

Service Guidelines

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WARNING: PERFORM SERVICING ONLY AFTER BECOMING THOROUGHLY FAMILIAR WITH THE FOLLOWING SERVICING GUIDELINES. NONCOMPLIANCE INCREASES THE RISK OF HAZARDS AND INJURY TO THE USER. DO NOT MODIFY ANY CIRCUIT.

3.1 Safety Precautions & Warnings

The *Marquee* projection system is CSA approved and is designed for safe and reliable operation. To assure safety to users and technicians, it is imperative that the following precautions be taken during servicing and that the original projector design be maintained.

Labels and Markings ➤

Observe and follow all warnings and instructions marked on the projector and within this service manual.

The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the projector.



The lightning flash with arrowhead symbol, within the equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the projector's enclosure that may be of sufficient magnitude to constitute a risk of serious electric shock to persons.



High Voltage ➤

High voltages capable of causing DEATH are used in this projector. Observe all precautions necessary for working on HIGH VOLTAGE equipment before servicing.

HIGH VOLTAGES MAY BE EXPOSED



QUALIFIED PERSONNEL ONLY

To prevent damage to solid state devices, do not arc the picture tube anode lead to chassis or earth ground.

X-RAY Radiation ➤

The projector is internally shielded to protect the user from exposure to x-ray radiation. Improper servicing may result in personal injury.



IF SHIELDING MUST BE REMOVED FOR SERVICING, IT MUST BE RE-INSTALLED TO ITS ORIGINAL CONDITION.

Do not operate or allow the operation of the projector with any shielding removed or damaged. Electrohome cannot be held responsible for injuries caused by improper replacement of shields or operation of the projector with damaged shields.

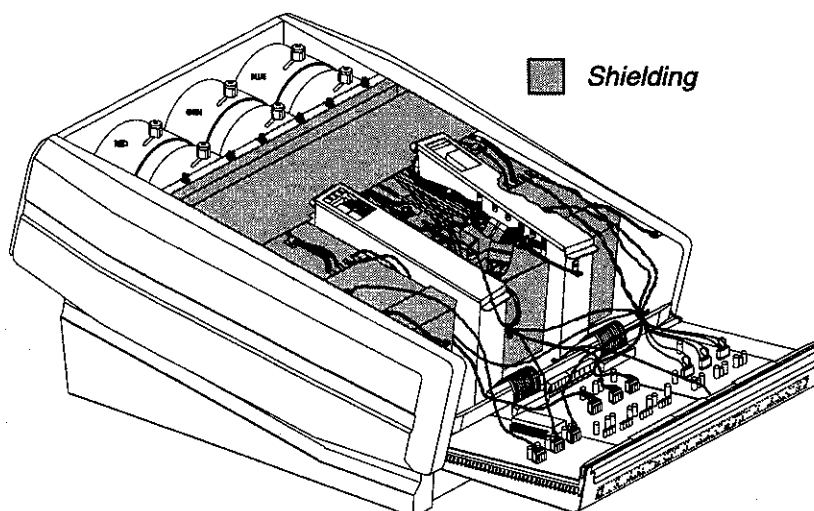


Figure 3-1. Shielding

Power Supplies ➤

The projector's two power supplies (high voltage and low voltage) are not serviceable. Do not open or attempt servicing of the supplies should a supply failure occur. Contact Electrohome for replacement power supplies.

Component Replacement ➤

All components on schematics and parts lists which are identified with a **⚠** are critical safety. These components **MUST** be replaced by exact equivalents. Failure to do so may result in unsafe operation. Replace all components that show signs of damage due to overheating.

3.3 Module Access & Extender Card Use

This subsection explains how to access the various electronic modules for troubleshooting. For certain modules, an extender kit (03-EXTEND-01P) is required. The extender kit allows service technicians to physically extend Marquee projector system modules and boards to fully expose circuit components for testing and diagnosis. To obtain the kit, call Electrohome (see section 5.1, *Ordering Parts*).

The Marquee Extender Card Kit (03-EXTEND-01P) includes:

- 2 Marquee extender cards
- 2 rear mount side brackets
- 2 shield mount side brackets
- 1 ribbon jumper
- 1 jumper board
- 1 instruction sheet

Read all instructions prior to extender card usage. Usage of the extender kit components varies depending on the modules/boards which are to be extended. Refer to the following for instructions for each module/board.

Note: Always take appropriate static precautions when handling modules or circuit boards. Ground straps are mandatory.

Rear Panel Modules ►

These instructions apply to the modules which are accessible at the rear panel of the projector. These modules may include:

- Video Input Module
- Control Module (with Deflection Processor Board and Stigmator Waveform Board)
- Expansion Boards
 - ACON Control Module (optional)
 - Video Decoder (optional)
 - Contrast Modulation Module

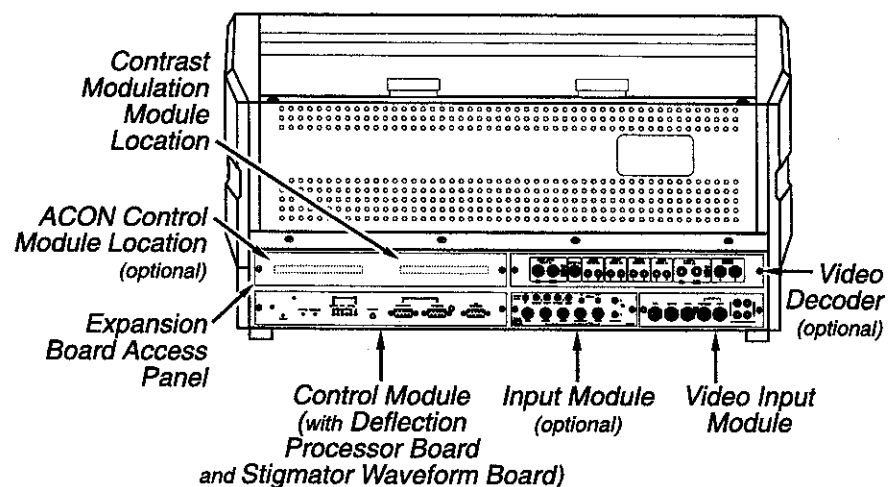


Figure 3-4. Rear Panel Module Locations

Video Input Module

- a) Unplug the projector line cord.
- b) Unscrew the screws which secure the Video Input Module (slot 1). Unscrew the screws which secure the optional input module or plate (slot 2). Pull out the Video Input Module and unplug the R,G,B connectors. Temporarily set the module aside.
- c) Plug in a single extender card into the backplane motherboard. The extender card connector may need to be notched like the VIM connector in order to mate to the backplane motherboard.

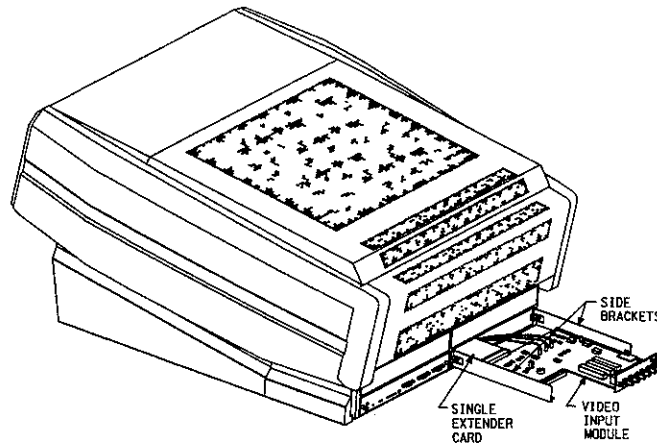


Figure 3-5. Control Module Extension

- d) Install two rear panel side brackets as shown in Figure 3-5.
- e) Slide the Video Input Module through the bracket guides then into the extender card. Plug in the R,G,B connectors.
- f) Check all connections then plug in the projector.

Expansion Boards (Video Decoder, Contrast Modulation Module, ACON Control Module)

- a) Unplug the projector line cord.
- b) Unscrew the two screws which secure the module. Pull out the module and set it aside. For the ACM and CMM, which are hidden behind a panel, remove the screws and then push sideways on the card extractor to unseat the board.
- c) Plug in a single extender card in the module location. (For the Video Decoder, slide the extender card above the slot 2 location.)
- d) Install two rear panel side brackets for the module which is to be extended. (The plastic card guides on each bracket must be relocated to the other set of holes on the bracket when used on the upper level of boards.)
- e) Slide the module through the bracket guides then into the extender card.

- f) Check all connections then plug in the projector.

Control Module

- a) Unplug the projector line cord.
- b) Unscrew the two screws which secure the Control Module. Pull out the Control Module and set it aside. Note: Do not place the module on a conductive surface which could short the on-board battery. Also observe static precautions.
- c) Plug in two extender cards as shown in Figure 3-6. Extender card connectors may need to be notched like the Control Module connector in order to mate with the backplane motherboard.
- d) Install two rear panel side brackets as shown.
- e) Slide the Control Module through the bracket guides then into both extender cards.

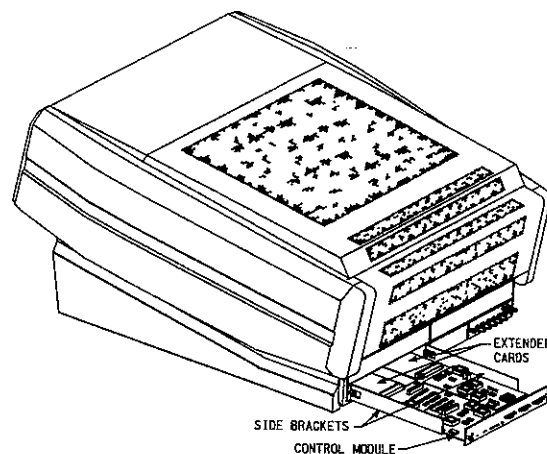


Figure 3-6. Control Module Extension

- f) To expose the Control Board components located under the Deflection Processor or Stigmator Waveform daughter board, remove the screws which secure the daughter board to the Control Board. Lift the daughter board from the Control Board then plug it into the supplied jumper board. Plug the jumper board into the daughter board connector on the Control Board. Ensure that no part of the daughter board is contacting the rear ventilation panel of the projector. (Figure 3-7 shows the Deflection Processor Board raised and the Stigmator Waveform Board removed).

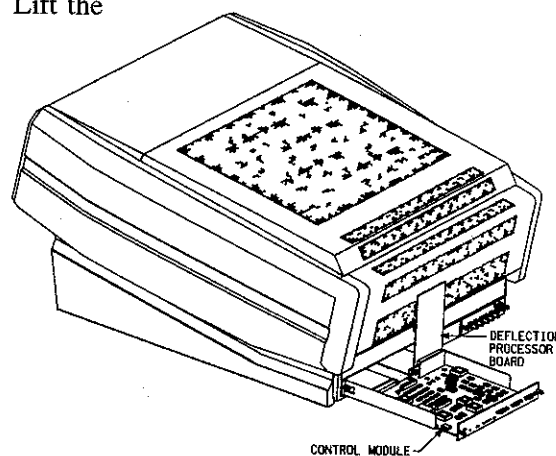


Figure 3-7. DPB Extension

IMPORTANT! The daughter boards may be damaged if they are improperly plugged in.

g) Check all connections then plug in the projector.

Internal Modules ►

These instructions apply to the modules which are accessible by removing the projector's rear and top covers. These modules include:

- Focus Module
- Horizontal Deflection Module
- Convergence Amplifier Module
- Vertical Deflection Module
- Stigmator Amplifier Board (Models 8500/8500LC/9500LC)

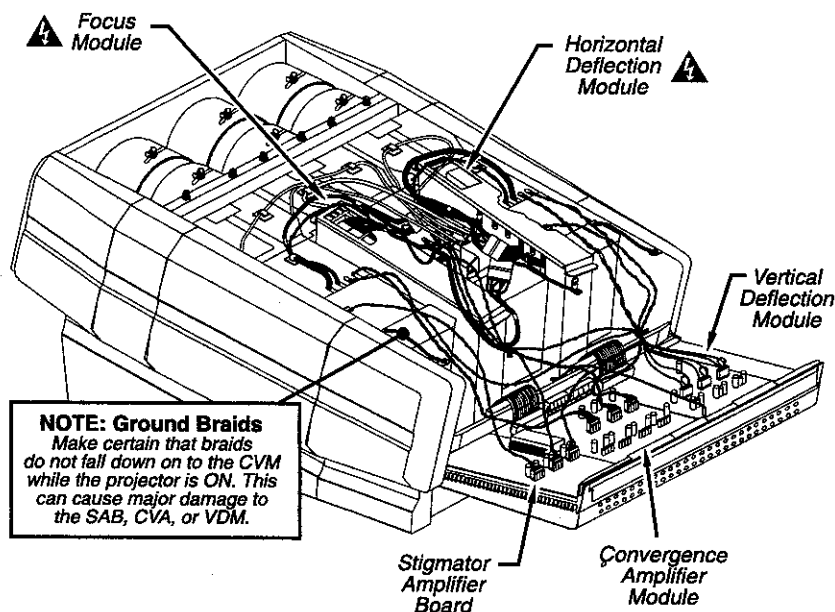


Figure 3-8. Internal Module Locations

Focus and Horizontal Deflection Modules

- a) Unplug the projector.
- b) Remove the snap-in front top cover and rear top cover as described in Section 5, *Parts & Disassembly*.
- c) Pull off the shield lid of the module to be extended.
- d) Pull out the module and set it aside. (Do NOT use the width coils to remove the board.)
- e) Install the two shield mount side brackets as shown in Figure 3-9.
- f) Plug in a single extender card in the module location.
- g) Plug the module into the extender card.

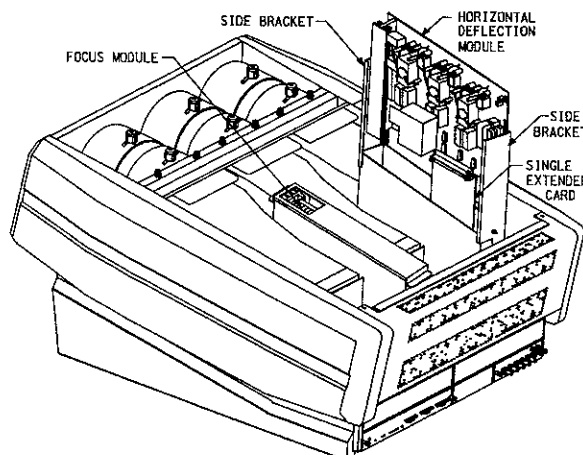


Figure 3-9. Horizontal Deflection Extension

- h) Check all connections then plug in the projector.

Convergence Amplifier Module, Vertical Deflection Module & Stigmator Amplifier Board

- a) Unplug the projector.
- b) Remove the snap-in front top cover and rear top cover as described in Section 5, *Parts & Disassembly*.
- c) Locate the four screws at the top of the large heat sink (behind the rear panel) then lower the heat sink (it hinges at the bottom). The Stigmator Amplifier Board, Convergence Amplifier Module and Vertical Deflection Module (CVA and VDM are joined) should be completely visible. See Figure 3-8.
- d) Check all connections then plug in the projector.

3.4 Cleaning

Clean the projector as required after each servicing. Before cleaning, always unplug the projector from the power outlet.

Lens Cleaning ►

To avoid the risk of scratching the lenses, only clean the lenses if absolutely required. A small amount of dust on the lenses will have very little effect on picture quality. If the lenses must be cleaned, use a DRY soft cotton cloth. Rub gently in a circular motion.

Case Cleaning ►

Clean the case with a soft dampened cloth. Use a mild commercial cleaner. Do not use liquid or aerosol cleaners.

ACON Cleaning ►



The lens on the ACON Locator Assembly is very tolerant to dust and should only be cleaned if ACON performance is affected. Cleaning of the lens (if required) must be performed with great care. Use a DRY soft cotton cloth. Rub gently in a circular motion.