

*CRUIS'N EXOTICA*TM

S E C T I O N T H R E E

SERVICE

SAFETY INSTRUCTIONS

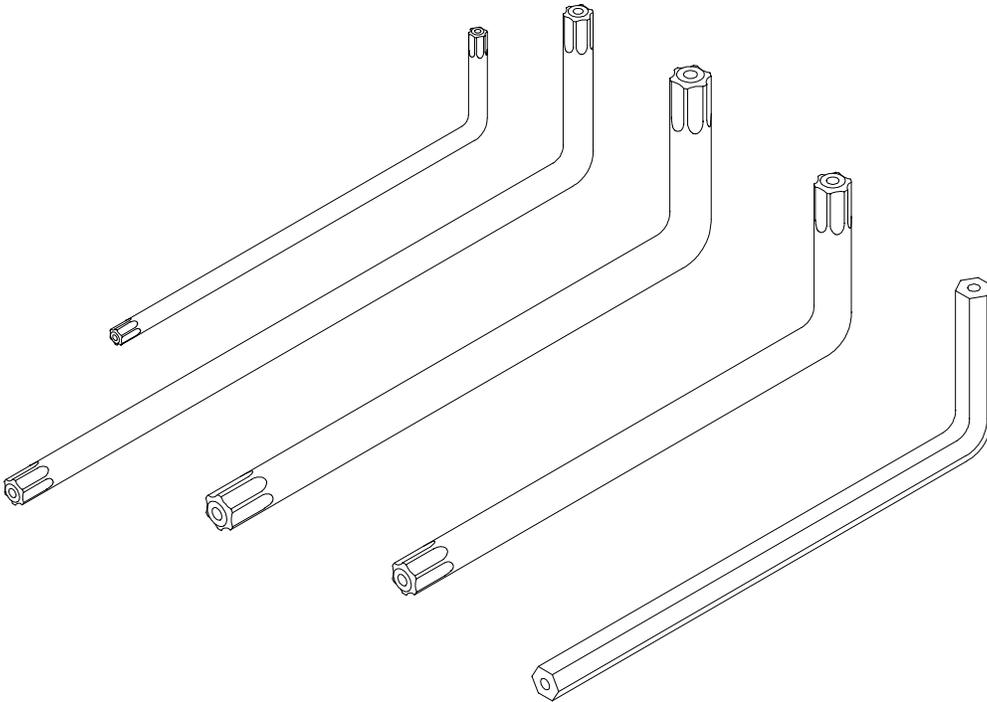
The following safety instructions apply to operators and service personnel. Read these instructions before preparing the Video Game Machine (VGM) for play. Other safety instructions appear throughout this manual.

DEFINITIONS OF SAFETY TERMS

- ◆ **DANGER** indicates an imminent hazard. If you fail to avoid this hazard, it **WILL** cause death or serious injury.
- ◆ **WARNING** indicates a potential hazard. If you fail to avoid this hazard, it **COULD** cause death or serious injury.
- ◆ **CAUTION** indicates a potential hazard. If you fail to avoid this hazard, it **MAY** cause minor or moderate injury. **CAUTION** also alerts you about unsafe practices.
- ◆ **NOTE** indicates information of special importance.

	<p>WARNING: TRANSPORTING GAMES. The VGM contains glass and fragile electronic devices. Use appropriate care when transporting. Avoid rough handling when moving the cabinet. Do not move with the power switched on.</p>
	<p>WARNING: DISCONNECT POWER. Always turn the power OFF and unplug the VGM before attempting service or adjustments unless otherwise instructed. Installing or repairing boards with power switched on can damage components and void the warranty.</p>
	<p>WARNING: GROUND GAMES. Avoid electrical shocks! Do not plug in a VGM until you have inspected and properly grounded it. Only plug this game into a grounded, three-wire outlet. Do not use a "cheater" plug, or cut off the ground pin on the line cord.</p>
	<p>WARNING: AVOID ELECTRICAL SHOCKS. The VGM system does not utilize an isolation transformer. Internal cabinet AC is not isolated from the external AC line.</p>
	<p>WARNING: HANDLE FLUORESCENT TUBE AND CRT WITH CARE. If you drop a fluorescent tube or CRT and it breaks, it will implode! Shattered glass can fly eight feet or more from the implosion.</p>
	<p>CAUTION: CHECK POWER SELECTOR, LAMP. Set the 115/230VAC selector on the power supply for the correct line voltage. Check the selector setting before switching on the VGM. Verify that the fluorescent lamp assembly is correct for the local line voltage.</p>
	<p>CAUTION: USE PROPER FUSE. Avoid electrical shock! Replacement fuses must be identically rated. Fuse voltage and current ratings must be identically rated to the original fuse.</p>
	<p>CAUTION: ATTACH CONNECTORS PROPERLY. Be sure board connectors mate properly. If connectors do not slip on easily, do not force them. A reversed connector may damage the VGM and void the warranty. Connector keys only allow a connector to fit one set of pins on a board.</p>

	<p>CAUTION: USE CARE WHEN SHIPPING HARD DISKS. The hard disk drive must be packed in an anti-static bag. When shipping the drive for repair or replacement, pack it in an approved container (P/N 08-8068). Do not stack or drop hard disk drives.</p>
	<p>WARNING: HAZARD TO EPILEPTICS. A very small portion of the population has a condition which may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns that are present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. People who have not had any previous seizures may nonetheless have an undetected epileptic condition.</p> <p>If you or anyone in your family has experienced symptoms linked to an epileptic condition (e.g., seizures or loss of awareness), immediately consult your physician before using any video games.</p> <p>We recommend that parents observe their children while they play video games. If you or your child experience the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions, DISCONTINUE USE IMMEDIATELY and consult your physician.</p>



CONTENTS OF TYPICAL TOOL PACK

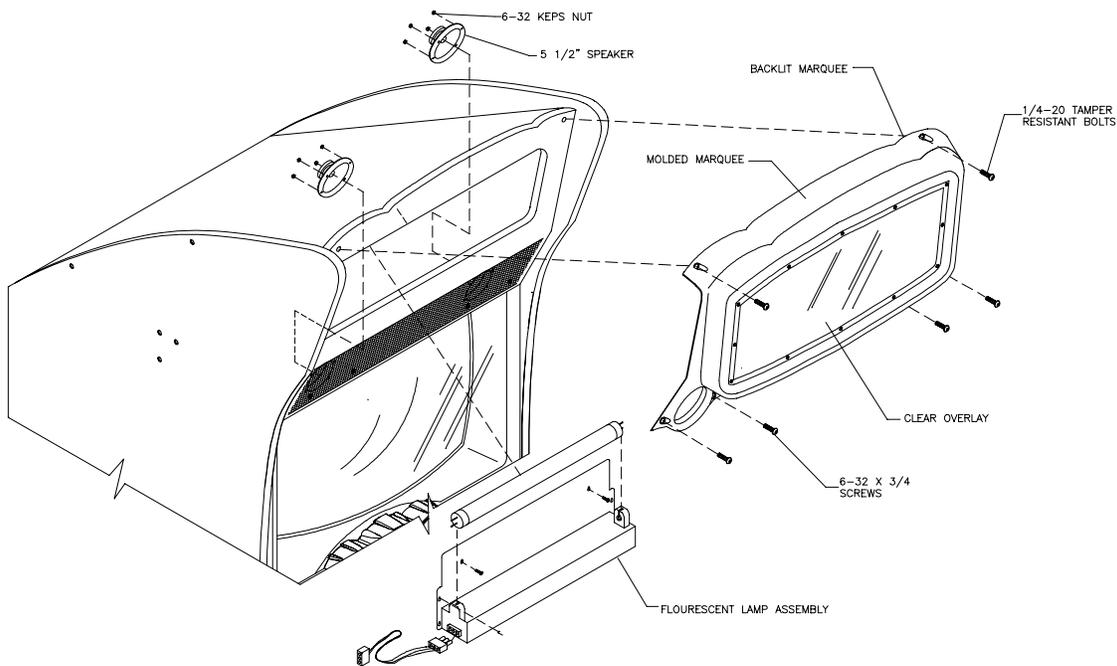
SERVICING

Only qualified service personnel should perform maintenance and repairs. The product guidelines apply to all operators and service personnel. Specific notes, cautions, and warnings appear throughout the manual where they apply. We recommend that you read the SAFETY NOTICES section thoroughly before beginning service. **NOTE:** *Always switch off power to the game before servicing.*

To service the Marquee...

Refer to the *Marquee Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove 6 tamper-resistant screws used to fasten the marquee to the top of the cabinet.
- Lift the marquee straight out from cabinet and set aside to expose the opening in the cabinet.
- Perform the desired repair or equipment replacement.
- To re-install, align the contoured marquee with contour of the cabinet.
- Fasten in place with the screws provided.



Marquee Service

To service the Fluorescent Light Assembly...

Refer to the *Marquee Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the marquee. *Refer to service instructions for Marquee.*
- Reach inside the opening in the cabinet and disconnect the power cable from the fluorescent light assembly.
- Loosen, but do not remove the screws fastening the assembly to the cabinet.
- Slide the assembly slightly forward to disengage the keyholes. Lift out the assembly.

To service the Fluorescent Lamp or Starter...

Refer to the *Marquee Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the marquee. *Refer to service instructions for Marquee.*
- Reach inside the opening in the cabinet and remove the fluorescent lamp locks.
- Both the fluorescent tube and the starter require a quarter turn for removal. Grasp the tube or starter, give it a quarter turn and pull it from its socket.
- Carefully place a new starter or tube into the sockets and rotate it a quarter turn to reinstall.
- Reinstall both fluorescent lamp locks. Clean the tube to remove fingerprints and dust.



WARNING

Fluorescent tubes implode on impact when dropped. Use care in handling.

To service the Cabinet Speakers...

Refer to the *Marquee Service* illustration. Speakers are located under the marquee.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the marquee. *Refer to service instructions for Marquee.*
- Reach inside the opening in the cabinet and disconnect the wires, including the ground strap.
- Remove the nuts on the mounting screws before removing the speakers from the enclosure.
- Perform the desired repair or equipment replacement.
- Carefully reseal the seals upon completing any task in the speaker enclosure.
- Reconnect the wires, including ground. Refer to the Cabinet Wiring Diagram for correct speaker polarity.

NOTE: The speakers are magnetically shielded to prevent video monitor color impurity. Be sure that any replacement speakers are also magnetically shielded.

To service Monitor Bezel...

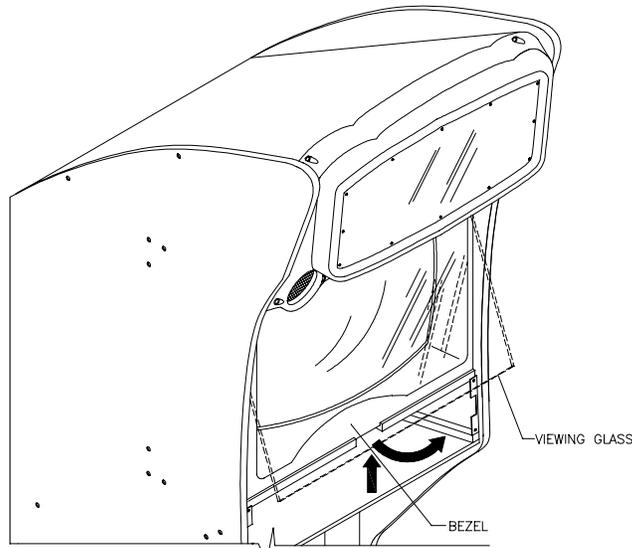
Refer to the *Bezel Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard. *Refer to service instructions for Dashboard.*
- Gently slide the viewing glass up and lift it out of the cabinet to. Set Viewing Glass aside.
- Grasp the monitor bezel at the bottom and lift it out of cabinet.
- Perform the desired repair or equipment replacement.
- Clean both the bezel and the viewing glass before reinstallation.

To service Viewing Glass...

Refer to the *Bezel Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard. *Refer to service instructions for Dashboard.*
- Gently slide the viewing glass up and lift it out of the cabinet to. Set Viewing Glass aside.
- Perform the desired repair or equipment replacement.
- Clean the glass before reinstallation.



Bezel Service

To service the Monitor (CRT)...

We recommend that you read the WARNINGS thoroughly before beginning this procedure.

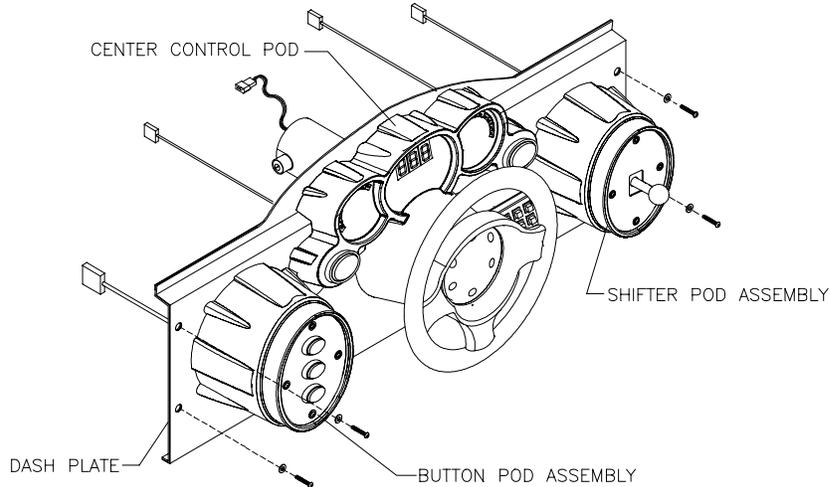
	<p>CAUTION</p> <p>The video monitor is heavy, with most of the weight toward the front of the assembly. Be sure it is firmly supported as it is moved from the cabinet.</p>
	<p>WARNING</p> <p>The monitor does not require isolation from the AC line voltage in normal operation. When operating outside the cabinet or servicing the monitor on a test bench, ISOLATE THE MONITOR FROM LINE VOLTAGE WITH AN ISOLATION TRANSFORMER.</p>

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard, Viewing Glass, and Monitor Bezel. *Refer to service instructions for the Dashboard, Viewing Glass and Monitor Bezel.*
- Open the rear cabinet door and disconnect the monitor from the wiring harness and ground wires.
- Remove 4 nuts securing the monitor mounting flanges to the mounting panel.
- Pull the monitor carefully from the cabinet and set aside.
- Perform the desired repair or equipment replacement.

To service the Dashboard...

Refer to *Dashboard Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Open the rear cabinet door.
- Label and disconnect all dash wiring, including the ground strap.
- Remove the four screws used to fasten the Dashboard to the cabinet.
- Firmly grab the dash and pull it straight out. **NOTE:** *The Dashboard is heavy, with most of the weight concentrated in the center near the Steering Mechanism.*
- Perform the desired repair or equipment replacement.
- To re-install, line-up the holes on either side of the Dashboard and push straight back.
- Check for pinched wires, and then reconnect dash wiring and ground strap.
- Fasten in place with the screws provided.

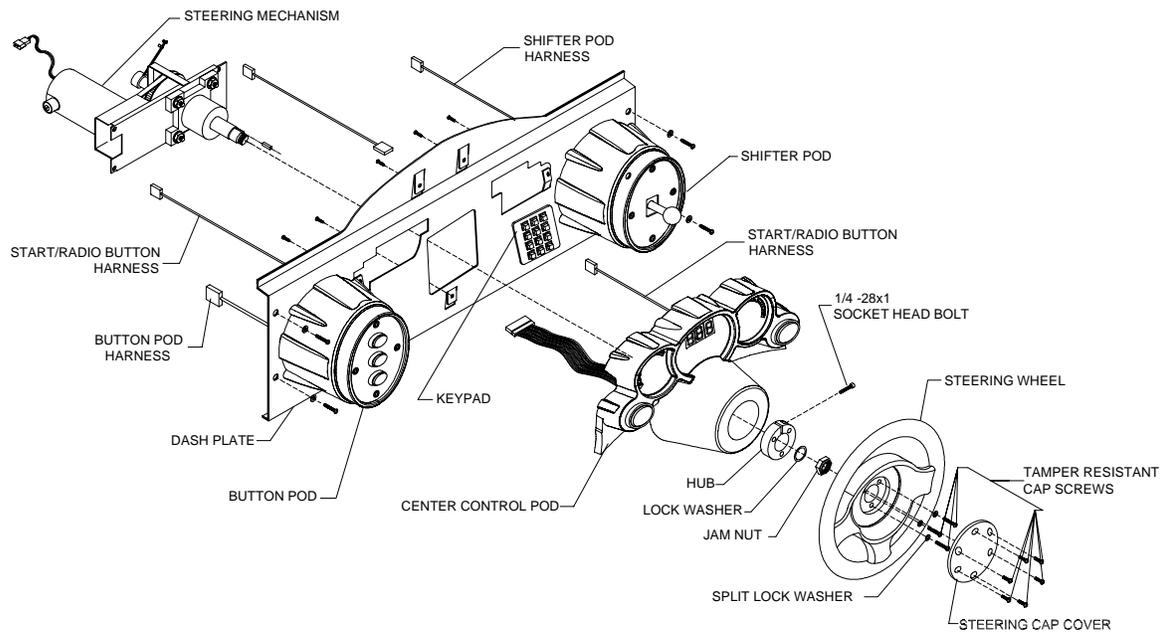


Dashboard Service

To service the Center Control Pod...

Refer to *Center Control Pod Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard. Refer to *service instructions for Dashboard*.
- Disconnect the light bulbs from the sockets for both the Radio and Start buttons, and set aside.
- Remove 5 hex head screws that form the outline of the pod and set aside.
- Lift the Center Control Pod from the Dashboard.
- Perform the desired repair or equipment replacement. **NOTE:** *It may also be necessary to remove the Dash PCB. Refer to service instructions for Dashboard PCB.*
- Re-install and fasten in place with the screws provided.

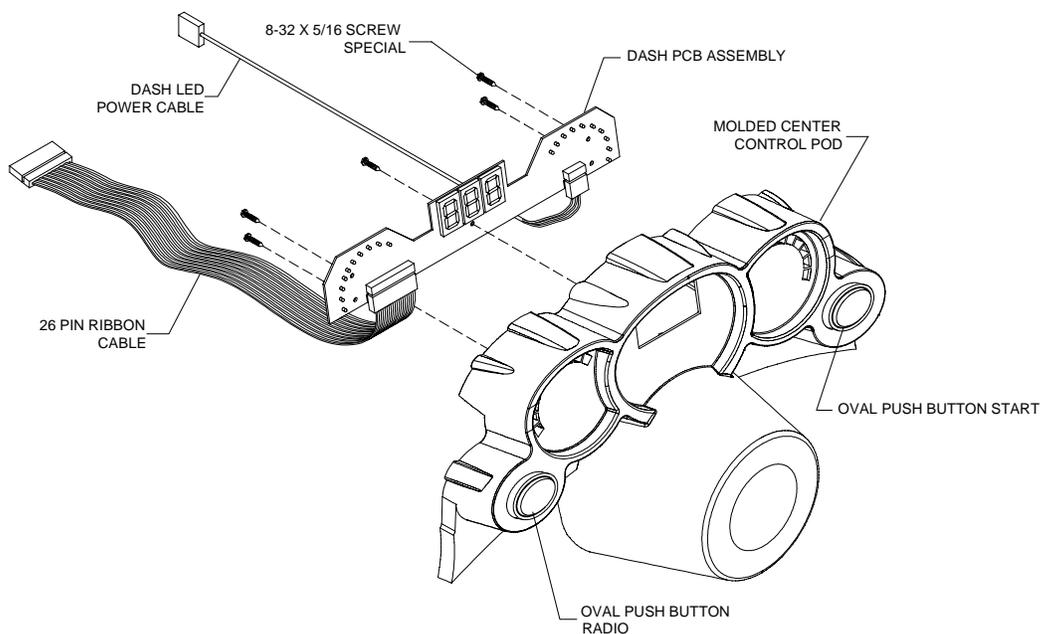


Center Control Pod Service

To service the Dashboard PCB...

Refer to the *Dash PCB Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard and the Center Control Pod. *Refer to service instructions for the Dashboard and the Center Control Pod.*
- With the Center Control Pod removed from the dash, remove 5 hex head screws that are used to fasten the PCB to the pod and set aside.
- Remove the ribbon and power cable connections.
- Perform the desired repair or equipment replacement.
- Connect the ribbon and power cable to a Dashboard PCB. **NOTE:** The red stripe on the ribbon cable must be lined up with pin 1 on the PCB, and the black wire on the power cable must line up with pin 1 on the power connection for the Dashboard.
- Re-attach the PCB to the pod, and then fasten the pod to the dashboard.
- Check for pinched wires.
- Re-install the Dashboard and fasten in place with the screws provided.

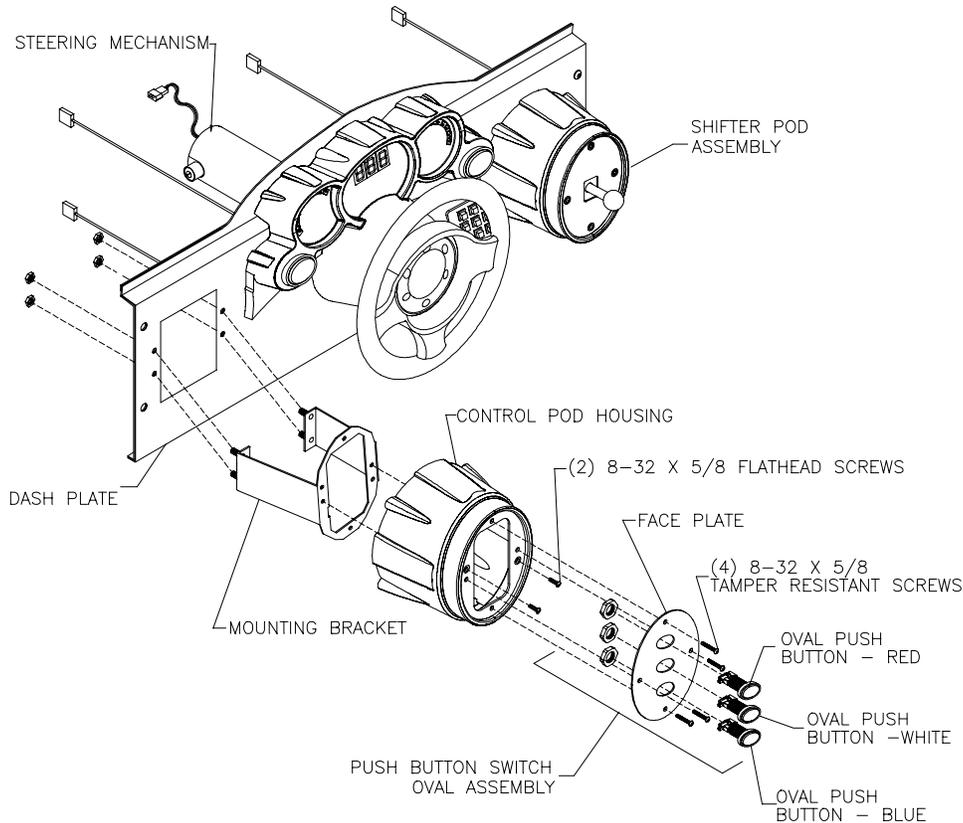


Dash PCB Service

To service the Left or Right Control Pods...

Refer to the *Control Pod, Buttons and Shifter Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the 4 tamper-resistant buttons used to fasten the faceplate.
- Pull the plate forward enough to expose the switches.
- Label and disconnect the wiring for the pod(s) being serviced.
- Lift the buttons or shifter mechanism out of the pod and set aside.
- Remove the 2 hex head screws used to fasten the pod to the dash, and then gently lift the pod off the dashboard.
- Perform the desired repair or equipment replacement.
- Re-install and fasten in place with the screws provided.



Control Pod, Buttons and Shifter Service

To service a Start or Radio Button...

Refer to the *Control Pod, Buttons and Shifter Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard. *Refer to service instructions for Dashboard.*
- Gently remove the bulb(s) from the socket using a rocking motion.
- Perform the desired repair or equipment replacement. **NOTE:** If changing a bulb, simply reseat it in original socket. If repairing a button, unscrew the ring at the base and remove the button.
- Re-install the Dashboard and fasten in place with the screws provided.

To service View Buttons...

Refer to the *Control Pod, Buttons and Shifter Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the 4 tamper-resistant buttons used to fasten the faceplate.
- Pull the plate forward enough to expose the switches.
- Label and disconnect the wiring for the pod(s) being serviced.
- Lift assembly completely out of the pod and set aside.
- Perform the desired repair or equipment replacement.
- Reconnect wires and re-install buttons. **NOTE:** *Insert the left edge of the button plate, then the right edge to fully seat.*
- Check for pinched wires.
- Fasten the faceplate with the screws provided.

To service Shifter...

Refer to the *Control Pod, Buttons and Shifter Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the 4 tamper-resistant buttons used to fasten the faceplate.
- Pull the plate forward enough to expose the switches. **NOTE:** *Pulling the shifter out of the pod requires quite a bit of force.*
- Label and disconnect the wiring for the pod(s) being serviced.
- Lift assembly completely out of the pod and set aside.
- Perform the desired repair or equipment replacement.
- Reconnect wires and re-install shifter. **NOTE:** *Orient the spring mechanism on the bottom edge of the shifter toward the floor and insert in pod followed by the top edge to fully seat.*
- Check for pinched wires.
- Fasten the faceplate with the screws provided.

To service Steering Assembly...

Refer to the *Steering Assembly Service* illustration.

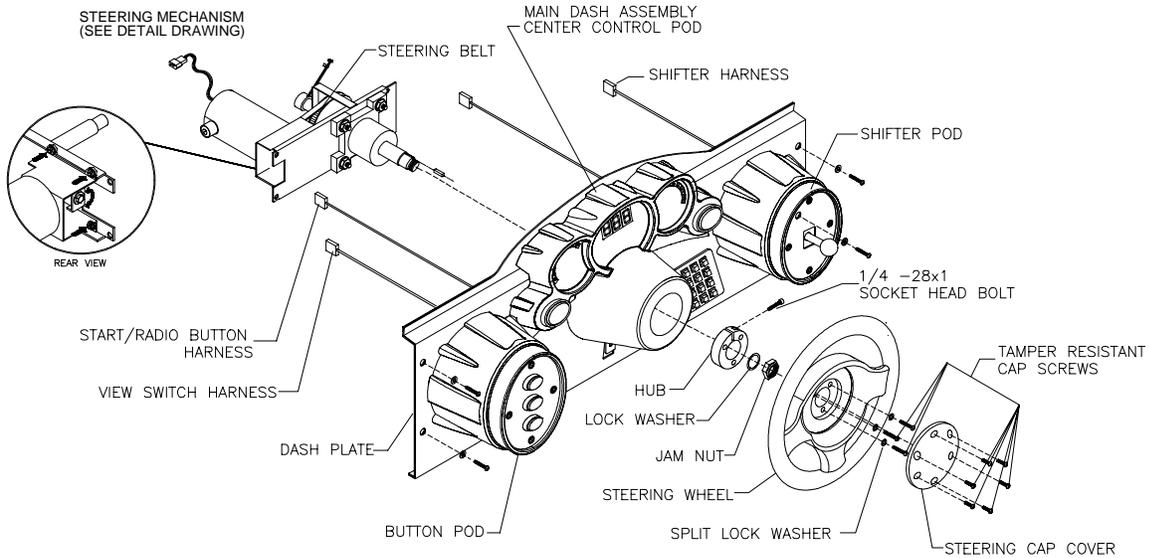
- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard. *Refer to service instructions for Dashboard.*
- Remove 6 screws used to fasten the cover plate to the center of the steering wheel. Remove the cover plate and set aside.
- Remove the 3 screws used to fasten the wheel hoop to the shaft. Pull the wheel hoop off of the dashboard.
- Remove 4 flange nuts holding the motor shield, motor and shaft to the wheel assembly (Presence of motor shield not required on all cabinet styles).
- Slide the motor and the shaft off of the assembly.
- Perform the desired repair or equipment replacement.
- Re-install and fasten all items in place with the screws provided.

While the steering mechanism is exposed, inspect the belt for splits in the rubber or other signs of wear at the edges of the teeth. Install a new belt if necessary following the instructions below.

To service Steering Assembly...

- Loosen four mounting nuts for the motor bracket.
- Tighten the tension-adjust bolt only until there is no belt deflection, then loosen the bolt one full turn and tighten the four nuts.
- Reattach the mechanism and recalibrate the assembly.

IMPORTANT: Apply removable anaerobic adhesive thread lock (Loctite Blue 242 or equivalent) and torque set screw to seven to nine ft.-lbs. (84 to 108 in.-lbs.) if it was loosened (see illustration).

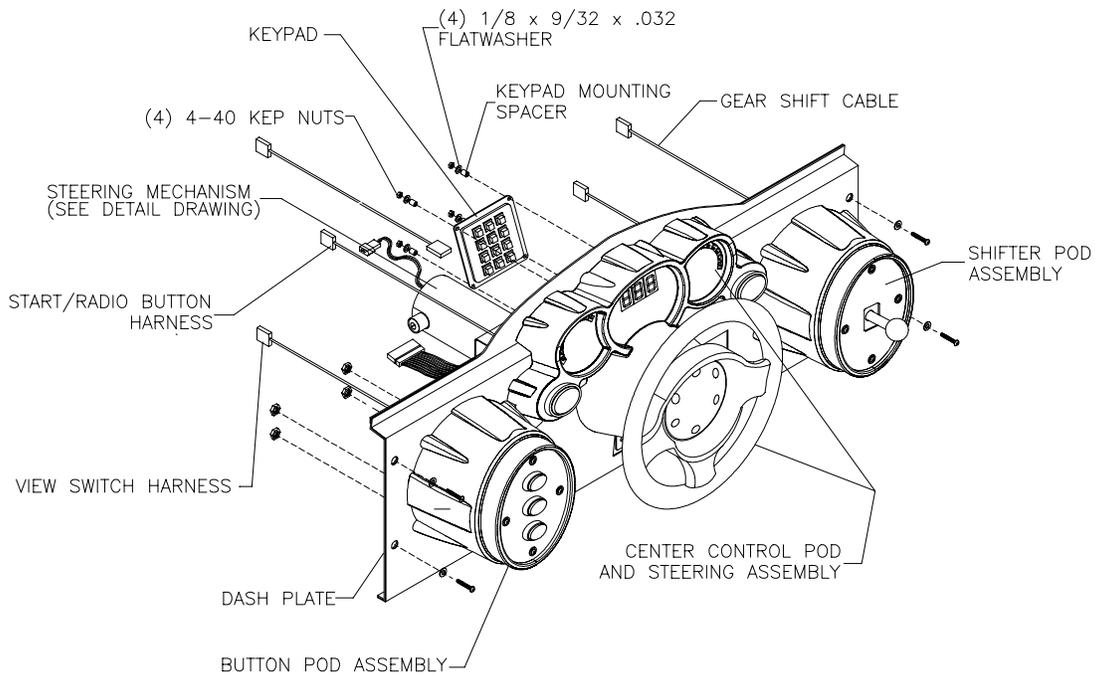


Steering Assembly Service

To service Keypad...

Refer to the *Keypad Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the Dashboard. Refer to service instructions for Dashboard.
- Label and disconnect wiring for keypad.
- Remove the 4 nuts and set of spacers used to fasten the Keypad to the dashboard.
- Lift the keypad out.
- Perform the desired repair or equipment replacement.
- Re-install keypad, seat the spacers and fasten in place with the nuts provided.
- Re-install Dashboard and fasten with hardware provided.



Keypad Service

To service Lower Cabinet Speaker...

This speaker is located just above the pedal assembly.

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear cabinet door.
- Label and disconnect the wiring, including ground strap, to Board assemblies attached to the electronics shelf.
- Remove the screws used to fasten the electronics shelf inside the cabinet, then remove the shelf and set it aside.
- Locate the speaker. Remove the nuts from the mounting screws before removing the speaker from the enclosure.
- Perform the desired repair or equipment replacement.
- Carefully reseal the seals upon completing any task in the speaker enclosure.
- Reconnect the wires, including the ground. Refer to the Cabinet Wiring Diagram for correct speaker polarity.

To service Pedal Assembly...

- Switch off the power to the game machine and unplug the AC line cord.
- Adjust the seat to the maximum rear position.
- Remove 4 tamper resistant screws used to fasten the Pedal assembly to the cabinet.
NOTE: *Due to the weight of the pedal assembly it may slide or abruptly jerk out of the opening once all screws are loosened and/or removed.*
- Pull the assembly forward enough to expose wiring.
- Carefully note the orientation of the cable wiring. Label and disconnect wiring, including ground.
- Perform the desired repair or equipment replacement.
- Re-install pedal assembly and reconnect wiring, including ground.
- Align the holes for the screws and fasten in place with the hardware provided.

To service Coin Meter...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock the cash door and swing it open. Remove the cash tubs.
- The meter is located on a plate at the vault bottom. Remove the screws and lift the plate just enough to disconnect the meter wires from the harness.
- Record the meter count before testing or replacement.
- Perform the desired repair or equipment replacement.

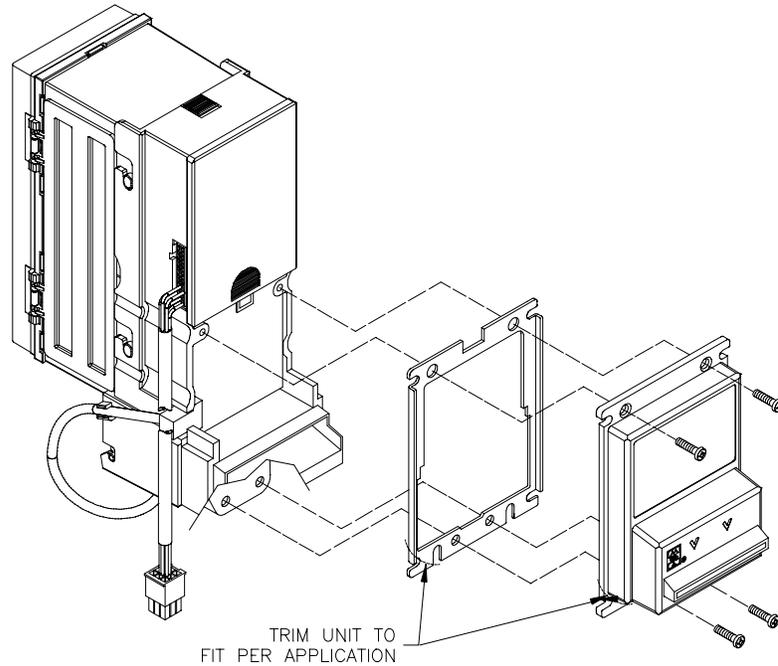
To service Coin Mechanism...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock the coin door and swing it open.
- Unlatch and remove each coin mechanism separately to clean or replace with a different type. Ensure mechanism seats fully in the holder upon reinstallation.
- Close and lock the release latch, then close the door.
- Turn on the game and change the mechanism setup, then test known good and bad coins to verify operation.

To service Dollar Bill Validator...

(Use MARS AE2411-U3 UL recognized currency changer) Dollar bill validators or other currency acceptors may be installed in games that are manufactured with the additional wiring connector. Refer to *Dollar Bill Validator Service Illustration*

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock the coin door and swing it open. Read the label affixed to the door for additional information.
- Disassemble the validator and remove material to permit it to fit inside the coin door as illustrated then reassemble unit.



Dollar Bill Validator Service

To service CPU Board Assembly...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear door.
- Remove the perforated metal cover to expose the CPU Board Assembly.
- Carefully note the orientation of the JAMMA connector and the other cables. Extract the harness and other cables from the board connectors.
- Remove CPU board assembly mounting screws. Lift the board out of the cabinet and set in a safe place. Use anti-static bags and protective containers from new parts for storage if not reinstalled immediately.
- Perform the desired repair or equipment replacement.
- Be certain to reinstall the perforated cover so that it seals tightly against the metal plate.

To service Memory...

The ROM (Read Only Memory) circuits contain the computer operating instructions for this game. *Memory devices are especially sensitive to static charges. Use grounding precautions when handling these parts.*

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear door.
- Remove the perforated metal cover to expose the CPU board assembly.
- Carefully note each IC position, and then remove using a chip extraction tool.
- To install memory circuits, orient a chip over the corresponding socket and press firmly to seat pins. *Do not force.*



CAUTION

Discharge any static electricity built up in your body by touching the chassis for the power supply. Do this **BEFORE** touching or handling the electronic assemblies.

To service the Battery...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear door.
- Carefully note the position, and then gently lift the contact arm to release tension. *Do not bend the arm.*
- Slight finger pressure may be needed to pry the cell from its holder. *Avoid direct shorts across terminals or from terminals to ground.*
- To install a battery, orient cell near its holder and slide it in under the contact arm. *Do not force.*



CAUTION

Danger of explosion if battery is replaced incorrectly. Replace only with the same or equivalent type as recommended by the manufacturer. Dispose of used batteries according to instructions printed on the battery or the manufacturers packaging.

To service Wheel Driver Board Assembly...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear door.
- Remove the perforated metal cover to expose the wheel driver board assembly.
- Carefully note the orientation of the cables. Extract the harness and other cables from the board connectors.
- Remove the wheel driver board assembly mounting screws. Lift the board out of the cabinet and set in a safe place. Use anti-static bags and protective containers for storage if not reinstalled immediately.
- Perform the desired repair or equipment replacement.
- Be certain to reinstall the perforated cover so that it seals tightly against the metal plate.

To service the Power Supply...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear cabinet door.
- Unplug the IEC AC connector from the rear of the supply and the DC connector from the front.
- Remove the two front and two rear screws from the supply, then lift it off of the power chassis. Note voltage setting.
- Perform the desired repair or equipment replacement.
- Be sure to set the voltage switch to the correct value prior to reinstallation.
- Set the supply on the power chassis and align the mounting holes. Install the four screws and the two power connectors.

To service the Transformer...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear door.
- If the power to the Video Game Machine (VGM) was only recently disconnected, the transformer may still be warm. Allow the transformer to cool completely before handling.
- Label and disconnect all wiring, including ground.
- Remove the screws used to fasten the transformer to the base of the cabinet.
- Perform the desired repair or equipment replacement.



DANGER:

High voltage present. Exercise extreme caution while servicing transformer.

To service Fan Assembly...

- Switch off the power to the game machine and unplug the AC line cord.
- Unlock and remove the rear door.
- Remove the perforated metal cover to expose the fan assembly and set aside.
- Unplug the fan power connector from the wiring.
- Remove the screws used to fasten a fan down and then lift fan out.
- Perform the desired repair or equipment replacement.

To service Speakers in Head Rest...

Refer to the *Seat Pedestal Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Remove the tamper resistant screws from the speaker grille.
- Remove the tamper resistant screws used to fasten the speaker plate to the seat and pull forward.
- Label and disconnect wires, including ground.
- Remove the nuts used to fasten the speaker to the plate and remove speaker(s).
- Perform desired repair or equipment replacement.
- Reinstall the speaker(s) to the speaker plate and reattach wiring, including ground. Attach the speaker plate to the seat.
- Reinstall speaker grille and fasten in place with hardware provided.

To service Speaker in Seat Back...

Refer to the *Seat Pedestal Service* illustration.

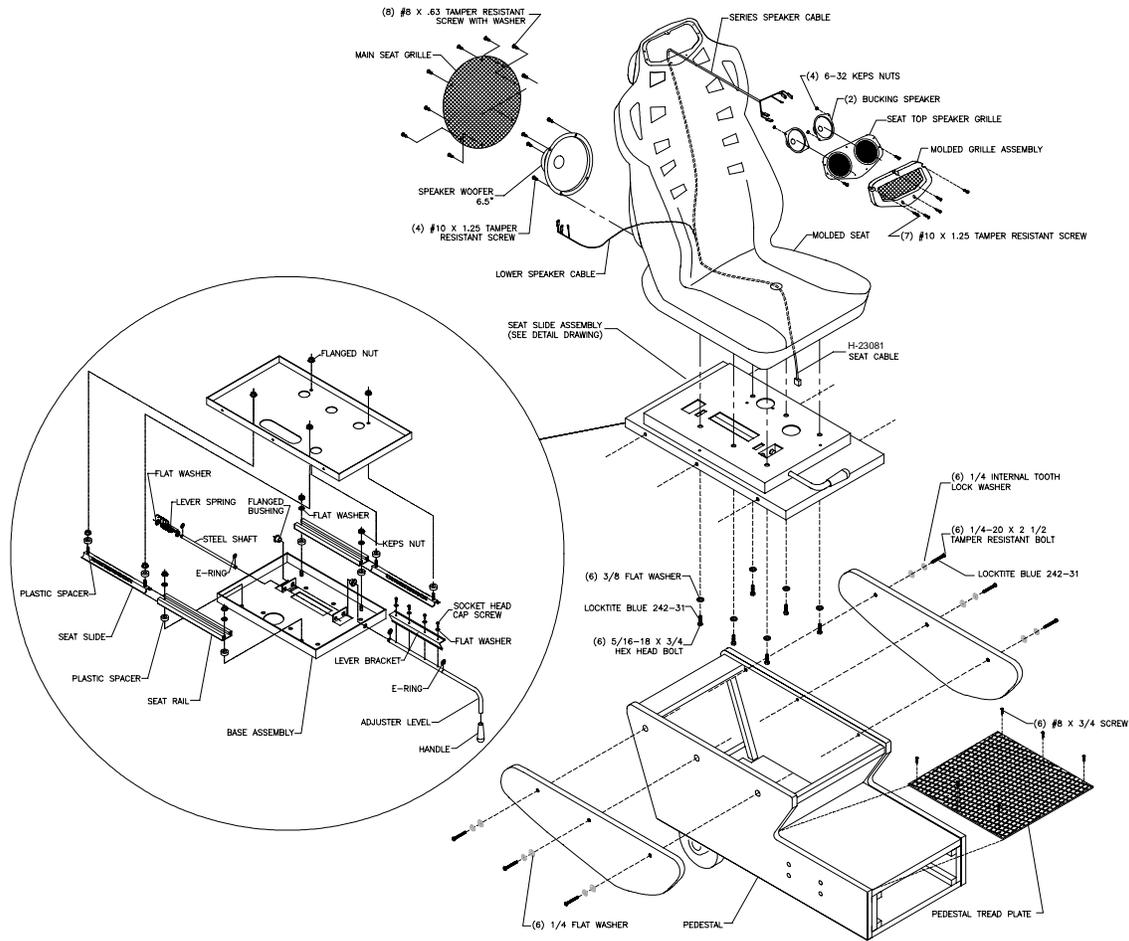
- Switch off the power to the game machine and unplug the AC line cord.
- Remove the tamper resistant screws used to fasten the grille to the seat and pull forward.
- Label and disconnect wires, including ground.
- Remove 4 Philips head screws used to fasten the speaker to the seat and remove speaker.
- Perform desired repair or equipment replacement.
- Reinstall speaker and reattach wiring, including ground.
- Reinstall speaker grille and fasten in place with hardware provided.

To service the Seat Assembly...

The Seat Assembly includes the pedestal base. Refer to the *Seat Pedestal Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Disconnect the Seat Assembly from the cabinet by removing 8 tamper resistant screws used to fasten the assembly to the slide rails in the cabinet.
- Slide the Seat Assembly halfway back along the rails to expose wiring.
- Disconnect the speaker cable and slide the seat the rest of the way off the rails.
- Remove 3 tamper resistant screws from each side of the seat mounting plate. Lift the seat and mounting plate assembly off the pedestal.
- Place the seat on its back, on a flat surface. Perform the desired repair or equipment replacement.
- Reinstall using the hardware provided.

IMPORTANT: Apply removable anaerobic adhesive thread lock (Loctite Blue 242 or equivalent) and torque each bolt to seven to nine ft.-lbs. (0.7 to 1.0 Nm) if it was loosened (see illustration).



Seat Pedestal Service

To service the Seat Slide Assembly...

Refer to the *Seat Pedestal Service* illustration.

- Switch off the power to the game machine and unplug the AC line cord.
- Disconnect the Seat Assembly from the cabinet by removing 8 tamper resistant screws used to fasten the assembly to the slide rails in the cabinet.
- Slide the Seat Assembly halfway back along the rails to expose wiring.
- Disconnect the speaker cable and slide the seat the rest of the way off the rails.
- Remove 3 tamper resistant screws from each side of the seat mounting plate. Lift the seat and mounting plate assembly off the pedestal and set aside.
- Slide the seat assembly forward, and remove the two tamper resistant screws from the rear of the metal panel on top of the pedestal assembly.
- Slide the seat assembly backward and remove the two tamper resistant screws from the front of the metal panel.
- Lift the metal panel out of the pedestal base and turn the unit over.
- Remove the four nuts holding the metal panel to the slide assembly. Set the metal panel aside and slide assembly is exposed.
- Perform the desired repair or equipment replacement.
- Reinstall by performing the steps in reverse and fasten in place using the hardware provided.

IMPORTANT: Apply removable anaerobic adhesive thread lock (Loctite Blue 242 or equivalent) and torque each bolt to seven to nine ft.-lbs. (0.7 to 1.0 Nm) if it was loosened (see illustration).