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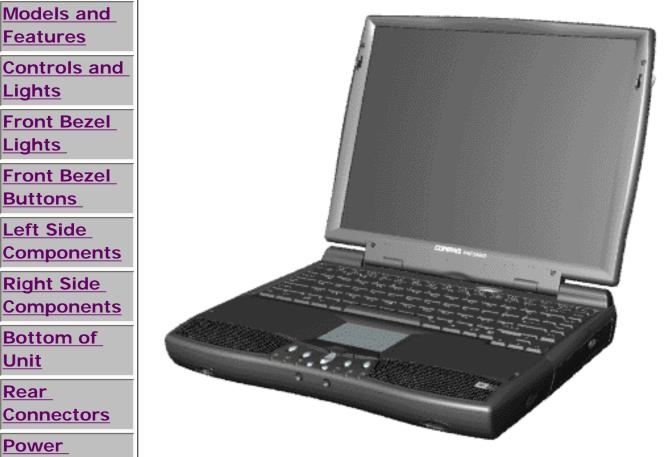
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Management
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Guide (MSG) to your hard drive.

Welcome to the Maintenance & Service Guide (MSG). This online guide is designed to serve the needs of those whose job it is to repair Compaq products. Many of the components of the hardcopy MSG are contained in this online guide. The <u>Notice</u>, contains the copyright and trademark information. The <u>Preface</u> shows symbol conventions, Technician Notes and Serial Number locations on the unit.

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

For content comments or questions, contact the Editor.

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Maintenance and Service Guide

Compaq Presario Series Portable Computer

"Compaq.com - Compaq Presario Series Maintenance and Service Guide - Model: 1670

First Edition (March 1999) Compaq Computer Corporation

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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 Series Portable Computers.

Compaq Computer Corporation reserves the right to make changes to the Compaq Presario Series Portable Computers without notice.

Symbols

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

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



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

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

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

Technician Notes



WARNING: Only authorized technicians trained by Compaq should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, the user should not attempt to make repairs at the component level or to make modifications to any printed circuit board. Improper repairs can create a safety hazard. Any indications of component replacement or printed circuit board modifications may void any warranty

Serial Number

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

Locating Additional Information

The following documentation is available to support this product:

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

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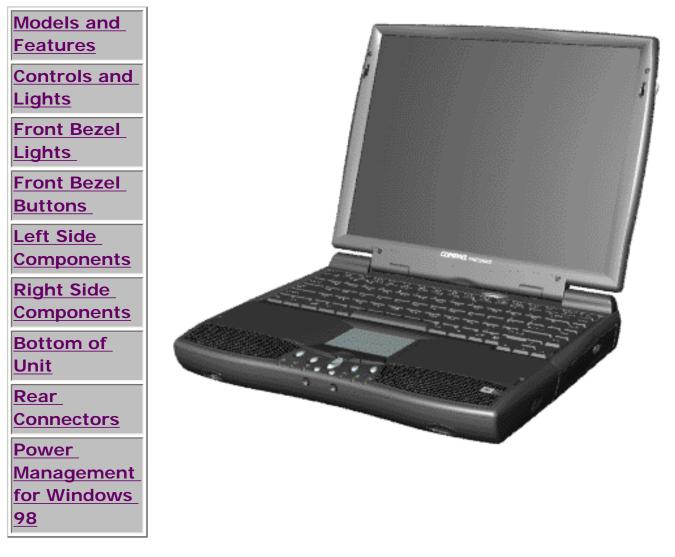
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Product Description



Compaq Presario Series Portable Computer is а continuation of the new generation of multimedia portable computers with an innovative integrated design, outstanding audio and video, advanced core features, and attractive styling. This fullfunction,

AMD-K6 based portable computer allows full desktop functionality.

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Troubleshooting

Preliminary	
<u>Steps</u>	
Clearing the	
Power-On	
Password	
Power-On Self	
Test (POST)	
<u>Compaq</u>	
<u>Diagnostics</u>	
Diagnostic Error	
<u>Codes</u>	
Troubleshooting	
Without	
<u>Diagnostics</u>	
Solving Minor	
<u>Problems</u>	
Contacting	
<u>Compaq</u>	
Support	

This section covers troubleshooting information for the Compag Presario 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 <u>Diagnostic Error Codes</u> 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.



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

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Illustrated Parts Catalog

System Unit
<u>Boards</u>
<u>Display</u> Assembly
<u>Mass Storage</u> Devices
Miscellaneous Cable Kit
<u>Miscellaneous</u> Hardware Kit
<u>Miscellaneous</u> Plastics Kit
<u>Miscellaneous</u> Parts
Documentation and Software

This section provides an breakdown and identifies the spare parts ordering number associated with each item(s) for the Compaq Presario Series Portable Computers. 1.800.AT.COMPAQ

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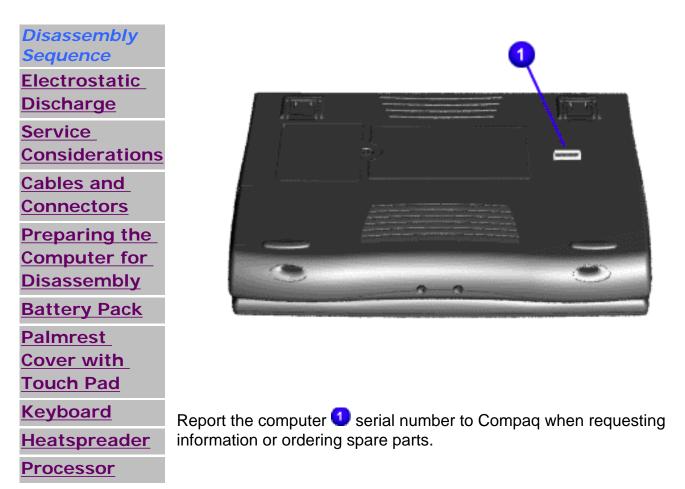
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Removal and Replacement Procedures

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

Serial Number Location



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Hard Drive
DVD or
CD Drive
Battery
Charger Board
<u>Modem</u>
Display Panel
<u>Assembly</u>
Upper CPU
<u>Cover</u>
Speaker
Assembly
Diskette Drive
Fan Assembly
System Board
Dip Switch
<u>Settings</u>
Memory
<u>Module</u>

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Specifications

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

- Computer models
- Physical and environmental
- System Interrupts
- System DMA
- System I/O Address
- System Memory Catalog
- Display
- Memory expansion
- Diskette drive
- Hard drive
- DVD or CD drive
- Battery pack

Physical and Environmental

Computer Specifications		
	U.S.	Metric

Dimensions		
Height	1.97 in 12.32 in	5.0 cm 31.3 cm
Depth Width	10.12 in	25.7 cm
Weight Model 1270	7.35 lbs	3.34 kg
Model 1270 Model 1670	7.35 lbs	3.34 kg
Model 1675	7.99 lbs	3.63 kg
Stand-Alone (Battery Pack) Power Requirements	Li Ion	
Nominal Operating Voltage Maximum Operating Power Peak Operating Power	W @ 14.8 VDC W @ 56.5 W W @ 58.5 W	
AC Power Requirements	(Information not available)	
Operating Voltage Operating Current Operating Frequency Maximum Transient		
Temperature		
Operating	41° to 95 °F	5° to 35 °C
Nonoperating	-4° to 140 °F	-20° to 60 °C
Relative Humidity (Non-condensing)		
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 10.14 km
Shock		
Operating	10 G, 11 ms, half sine	
Non operating	240 G, 2 ms, half sine	
Vibration		
Operating	0.55 G, 0.25 Oct/Min sweep rate	
Nonoperating	1.5 G, 0.25 Oct/Min sweep rate	
NOTE: Applicable product safety standards Portable Computers operate well within this	s specify thermal limits for plastic surfaces. Con range of temperatures.	npaq Presario Series

System Interrupts

System Interrupts	
Hardware IRQ System Function	
IRQ0	Timer Interrupt
IRQ1	Standard 101/102-Key or Microsoft Natural Keyboard
IRQ2	Programmable interrupt controller

IRQ3	Compaq Prosignia 56K-DF
IRQ4	Communications Port (COM1)
IRQ5	ES1869 Plug and Play Audio Drive
IRQ6	Standard Floppy Disk Controller
IRQ7	Printer Port (LPT1)
IRQ8	System CMOS / real-time clock
IRQ9	(free)
IRQ10	OPTi 82C861 PCI to USB Open Host Controller
IRQ10	IRQ Holder for PCI Steering
IRQ11	IRQ Holder for PCI Steering
IRQ11	IRQ Holder for PCI Steering
IRQ11	NeoMagic MagicGraph 128XD
IRQ11	Texas Instruments PCI-1131 CardBus Controller
IRQ11	Texas Instruments PCI-1131 CardBus Controller
IRQ12	Synaptics PS/2 TouchPad
IRQ13	Numeric data processor
IRQ14	Primary IDE controller (dual fifo)
IRQ14	Opti Viper Max Dual PCI IDE Controller
IRQ15	Secondary IDE controller (dual fifo)
IRQ15	Opti Viper Max Dual PCI IDE Controller

System DMA

System DMA	
Hardware DMA	System Function
0	ES1869 Plug and Play AudioDrive
1	ES1869 Plug and Play AudioDrive
2	Standard Floppy Disk Controller
3	(free)
4	Direct memory access controller
5	(free)
6	(free)
7	(free)

System I/O Address

Sy	stem I/O Address	
I/O Address (Hex)	System Function (Shipping Configuration)	
x0000 - x000F	Direct memory access controller	
x0020 - x0021	Programmable interrupt controller	

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x0022 - x0024	Motherboard resources
x0040 - x0043	System timer
x0060 - x0060	Standard 101/102-Key or Microsoft Natural Keyboard
x0061 - x0061	System speaker
x0064 - x0064	Standard 101/102-Key or Microsoft Natural Keyboard
x0070 - x0071	System CMOS/real time clock
x0080 - x0080	Motherboard resources
x0081 - x008F	Direct memory access controller
x0092 - x0092	Motherboard resources
x00A0 - x00A1	Programmable interrupt controller
x00C0 - x00DF	Direct memory access controller
x00EC - x00EF	Motherboard resources
x00F0 - x00FF	Numeric data processor
x0170 - x0177	Opti Viper Max Dual PCI IDE Controller
x0170 - x0177	Secondary IDE controller (dual fifo)
x01F0 - x01F7	Opti Viper Max Dual PCI IDE Controller

System Memory Catalog

System Memory Catalog	
System Function	
System board extension for PnP BIOS	
NeoMagic MagicGraph 128XD	
NeoMagic MagicGraph 128XD	
NeoMagic MagicGraph 128XD	
System board extension for PnP BIOS	

x00100000 - x01FFFFFF	System board extension for PnP BIOS
x03000000 - x03000FFF	Texas Instruments PCI-1131 CardBus Controller
x03001000 - x03001FFF	Texas Instruments PCI-1131 CardBus Controller
xFD000000 - xFDFFFFF	NeoMagic MagicGraph 128XD
xFEA00000 - xFEBFFFFF	NeoMagic MagicGraph 128XD
xFECFF000 - xFECFFFFF	OPTi 82C861 PCI to USB Open Host Controller
xFED00000 - xFEDFFFFF	NeoMagic MagicGraph 128XD
xFFFC0000 - xFFFFFFF	Motherboard resources

Display

12.1" (Diagona	al) TFT Display with	LVDS
	U.S.	Metric
Dimensions Height Width	7.83" 10.8"	19.9 cm 25.7 cm
Diagonal Size	12.1"	30.7 cm
Mounting	Internal	
Number of Colors	16 M	
Contrast Ratio	Typical 150:1	
Brightness	Over 120 cd/m~3	
Pixel Resolution Pitch Format Configuration	0.30 x 0.30 m 800 x 600 RGB Stripe	m
Backlight	Edge Light	
Character Display	80 x 25, 80 x 5	50
Total Power Consumption	5.4 W (max)	

(Information not available)

13.3" (Diagonal) TFT	Display with LV	/DS
	U.S.	Metric
Dimensions Height Width		
Diagonal Size		
Mounting		
Number of Colors		
Contrast Ratio		
Brightness		
Pixel Resolution Pitch Format Configuration		
Backlight		
Character Display		
Total Power Consumption		

14.1" (Diagonal) TFT	Display with LVDS	
	U.S.	Metric
Dimensions Height Width	8.43" 11.2"	21.42 cm 28.56 cm
Diagonal Size	14.1"	35.8 cm
Mounting	Internal	
Number of Colors	64 K	
Contrast Ratio	Typical 150:1	
Brightness	Over 120 cd/m~3	
Pixel Resolution Pitch Format Configuration	0.279 x 0.279 mm 1024 x 768 RGB Stripe	
Backlight	Edge Light	
Character Display	80 x 25	
Total Power Consumption	6.6 W (max)	

Memory Expansion

Memory Expansion for 350-MHz Processor		
System Memory	Expansion Board Memory	Total Memory
32-MB	32-MB	64-MB
32-MB	64-MB	96-MB

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32-MB 128-MB 160-MB	
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Memory Expansion for 380-MHz Processor		
System Memory	Expansion Board Memory	Total Memory
64-MB	32-MB	96-MB
64-MB	64-MB	128-MB
64-MB	128-MB	192-MB

Diskette Drive

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

Hard Drive

Hard Drives			
	6.4-GB	4.3-GB	
Capacity Per Drive	6.4-GB	4.3-GB	
Drive Type	65	65	
Physical Configuration Cylinders Heads Sectors per track Bytes per sector	8647 6 240-250 512	8647 6 240-250 512	
Logical Configuration Cylinders Heads Sectors per track Bytes per sector	13424 15 63 512	7944 15 63 512	

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Seek Times	2.5 ms	2.5 ms
(Typical, Including settling in ms)	10	
Track to Track	13 ms	13 ms (read)
Average Maximum	23 ms	23 ms
Rotational Speed	4200 rpm	4200 rpm
Transfer Rate		
Media	60.8 to 107.2 Mb/s	60.8 to 107.2 Mb/s
At interface	33.3 MB/s	33.3 MB/s
Sector Interleave	1:1	1:1
Buffer Size	512 KB	512 KB

DVD or CD Drive

CD Drive	
	24× CD Drive
Applicable Disk	CD-DA, CD-ROM, CD-ROM XA, CD-1, Photo CD (multisession), Video CD, CD- R, CD-Extra (CD+), CD-G, CD-RW
Center Hole Diameter	.6" / 15 mm
Disc Diameter	12 cm, 8 cm
Disc Thickness	1.2 mm
Track Pitch	1.6 um
Access Time (typical, including setting)	110 ms
Audio Output Level Line out Headphone	+/- 0.27 Vrms none
Cache Buffer	128 KB
Data Transfer Rate (typical, including setting)	3600 KB/s 150 KB/s 16.66 MB/sec
Startup Time	< 8 sec
Stop time	< 4 sec

DVD Drive	
	DVD Drive
Applicable Disk	DVD-ROM, CD-ROM, CD-XA, CD-I, Photo CD, Multisession, Audio, CD-R, CD-RW
Center Hole Diameter	6" / 15mm
Access Time (typical, including setting)	< 100 ms (CD) < 150 ms (DVD)
Disc Thickness	4.7", 3.15" / 12cm, 8cm

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Track Pitch	0.74um (DVD)
Laser Beam Divergence	.05" / 1.2cm
Audio Output Level Line out Headphone	1.0 volts RMS 0 - 0.6 volts RMS
Cache Buffer	512 KB/s (CD)
Data Transfer Rate (typical, including setting)	12,000 - 3,000 KB/s (CD) 2705 KB/s (DVD)
Startup Time	< 5 sec
Stop time	< 3 sec

Battery Pack

	Battery Pack		
	Lithium Ion (Li ion) *		
	US	Metric	
Dimensions Height Length Width	.81 in 3.05 in 5.69 in	2.05 cm 7.75 cm 14.45 cm	
Weight	0.85 lb	.39 kg	
Battery Pack Operating Time	3:00 hr		
Energy Voltage Amp-hour capacity Watt-hour capacity	14.8 V 3.0 Ah 44.4 Wh		
Environmental Requirements Operating Temperature Non-operating Temperature	32° F to 113 F -4° F to 140 ° F	0° to 45° C -20° to 60° C	

Modem		
Compliance	ITU v.90~6 standard	
	Full ITU-T V.34 compliance	
	Full compliance with: V.21, V.22, V.22bis, V.23, V.32, V.32bis, Bell 103, Bell 212A	
Data Compression	V.42bis/MNP 5	

Fax Modulation	V. 17
	V. 21 (Group III Compatible)
	V.29
	V.27Ter
Command Set	Hayes AT
	Class 1 Fax
Cable	6 Ft. RJ-11 telephone cable

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Connector Pin Assignments

This appendix provides connector pin assignment tables for Compaq Presario Series Portable Computers. For more information on connectors, refer to the section on <u>Rear</u> <u>Connectors</u>.

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*		

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9	Data Bit 7	18-25	Signal Ground	
* = Active low				

Serial Connector			
Connector	Pin	Signal	
00000	1	Carrier Detect 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	
Кеу	vboard/Mo	buse	
Connector	Pin	Signal	
	1	Data 1	
	2	Data 2	
	3	Ground	
	4	+5 V	
	5	Clock 1	
	6	Clock 2	

External VGA Monitor			
Connector	Pin	Signal	
	1	Red Analog	
00000	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	Pin	Signal	

	1	+5V
Universal Serial Bus Connector	2	Data -
Chiversal Serial Das Connector	3	Data +
		Ground
	4	

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

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Battery Pack Operating Time

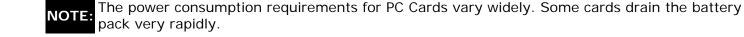
This appendix covers the following information concerning battery pack operating time:

- Increase battery pack operating time
- Conditioning a battery pack
- Disposal 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



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.
\triangle		

To condition a battery pack, complete the following steps:

1. Plug in the AC adapter and allow the battery to charge until the LED light on the display stops blinking. Your battery gauge may read 100 percent for a period of time before LED light on the display stops blinking. Do not unplug the AC adapter until the arrow disappears.

2. Unplug the AC adapter and allow the battery to drain until the computer reaches hibernation and turns itself off. Do not plug in the AC adapter during this process or you will need to restart with Step No. 1. You may use the computer while the battery is draining.

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

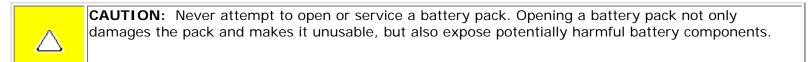
The table below shows the approximate battery pack charge times.

Approximate Battery Charge Time			
Computer	On Line	Off Line	
NiMH Battery Pack	4.0 hours premature termination	2:00 hrs	

Li ion Battery Pack	4.5 hours premature termination	2:50 hrs

Disposal 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.



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Models and Features

Models and Features	Compaq Presario Series Portable Computer Models			
Controls and		Model 1675	Model 1670	
Lights	Display	14. 1" TFT	13.3" TFT	
Front Bezel	Processor	AMD-K6 380-Mhz MMX	AMD-K6 350-Mhz MMX	
Lights	Cache	1-MB	1-MB	
Front Bezel	Hard Drive	6.4-GB	4.3-GB	
Buttons	DVD or CD Drive	2x DVD	24x CD	
Left Side	Modem	56.0 Kbps Data/Fax with PCI	56.0 Kbps Data/Fax with PCI	
Components	System Memory	64-MB	64-MB	
<u>Right Side</u> Components	,		, ,	
Bottom of		Model 1270	-	
<u>Unit</u>	Display	12. 1" TFT	_	
Rear	Processor	AMD-K6 350-Mhz MMX	_	
<u>Connectors</u>	Cache	512K	_	
Power Management	Hard Drive	4.3-GB		
for Windows	CD Drive	24x CD	-	
<u>98</u>	Modem	56.0 Kbps Data/Fax with PCI	_	
	System Memory	32-MB		

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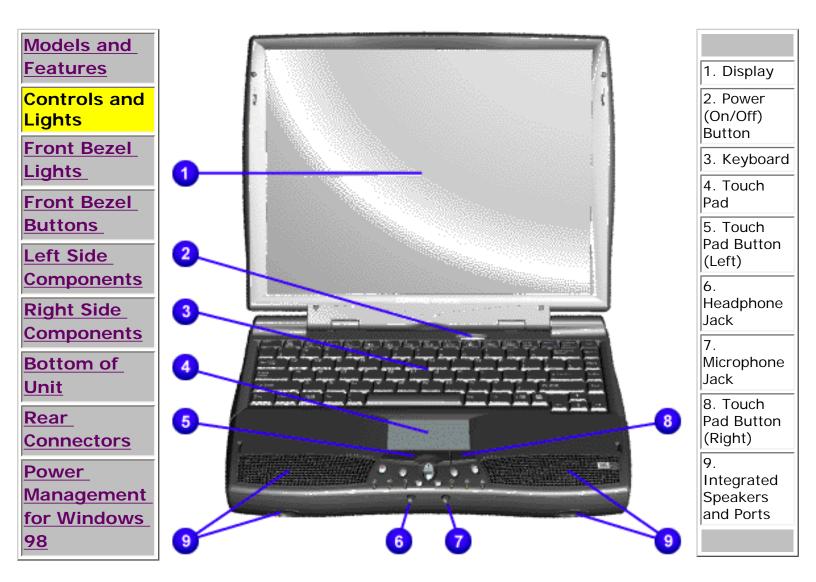
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Controls and Lights



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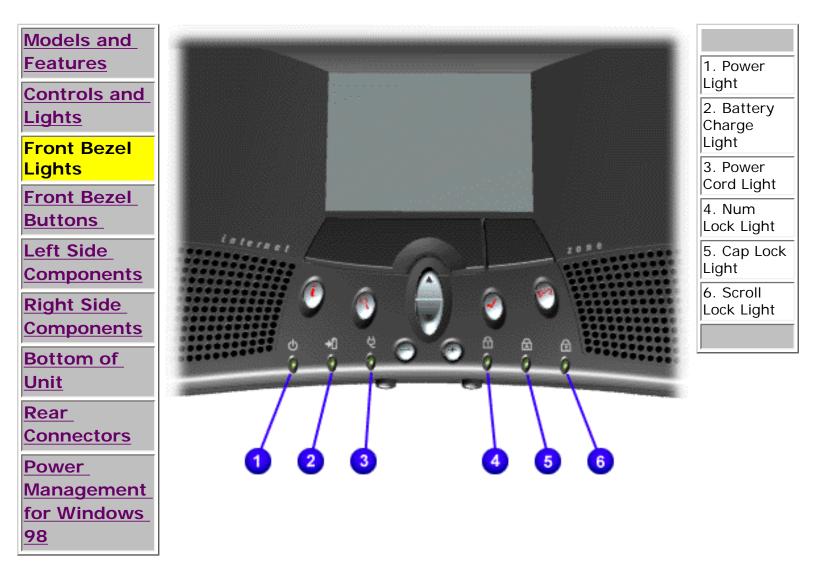
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Front Bezel Lights



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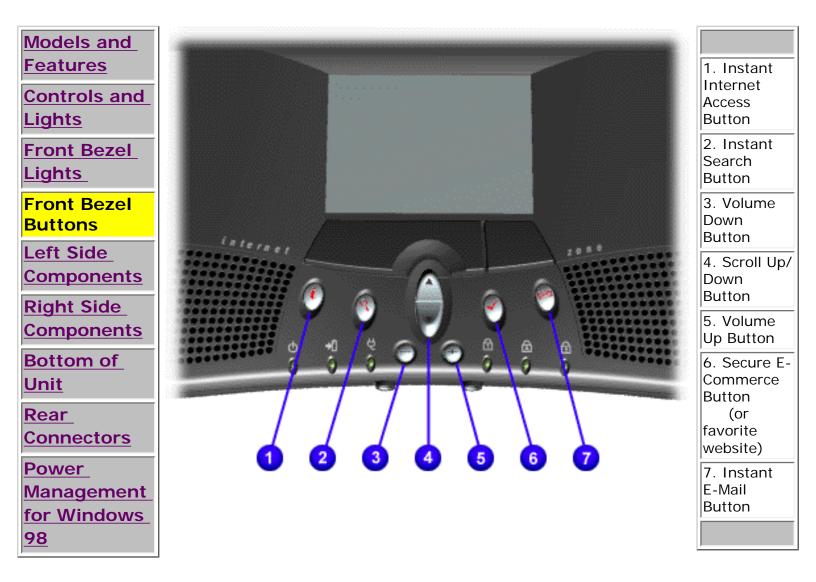
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Front Bezel Buttons



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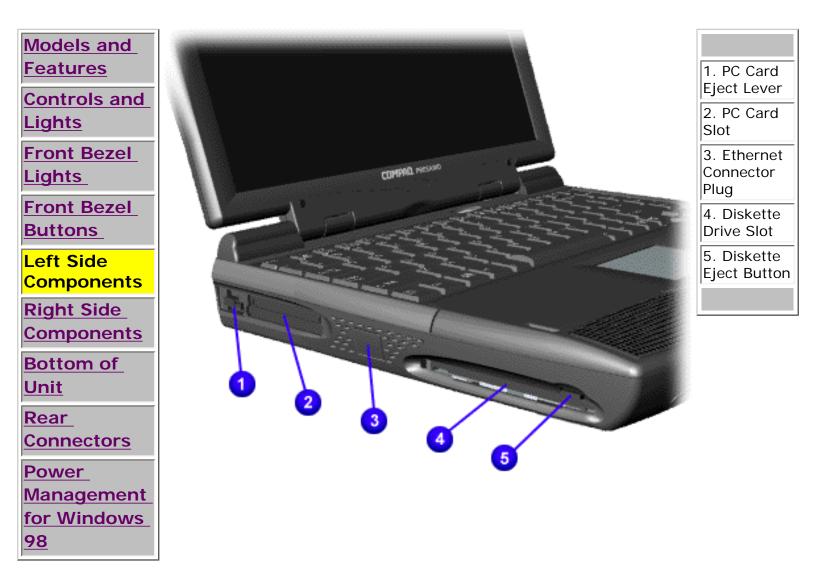
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Left Side Components



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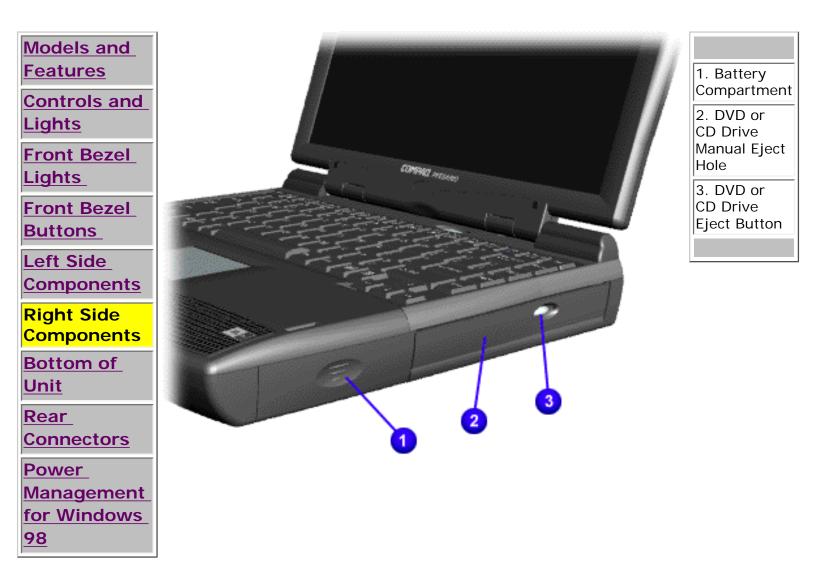
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Right Side Components



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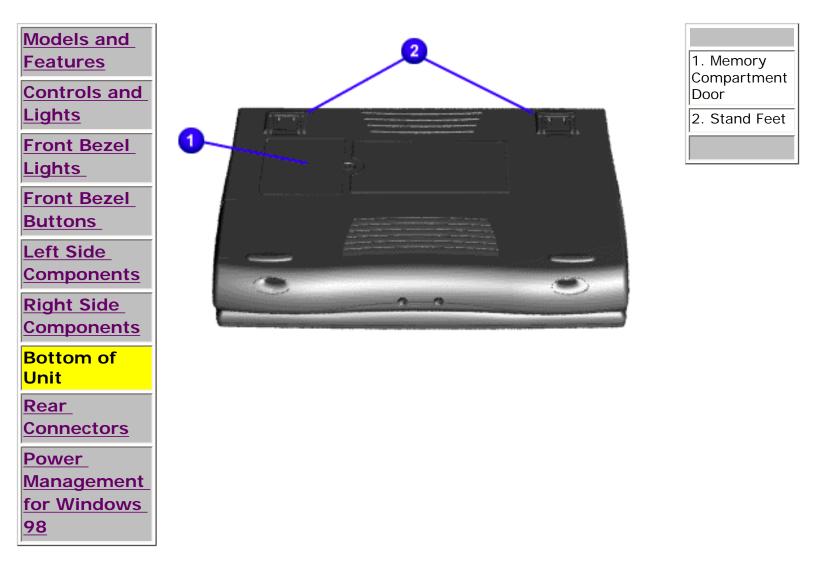
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Bottom of Unit



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Rear Connectors

Models and Features Controls and Lights Front Bezel Lights		1. AC Adapter 2. Universal Serial Bus 3. Security Slot
Front Bezel Buttons	12345 6789	4. Serial Port
Left Side Components		5. Port Replicator
Right Side Components		6. External Monitor Port
Bottom of		7. Parallel Printer Port
<u>Unit</u> Rear Connectors		8. Keyboard/ Mouse Port
Power_		9. Modem Jack
Management for Windows 98		

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Power Management for Windows 98

The following power management features are available for conserving AC power and extending battery operating time:

- Power Management Settings
- <u>Sleep</u>
- Hibernation
- <u>Battery operating time</u>
- Rebooting After a Lockup
- Servicing Your Computer Full Off Mode

Power Management Settings

Depending on your patterns of computer use, you can set different levels of power management. These different power management levels can be activated based on the amount of time passed since the last system activity. System activity examples include keyboard or mouse movement, CD or DVD playback (while under program control that monitors Sleep), and modem use.

You can select different conditions or power schemes through Power Management. The optional settings are **Home/Office Desk**, **Portable/ Laptop**, and **Always On**. From the default settings, you can change the following settings:

- the System goes to Sleep (Standby) mode
- the screen times out and goes blank
- the hard drive spins down

Each of these system components will go to sleep after the selected or default periods of inactivity. (The setting for hard drive must be less than or equal to the setting for System.)

IMPORTANT: If you're on a network, it's recommended that you set **System Standby** to **Never**.

There are five categories of power management settings under the Control Panel. The default setting for each feature is listed below in the tables.

Power Management Properties

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Tab: Power Schemes:	Plugged in	Running on Batteries
Always on System Standby:	Never	15 minutes
Turn OFF Monitor	After 15 minutes	After 10 minutes
Always on System Standby:	After 15 minutes	After 10 minutes

Power Management Properties

Tab: ALARMS::	
Low Battery Alarm:	10%
Critical Battery Alarm	0%
Alarm Actions:	X Display Message Notification

Text Action No Action

Power Management Properties

Tab: POWER METER:	Default
Tab: ADVANCED	Default

Display Properties

Tab: Monitor: Laptop Display (Maximum resolution according to unit display size)

Sleep

You can select Sleep mode instead of turning off the computer when you have finished using it. This allows the computer to wake up faster than turning it completely off and saves power over the active (On) mode. Compaq Presario Series Notebook computers have two levels of sleep, Hibernation and Sleep.

Hibernation – by pushing the power button once your computer will perform a save to disk followed by a shut down of the computer into Off mode.

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



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 helps conserve battery life and protects your data. Hibernation can be a routine power saving event, or can be the result of a low battery condition. As it enters Hibernation your computer will display a progress screen, as it automatically saves the machine state before it shuts down and turns itself off. Your computer will automatically go into Hibernation, when the battery has little power left, or when the system (operating on battery power) has been in Sleep mode for more than an hour. You can also manually initiate Hibernation by pressing the power button once while the system is active. To restore the computer's previous state, simply press the power button once again. While waking up, the computer will display a progress screen.

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

Mode	To Initiate	To End	Indicators
Sleep	Manual <u>keys</u> combination - Fn+F4	Press any key	Flashing green Power LED
	Time Out Default 15 minutes. If on 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 via the start button, or press and hold down the power button for 4 seconds	Press Power Button once	No Power LED, blank screen

Servicing Your Computer – Full Off Mode

If you need to install or replace components in your system, you must turn the computer off *completely*. Follow the instructions above for properly putting the computer into Off mode, unplug from the outlet, and remove the battery (see battery section for instruction on removing battery).

Rebooting After a Lockup

Occasionally you may encounter a frozen keyboard or a locked screen. To reboot your computer (as if from a cold start) press and hold down the Power Button for at least four seconds, which will cause a manual shutdown. Then, restart it with a single press of the Power Button. If it still doesn't recover, press the Power Button and hold it for four seconds to shut it down, then, remove the battery or unplug the AC power for at least 30 seconds. Reinsert the battery or reconnect AC power and press the Power Button once to reboot.

Battery Operating Time

Battery operating time is affected by variables, such as the following:

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

For more information on increasing battery pack operating time, conditioning the battery pack, and disposing of a used battery pack, refer to the <u>Battery Pack Operations</u>.

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Preliminary Steps

Before running <u>POST</u>, 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, <u>clear the password.</u>

- 2. Run Computer Checkup.
- 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.



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.

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When the preliminary steps are completed, you are ready to run POST.

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 $file:///C|/SERVICE\%20MANUALS/COMPAQ\%20_\%20 checked\%20 ok/NOTEBOOKS/PRESARIO\%201270,\%201670,\%20 and\%201675/ponpass.html and the second second$

United States June 27, 2004

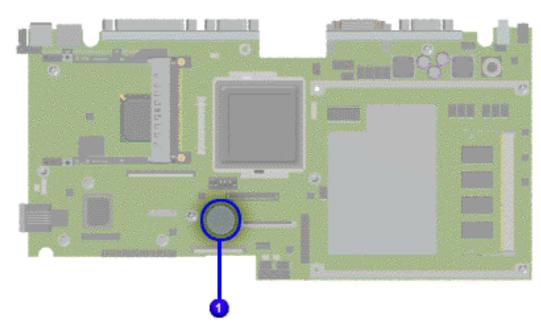
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Clearing the Power-on Password



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

The **1** RTC battery is located on the system board.

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 <u>Palmrest</u> <u>Cover with Touch Pad</u>.

5. Remove the heatspreader.

6. Remove the keyboard.

7. Remove RTC battery for 30 seconds and replace it .

8. Reassemble the computer.

9. Turn on the computer to verify that the power-on password has been cleared. If it has not been cleared, repeat Steps 1 through 9.

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Power-On Self Test (POST)

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				
30	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-Keyb	oard 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-Di	iskette 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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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 problem you cannot solve, run the Diagnostics utilities before you call for support. Run Computer Checkup and select to save the device list to a file and to print or to save the log of errors. Run the View System Information (INSPECT) utility and select to print or to 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 display 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 how many times to run the tests, to stop on errors, or to print or 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 or 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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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 has been resolved, do not proceed with the remaining steps.

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

Select error codes by number or type:

101 through 114
200 through 215
300 through 304
401 through 403
600 through 699
<u>1101</u>
1701 through 1736
501 through 516
2402 through 2456

Processor Test Memory Test Keyboard Test Parallel Printer Test Diskette Drive Test Serial Test Hard Drive Test Video Test

<u>3206</u>

8601 through 8602

Audio Test Touch Pad Pointing Device Test

l

CD Test

3301 through 6623

Error Code	Description	Recommended Action	
101-xx	CPU test failed	Replace the processor and retest.	
102-xx	Coprocessor or Weitek Error	 Run the Configuration and Diagnostics Utilities. 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	 Check system configuration. Verify cable connections to speaker. Replace the system board and retest. 	
	Memory Test Er	ror Codes	
200-xx	Memory machine ID test failed	1. Flash the system ROM and retest.	
202-xx	Memory system ROM checksum failed	2. Replace the system board and retest	
203-xx	Write/Read test failed	1. Remove the memory module and	
204-xx	Address test failed	retest. 2. Install a new memory module and	
211-xx	Random pattern test failed	retest.	
214-xx	Noise test failed		
215-xx	Random address test failed	-	

300-xx	Failed ID Test	1. Check the keyboard connection. If
		disconnected, turn off the computer and
301-xx	Failed Selftest/Interface Test	connect the keyboard.
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 Te	st Error Codes
401-xx	Printer failed or not connected	 Connect the printer. Check power to the printer.
402-xx	Failed Port Test	3. Install the loop-back connector and retest.
403-xx	Printer pattern test failed	4. Check port and IRQ configuration. 5. Replace the system board and retest.
	Diskette Dri	ve Test
600-xx	Diskette ID drive types test failed	 Replace the diskette media and retest. Check and/or replace the diskette
601-xx	Diskette format failed	power and signal cables and retest. 3. Replace the diskette drive and retest.
602-xx	Diskette read test failed	4. Replace the system board and retest.
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	 Replace media. Run the Configuration and Diagnostics Utilities.
	Serial Test Eri	ror Codes
1101-xx	Serial port test failed	 Check port configuration Replace the system board and retest.
	Hard Drive Test	Error Codes
1701-xx	Hard drive format test failed	1. Run the Configuration and
1702-xx	Hard drive read test failed	Diagnostics Utilities and verify drive type.

1703-xx	Hard drive write/read/compare test failed	2. Verify that all secondary drives have secondary drive capability.
1704-xx	Hard drive random seek test failed	 3. Replace the hard drive and retest. 4. Replace the system board and retest.
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 = E	rror Correction Code	
	Video Test Err	or Codes
501-xx	Video controller test failed	The following apply to error codes 501-
502-xx	Video memory test failed	xx through 516-xx:
503-xx	Video attribute test failed	1. Disconnect external monitor and test
504-xx	Video character set test failed	with internal LCD display.
505-xx	Video 80 × 25 mode 9 × 14 character cell test failed	2. Replace the display assembly and retest.
506-xx	Video 80 × 25 mode 8 × 8 character cell test failed	- 3. Replace the system board and retest
507-xx	Video 40 \times 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
2403-xx	Video attribute test failed	2402-xx through 2456-xx:
2404-xx	Video character set test failed	1. Run the Configuration and
2405-xx	Video 80 \times 25 mode 9 \times 14 character cell test failed	Diagnostics Utilities. 2. Replace the display assembly and
2406-xx	Video 80 × 25 mode 8 × 8 character cell test failed	retest. 3. Replace the system board and retest.
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.
2421-xx	ECG/VGC 640 × 200 graphics mode test failed	 Disconnect external monitor and test with internal LCD display. Replace the display assembly and
2422-xx	ECG/VGC 640 × 350 16 color set test failed	4. Replace the system board and retest.
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:		
2468-xx	Advanced VGA DAC test	Replace the system board and retest.		
2477-xx	Advanced VGA data path test			
2478-xx	Advanced VGA BitBLT test			
2480-xx	Advanced VGA LineDraw test			
	Audio Test Err	or Codes		
3206-xx	Audio System Internal Error	Replace the system board and retest.		
TouchPad/Pointing Device Interface Test Error Codes				
	TouchPad/Pointing Device In	terrace rest error codes		
8601-xx	TouchPad/Pointing Device In Mouse test failed	 Replace the TouchPad and retest. Replace the system board and retest. 		
8601-xx 8602-xx		1. Replace the TouchPad and retest.		
	Mouse test failed	 Replace the TouchPad and retest. Replace the system board and retest. 		
	Mouse test failed Interface test failed	 1. Replace the TouchPad and retest. 2. Replace the system board and retest. rror Codes 1. Replace the CD and retest. 2. Verify that the speakers are 		
8602-xx	Mouse test failed Interface test failed CD Drive Test E	 1. Replace the TouchPad and retest. 2. Replace the system board and retest. 2. Replace the System board and retest. rror Codes 1. Replace the CD and retest. 2. Verify that the speakers are connected. 3. Verify that drivers are loaded and 		
8602-xx 3301-xx	Mouse test failed Interface test failed CD drive read test failed	 1. Replace the TouchPad and retest. 2. Replace the system board and retest. 2. Replace the CD and retest. 1. Replace the CD and retest. 2. Verify that the speakers are connected. 		

6608-xx	Controller test failed
6623-xx	Random read test failed

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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	Memory
Battery/Battery gauge	PC Card
CD drive	Power
Diskette/Diskette drive	Printer
Display	Touch Pad
Hard drive	Keyboard/Numeric keypad
Hardware Installation	

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: 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.	No action is necessary.
	Battery pack was exposed to temperature extremes.	Allow time for the battery pack to return to room temperature.
	Battery pack is at end of its life.	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.

Problem	Probable Cause	Solution(s)
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 Drive Problems

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

Solving CD Drive Problems			
Problem	Probable Cause	Solution(s)	
CD drive cannot read a compact disc.	improperly inserted in the CD drive.	Open the CD loading tray, lay the compact disc in it (label side up), then close the tray.	
	0 1	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
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
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:

- 1. Turn off the monitor.
- 2. Turn off the computer.
- 3. Disconnect the monitor signal cable from the computer.
- 4. 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 or contrast (if applicable) is not set properly.	Adjust the Brightness of the display by using Fn + F7 (⁻) or Fn + F8 (-). Adjust the Contrast of the display by using Fn + F5 (⁻) or Fn + F6 (-).
	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 .

Problem	Probable Cause	Solution(s)
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.
	Defective system board.	Replace the system board.
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.
Backlight (brightness) cannot be adjusted with Fn + F7 (⁻) or Fn + F8 (-).***	Improper display cable connections.	 Reseat the display cable to the system board. 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.
Contrast cannot be adjusted with Fn + F5 (⁻) or Fn + F6 (-).	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.

** 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.

Problem	Probable Cause	Solution(s)
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.
Ghost bars extending from graphics on the display.	Common characteristic of STN displays.	 Change the background colors. Adjust the Contrast of the display by using Fn + F5 (⁻) or Fn + F6 (-).
A single line, small group of lines, or block appears on the display panel. This failure occurs in only a section of the display panel.	Defective display panel.	Replace the display assembly.

To perform a "self-test" on an external VGA color or monochrome monitor, complete the following steps: NOTE: 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.

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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	Solutions(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)
Memory count during Power-On Self-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.
L.	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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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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System Unit



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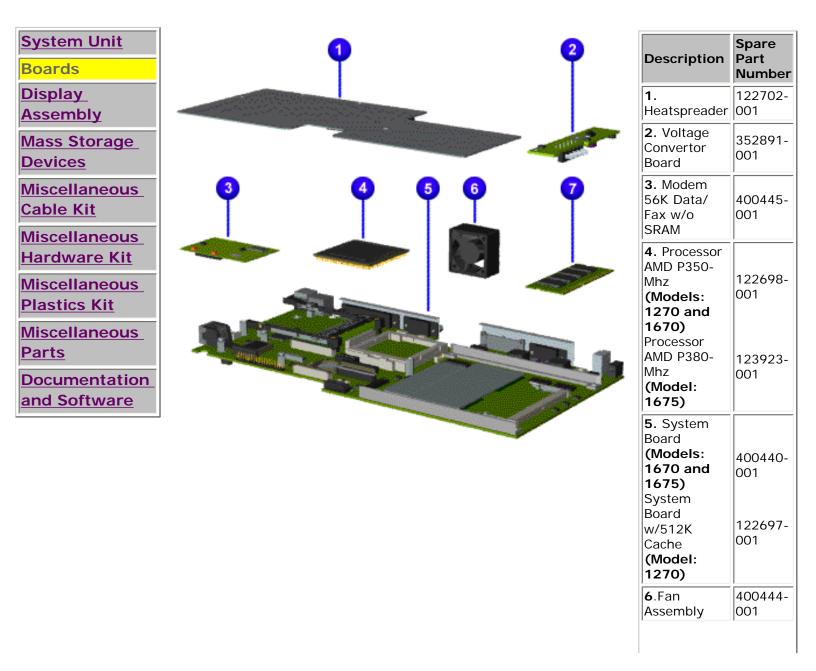
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Boards



7. System Memory 32-MB (Model: 1270) 64-MB (Models: 1670 and 1675)	122699- 001 122700- 001

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System Unit Boards	Description	Spare Part Number
Display Assembly Mass Storage		118165- 001
Devices Miscellaneous Cable Kit		123924- 001
Miscellaneous Hardware Kit Miscellaneous Plastics Kit	3. Display 12.1 TFT w/ LVDS (Model: 1270)	387544- 001
<u>Miscellaneous</u> Parts		
Documentation and Software		

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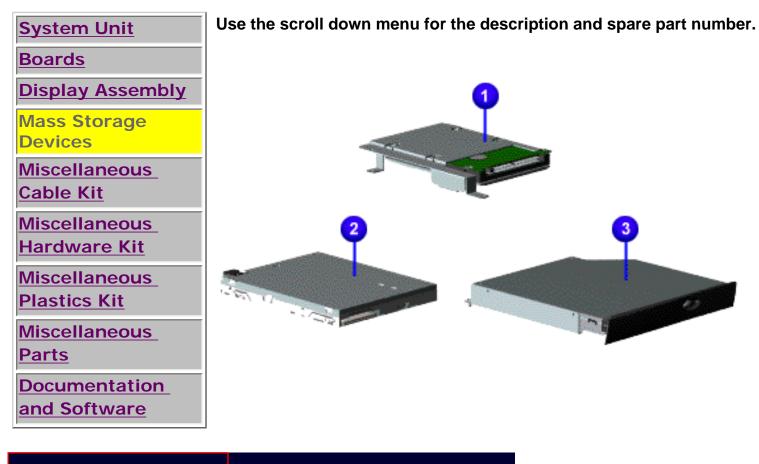
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Mass Storage Devices



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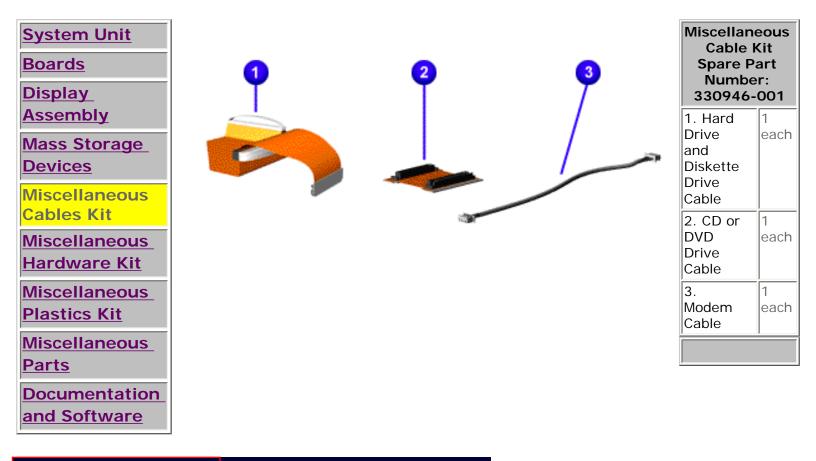
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Miscellaneous Cables Kit



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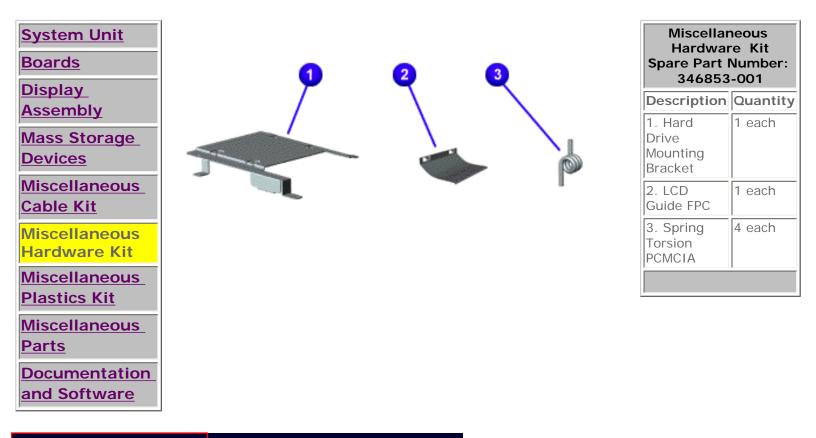
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Miscellaneous Hardware Kit



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Miscellaneous Plastics Kit

System Unit Boards	1 2 3 4 5 Miscella Plastic Spare Part 330940	cs Kit Number:
Display Assembly	Description	Quantity
Mass Storage	1. Door, Battery Pack	1 each
Devices Miscellaneous	6 7 8 9 10 11 2. Cover, Memory Module	1 each
Cable Kit	3. Door, PCMCIA	1 each
Miscellaneous Hardware Kit Miscellaneous Plastics Kit	4. Display Hinge Cover, (Left)	1 each
Miscellaneous Parts	5. Display Hinge Cover, (Right)	1 each
Documentation and Software	6. CD Drive Guide	1 each
	7. Rubber Plug (A)	4 each
	8. Rubber Plug (B)	4 each
	9. Rubber Foot	8 each
	10. Latch (Right)	2 each
	11. Latch (Left)	2 each

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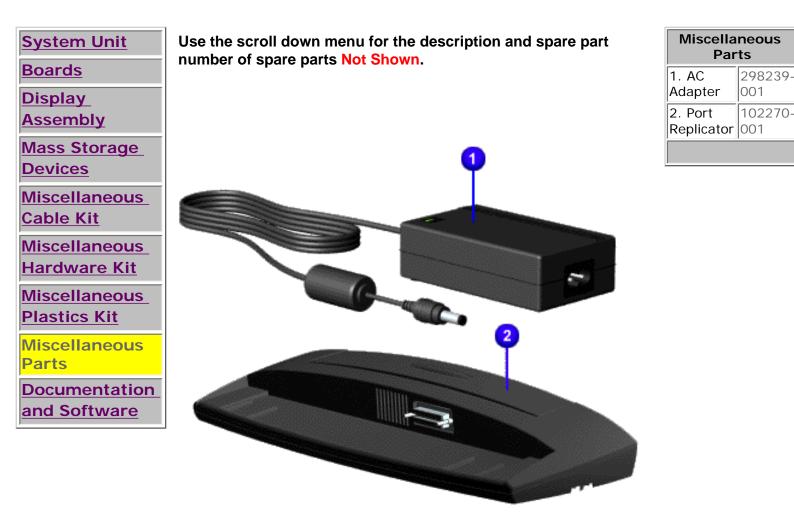
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Miscellaneous Parts



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Documentation and Software

System Unit	Description Spare Part Number			
Boards	Quick Restore CD, Belgium Windows 98			Info. Not Available
Display	France Wind	lows 98		Info. Not Available
Assembly	Germany Wind	dows 98		Info. Not Available
Mass Storage	Netherlands Wind	dows 98		Info. Not Available
<u>Devices</u>	UK Wind	dows 98		Info. Not Available
Miscellaneous				
Cable Kit	Quick Reference C	Guide		Info. Not Available
<u>Miscellaneous</u> Hardware Kit	QuickFind for Windows, North America, Latin America, Asia Pacific			
Miscellaneous Plastics Kit	QuickFind for Windows, Europe, Middle East, Africa			Info. Not Available
Miscellaneous Parts Documentation	*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.			
and Software	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	Мау	-011	November
	-006	June	-012	December

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Electrostatic Discharge

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

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

Generating Static

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

Typical Electrostatic Voltages			
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

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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:

- Compaq screwdriver kit (Spare Part No. 161946-001)
- Torx T-9 screwdriver
- 3/16-inch and 5mm nut drivers (for screwlocks and standoffs)
- Small, standard screwdriver
- Small, Phillips screwdriver
- 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 avoid damage. Apply only the tension required to seat or unseat the cables during insertion or removal from the connector. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing the cables, and ensure that the cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced.

Cables

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

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



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

Select the desired illustration.

Removing a Cable from a **<u>ZIF Connector</u>**.

The ribbon cable position for the **<u>4.3-GB and 6.4-GB hard drive</u>**.

The ribbon cable position for the <u>CD or DVD drive</u>.

The ribbon cable position for the **diskette drive**.

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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Preparing the Computer for Disassembly

Disassembly Sequence	Before beginning removal and replacement procedures, complete the following procedures:
Electrostatic Discharge	1. Disconnect AC power and any external devices.
Service Considerations	2. Remove the battery pack.
Cables and Connectors	3. Remove any PC Cards.
Preparing the Computer for Disassembly	IMPORTANT. The battery pack should be removed before performing
Battery Pack Palmrest	IMPORTANT: any internal maintenance on the computer.
Cover with Touch Pad	
<u>Keyboard</u> Heatspreader	WARNING: Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent
Processor	damage, do not allow metal objects to touch the battery
Hard Drive	Series Portable Computers into the battery compartment. Do
DVD or CD Drive	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 Series Portable Computers have several screws of various sizes which are **not** interchangeable. Care must be taken during reassembly to ensure that the correct screws are used in their correct location. During removal please keep respective screws with their associated sub-assembly.

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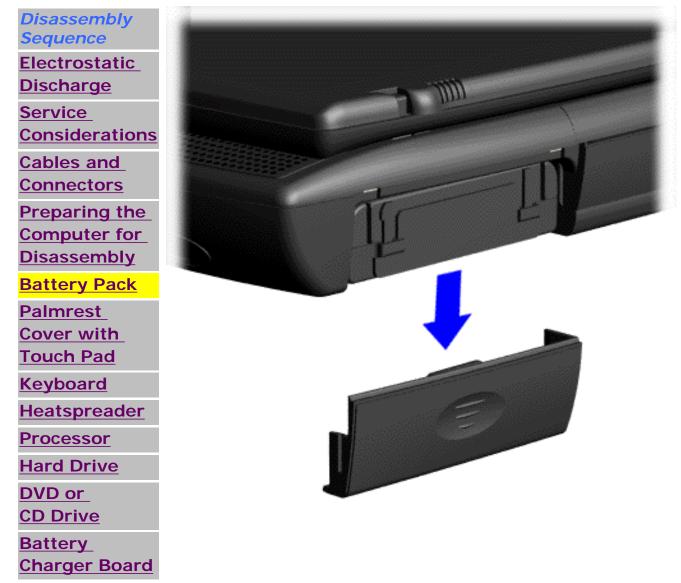
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Removing the Battery Pack



To remove the battery pack, complete the following steps:

1. Slide the battery pack compartment door down and remove it from the battery pack.

Next Step

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<u>Modem</u>		
Display Panel		
<u>Assembly</u>		
Upper CPU		
<u>Cover</u>		
<u>Speaker</u>		
<u>Assembly</u>		
Diskette Drive		
Fan Assembly		
System Board		
Dip Switch		
<u>Settings</u>		
<u>Memory</u>		
Module		

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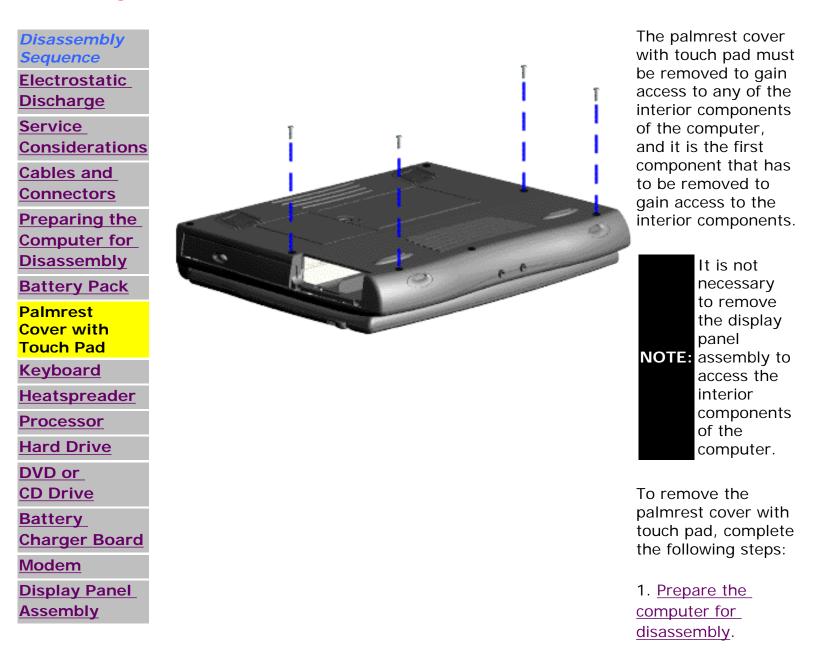
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Removing the Palmrest Cover with Touch Pad



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Upper CPU Cover Speaker Assembly Diskette Drive Fan Assembly System Board Dip Switch Settings Memory Module

2. Close the computer and turn the computer upside down.

3. Remove four screws from the bottom of the computer.

Next Step

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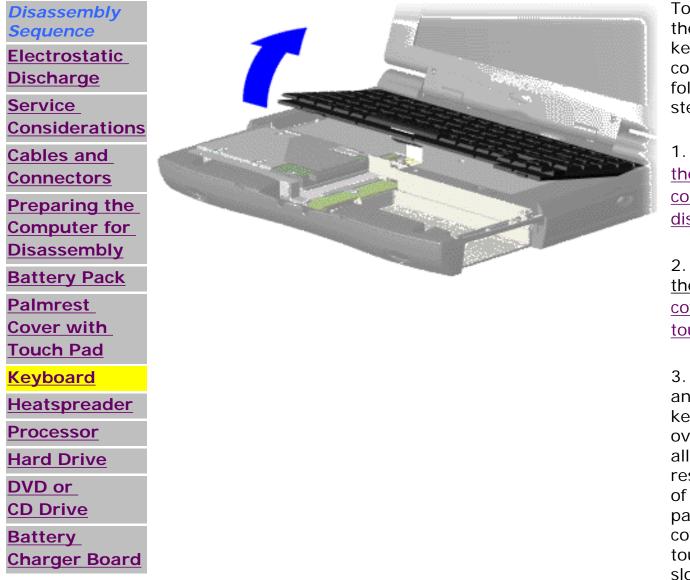
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Removing the Keyboard



To remove the keyboard, complete the following steps:

1. <u>Prepare</u> the computer for disassembly.

2. <u>Remove</u> <u>the palmrest</u> <u>cover with</u> <u>touch pad</u>.

3. Gently lift and turn the keyboard over allowing it to rest on top of the palmrest cover with touchpad slot opening. "Compaq.com - Compaq Presario Series Maintenance and Service Guide - Models: 1270, 1670, and 1675

<u>Modem</u> Display Panel Assembly		4. Remo the heatspro
<u>Upper CPU</u> <u>Cover</u>		Next Ste
<u>Speaker</u> Assembly		
Diskette Drive Fan Assembly		
System Board		
<u>Dip Switch</u> Settings		
<u>Memory</u> <u>Module</u>		

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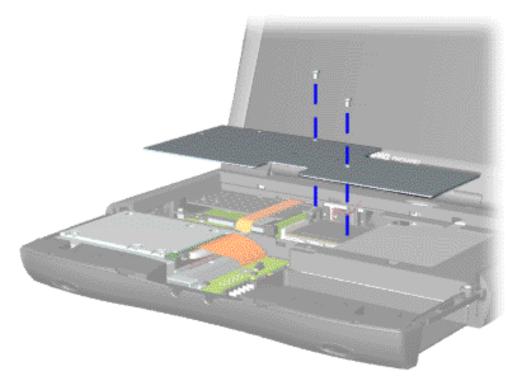
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Removing the Heatspreader

Disassembly Sequence Electrostatic **Discharge** Service Considerations Cables and **Connectors** Preparing the Computer for Disassembly **Battery Pack** Palmrest Cover with **Touch Pad Keyboard Heatspreader** Processor Hard Drive DVD or **CD** Drive Battery **Charger Board**



To remove the heatspreader, complete the following steps:

1. <u>Prepare</u> the computer for disassembly.

2. <u>Remove</u> <u>the palmrest</u> <u>cover with</u> <u>touch pad</u>.

3. Gently lift and turn the keyboard over allowing it to rest on top of the palmrest cover with touchpad slot opening. "Compaq.com - Compaq Presario Series Maintenance and Service Guide - Models: 1270, 1670, and 1675

Modem Display Panel Assembly Upper CPU Cover	4. Remove two screws from the heatspreader and lift out of the chassis.
SpeakerAssemblyDiskette DriveFan AssemblySystem Board	To replace the heatspeader, reverse the previous procedures.
Dip Switch Settings Memory Module	

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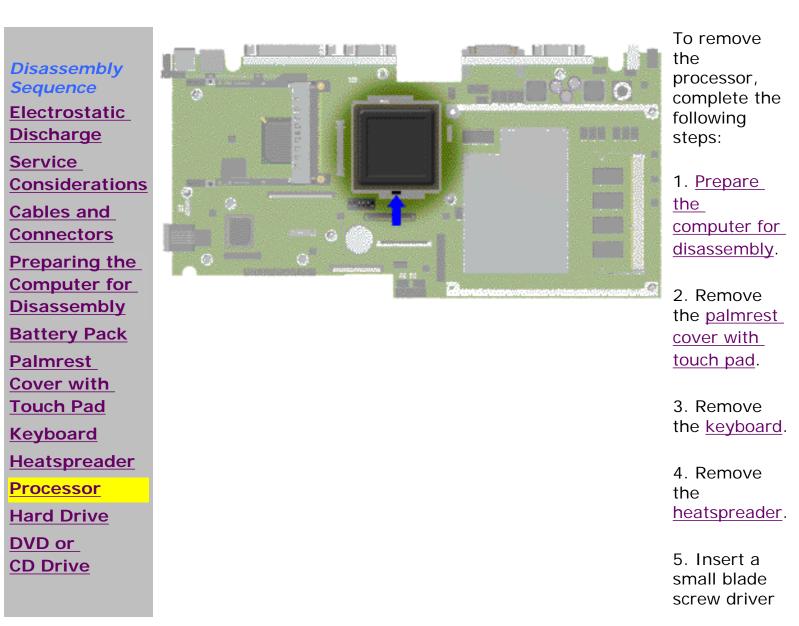
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Removing the Processor



Battery Charger Board Modem Display Panel Assembly Upper CPU Cover Speaker Assembly Diskette Drive	b c t t p a t c r p	nto the pottom slot ppening on the processor and push coward the display to release the processor from the chassis slot.
Fan AssemblySystem BoardDip SwitchSettingsMemoryModule	c c	5. Lift the processor but of the processor chassis slot.

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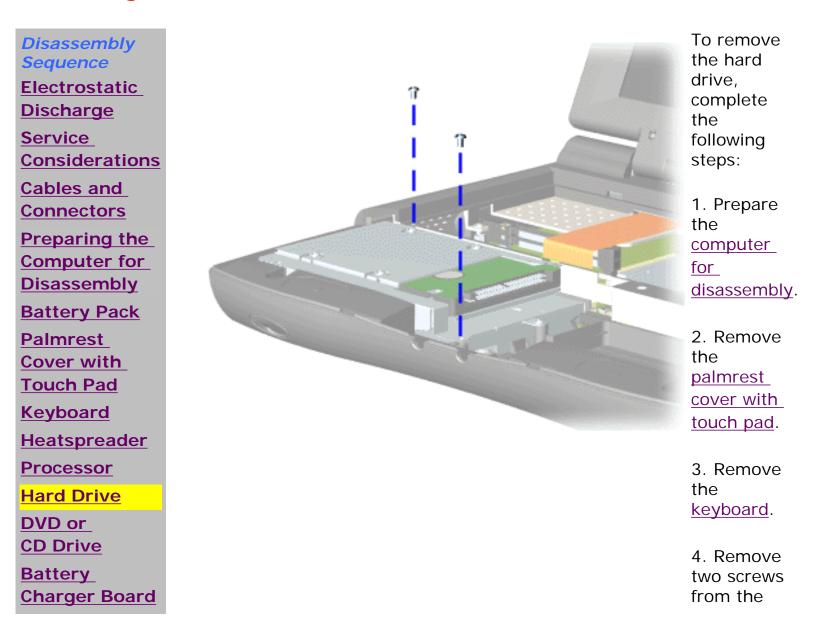
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Removing the 4.3-GB or 6.4-GB Hard Drive



<u>Modem</u> Display Panel Assembly	hard drive mounting bracket and lift out the
Upper CPU Cover	hard drive with drive
Speaker Assembly	mounting bracket attached.
Diskette Drive	
Fan Assembly	Next Step
System Board	
Dip Switch Settings	
<u>Memory</u> <u>Module</u>	

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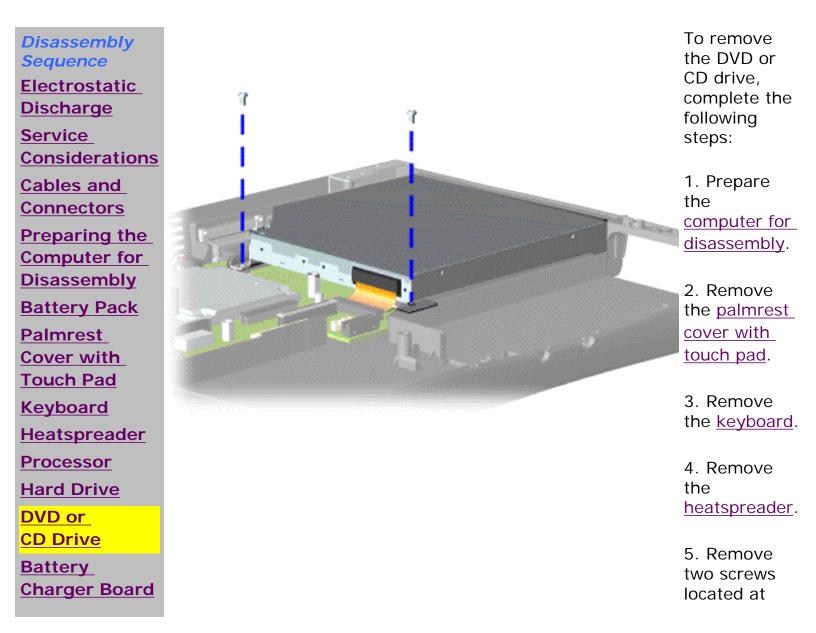
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Removing the DVD or CD Drive



Modem Display Panel Assembly	the back DVD or CD drive.
<u>Upper CPU</u> <u>Cover</u>	<u>Next Step</u>
Speaker Assembly	
Diskette Drive Fan Assembly	
System Board	
Dip Switch Settings	
<u>Memory</u> <u>Module</u>	

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Removing the Battery Charger Board



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

1. Prepare the computer for disassembly.

2. Remove the palmrest cover with touch pad.

3. Remove the <u>keyboard</u>.

4. Remove the heatspreader.

5. Remove the <u>hard drive</u>.

6. Remove one screw from the battery charger board, unplug the board from the connector on the system board,

Battery	and lift out of t
Charger Board	chassis.
Modem	To replace the
Display Panel	battery charger
Assembly	board, reverse
Upper CPU	the previous procedures.
Cover	procedures.
Speaker	When
Assembly	replacir
Diskette Drive	the
Fan Assembly	battery charger
System Board	board,
Dip Switch	ensure
<u>Settings</u>	NOTE: the pine
<u>Memory</u>	are aligned
Module	with the
	connec
	on the system
	System

board.

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Removing the Modem

Disassembly Sequence Electrostatic Discharge		To ren the mo comple followi
Service		steps:
Considerations	have been and the second se	1. Prep
Cables and		the
Connectors		<u>compu</u>
Preparing the		disass
Computer for		
Disassembly		2. Ren the <u>pa</u>
Battery Pack		<u>cover</u>
Palmrest		touch
Cover with		
Touch Pad		3. Ren
Keyboard		the <u>ke</u>
Heatspreader		4. Ren
Processor		the
Hard Drive		heatsp
DVD or		
CD Drive		5. Ren two sc
Battery		securir
Charger Board		moder

To remove the modem, complete the following steps:

1. Prepare the <u>computer for</u> <u>disassembly</u>.

2. Remove the <u>palmrest</u> <u>cover with</u> <u>touch pad</u>.

3. Remove the keyboard.

4. Remove the <u>heatspreader</u>.

5. Remove two screws securing modem and

Modem	pull the
Display Panel	modem off the
Assembly	connector on
Upper CPU	the system
Cover	board.
Speaker	Novt Stop
Assembly	Next Step
Diskette Drive	
Fan Assembly	
System Board	
Dip Switch	
<u>Settings</u>	
Memory	
Module	

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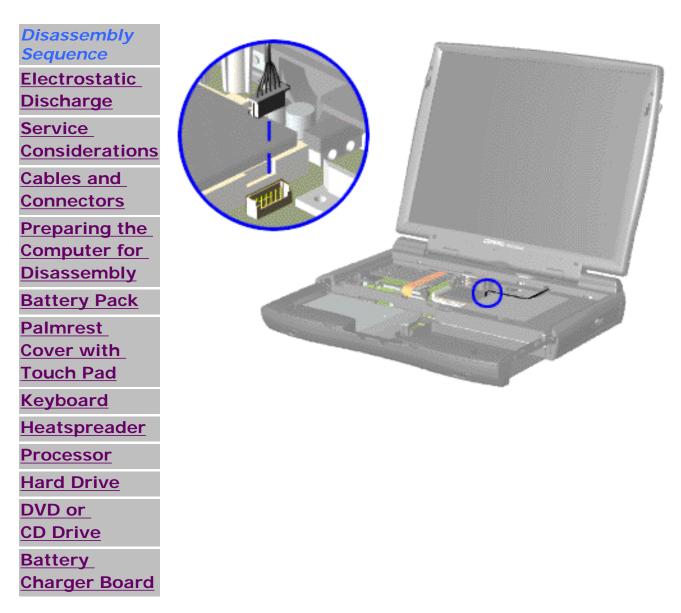
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Removing the Display Panel Assembly



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

1. <u>Prepare</u> <u>the</u> <u>computer for</u> <u>disassembly</u>.

2. Remove the <u>palmrest</u> <u>cover with</u> <u>touch pad</u>.

3. Remove the <u>keyboard</u>.

4. Remove the <u>heatspreader</u>.

5. Remove the modem.

Modem	6.
Display Panel	Disconnect
Assembly	the backlig
Upper CPU	cable
Cover	attached to
Speaker_	the display panel
Assembly	assembly
Diskette Drive	from the
Fan Assembly	connector o
	the system
System Board	board.
Dip Switch	
<u>Settings</u>	<u>Next Step</u>
Memory	
Module	

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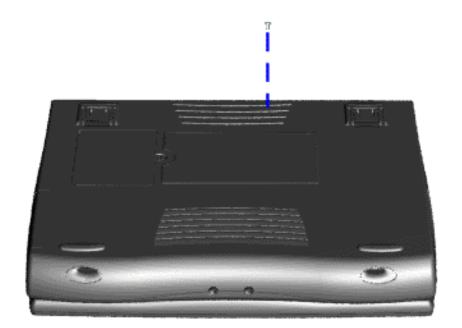
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Removing the Upper CPU Cover

Disassembly Sequence Electrostatic Discharge Service Considerations Cables and Connectors Preparing the Computer for **Disassembly Battery Pack** Palmrest Cover with **Touch Pad Keyboard** Heatspreader Processor **Hard Drive**

DVD or

CD Drive



To remove the Upper CPU cover complete the following steps:

1. Prepare the <u>computer for</u> <u>disassembly</u>.

2. Remove the <u>palmrest</u> <u>cover with</u> <u>touch pad</u>.

3. Remove the <u>keyboard</u>.

4. Remove the <u>heatspreader</u>.

5. Remove the <u>hard</u> <u>drive</u>.

Battery Charger Board Modem Display Panel Assembly	6. Remove the <u>display</u> <u>panel</u> <u>assembly</u> .
Upper CPU Cover	7. Remove the screw located
<u>Speaker</u> Assembly	under the bottom of
Diskette Drive Fan Assembly	the unit (rear) which secures the
System Board Dip Switch	Upper CPU cover to the
Settings	chassis.
<u>Memory</u> <u>Module</u>	<u>Next Step</u>

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Sequence

Discharge

Cables and

Connectors

Palmrest

Keyboard

Cover with Touch Pad

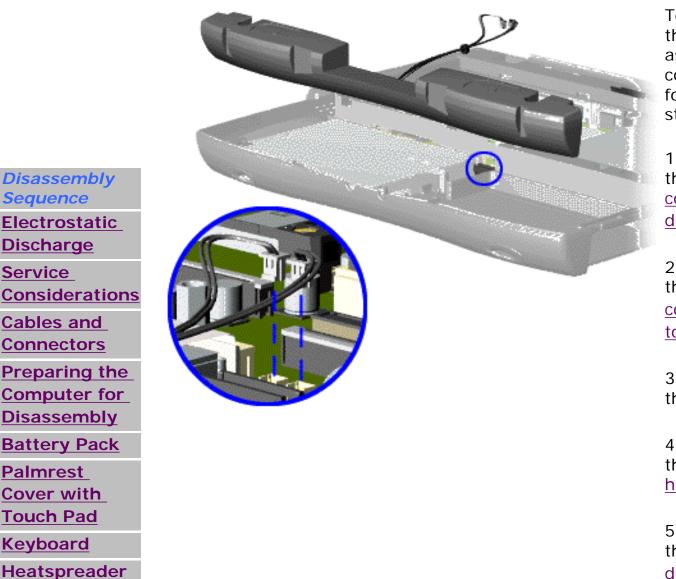
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Removing the Speaker Assembly



To remove the speaker assembly, complete the following steps:

1. Prepare the computer for disassembly.

2. Remove the palmrest cover with touch pad.

3. Remove the keyboard.

4. Remove the heatspreader.

5. Remove the hard drive.

Processor Hard Drive DVD or CD Drive	6. Remove the <u>display</u> <u>panel</u> assembly.
<u>Battery</u> <u>Charger Board</u> <u>Modem</u> Display Panel	7. Remove the <u>Upper</u> <u>CPU cover</u> .
Assembly Upper CPU Cover	8. Remove the <u>charger</u> <u>board</u> .
SpeakerAssemblyDiskette DriveFan AssemblySystem BoardDip SwitchSettingsMemoryModule	9. Disconnect the speaker cables from the system board and remove the speaker assembly from the chassis.

To replace the speaker assembly, reverse the previous procedures.

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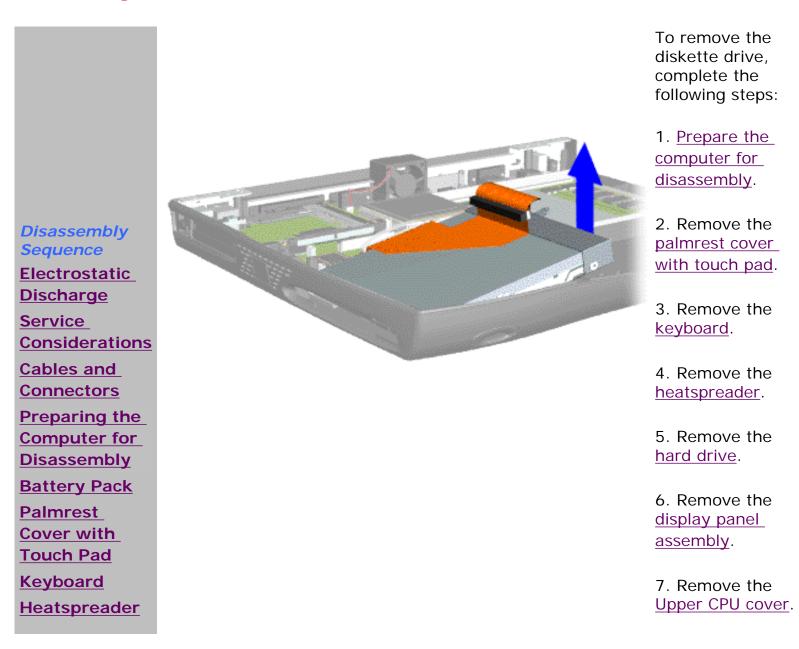
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Removing the Diskette Drive



Processor Hard Drive DVD or CD Drive	8. Remove the screw from the diskette drive and lift up the diskette drive.
Battery Charger Board Modem Display Panel Assembly	9. Disconnect the diskette drive data cable from the system board.
Upper CPU Cover Speaker Assembly Diskette Drive	To replace the diskette drive, reverse the previous procedures.
Fan Assembly System Board Dip Switch Settings Memory Module	NOTE: Ensure the diskette drive eject lever is properly inserted in the chassis slot, when replacing the diskette

drive.

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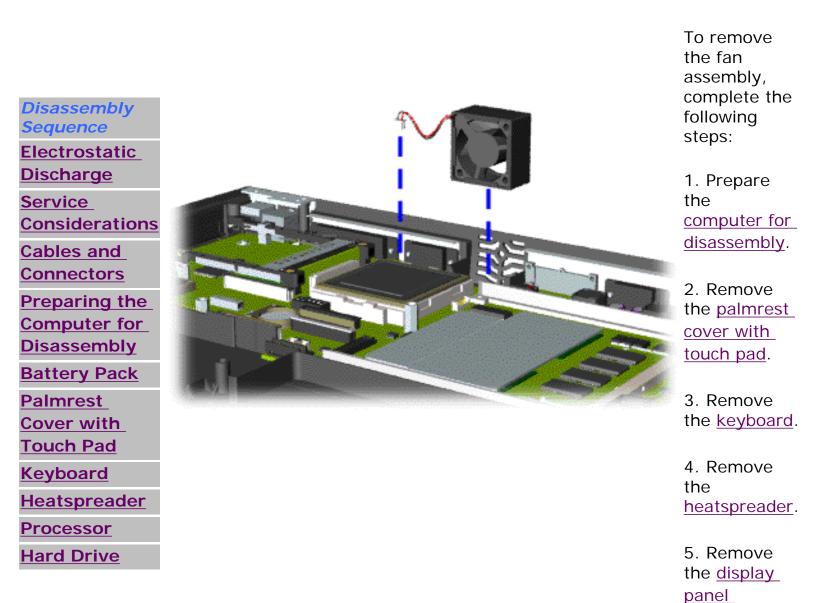
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Removing the Fan Assembly



DVD or	assembly.
<u>CD Drive</u> <u>Battery</u> Charger Board Modem	6. Remove the <u>hard</u> drive.
Display Panel Assembly	7. Remove the <u>Upper</u> CPU cover.
<u>Upper CPU</u> <u>Cover</u> Speaker	8. Lift the
Assembly Diskette Drive Fan Assembly	fan assembly from the chassis slot and
System Board Dip Switch	disconnect the fan cable from the
<u>Settings</u> <u>Memory</u> Module	connector on the system board.
Module	<u>Next Step</u>

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Removing the System Board

Disassembly Sequence	To remove the system board, complete the following steps:
Electrostatic	1. Prepare the computer for disassembly.
Discharge Service	2. Remove the palmrest cover with touch pad.
Considerations	3. Remove the keyboard.
Cables and Connectors	
Preparing the	4. Remove the <u>heatspreader</u> .
<u>Computer for</u> Disassembly	5. Remove the processor.
Battery Pack	6. Remove the modem.
<u>Palmrest</u> Cover with Touch Pad	7. Remove the <u>hard drive</u> .
<u>Keyboard</u>	8. Remove the display panel assembly.
Heatspreader Processor	9. Remove the Upper CPU Cover.
<u>Hard Drive</u> DVD or	10. Remove the battery charger board.
<u>CD Drive</u>	11. Remove the diskette drive.

Battery	12. Remove the <u>CD or DVD drive</u> .
<u>Charger Board</u> Modem	13. Remove the fan assembly.
Display Panel	
Assembly Upper CPU	IMPORTANT: When replacing the system board remove the memory module on the system board.
Cover	14. Disconnect the speaker assembly cables.
<u>Speaker</u> Assembly	Next Step
Diskette Drive	
Fan Assembly System Board	
Dip Switch	
<u>Settings</u> Memory	
Module	

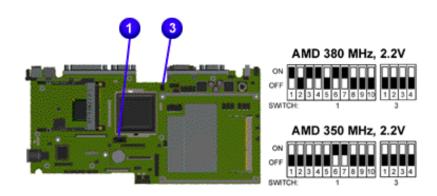
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For Models: 1670 and 1675

CAUTION: Only change settings **1-5** on SW1 **1**. Settings **6-10** vary by model and should not be changed when replacing the system board. Ensure the dip switch voltage settings (SW1 **1** and SW3 **3**) on the system board are correct for the computer model and processor voltage marked on the processor chip. If the system board dip switch voltage settings are not correct, damage may occur to the computer and/or system board.



NOTE: The black area on the dip switch indicates the position of the switch.

Return to Removal & Replacement Procedures

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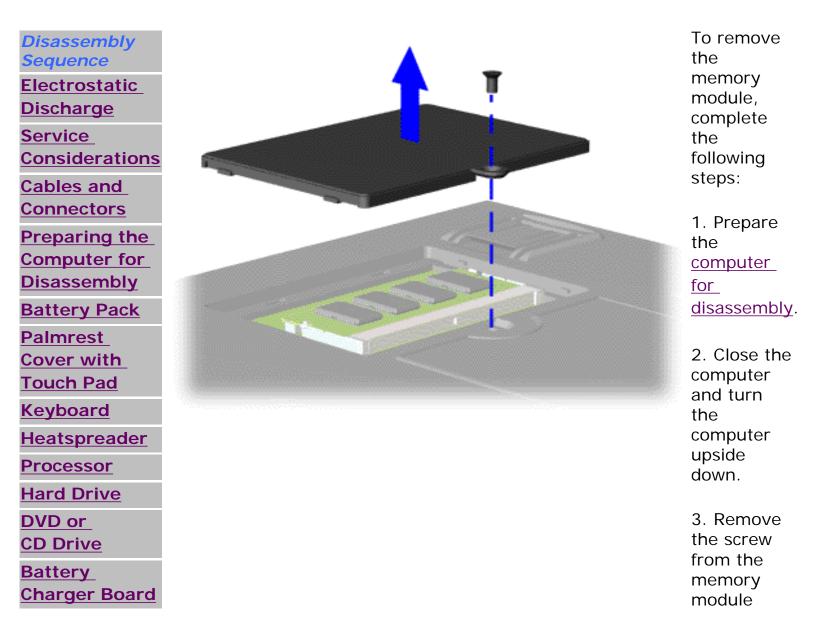
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Removing the Memory Module



	, , ,	
<u>Modem</u> Display Panel Assembly		door, and slide the memory module
Upper CPU		door to the
<u>Cover</u>		right.
Speaker		Novt Stop
Assembly		<u>Next Step</u>
Diskette Drive		
Fan Assembly		
System Board		
Dip Switch		
Settings		
Memory		
Module		
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