



## Program Overview

The PowerBook 5300/190 Repair Extension Authorization (REA) program provides instructions for resolving specific quality issues that customers may experience on the PowerBook 5300 and 190 family of computers.

**Note:** Not every PowerBook will be affected by each issue covered under the program, and a customer's PowerBook need not be exhibiting symptoms to be eligible for repair.

### Symptoms Addressed by the Program

- 1 The AC power connector on the logic board can become loose or inoperative as evidenced by the inability to fully insert the AC adapter plug into the PowerBook.
- 2 Some computers may freeze when accessing a device in the media bay while using certain PC cards that draw higher levels of power.
- 3 The plastics may crack.
- 4 Some computers may take twice as long to boot when plugged into AC power as compared to booting from battery only.
- 5 Some computers on larger LocalTalk networks may experience devices dropping off the network.





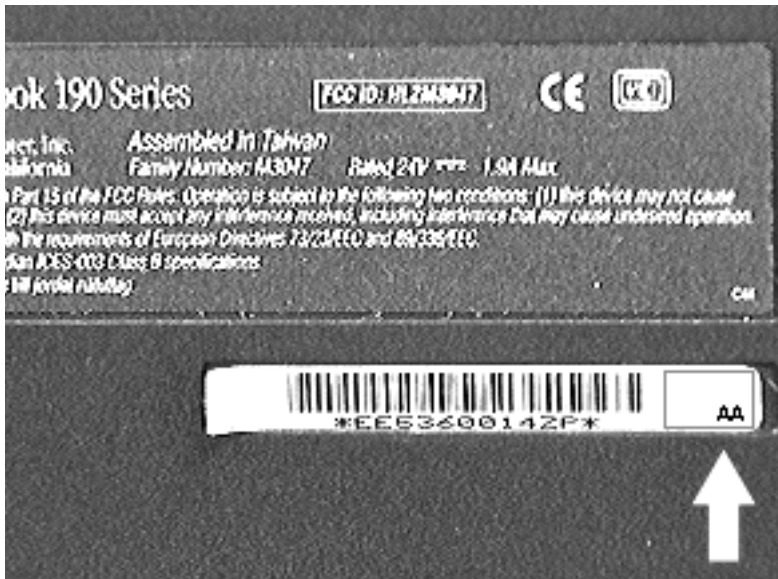
## Determine Whether a Unit Qualifies

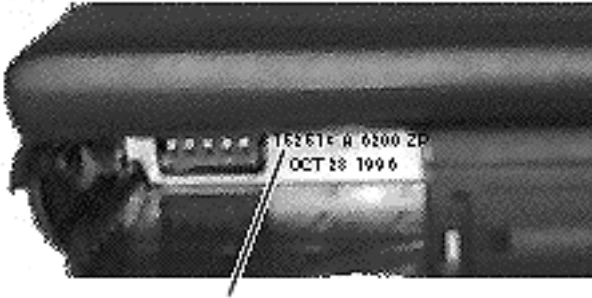
Before repairing a unit, check whether it qualifies for repair under this program. Use the following guidelines to determine this.

### Units That Don't Qualify

- If the unit has an REA label (consists of the letters "AA") and an ink date stamp, it has already been repaired. No further repairs are necessary, so the unit does not qualify.

To the left is a sample of an REA label.





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- If the unit has an ink date stamp (consists of a series of numbers/ letters and a date stamp), but no REA label, it has already been repaired. No further repairs are necessary, so the unit does not qualify.

To the left is a sample of an ink date stamp.

*In the unlikely event that an REA label is not attached to this unit, attach one before returning the unit to the customer.*





## Units That Do Qualify

- If the unit has an REA label, but no ink date stamp, perform the procedures below:
  - Replace the palm rest.
  - Replace the center clutch cover and CPU stiffener.
  - Replace the bottom case.
- If the unit has no REA label or ink date stamp, perform the procedures below *unless* the part does not meet a specified criteria:
  - Replace the display bezel/housing on units with serial numbers xx622xxxxx and below.
  - Replace the palm rest.
  - Replace the logic board on units with serial numbers xx605xxxxx and below.
  - Install a power supply shield on units with serial numbers xx605xxxxx and below and no existing shield on the power supply.
  - Replace the center clutch cover and CPU stiffener.
  - Replace the bottom case.





## Before You Begin

Before you begin the repair, perform the tasks listed below.

### Set Out Tools and Equipment

You'll need the following to perform these PowerBook repairs:

- T-8 torx driver
- Flat-blade jeweler's screwdriver
- ESD-safe work station and wriststrap
- Appropriate system software
- Chip puller

### Observe General Precautions

- Do not overtighten screws going into the plastics.
- When removing and installing keyboard cables or the trackpad cable, make sure you do it carefully. Use a chip puller for removal of these cables.

### Order New Parts

Refer to the Parts section of this manual for the new part numbers for these repairs.

- Bezel/housing kits:
  - bezel/housing kit, color display, PB 190
  - bezel/housing kit, color display, PB 5300c,5300cs,5300ce
  - bezel/housing kit, mono display, PB 190cs
  - bezel/housing kit, mono display, PB 5300
- Logic boards:
  - board, logic, 040, 33 MHz, 4 MB, 190/190cs
  - board, logic, 040, 33 MHz, 8 MB, 190/190cs
  - board, logic, 603e, 100 MHz, 16 MB, 1 MB, VGA, 5300c
  - board, logic, 603e, 100 MHz, 16 MB, 512K, 5300/5300cs
  - board, logic, 603e, 100 MHz, 8 MB, 512K, 5300/5300cs/5300c
  - board, logic, 603e, 117 MHz, 16 MB, 1 MB SVGA, 5300ce
- shield, EMI, power supply board, pkg. of 5
- top and bottom case kit





- CD, Apple Macintosh System, System 7.5.2, v. 1.2.1 (English or French Canadian)
- label, REA procedure, pkg. of 10





## Perform One or More of These Procedures

The following procedures are included in the program and detailed on the following pages:

- Replacing the display bezel/housing
- Replacing the palm rest
- Replacing the logic board
- Installing the power supply shield
- Replacing the center clutch cover and chassis/CPU stiffener
- Replacing the bottom case
- Attaching an REA label
- Installing system software





## Replace Display Bezel/Housing

*Units that qualify for this repair: 5300 and 190 units with serial numbers xx622xxxxx and below and no REA sticker*

Before you begin, remove the following:

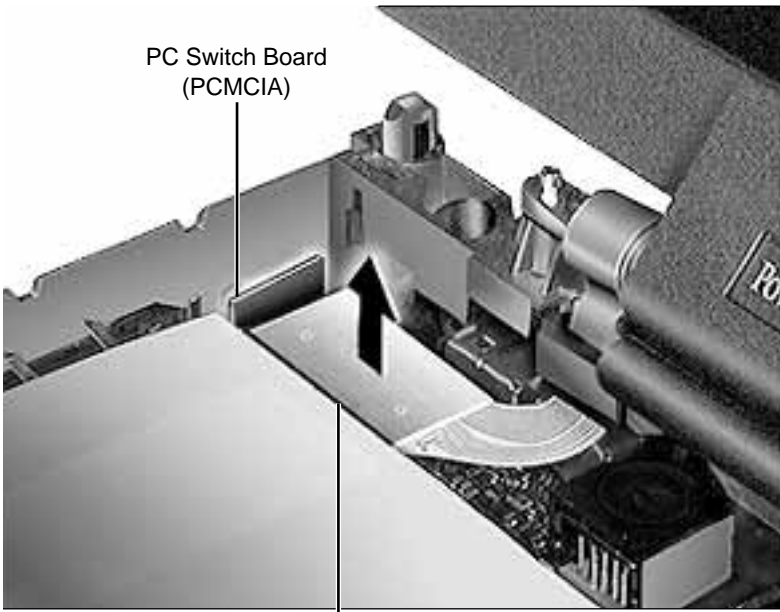
- Battery
- Floppy Drive
- Keyboard
- Clutch Covers







PC Switch Board  
(PCMCIA)



Display Cable Connector

- 1 Disconnect the display cable from the logic board by gently lifting up on the hardened plastic backing of the cable.

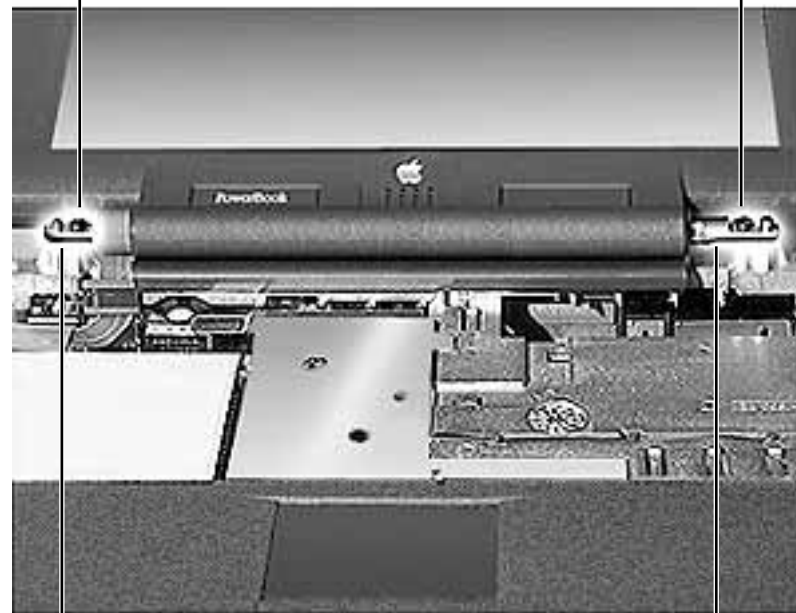
**Caution:** The PC switch board connector is fragile. Focus effort on the side of the display cable connector away from the PC switch board.

- 2 Tilt the display back 170 degrees from the keyboard and remove the 2 screws holding the metal clutches to the CPU stiffener.

**Caution:** Moving the display back more than 170 degrees could damage the CPU stiffener.

Screw

Screw



Clutch

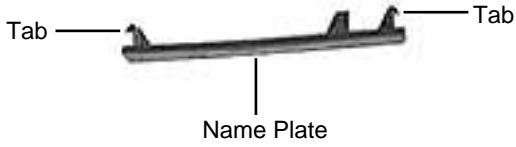
Clutch

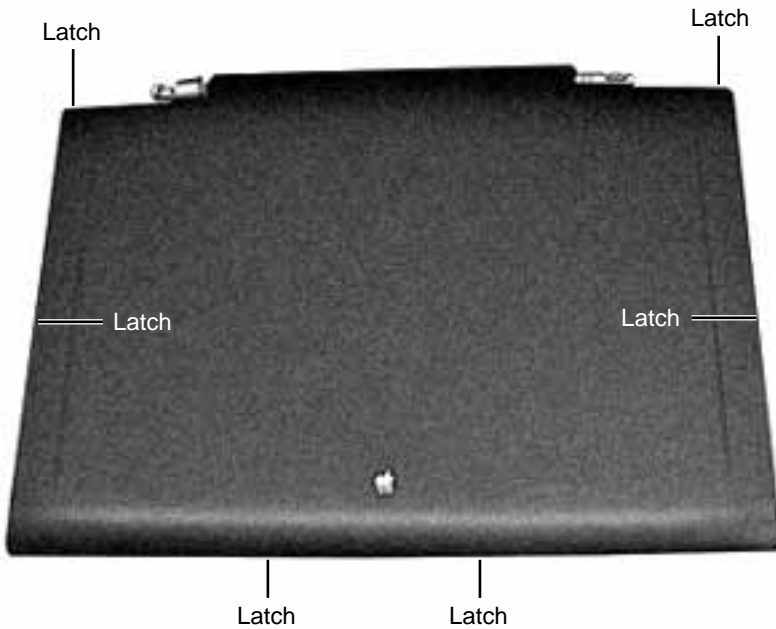
- 3 Remove display from computer and lay it on a flat surface.





- 4 Remove the 2 product name plates to expose the underlying screws.
- 5 Remove the 4 screws holding the bezel to the back display housing.





- 6 Turn the display over, face down.
- 7 Starting at the bottom of the display housing, using a flat-blade screwdriver, carefully pry the plastics apart at the 6 inner latch locations.
- 8 Remove the 4 screws holding the display to the display bezel.
- 9 Remove the display from the bezel.

**Caution:** To prevent damage to the display, lay the bezel on a flat surface before installing the display.

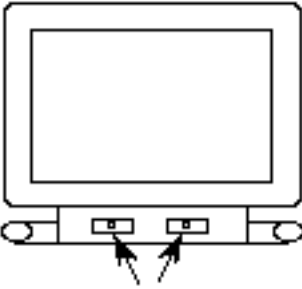
**Replacement Note:** When replacing the display cable over the left clutch, make sure you route the cable over the pegs and not under the screw.





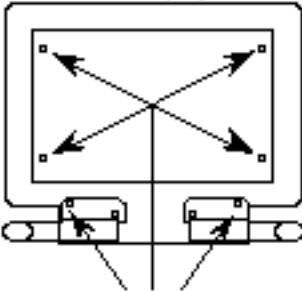
### Color Displays (10.4")

#### Front of Display Bezel



Use 8 mm patchlock screws under product D labels

#### Rear of Display Bezel



Use 6 mm patchlock screws to secure clutch to bezel and display to bezel

**Replacement Note:** When you replace the bezel to the housing, use the new patchlock screws that come with the display bezel/housing kit. Install the patchlock screws as shown.

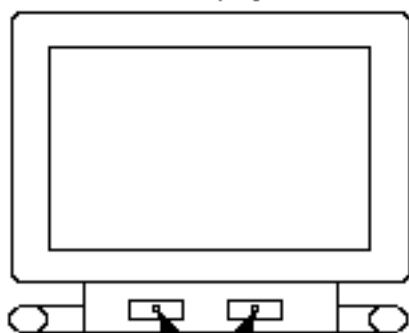
**Replacement Caution:** Do not overtighten the screws. This will damage the new plastics.





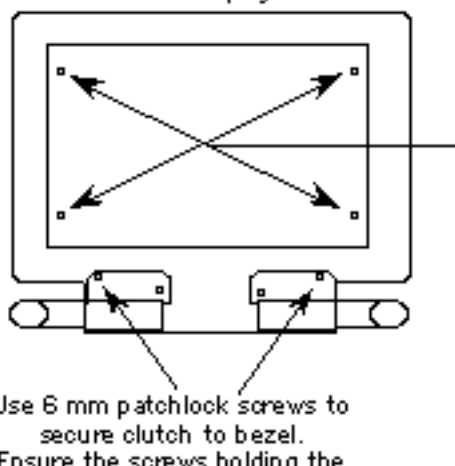
## Monochrome Display (9.5")

Front of Display Bezel



Use 8 mm patchlock screws under product **D** labels

Rear of Display Bezel



Use 6 mm patchlock screws to secure clutch to bezel. Ensure the screws holding the display to the bezel are tight.



## Replace Palm Rest

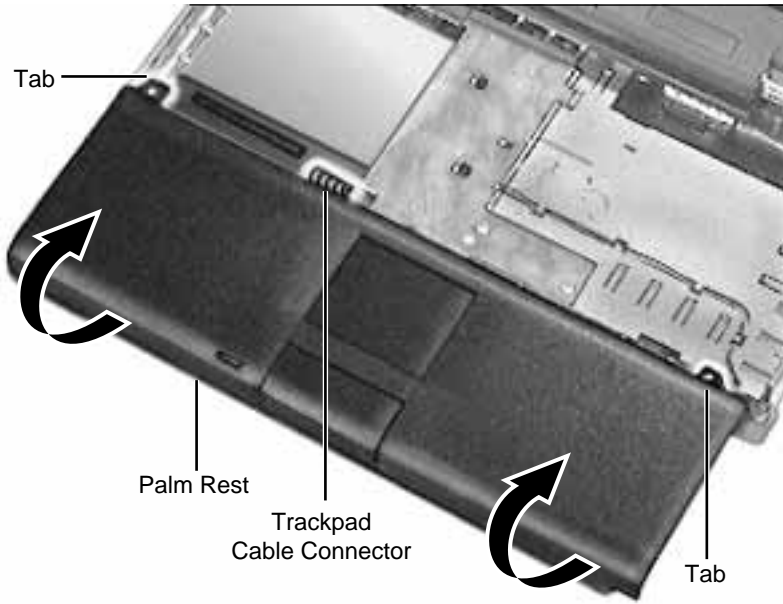
*Units that qualify for this repair: 5300 and 190 units with no ink date stamp*

Before you begin, remove the following:

- Battery
- Floppy Drive
- Keyboard
- RAM Card
- Clutch Covers

Palm Rest

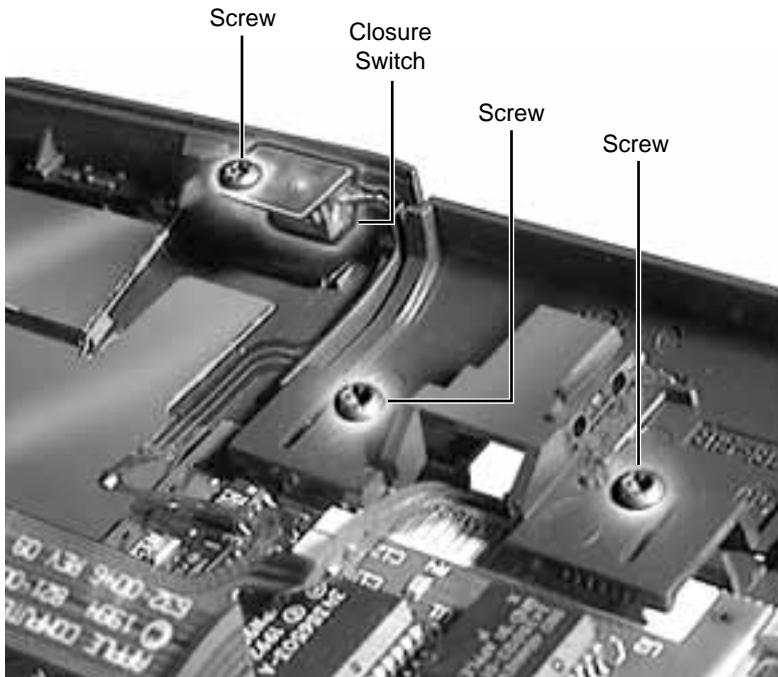


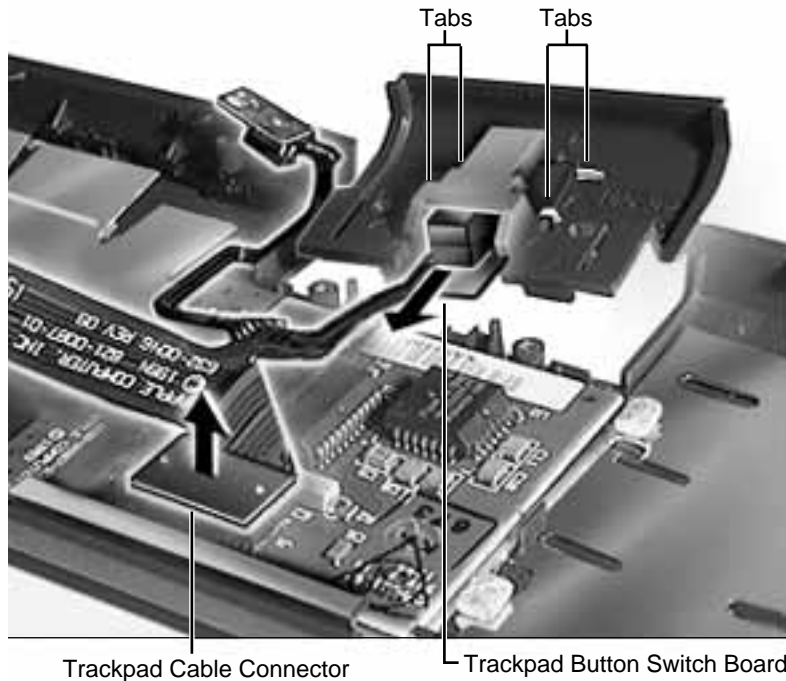


- 1 Slowly pull the palm rest toward you (to unlatch it from the bottom case) and then rotate the front of the palm rest over the back until the palm rest is laying upside down in the area the keyboard occupied.

**Caution:** Make certain that you do not pull the trackpad cable out of the connector as you rotate the palm rest.

- 2 Release the trackpad cable by lifting up the connector ears.
- 3 Remove the 3 screws holding the trackpad button and closure switch in place.





Trackpad Cable Connector

Trackpad Button Switch Board

- 4 Grip the trackpad button switch board and slide it out between the four tabs holding it in place.
- 5 Disconnect the trackpad cable from the trackpad.
- 6 Lift the trackpad out from under the mounting ledge.

**Replacement Notes:**

- Before you reconnect the trackpad cable, check that the ferrite bead is on the cable and that both the cable and the bead fit correctly under the palm rest.
- Install the palm rest before the clutch covers. (The palm rest tabs fit under the clutch cover tabs.)
- Note the two tiny notches on the trackpad (near the button) and how they align with the tabs in the plastics.

**Note:** If you clean the trackpad surface, use a nonstatic inducing material and make certain that the computer is **off**.







## Replace Logic Board

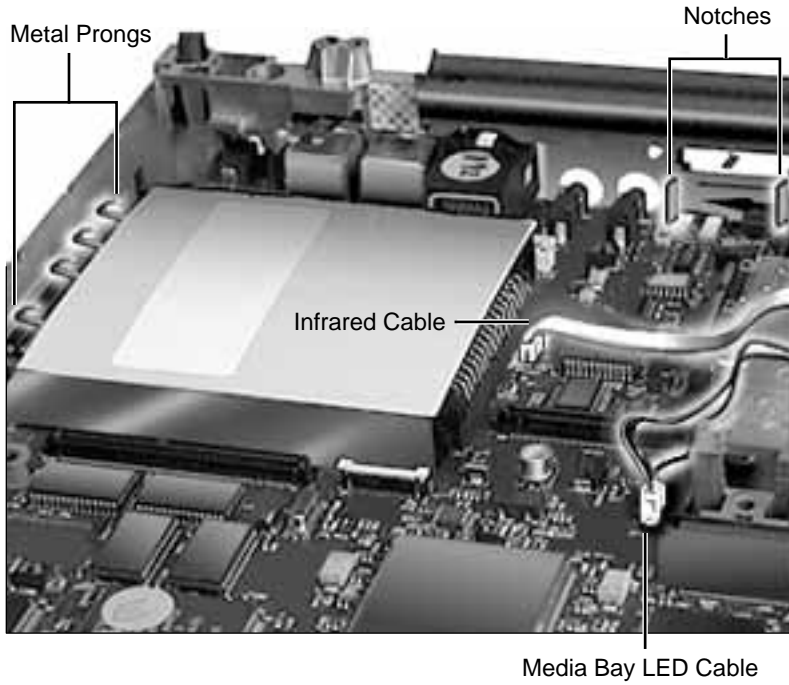
*Units that qualify for this repair: 5300 and 190*

*Units with serial numbers xx605xxxx and below and no REA label*

Before you begin, remove the following:

- Battery
- Floppy Drive
- Keyboard
- RAM Card
- Clutch Covers
- Palm Rest
- Hard Drive
- Power Supply Board (5300 Series only)
- Backup Battery
- Heat Sink
- Video Board (190 Series option)





- 1 Disconnect the infrared (if present) and media bay LED cables from the logic board.
- 2 Carefully maneuver the logic board back and forth until the port connectors are free of the port holes in the back of the plastic case.

**Note:** The logic board often catches on a notch in the back of the plastic case near the media bay.

- 3 Pull the logic board toward you and slightly to the left.





**Caution:** Be careful that the logic board clears both the media bay and the PC Card bay.

**Replacement Note:** The logic board will snap into place when you align

- the I/O port connectors
- the metal prongs over the ledge for the PC Card bay and the PC Card module's sides under the ledge
- the notches near the media bay

**Replacement Caution:** Make certain that you insert the infrared cable into the logic board connector correctly. When the connection is straight, the line on the infrared cable will align with the connector top. If the cable is incorrectly connected, you can blow a (soldered) fuse on the logic board.

**Return Note:** The entire PC Card module (including the white metal shield) remains on the logic board for return to Apple.





## Install Power Supply Shield

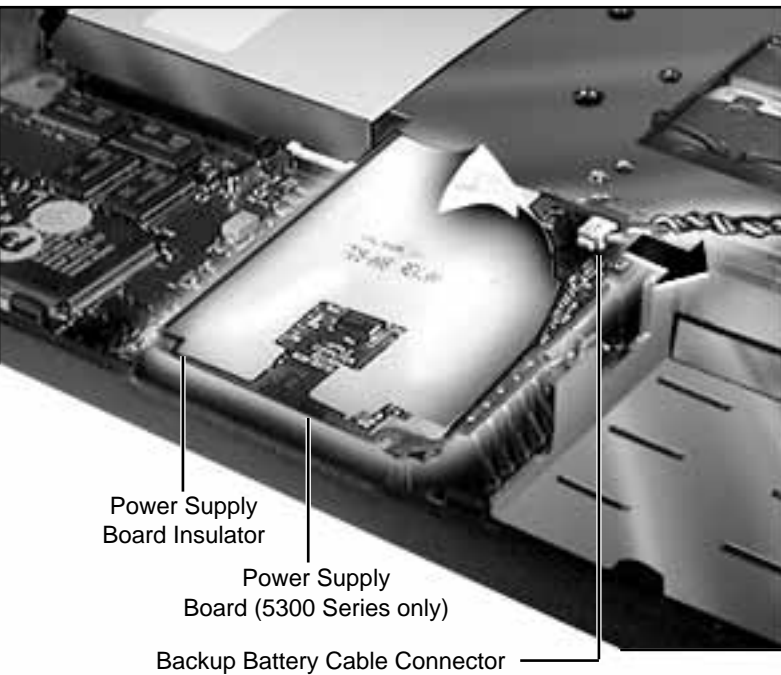
*Units that qualify for this repair: 5300 units with serial numbers xx605xxxxx and below and no shield on the power supply*

Before you begin, remove the following:

- Battery
- Floppy Drive
- Keyboard
- RAM Card
- Clutch Covers
- Palm Rest
- Hard Drive

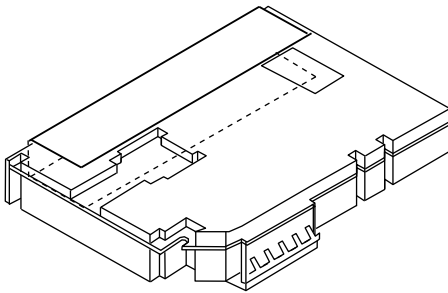
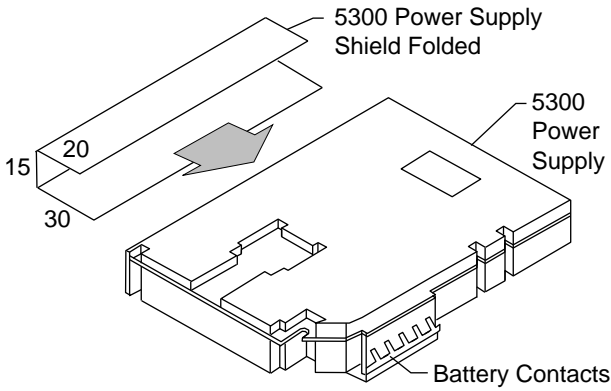
- 1 Disconnect the backup battery cable from the power supply board by carefully pulling the male portion of the connector to the right.
- 2 Lift the power supply board straight up, supporting all sides of the board (the power supply board connector is under the backup battery connector).

**Caution:** Make certain that the power supply board insulator is present and correctly placed when you reinstall the board.





### 5300 Power Supply Shield Installation



Finished Assembly

- 3 Carefully fold the power supply shield at the perforations and install it as indicated in the illustration.

**Note:** Placement of the shield is critical to prevent the edges from bending onto components on the power shield.





## **Replace Center Clutch Cover and Chassis/ CPU Stiffener**

*Units that qualify for this  
repair: 5300 and 190 units  
with no ink date stamp*

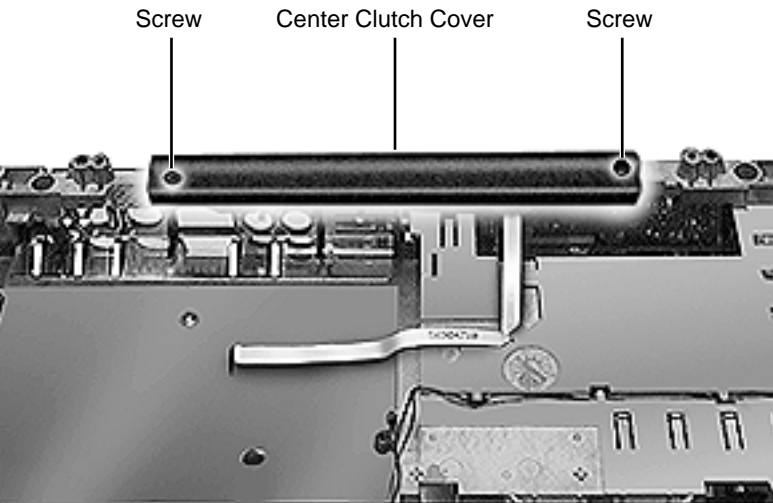
Before you begin, remove  
the following:

- Battery
- Floppy Drive
- Keyboard
- RAM Card
- Clutch Covers
- Display Assembly
- Palm Rest
- Hard Drive



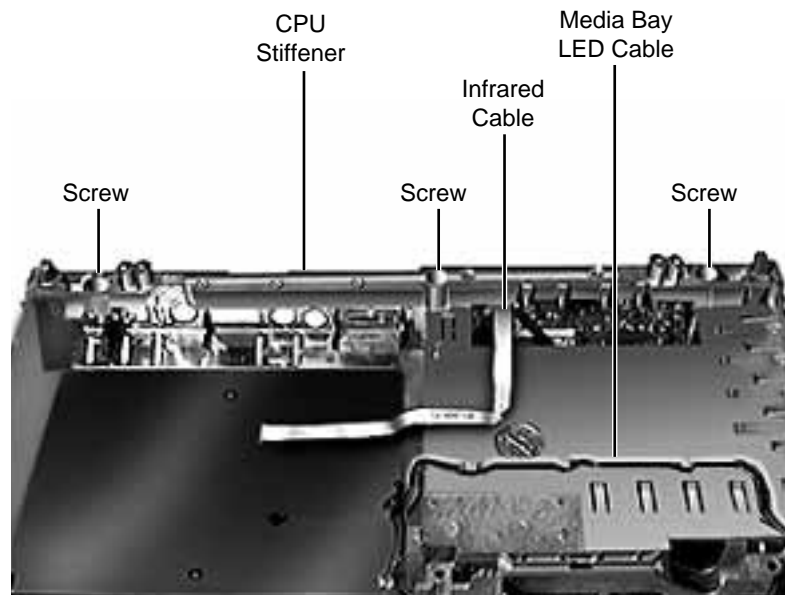


- Power Supply Board (5300 Series only)
- Heat Sink
- Video Board (190 Series Option)
- Logic Board



- 1 Remove the 2 screws holding the center clutch cover to the CPU stiffener.
- 2 Remove the 3 screws holding the CPU stiffener to the back of the bottom case.
- 3 Free the stiffener from the infrared and media bay cables.
- 4 Remove the CPU stiffener from the bottom case.

**Replacement Tip:** Make certain that the infrared board, infrared window, I/O port EMI shield, and media bay LED cable are correctly aligned before tightening down the CPU stiffener.

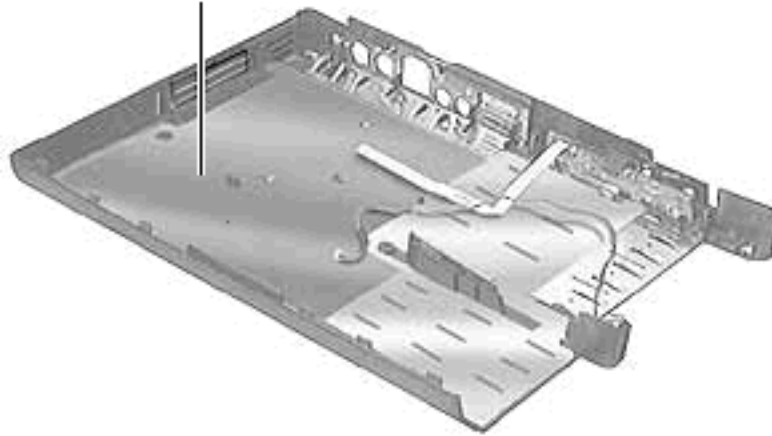




## Replace Bottom Case

*Units that qualify for this repair: 5300 and 190 units with no ink date stamp*

Bottom Case



Before you begin, remove the following:

- Battery
- Floppy Drive
- Keyboard
- RAM Card
- Clutch Covers
- Display Assembly
- Palm Rest
- Hard Drive
- Power Supply Board (5300 Series only)
- Heat Sink
- Video Board (190 Series Option)
- Logic Board
- CPU Stiffener
- Media Bay LED
- Infrared Board (Optional on 190 Series)
- PC Card Door (PCMCIA)

No additional removals are necessary.







## The Final Steps

Once you have repaired a unit, perform the following tasks:

- Attach a blank serial number label to the bottom case.  
Using indelible ink, write in the serial number from the old bottom case.
- Attach an REA label to the PowerBook.
- Power up and verify functionality of the PowerBook.
- Confirm that the system software is version 7.5.2 with enabler 1.2.1 or higher. If it isn't, install the new system software.





AA Sticker AA



### Attach an REA Label

An REA label on the unit indicates it was serviced under the 5300 and 190 Repair Extension Program. If the repaired unit does not already have this label, adhere it over the unit's serial number (located on the underside of the PowerBook). Position the label so the letters "AA" appear in the lower right





corner.

## **Install System Software**

If the software on the PowerBook you are servicing pre-dates version 7.5.2 with enabler version 1.2.1, replace it with version 7.5.2 with enabler version 1.2.1. You do not need to perform a clean install of system software unless the computer exhibits symptoms that would indicate system software corruption.

