





Basics

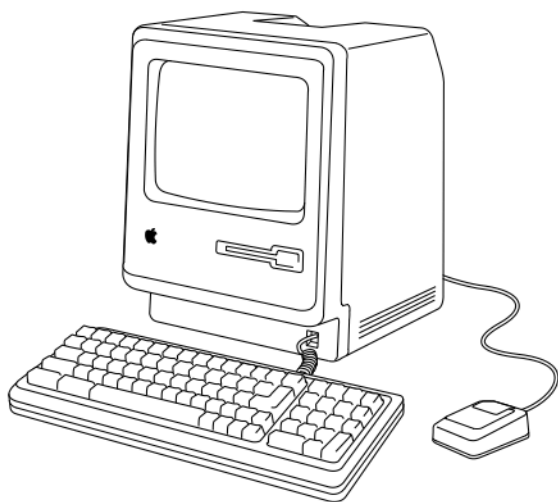


Figure: Macintosh Plus





Specifications

Introduction

Specifications information for this product can be found in the Apple Spec Database, which you can access in one of three ways:

- Launch it directly by double-clicking the Apple Spec Database icon at the top level of the Main Service Source CD.
- Select "Apple Spec Database" from the Service Source dropdown menu.
- Click the Acrobat toolbar icon for the database, which is represented by a toolbar with the letters "SP."



Specifications

Processor

CPU

Motorola 68000 microprocessor
7.83 MHz
32-bit internal data bus



Specifications

Memory

RAM	1 MB, expandable to 4 MB (150 ns)
ROM	128K
PRAM	CMOS custom chip with 4.5 V, user (includes 256 bytes of memory; parameters even with the machine



Specifications

Disk Storage

Floppy Drive

Internal, double-sided drive: uses 3 disks—either double-sided, 800K or 400K capacity



Specifications

I/O Interfaces

Floppy Drive

External drive port; DB-19 connector

SCSI

One SCSI parallel port; DB-25 connector

Mouse

Mouse port; DE-9 connector

Keyboard

Synchronous serial keyboard bus; PS/2 connector

Serial

Two RS-422 serial ports; mini DIN connectors



Specifications

I/O Devices

Keyboard

78 keys, including numeric keypad
connector

Mouse

Mechanical tracking; optical shaft en
(90 pulses per in.) of travel; DE



Specifications

Sound and Video

Sound Generator

Four-voice sound with 8-bit digital
22-kHz sampling rate

Video Display

9-in. (diagonal) screen; 512 by 342



Specifications

Electrical

Line Voltage 105–125 VAC

Frequency 50–60 Hz

Maximum Power 60 W



Specifications

Physical

Dimensions

Height: 13.6 in. (34.5 cm)

Width: 9.6 in. (24.4 cm)

Depth: 10.9 in. (27.6 cm)

Weight

16 lb. 8 oz. (7.5 kg)



T



Troubleshooting

General

The Symptom Charts included in the manual are used to diagnose specific symptoms related to the system. The charts are listed on the charts in the order of the first cure first. Verify whether or not the system exhibits the symptom. If the symptom is not present, (Note: If you have replaced a module, verify the module before you proceed to the next cure.

If you are not sure what the problem is, or if the problem does not resolve the problem, refer to the Troubleshooting family.

For additional assistance, contact Apple.



Symptom Charts

Video

No video, but audio tone is present and drive operates

- 1 Turn contrast control fully clockwise.
- 2 Check video cable connections.
- 3 Replace power/sweep board.
- 4 Replace neck cable.
- 5 Replace logic board. Retain customer.

Screen is bright and audio is present, but no video information is present

- 1 Replace power/sweep board.
- 2 Replace logic board. Retain customer.



Troubleshooting

Drives

Disk ejects; display shows disk icon with blinking "X"

- 1 Replace bad disk.
- 2 Replace floppy drive cable.
- 3 Replace floppy drive.
- 4 Replace logic board. Retain customer.

Unable to insert disk all the way

- 1 Insert paper clip into small hole on front of drive, off system power and hold mouse button down while switching system power back on. Then insert disk with metal slot on top, not bottom tab on bottom.
- 2 Replace floppy drive.

**Drives (Continued)**

Does not read disks on
internal drive

- 1 Replace bad disk.
- 2 Replace floppy drive cable.
- 3 Replace Mylar RFI shield.
- 4 Replace floppy drive.
- 5 Verify ROMs on the logic board.
- 6 Replace logic board. Retain cus

Does not read disks on
external drive

- 1 Replace bad disk.
- 2 Replace floppy drive cable.
- 3 Replace Mylar RFI shield.
- 4 Replace external drive.
- 5 Verify ROMs on the logic board.
- 6 Replace logic board. Retain cus

**Drives (Continued)**

Audio tone sounds at power on, video is present, but drive does not operate

- 1 Replace floppy drive cable.
- 2 Replace floppy drive.
- 3 Replace logic board. Retain customer.

Drive runs continuously

- 1 Replace bad disk.
- 2 Replace floppy drive cable.
- 3 Replace floppy drive.
- 4 Replace logic board. Retain customer.

400K drive does not boot

- 1 If logic board has Rev. A ROMs and serial number F518 or higher, u
- 2 Replace floppy drive.



Peripherals

Cursor does not move	<ol style="list-style-type: none">1 Connect mouse.2 Clean mouse.3 Replace mouse.4 Replace logic board. Retain cus
Cursor moves but clicking mouse produces no response	<ol style="list-style-type: none">1 Replace mouse.2 Replace logic board. Retain cus
No response to any key on keyboard	<ol style="list-style-type: none">1 Replace keyboard cable.2 Replace keyboard.3 Replace logic board. Retain cus
No response from a particular key	<ol style="list-style-type: none">1 Replace keyswitch.2 Replace keyboard.3 Replace logic board. Retain cus

**Peripherals (Continued)**

Known-good
ImageWriter or
ImageWriter II does
not print

- 1 Make sure that Chooser and Control Panels are properly installed.
- 2 Check that system software version matches printer software with known-good.
- 3 Reset PRAM.
- 4 Replace interface cable.
- 5 Replace logic board. Retain customer's printer.

Known-good
LaserWriter does not
print

- 1 Make sure that Chooser and Control Panels are properly installed.
- 2 Check that system software version matches printer software with known-good.
- 3 Reset PRAM.



Miscellaneous

When turned on, the Macintosh Plus continuously beeps and tries to power up

- 1 Perform voltage adjustment. Reconnect internal disk drive.
- 2 Disconnect internal disk drive. Replace drive.
- 3 Replace logic board. Retain customer's board if possible.
- 4 Replace power/sweep board, logic board, and power supply. Then turn on Macintosh. Note: Replacing logic board may damage new power/sweep board.

Clicking or chirping sound

- 1 Connect logic board cable.
- 2 Perform voltage adjustment. Reconnect internal disk drive.
- 3 Replace power/sweep board.
- 4 Replace logic board. Retain customer's board if possible.

**Miscellaneous (Continued)**

Smoke/odor issues
from the Macintosh
Plus

Replace power/sweep board.

No video, no audio
tone, and no drive
operation

- 1 Connect power cord.
- 2 Turn power on.
- 3 Replace power cord.
- 4 Check fuse.
- 5 Replace power/sweep board.
- 6 Replace logic board. Retain cus



Miscellaneous (Continued)

MacTest displays
128K/512K when
1 MB Macintosh Plus
is tested

Replace Macintosh Plus logic board.

When developer's
switch is installed,
Macintosh Plus
sometimes resets
intermittently

Remove switch and file it down about

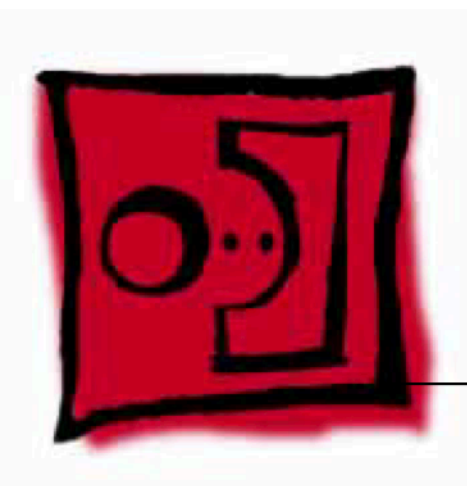
**Miscellaneous (Continued)**

Macintosh Plus hangs
on startup

- 1 If logic board has ROMs 342-0342-A (ROM LO) and a peripheral device connected to SCSI port, peripheral device must be disconnected before powering on Macintosh Plus.

Macintosh Plus boots
but keyboard behaves
erratically

- 1 Replace keyboard.
- 2 Check that logic board grounding points beneath logic board.
- 3 Replace logic board. Retain customer's keyboard.



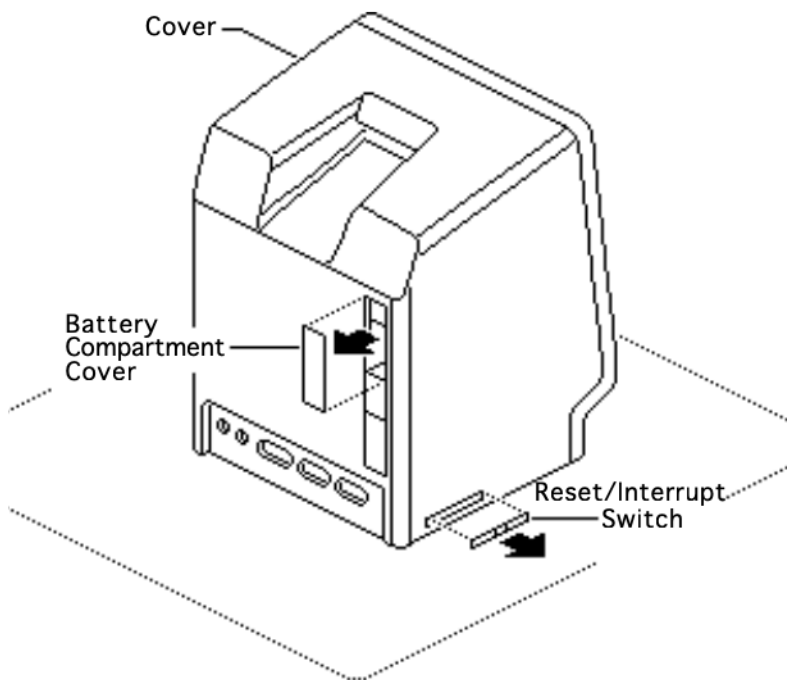


Take Apart

Cover

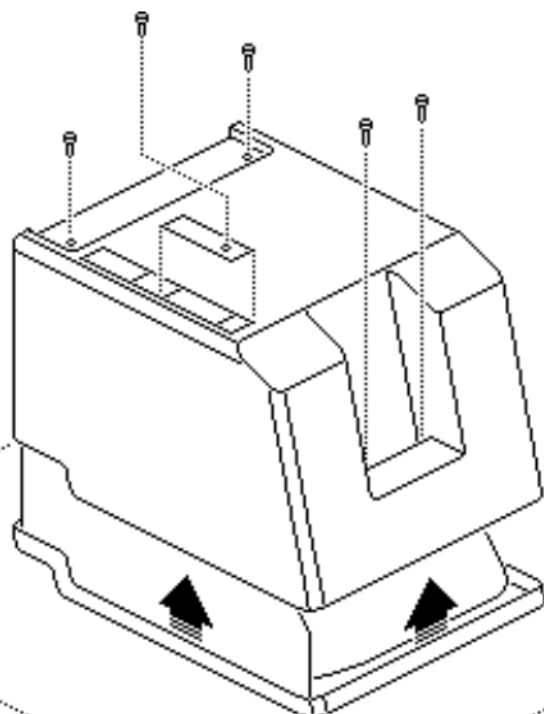
Battery
Compartment
Cover

Reset/Interrupt
Switch



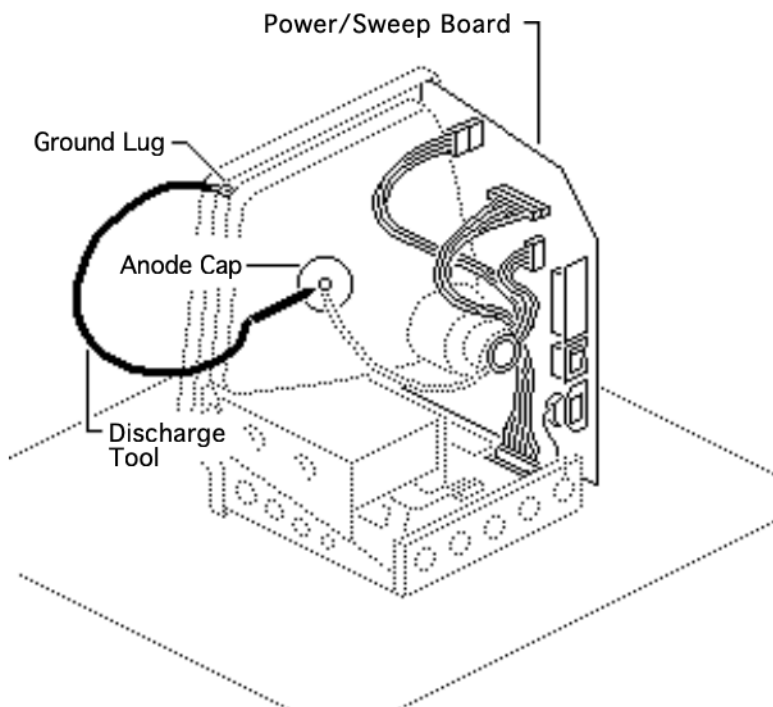


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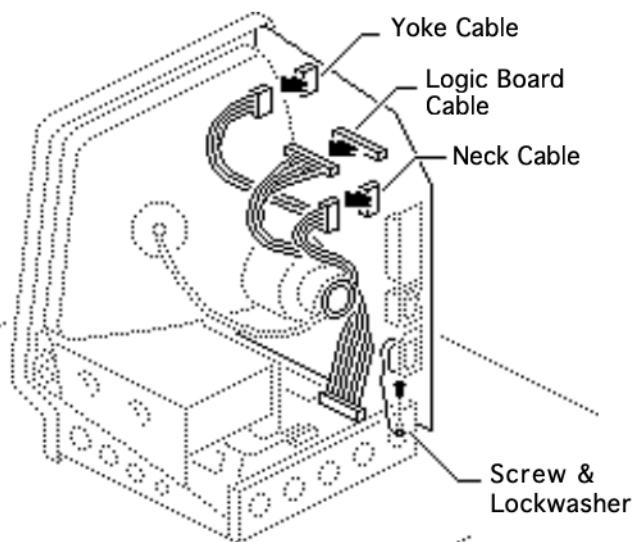


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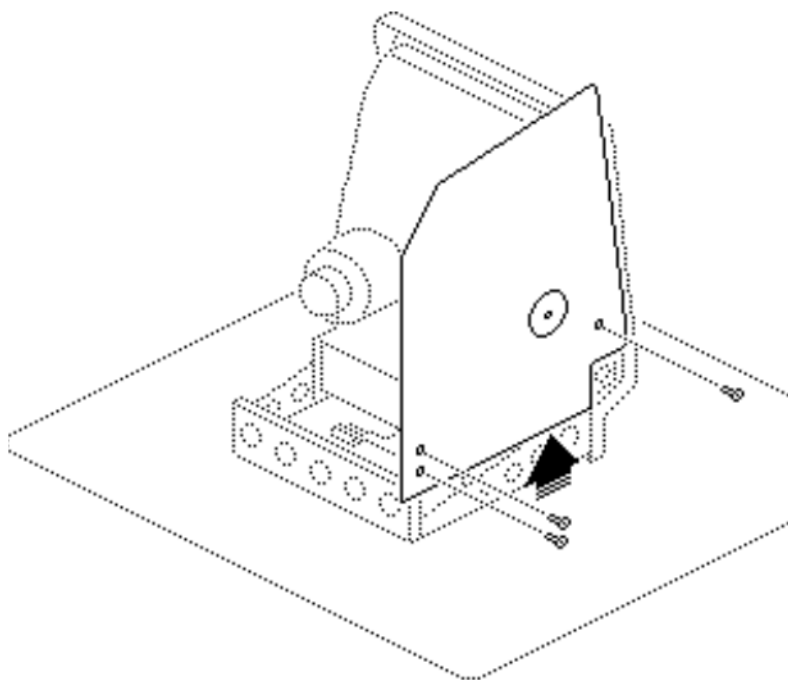


Take Apart





Take Apart

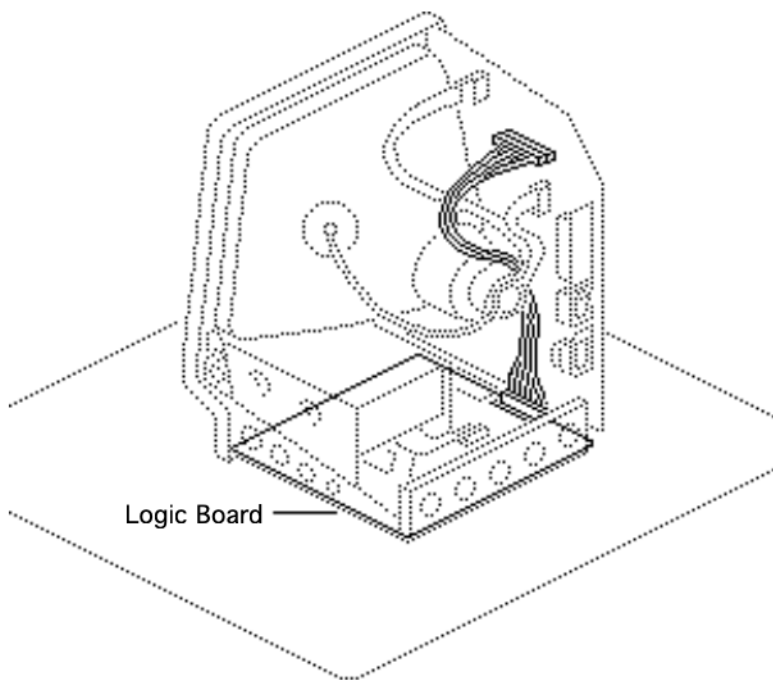




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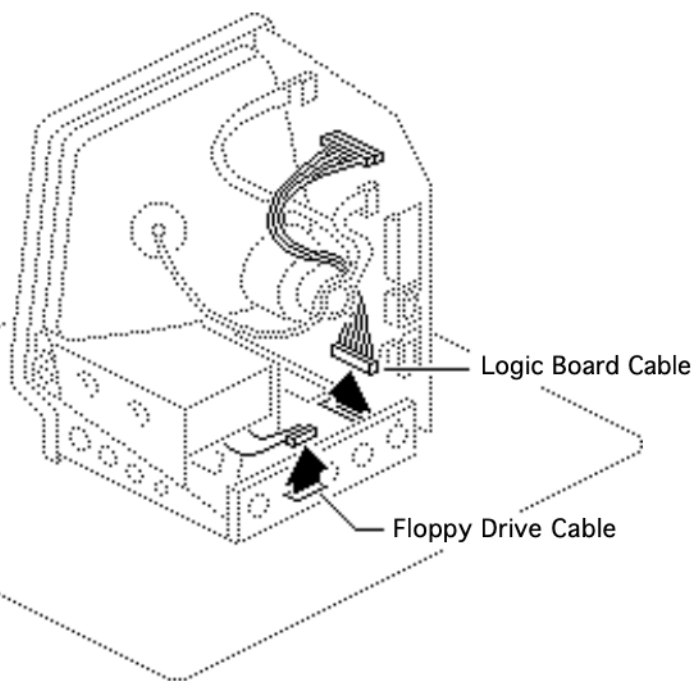


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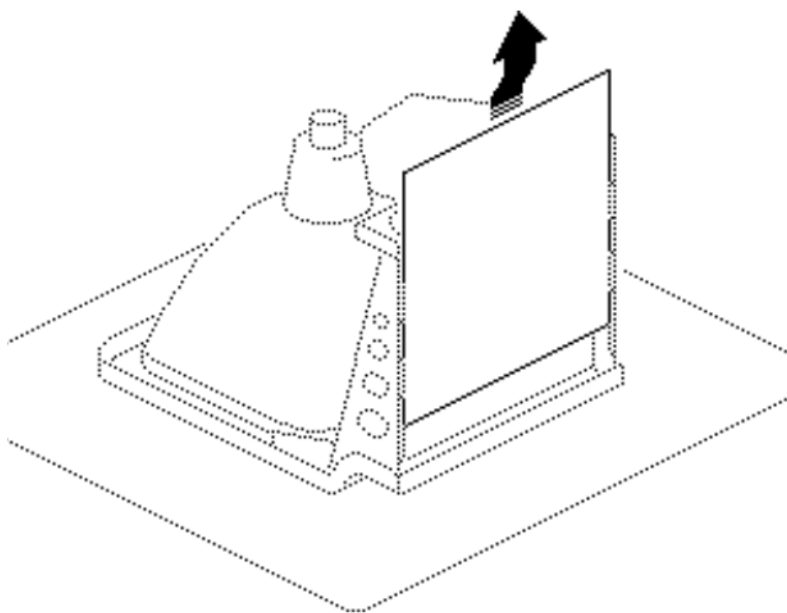


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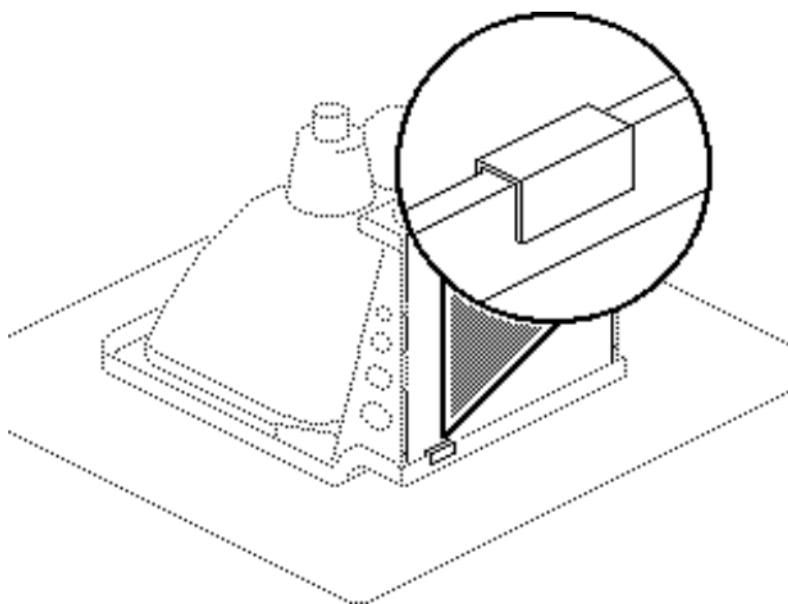


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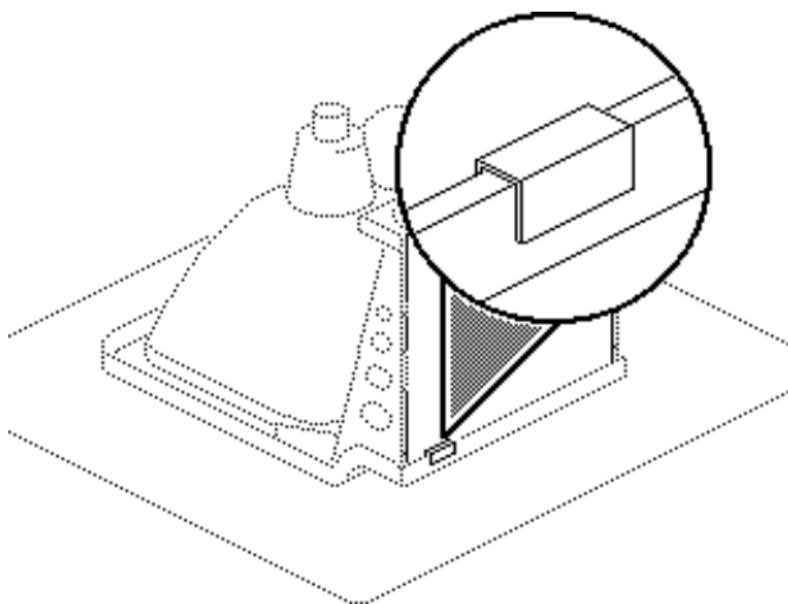


Take Apart





Take Apart

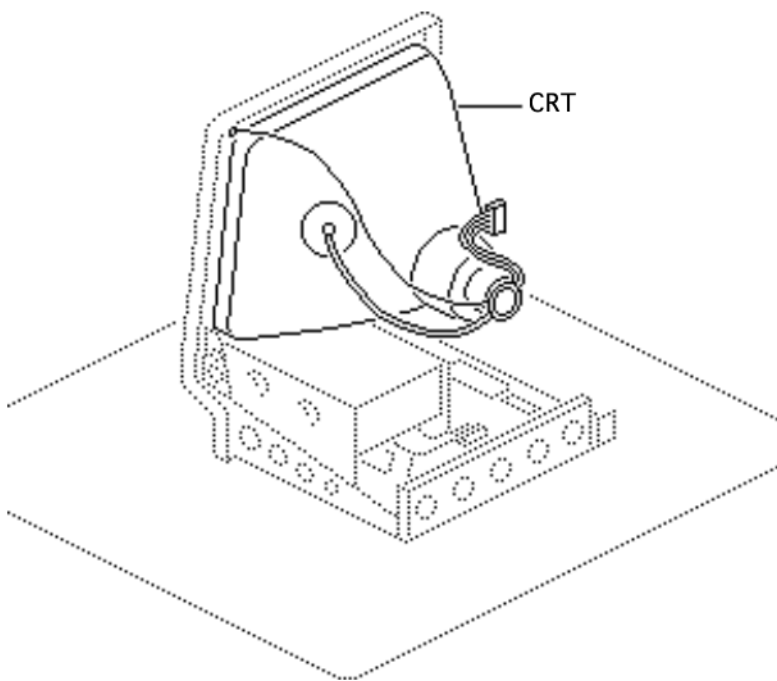




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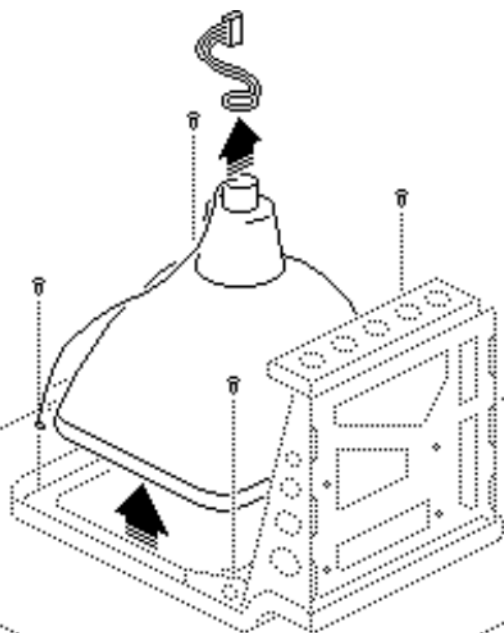


Take Apart





Take Apart



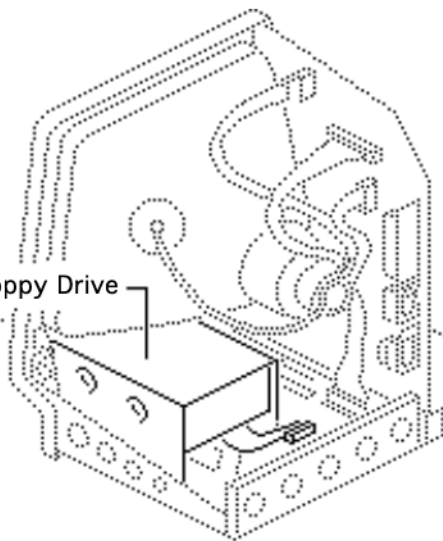


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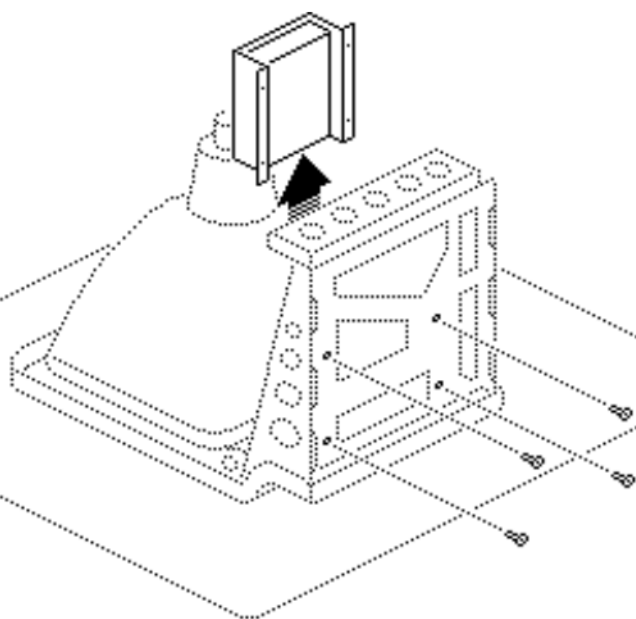
Take Apart

Floppy Drive





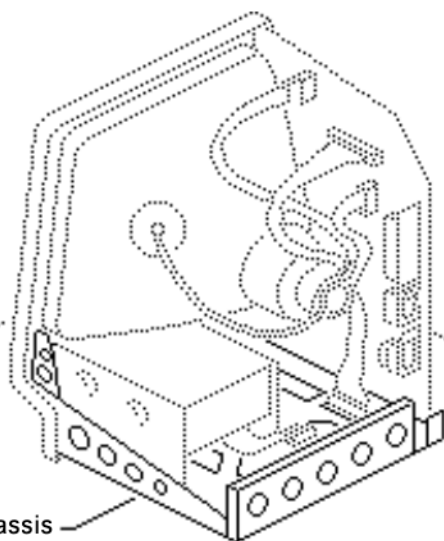
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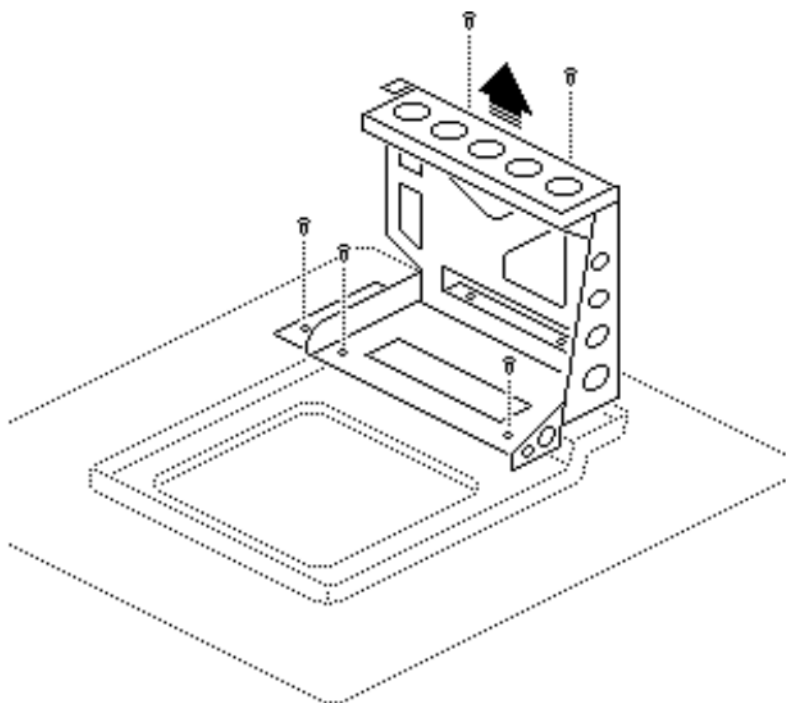
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Chassis





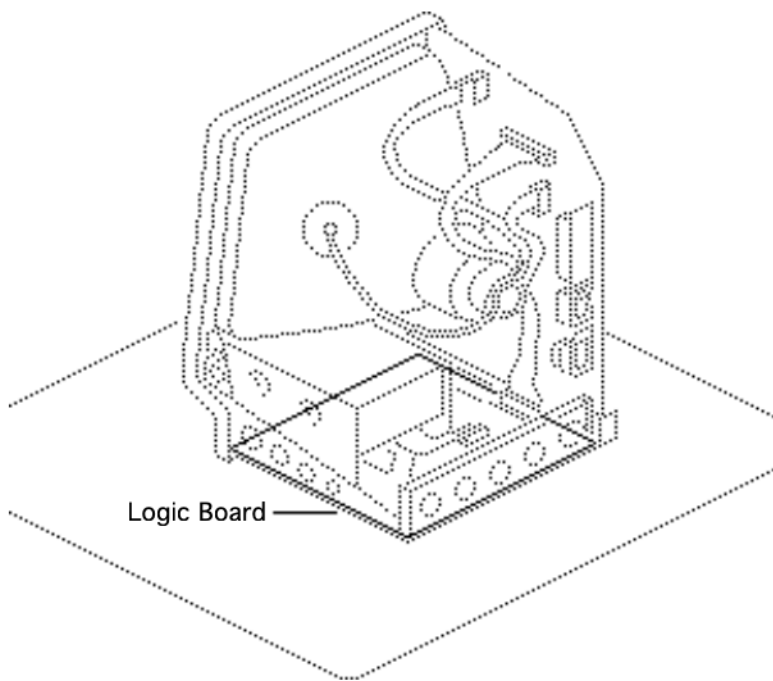
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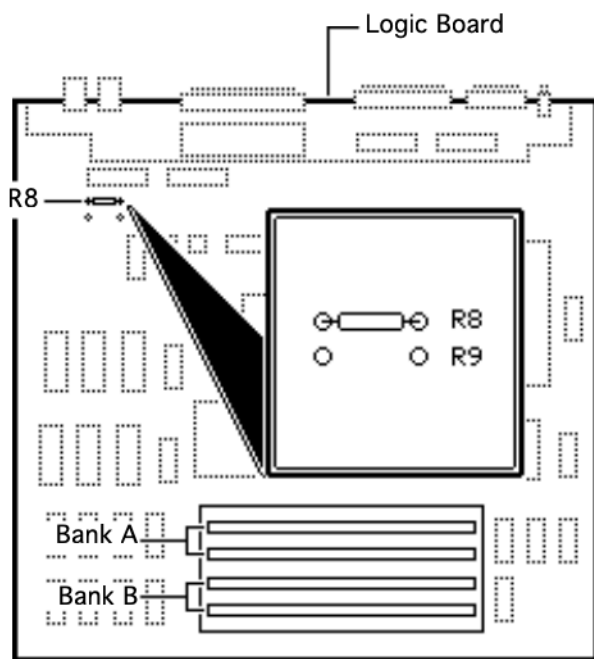


Upgrades



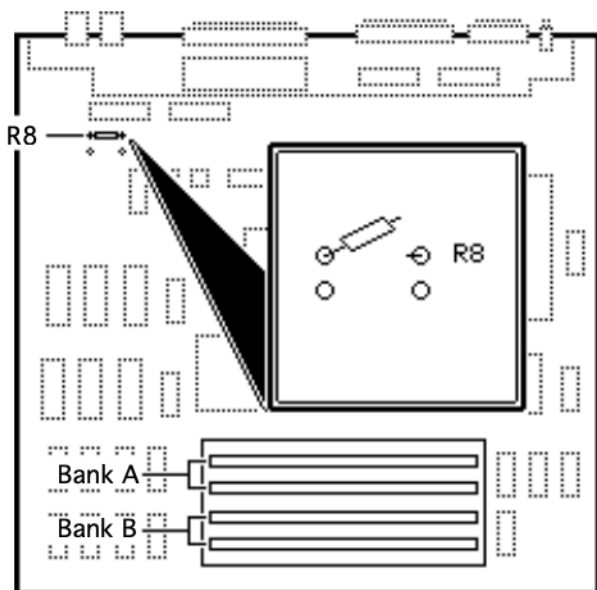


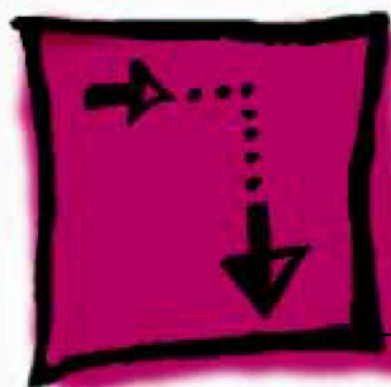
Upgrades





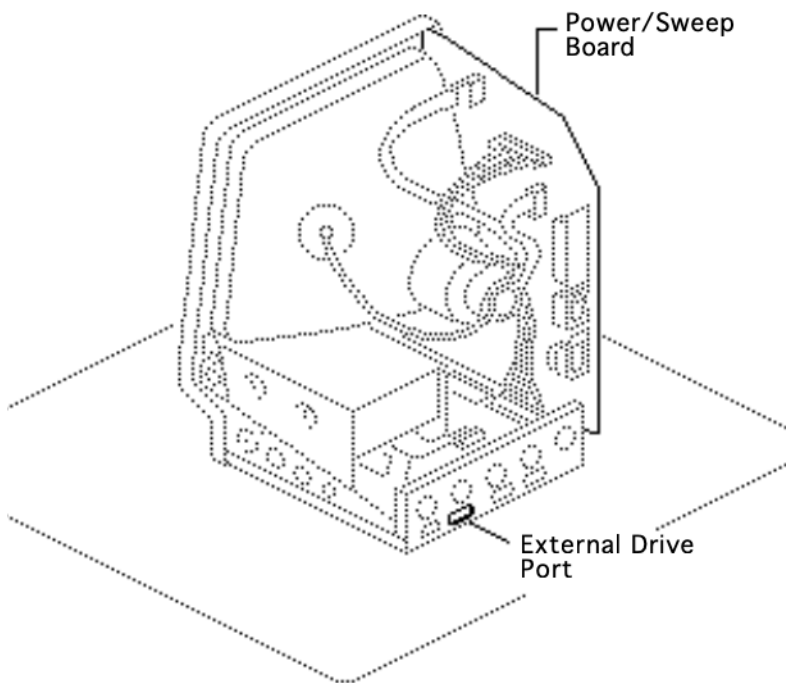
Upgrades







Adjustments

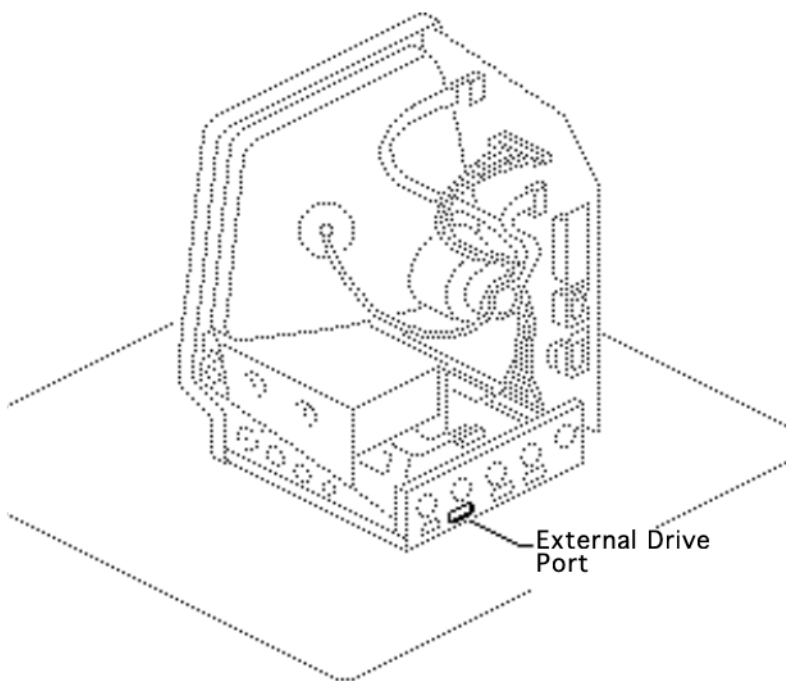




Adjustments



Adjustments

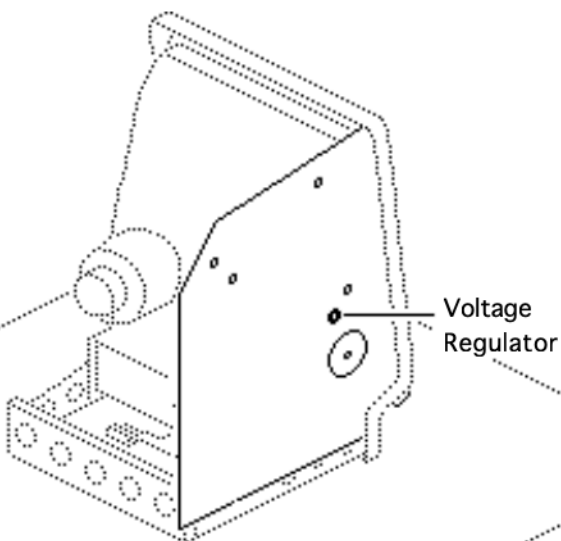




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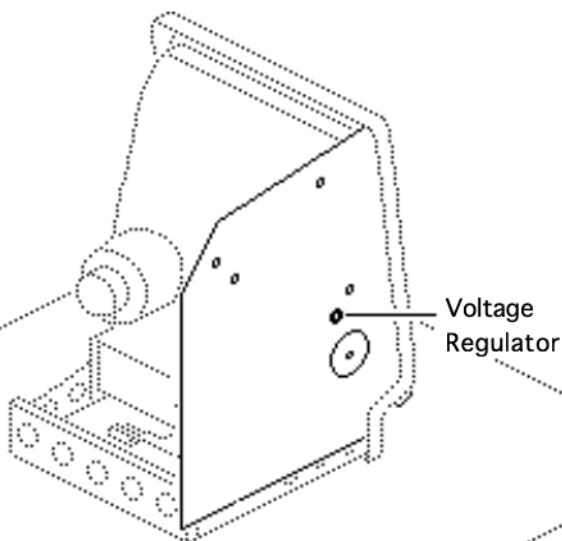


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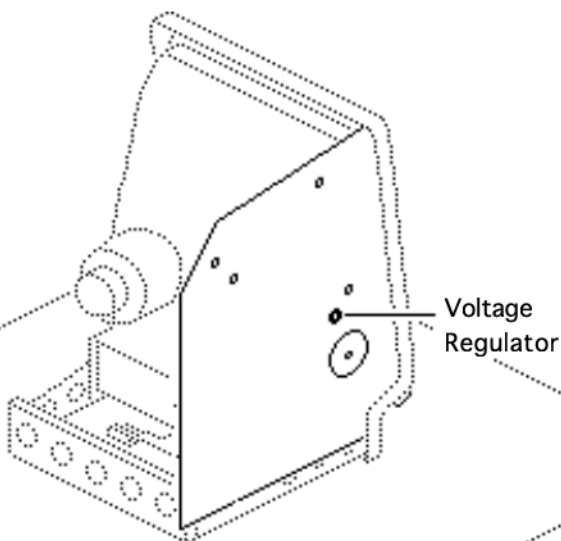


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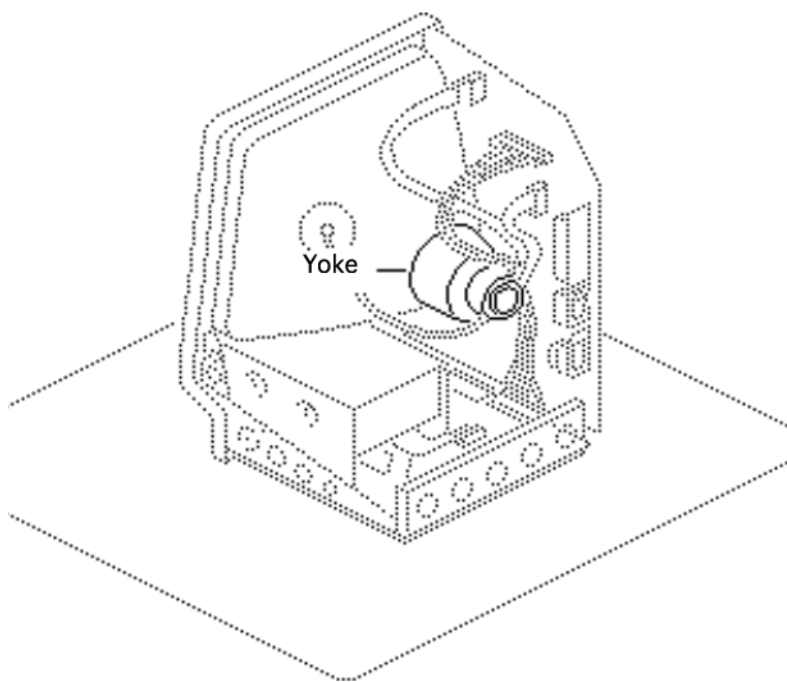


Adjustments





Adjustments

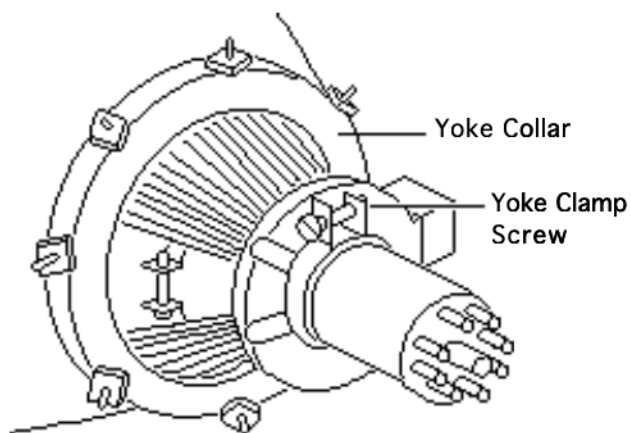




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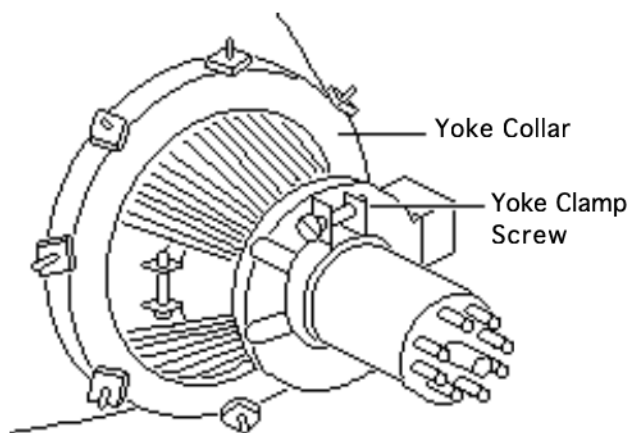


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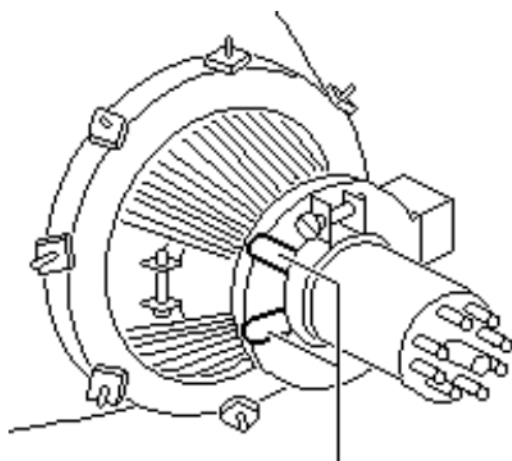


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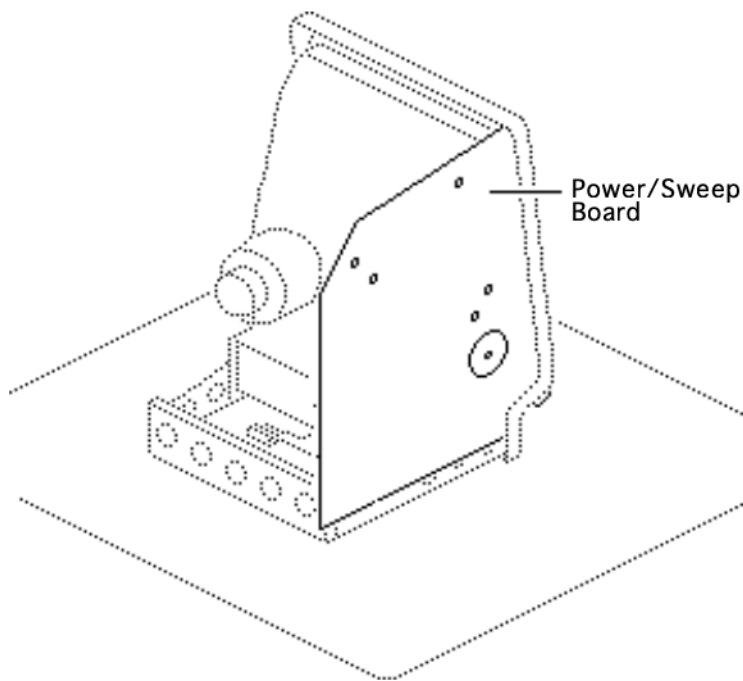
Adjustments



Centering Rings



Adjustments

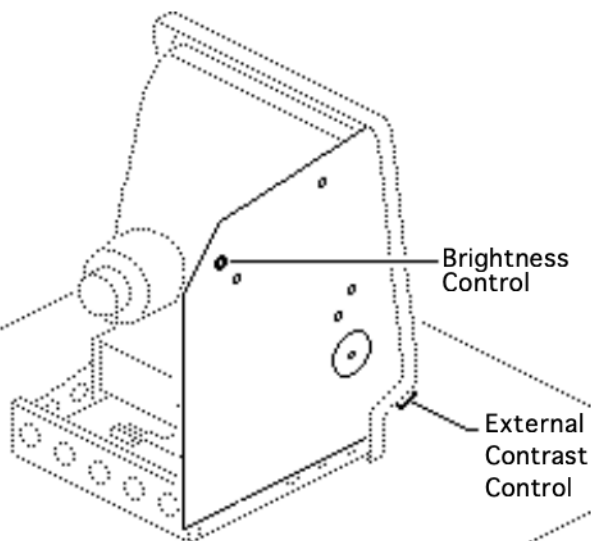




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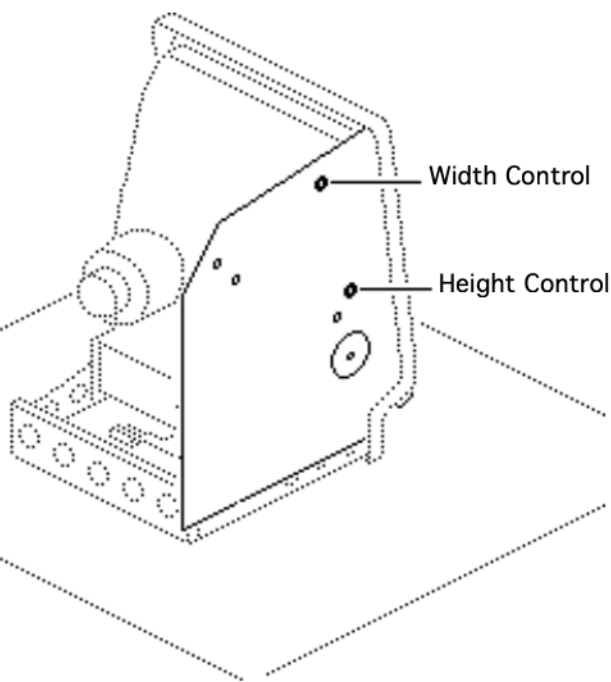


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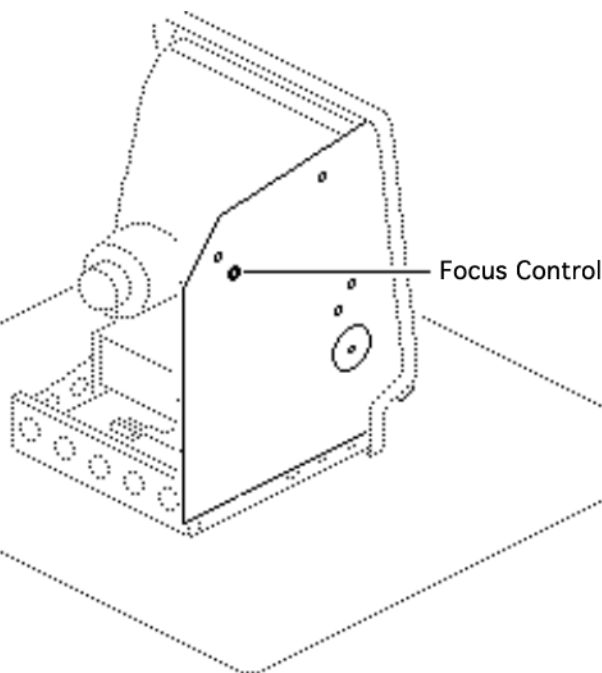


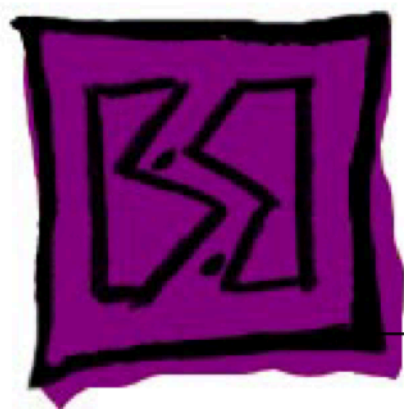
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Adjustments





Exploded View

