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Troubleshooting

This section covers troubleshooting information for Compaq Presario 1200 Series Portable Notebook Computers. The basic steps in troubleshooting include:

1. Preliminary Steps

2. The Power-On Self Test (POST)

3. The recommended actions described in the diagnostic tables in case you are unable to run POST, or if POST displays an error message.

When following the recommended actions in the Sections on Power-On Self Test (POST) and Diagnostic Error Codes, perform the steps in the order listed above. Rerun POST after each recommended action until the problem is solved, and if no error message occurs. Once the problem is solved, do not continue with any recommended actions remaining.

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

Preliminary Steps

Before running Power-On Self Test (POST), complete the following steps:

1. If a Power-on password is established, type the password and press the **Enter** key. If you do not know the password, clear the password (See Clearing the Power-On 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 that the hard drive is installed in the notebook.

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7. Ensure that the battery pack is inserted in the notebook and that it is connected to an external AC power source.

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

Clearing the Power-On Password

(Removing/Replacing the RTC Battery)

> **Note:** Clearing the Power-on password also removes all notebook Setup attributes that are programmed in the CMOS.

If you do not know the password, clear it by performing the following steps:
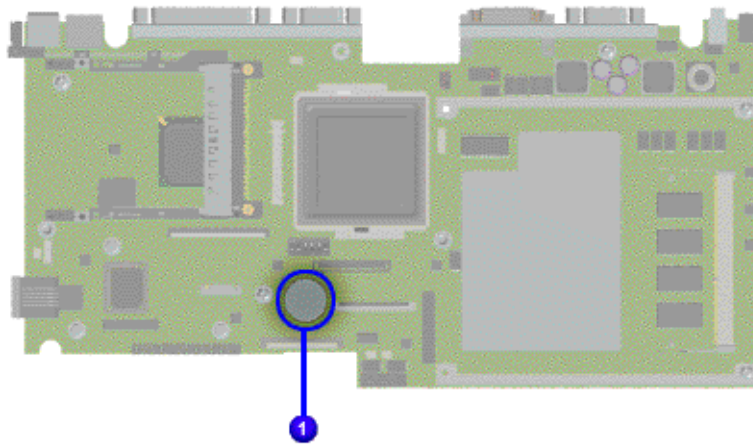
1. Turn off the Notebook.

2. Disconnect the power cord.

3. Remove the battery pack.

4. Remove the Palmrest cover with the TouchPad.

5. Remove the Heatspreader.

6. Remove the keyboard.

Continued on the next page.

7. To clear the password, remove the RTC battery ❶ for 30 seconds and replace it.

8. Reassemble the notebook.

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

Power-On Self Test (POST)

To run POST, complete these steps:

Turn off the notebook, then turn it on again. As soon as the Compaq logo appears press the **ESC** key to clear the logo and display the POST messages as they occur.

If the notebook does not beep, POST has successfully completed its test and detected no errors. POST then re-boots from the hard drive, or from a bootable diskette if one is installed in the diskette drive.

However, if POST detects errors, these are indicated by messages on the display screen and/or audible messages. A list of the POST error codes and what they mean is shown in the table below.

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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**
Incorrect configuration	Run Computer Setup.
CMOS reflects an invalid configuration setting.	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**
Keyboard failure	1. Ensure that no keys are depressed during POST. 2. Reconnect the keyboard with the notebook off. 3. Replace the keyboard.

301-Keyboard Error	
Probable Cause	**Recommended Action**
Keyboard failure	1. Ensure the keys are not depressed during POST. 2. Reconnect the keyboard with the notebook off. 3. Replace the keyboard.

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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 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 notebook. Run the Diagnostic 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 the diagnostic program is version 10.11 or later.

The Diagnostics menu includes the following utilities:

- Computer Checkup (TEST)

- View System Information (INSPECT)

- Diagnostic Error Codes

- Troubleshooting without Diagnostics

- Before Replacing Parts

- Solving Minor Problems

- Solving Hard Drive Problems

- Solving Hardware Installation Problems

- Solving Keyboard/Numeric Keypad Problems

- Solving Memory Problems

- Solving PC Card Problems

- Solving Power Problems

- Solving Printer Problems

- Solving TouchPad/Pointing Device Problems

- Contacting Compaq Support

If you have a problem you cannot solve, run the Diagnostics utilities before calling 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.

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Computer Checkup (TEST)

Computer Checkup (TEST) determines if 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 notebook 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 notebook. The notebook starts from drive A, and the Diagnostics Welcome screen is displayed.

5. Press **Enter** to continue. The Diagnostics menu is displayed.

6. Select **Computer Checkup** from the **Diagnostics** menu. A Test Option menu is displayed.

7. Select **View the Device List** from the **Test Option** menu. A list of the installed Compaq devices is displayed.

8. If the list of installed devices is correct, select **OK**. The Test Option menu is displayed.

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

   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.

9. Follow the instructions on the screen as the devices are tested. When testing is complete, the Test Option menu is displayed.

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10. Exit the Test Option menu and the Diagnostics menu.

View System Information (INSPECT)

The View System Information (INSPECT) utility provides information about the notebook 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 is displayed.

4. Press **Enter** to continue. The Diagnostics menu is displayed.

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

Diagnostic Error Codes

Diagnostic error codes are displayed if the system recognizes a problem while running the Compaq Diagnostic program. These error codes help identify subassemblies with possible damage or defects.

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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 Removal and Replacement Procedures.

Select error codes by number or type:

101 through 114 (pg 10)	Processor Test
200 through 215 (pg 10)	Memory Test
300 through 304 (pg 11)	Keyboard Test
401 through 403 (pg 11)	Parallel Printer Test
501 through 516 (pg 14)	Video Test
600 through 699 (pg 12)	Diskette Drive Test
1101 (pg 12)	Serial Test
1701 through 1736 (pg 13)	Hard Drive Test
2402 through 2456 (pg 15)	Video Test
2419 through 2456 (pg 16)	Video Test
2458 through 2480 (pg 16)	Video Test
3206 (pg 17)	Audio Test
3301 through 6623 (pg 17)	DVD or CD Test
8601 through 8602 (pg 17)	TouchPad Pointing Device Test

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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	1. Check system configuration. 2. Verify cable connections to speaker. 3. Replace the system board and retest.

Memory Test Error Codes		
Error Code	**Description**	**Recommended Action**
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	

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Keyboard Test Error Codes		
Error Code	**Description**	**Recommended Action**
300-xx	Failed ID Test	1. Check the keyboard connection. If disconnected, turn off the computer and reconnect the keyboard.
301-xx	Failed Self Test/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		
Error Code	**Description**	**Recommended Action**
401-xx	Printer failed or not connected	1. Connect the printer.
402-xx	Failed Port Test	2. Check power to the printer.
403-xx	Printer pattern test failed	3. Install the loop-back connector and retest.
		4. Check port and IRQ configuration.
		5. Replace the system board and retest.

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Diskette Drive Test Error Codes		
Error Code	**Description**	**Recommended Action**
600-xx	Diskette ID drive types test failed	1. Replace the diskette media and retest.
601-xx	Diskette format failed	2. Check and/or replace the diskette power and signal cables and retest.
602-xx	Diskette read test failed	3. Replace the diskette and retest.
603-xx	Diskette write, read, compare test failed	4. Replace the system board and retest.
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	
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		
Error Code	**Description**	**Recommended Action**
1101-xx	Serial port test failed	1. Check port configuration. 2. Replace the system board and retest.

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Hard Drive Test Error Codes		
Error Code	**Description**	**Recommended Action**
1701-xx	Hard drive format test failed	1. Run the Configuration and Diagnostics Utilities and verify drive type.
1702-xx	Hard drive read test failed	2. Verify that all secondary drives have secondary drive capability.
1703-xx	Hard drive write/read/compare test failed	3. Replace the hard drive and retest.
1704-xx	Hard drive random seek test failed	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 = Error Correction Code

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

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

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

Video Test Error Codes (*Continued*)		
Error Code	**Description**	**Recommended Action**
2458-xx	Advanced VGA BitBLT test failed	The following applies to error codes 2458-xx through 2480-xx:
2468-xx	Advanced VGA DAC test failed	
2477-xx	Advanced VGA data path test failed	Replace the system board and retest.
2478-xx	Advanced VGA BitBLT test failed	
2480-xx	Advanced VGA LineDraw test failed	

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Audio Test Error Codes		
Error Code	**Description**	**Recommended Action**
3206-xx	Audio System Internal Error	Replace the system board and retest.

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

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

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	PC Card
CD or DVD Drive	Power
Diskette Drive	Printer
Display	TouchPad
Hard Drive	Keyboard/Numeric Keypad
Hardware Installation	

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Since symptoms can appear to be similar, carefully match the symptoms of the computer malfunction against the problem description in the 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.

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**
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.

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Solving Battery Pack/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/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. OR • 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.
Notebook is beeping and battery icon is blinking.	Battery charge is low.	Immediately save any open file(s). Then complete one of the following: • Connect the notebook to an external power source to charge the battery pack. • Turn off the notebook or initiate Hibernation until you can find another power source or charge the battery pack.
Battery icon on the front of the unit blinks to indicate low battery condition, but computer does not beep.	Volume is turned down too low.	Adjust the volume.
Battery 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 the battery pack.

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Solving Battery Pack/Gauge Problems		
Problem	**Probable Cause**	**Solution(s)**
You have to set the date and time every time you turn on the notebook.	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 temperature range for operation or storage. • Operating Range: 50°F to 104°F (10°C to 40°C) • 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 in use.
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 in use.

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Solving Battery Pack/Gauge Problems		
Problem	**Probable Cause**	**Solution(s)**
	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 notebook is disconnected from external power for more than two weeks, remove battery packs from the notebook 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 range for operation or storage. • Operating Range: 50°F to 104°F (10°C to 40°C) • Storage Range: -4°F to 86°F (-20°C to 30°C) Recharge the battery pack.

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Solving CD and DVD Drive Problems

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

Solving CD or DVD Drive Problems		
Problem	**Probable Cause**	**Solution(s)**
CD or DVD drive cannot read a Compact Disc or Digital Versatile Disc.	Disc is upside down or is improperly inserted in the CD or DVD drive.	Open the loading tray, lay the compact 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 Drive Problems

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

Solving 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 occured.	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.	Diskette drive cannot read a diskette.	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.

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Solving Diskette Drive Problems		
Problem	**Probable Cause**	**Solution(s)**
(*Continued*) Diskette drive cannot read a 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-text on an external VGA color or monochrome monitor by disconnecting the monitor from the notebook, then completing the following steps:

1. Turn off the monitor.

2. Turn off the notebook.

3. Disconnect the monitor signal cable from the notebook.

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 (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 TouchPad.

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Solving Display Problems		
Problem	**Probable Cause**	**Solution(s)**
	Display has overheated.	If the notebook 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 TouchPad.
Internal display is blank and the screen on an external monitor displays information.	Display function was switched to the external monitor.	Use **Fn+F3** to switch between LCD or CRT.
Internal display flashes or has garbled characters when notebook is connected to external monitor.	Using 1024 x 768 or higher resolution on external monitor and have toggled back to internal display, which supports up to 800 x 600.	Restart the notebook.
The light tubes on the edge of the display panel do no light up at all and the 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.	1. Reseat the display cable to the system board. 2. Replace the display assembly.

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Solving Display Problems		
Problem	**Probable Cause**	**Solution(s)**
(Continued)	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. If the backlight is not functioning, the POST result cannot be observed. Connect the unit to an external monitor before powering up the unit. If an external monitor is not available verify that POST is complete by opening and closing the display, listening for the single or double beep, and watching for the icons to turn on at the front of the notebook.

Solving Display Problems Continued		
Problem	**Probable Cause**	**Solution(s)**
This display panel has a continuous pattern across it (e.g., "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.
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.

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Note: When you perform a "self-test" on an external VGA color or monochrome monitor, 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 notebook.	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 notebook, remove the battery pack, and remove and then reinstall the hard drive.

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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 proplerly and securely connected.
	Power switch of new external device is not turned on.	Turn off the notebook, turn on the external device, then turn on the notebook to integrate the device with the computer system.
	Device is not seated properly.	Turn off the notebook 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 numberic keypad on notebook keyboard is disabled.	Num Lock function is not enabled.	Press the **Shift+NumLk** keys to enable the Num Lock function and embedded numberic keypad. The Num Lock light on the notebook turns on.
Embedded numeric keypad is disabled and Num Lock function is on.	External numeric keypad is connected to the notebook.	Disconnect the external numeric keypad from the notebook.

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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. If necessary, 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 PC Card Problems

The following table lists some common causes and solutions for PC Card problems.

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 that 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.

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Solving PC Card Problems		
Problem	**Probable Cause**	**Solution(s)**
	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.
	Card or card driver is not supported.	Contact a Compaq authorized service provider for a list of PC Cards tested sucessfully in Compaq PC Card platforms.
PC Card modem, fax, or network card does not work.	Card is not fully inserted into the slot or is not inserted properly.	Ensure that the card is inserted in the correct orientation.
	Telephone cord is not plugged in all the way.	Check and secure telephone connection.
	Necessary drivers are not installed (turned on).	Install drivers.
PC Card modem or fax card does not work.	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 netword 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.

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Solving PC Card Problems		
Problem	**Probable Cause**	**Solution(s)**
Memory or storage card does not work.	SRAM and flash memory cards require the memory card driver to be loaded (turned on). 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.	Install driver.
	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 a Compaq authorized service provider for a list of PC Cards tested successfully in Compaq PC Card platforms.

Solving Power Problems

Also see Solving Battery Pack/Gauge Problems in this section.

Solving Power Problems		
Problem	**Probable Cause**	**Solution(s)**
Notebook will not turn on and the battery pack is not inserted.	Notebook 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.

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Solving Power Problems		
Problem	**Probable Cause**	**Solution(s)**
Notebook 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 notebook to an external power source. Then turn on the notebook.
	System initiated Hibernation after a preset timeout.	Turn on the notebook.

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 offline.	Turn the printer on and set it to online.
	The device drivers for the application is 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.

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Solving Printer Problems		
Problem	**Probable Cause**	**Solution(s)**
	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 notebook.
	Cable is defective.	Replace the printer cable and retest.

Solving TouchPad/Pointing Device Problems

The following table lists some common causes and solutions for TouchPad/pointing device problems.

Solving TouchPad/Pointing Device Problems		
Problem	**Probable Cause**	**Solution(s)**
TouchPad 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 TouchPad/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.
TouchPad 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 driver each time the computer is turned on or restarted.

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Solving TouchPad/Pointing Device Problems		
Problem	**Probable Cause**	**Solution(s)**
	Cable is not properly seated in TouchPad board.	Reseat cable.
	Defective TouchPad board.	Replace the TouchPad board.
	Defective system board.	Replace system board.
	Device driver is not correclty installed in Windows.	Install the appropriate device driver in Windows.
Cursor skips or moves abnormally when using the TouchPad.	The TouchPad needs to be cleaned.	Clean the TouchPad with a cloth dampened with alcohol or an ammonia-based glass cleaner. Wipe up liquid with a dry cloth.

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 installed

- Printed result of Computer Checkup (TEST)

- Printed copies of *CONFIG.SYS* and *AUTOEXEC.BAT* files, if possible.

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Shipping Preparation

To ship the notebook, 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 or in transit.

2. Turn off the notebook and external devices.

3. Disconnect the external devices from their power sources, then from the notebook.

   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 notebook.

5. Pack the notebook with sufficient packing material to protect it. Use the original packing box or similar packaging.

POST Routine Description

Note: The following routines are sorted by their test point numbers assigned in the BIOS code. Their actual orders, as executed during POST, can be quite different.

Code	Beeps	POST Routine Description
02h		Verify Real Mode
03h		Disable Non-Maskable Interrupt (NM)
04h		Get CPU type
06h		Initialize system hardware
08h		Initialize chipset with Initial POST values
09h		Set IN POST flag
0Ah		Initialize CPU registers
0Bh		Enable CPU cache
0Ch		Initialize caches to initial POST values
0Eh		Initialize I/O component
0Fh		Initialize the local bus IDE
10h		Initialize Power Management
11h		Load alternate registers with initial POST values

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Code	Beeps	POST Routine Description
12**h**		Restore CPU control word during warm boost
13h		Initialize PCI Bus Mastering devices
14h		Initialize keyboard controller
16h	1-2-2-3	BIOS ROM Checksum
17h		Initialize cache before memory autosize
18h		8254 timer initialization
1Ah		8237 DMA controller initialization
1Ch		Reset Programmable Interrupt Controller
20h		Test DRAM refresh
22h		Test 8742 Keyboard Controller
24h		Set ES segment register to 4 GB
26h		Enable A20 line
28h		Autosize DRAM
29h		Initialize POST Memory Manager
2Ah		Clear 512 KB base RAM
2Ch		RAM failure on address line *xxxx**RAM failure on data bits *xxxx* of low byte of memory bus*
2Eh		Enable cache before system BIOS shadow
2Fh		RAM failure on data bits *xxxx*of high byte memory bus*
30th		Test CPU bus-clock frequency
32h		Initialize Phoenix Dispatch Manager
33h		Warm start shut down
36h		Shadow system BIOS ROM
38h		Autosize cache
3Ah		Advanced configuration of chipset registers
3Ch		Load alternate registers with CMOS values
3Dh		Initialize interrupt vectors
42h		POST device initialization
45h		Check ROM copyright notice
46h		Check Video configuration against CMOS
48h		Initialize PCI bus and devices

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Code	Beeps	POST Routine Description
49h		Initialize all video adapters in system
4Ah		QuietBoot start (optional)
4Bh		Shadow video BIOS ROM
4Ch		Display BIOS copyright notice
4Eh		Display CPU type and speed
50Eh		Initialize EISA board
51h		Test keyboard
52h		Set key click if enabled
54h		Test for unexpected interrupts
58h		Initialize POST display service
59h		Display prompt "Press F2 to enter SetUP"
5Ah		Disable CPU cache
5Bh		Test RAM between 512 and 640 KB
5Ch		Test extended memory
60h		Test extended memory address lines
62h		Jump to UserPatchI
64h		Configure advanced cache registers
66h		Initialize Multi Processor APIC
67h		Enable external and CPU cache
68h		Setup System Management Mode (SMM) area
69h		Display external L2 cache size
6Ah		Load custom defaults (optional)
6Bh		Display shadow-area message
6Ch		Display possible high address for UMB recovery
6Eh		Display error messages
70h		Check for configuration errors
72h		Check for keyboard errors
76h		Set up hardware interrupt vectors
7Ch		Initialize coprocessor if present
7Eh		Disable onboard Super I/O ports and IRQs
80h		Late POST device initialization

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Code	Beeps	POST Routine Description
81h		Detect and install external RS232 ports
82h		Configure non-MCD IDE controllers
83h		Detect and install external parallel ports
84h		Initialize PC-compatible PnP ISA devices
85h		Reinitialize onboard I/O ports
86h		Configure Motherboard Configurable Devices (optional)
87h		Initialize BIOS Data Area
88h		Enable Non-Maskable Interrupts (NMIs)
89h		Initialize Extended BIOS Data Area
8Ah		Test and initialize PS/2 mouse
8Bh		Initialize floppy controller
8Ch		Determine number of ATA drives (optional)
81h		Initialize hard disk controllers
90h		Initialize local-bus hard disk controllers
91h		Jump to UserPatch2
92h		Build MPTABLE for multi-processor boards
93h		Install CD ROM or DVD Drive for boot
95h		Clear huge ES segment register
96h		Fixup Multi Processor table
97h		Search for option ROMs. One long, two short beeps on checksum failure
98h		Check for SMART drive (optional)
99h		Shadow option ROMs
9Ah		Set up Power Management
9Ch		Initialize security engine (optional)
9Dh		Enable hardware interrupts
9Eh		Determine number of ATA and SCSI drives
9Fh		Set time of day
A0h		Check key lock
A2h		Initialize Typematic rate
A4h		Erase F2 prompt

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Code	Beeps	POST Routine Description
A8h		Scan for F2 key stroke
AAh		Enter Setup
		Clear Boot flag
		Check for errors
		POST done - prepare to boot operating system
		One shot beep before boot
		Terminate QuietBoot (optional)
		Check password (optional)
		Prepare Boot
		Initialize DMI Parameters
		Initialize PnP Option ROMs
		Clear parity checkers
		Display MultiBoot menu
		Clear screen (optional)
		check virus and back up reminders
		Try to boot with INT 19
		Initialize POST Error Manager (PEM)
		Initialize error logging
		Initialize error display function
		Initialize system error handler
		PnPnd dual CMOS (optional)
		Initialize notebook docking (optional)
		Initialize notebook docking late
		Force check (optional)
		Extended checksum (optional)
		Unknown interrupts