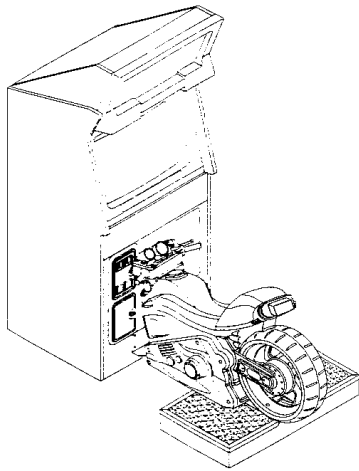




APRIL 1999  
16-30025.1-101

# ROAD BURNERS™



## DEDICATED GAME 27" (68 cm) COLOR MONITOR OPERATION MANUAL

Operation & Adjustments • Testing &  
Problem Diagnosis  
Parts Information • Wiring Diagrams



### WARNINGS & NOTICES

#### WARNING

USE OF NON-ATARI PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY ATARI AUTHORIZED PARTS.

\* For safety and reliability, substitute parts and modifications are not recommended.

\* Substitute parts or modifications may void FCC type acceptance.

\* Use only authorized components and parts. Failure to do so will void warranty and may result in incorrect and/or unsafe operation.

\* This game is protected by federal copyright, trademark and patent laws. Unauthorized modifications may be illegal under federal law. This also applies to ATARI logos, designs, publications and assemblies. Moreover, facsimiles of ATARI equipment (or any feature thereof) may be illegal under federal law, regardless of whether or not such facsimiles are manufactured with ATARI components.

Look on our Website for more information. <http://www.atarigames.com>

# DECLARATION OF CONFORMITY

## ATARI GAMES CORPORATION

675 SYCAMORE DRIVE  
MILPITAS, CA 95035 USA

WE HEREBY DECLARE UNDER SOLE RESPONSIBILITY  
THAT THE FOLLOWING PRODUCT

**Product Type:** Amusement Machine  
**Description:** Coin Operated Video Game (Road Burners)  
**Model Number:** 30225, 30425, 31025, 31425, 32025

**Manufacturer:** Atari Games Corporation  
675 Sycamore Drive  
Milpitas, CA 96035 USA

CONFORMS TO THE FOLLOWING EUROPEAN DIRECTIVES

**ELECTROMAGNETIC COMPATIBILITY DIRECTIVE**

89/336/EEC and Amendments 91/C162/08, 92/331/EEC, 93/68/EEC

**LOW VOLTAGE EQUIPMENT DIRECTIVE**

73/336/EEC and Amendments 88/C168/02, 92/210/01, 93/68/EEC, 94/C199/03, 95/C214/02

AND IS VERIFIED BY COMPLIANCE  
WITH THE FOLLOWING PRODUCT STANDARDS

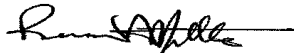
EN 60335-1: 1994, SAFETY: IEC 335-2-82: 1998 (DRAFT)

EN 55081-1: 1992, EMISSIONS: EN55022: 1995

EN 50082-1: 1992, IMMUNITY: EN61000-4-2: 1992  
EN61000-4-3: 1996  
EN61000-4-4: 1995

**Date Issued:** April 30, 1999

**Signature:**



Richard A. Meyette, P.E.  
Atari Games Corporation

## MISCELLANEOUS

### 1. Marquee fluorescent lamp is intermittent or non-functional. Game starts and plays normally.

- A: Remove the marquee housing and the glass. Remove the fluorescent tube from the holders. Install a new lamp if cracks or darkened ends are found. Clean the tube before reinstallation.
- B: Verify that the lamp and starter pins are making good connection with their socket contacts.
- C: Measure the Fluorescent Lamp Assembly A.C. voltages (Power Wiring Diagram, Section Three). Check wiring and connector continuity from the Power Supply connector to the Lamp Assembly. Verify the fluorescent lamp cable is tightly plugged into the power supply A.C. output connector.
- D: Ensure that the Fluorescent Lamp Ballast is rated for the local A.C. line voltage and frequency.  
*NOTE: Electronic Fluorescent Lamp Ballasts operate on most voltages without any changes.*
- E: Check for continuity of both fluorescent lamp filaments, the starter, and the ballast. One at a time, verify that the lamp, starter, and ballast operate by placing each in a known good unit.

### 2. Game operates normally, but fans are noticeably noisy.

- A: Check bottom and rear of cabinet for blocked air flow. Move game away from sources of heat.
- B: Turn OFF the game power. Apply high power vacuum cleaner to vent holes to remove dust.
- C: Inspect the Power Supply while it is operating. Unlock and remove the rear door. Remove the Electronics Assembly cover. Locate and replace defective fans.

### 3. Game plays normally, then resets after a period of time.

- A: Check the fan assemblies on the Game Electronics. Make sure each is connected to D.C. power.
- B: Check the cabinet and Electronics Assembly ventilation holes for obstructions. Clear obstructions and allow the ventilation holes access to fresh, cool air.
- C: Measure the +5VDC level at the hard disk drive power connector. Change the power supply output voltage adjustment, if necessary, to maintain the voltage within the range specified in the D.C. Power Source Voltage Limits table in Section 3.

### 4. Error Messages appear on the screen. The game does not start and there is no audio.

- A: Check any assembly (RAM, ROM, Battery, etc.) identified in the Error Message.
- B: Call your authorized distributor for help with unresolved screen messages.

### 5. Leader Light does not light for race leader.

- A: Remove marquee housing and the glass. Check and replace #93 lamp as required. Operation of lamp may be verified using the controls section tests as described in section one.
- B: Check D.C. fuse and wiring, insure all connectors are seated and correctly connected.

# ROAD BURNERS™

## SECTION ONE

### OPERATION

**NOTICE**

Information in this manual is subject to change without notice. ATARI reserves the right to make improvements in equipment function, design, or components as progress in engineering or manufacturing methods may warrant.

Fill out and mail in the Game Registration card. Include the game serial number from the label on the rear of the cabinet. For your records, write the game serial number in the manual. SERIAL NUMBER \_\_\_\_\_

## **SAFETY NOTICES**

The following safety instructions apply to all game operators and service personnel. There are specific warnings and cautions throughout this manual where they apply. Read this page before preparing your game for play.

---

## **CAUTION**

**HARD DISK DRIVE.** The hard disk drive must be packed in an anti-static bag. The disk drive assembly must be packed in an approved shipping container (P/N 08-8068) in order to be sent in for repair or replacement. Do not stack or drop hard disk drives during installation or removal.

**TRANSPORTING GAME.** This game contains glass and fragile electronic devices. Transport this game securely. Avoid rough handling when moving cabinet. Do not move this game with power on.

**AC POWER CONNECTION.** Verify that the switch on the power supply is set for 110VAC or 220VAC according to local line voltage. Verify that the fluorescent lamp assembly is correct for local line voltage.

**PROPERLY GROUND THE GAME.** To avoid electrical shocks, do not plug in the game until it has been inspected and properly grounded. This game should only be plugged into a fixed-location grounded 3-wire outlet. Do not use a "cheater" plug or cut off the ground pin on the line cord.

**POTENTIAL SHOCK HAZARD.** This video game system does not utilize an isolation transformer. There is no isolation between the internal cabinet AC system and the external AC line.

**DISCONNECT POWER DURING REPAIRS.** To avoid electrical shock, turn off the power switch and disconnect the game from the AC power source before removing or repairing any part of the game. After servicing any parts of the unit, be sure that all of the ground wires are secure before restoring power.

**PROPERLY ATTACH ALL CONNECTORS.** Be sure that the connectors on each printed circuit board (PCB) are properly connected. If they do not slip on easily, do not force them. A reversed connector may damage your game and void the warranty. Connectors are keyed to fit specific pins on each board.

**USE PROPER FUSE.** To avoid electrical shock, all replacement fuses must match the type, voltage rating, and current rating of the original fuse.

**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.

---

## **EPILEPSY WARNING**

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.

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.

Parents should 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.

---

---

## PRODUCT SPECIFICATIONS

### Operating Requirements

<u>Location</u>	<u>Electrical Power</u>	<u>Temperature</u>	<u>Humidity</u>
Domestic	120VAC @ 60Hz 4.0 Amps	37°F to 100°F	Not to exceed 95% relative
Foreign	230VAC @ 50Hz 2.0 Amps	(3°C to 38°C)	
Japan	100VAC @ 50Hz 4.0 Amps		

### Cabinet Statistics

<u>Shipping Dimensions</u>	<u>Shipping Weight</u>	<u>Design Type</u>
Width 33" ( 84 cm)	325 lbs. (146 kg.)	Sit-on Style Dedicated Video Game with Linking capability
Depth 34" ( 86 cm)		
Height 76" (192 cm)		

### Seat Statistics

<u>Shipping Dimensions</u>	<u>Shipping Weight</u>
Width 39" (99 cm)	225 lbs. (101 kg.)
Depth 58" (147 cm)	
Height 42" (107 cm)	

### Equipment Characteristics

<u>Video Display Monitor</u>	<u>Audio System</u>	<u>Currency Acceptors</u>
VGA Resolution 27" (68.5 cm) CRT	2 Channel Audio 2 Full Range Speakers 1 Seat Woofer	Standard Coin Door 2 Coin Mechanisms, DBV ready 1 Coin Counter

### Game Characteristics

<u>Player Variables</u>	<u>Operator Variables</u>	<u>Diagnostics</u>
1 to 8 players per game (with Linking) Choice of Vehicle	Coinage, Play Mode, Difficulty, Volume, Audits, Statistics	Automatic Power-Up Test Manual Multi-Level Menu System

---

---

## PRODUCT CONFIGURATION

### ◆ Stand Alone Units

Each game is ready to play right out of the box. Operators may use the menu screens in the game menu system to determine some player variables in advance or leave the choices up to the players.

### ◆ Linked Units

Linking allows players to compete against each other. Operator menus are the same as in stand-alone games. Crossover Couplers (included in the spare parts) connect together two cabinets. Use the Hub Linking Kit to interconnect from three to eight cabinets.

---

---

## MAINTENANCE

### ◆ Viewing Glass

It is not necessary to switch off the power to the game to clean the glass. Apply a mild glass cleaner to a clean cloth or sponge, then use this to wipe the viewing glass. **Do not apply the cleaner directly on the glass!** Liquid could drip down into the game circuits and cause erratic operation.

### ◆ Cabinet

Use plastic-safe non-abrasive cleaners to avoid damage. Apply cleaner to a clean cloth or sponge, then use this to wipe the controls or cabinet. **Do not apply cleaner directly on controls or cabinet!**

## INSTALLATION AND INSPECTION

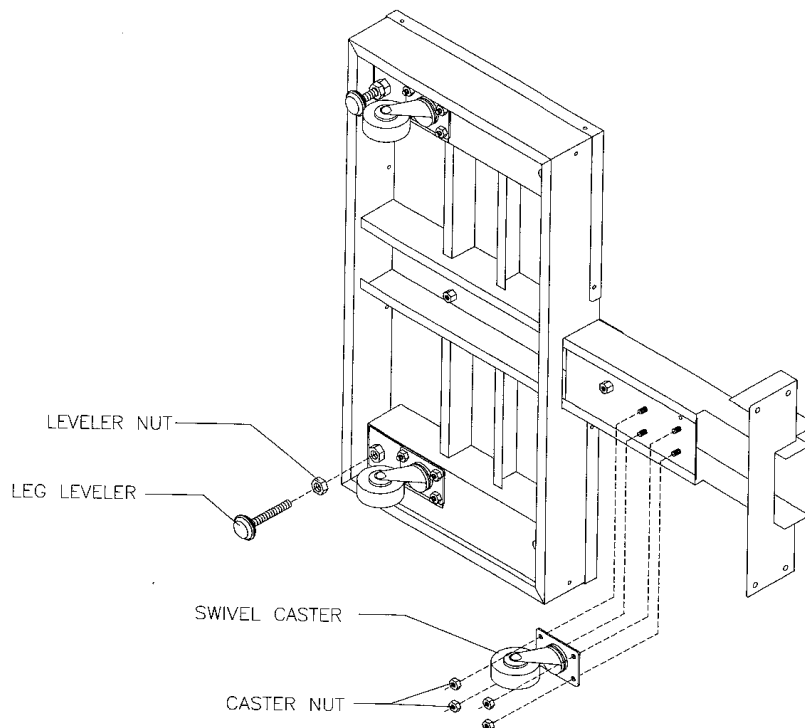
**Note:** The game cabinet is packed separately from the seat assembly. Assemble the pieces and then attach them together. Setup requires two persons.



### DANGER

The cabinet is top-heavy. Use caution when tilting it to install the levelers.

1. Unpack the seat assembly. Remove the strapping from the box, lift the cover and side walls away from the bottom of the box. Remove the strapping holding the seat mechanism to the shipping pallet. Lift the seat mechanism from the pallet with the help of another person.
2. Unpack the cabinet assembly. Remove the strapping from the box, lift the cover and side walls away from the bottom of the box. Packed within the cabinet assembly box is the spare parts box.
3. Open the spare parts box and find the casters and leg levelers. Have one person tilt and hold the seat mechanism sideways while the other installs the casters and leg levelers.



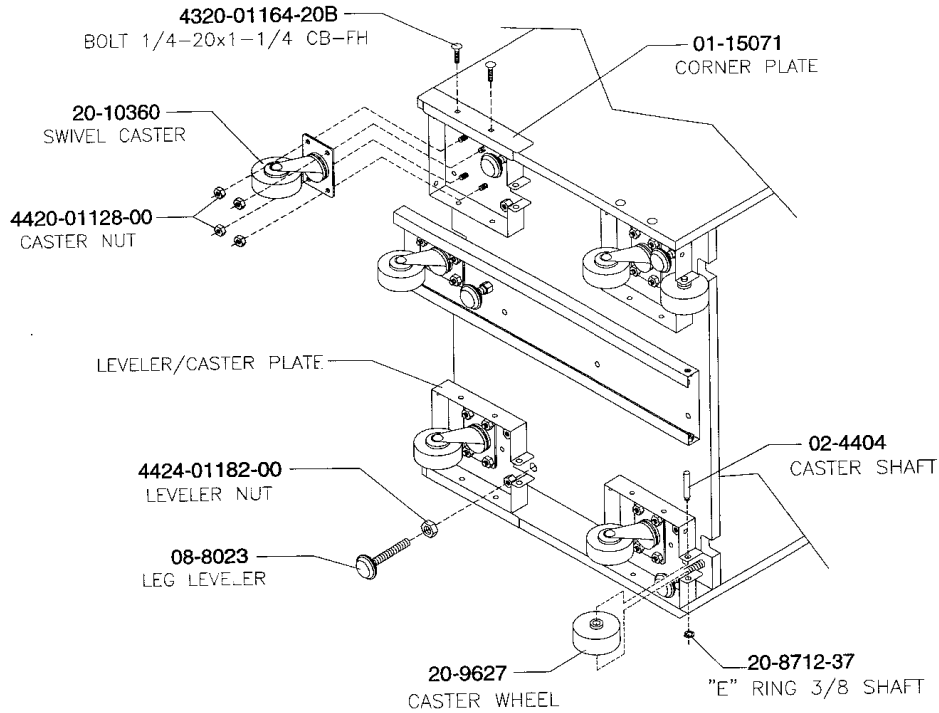
### CASTER AND LEVELER INSTALLATION ON SEAT ASSEMBLY

4. Install a locknut on each leg leveler and turn each into the threaded nut on the bottom of the seat assembly. Attach a caster to each set of threaded studs using the keps nuts.
5. Return the seat mechanism to an upright position and roll it to its intended location.

**DANGER**

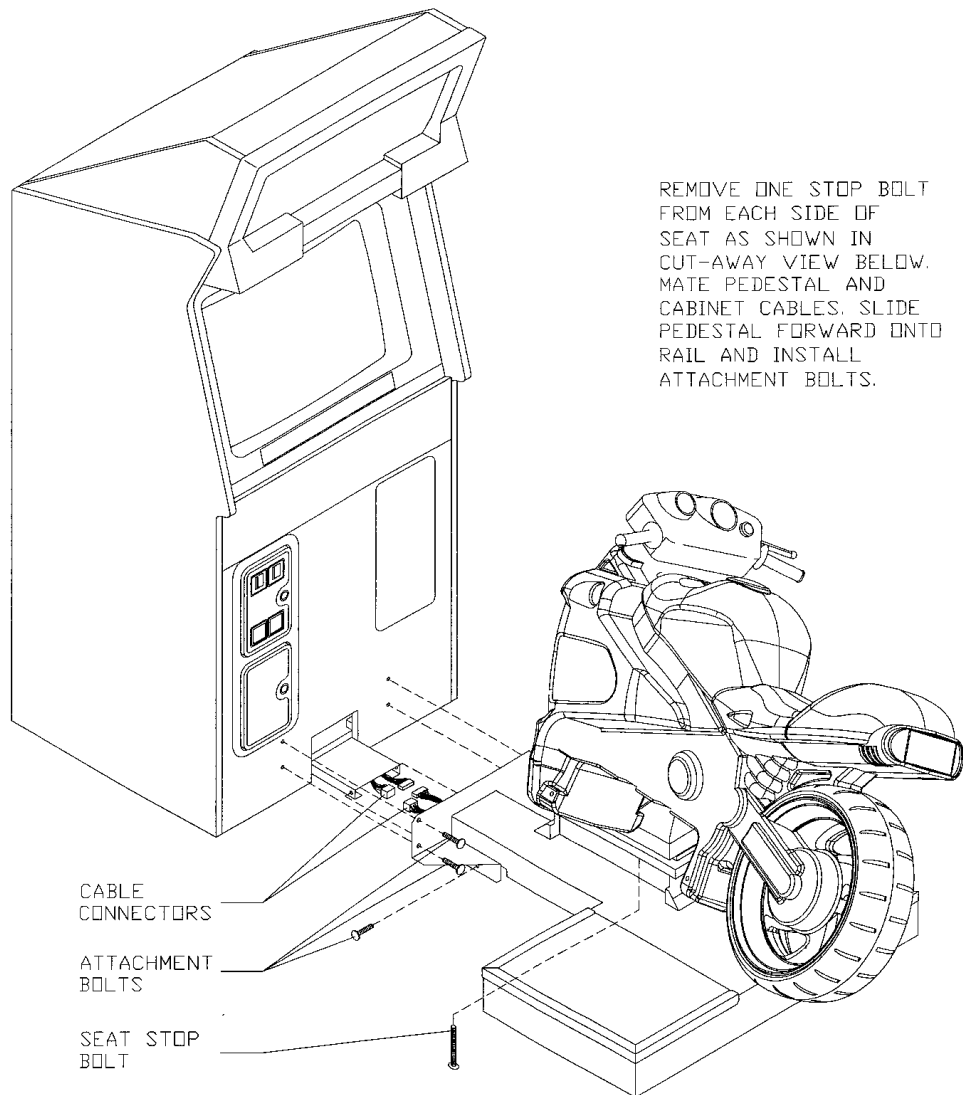
The cabinet is top-heavy. Use caution when tilting to install levelers.

6. Have one person tilt and hold the cabinet assembly sideways while another installs the casters and leg levelers on the cabinet assembly. Install a locknut onto each leg leveler before turning it into the threaded inserts on the cabinet bottom. Attach a caster to each set of threaded studs using keys nuts. Roll the cabinet assembly to its intended location.

**CASTER AND LEVELER INSTALLATION ON CABINET ASSEMBLY**

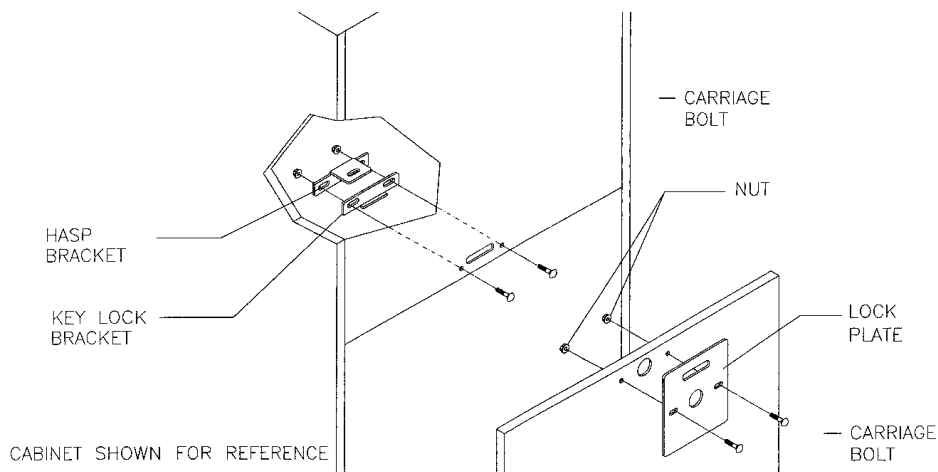
7. Move the front of the seat assembly toward the front of the cabinet assembly and connect the wiring harnesses (refer to the following page). The connectors are keyed. *Do not force any connector!*
8. Lower the leg levelers on the cabinet and seat assemblies until the cabinet and seat mechanism lift up off of the casters. Align the mounting holes in each part with one another. This game is intended for use only in a fixed position. Distribute weight equally on each leveler and tighten the locknuts.
9. Remove the keys from the handle at the top of the cabinet assembly and open the cash door. The spare parts bag containing the seat mounting hardware and electrical is in the cash box.
10. Use the T-27 tamper-resistant bolts with lock washers to attach the seat assembly to the cabinet assembly. Start by inserting and tightening the bolts at the bottom of the seat assembly, then insert and tighten the ones toward the top.





#### SEAT INSTALLATION AND STOP BOLT REMOVAL

11. Remove the stop bolts on each side at the bottom of the seat assembly. Check the seat for freedom of movement. Save the stop bolts for later reinstallation when the game is moved to another location.
12. Inspect cabinet interior for any signs of damage. Check all major assemblies to assure that they are mounted securely. Ensure that nothing blocks fan airflow.



### HASP BRACKET AND LOCK PLATE ASSEMBLY INSTALLATION

13. An extra padlock may be installed to secure the rear door. A hasp is located in the spare parts bag. Remove the screws holding the cabinet rear door, unlock it, and remove it. Remove the two lock bracket nuts from inside the cabinet, above the rear door opening. Slide the hasp onto the bolts so that it protrudes from the hole in the back of the cabinet, then reinstall the nuts.
  14. Modify the lock plate at the top of the rear door. Remove the bolts and nuts from the lock plate, then rotate the plate so that the slot will be above the door. Reinstall the bolts and nuts and tighten firmly.
  15. Refer to the game's Cabinet Wiring Diagram (Section Three of this manual). Inspect for damaged connectors. Be sure NOT TO FORCE CONNECTORS and avoid making reversed connections.
  16. Plug the game into a grounded (3-terminal) AC wall outlet. Switch ON the game using the power supply switch located at the cabinet rear. The game will power up and begin self-diagnostics. If there are no errors, the game will automatically enter its "attract" mode of operation.
  17. Open the coin door and press the TEST button to activate the self-test menu system. Select CONTROLS TEST. Calibrate the seat, throttle, and steering mechanisms according to the on-screen instructions. Test each switch following the instructions on screen. Return to the main menu screen and select EXIT TO GAME.
  18. Close and lock the coin, cash, and rear cabinet doors. Remove the plastic film from the seat pedestal edges. Sit on the bike seat and lean to the maximum left and right side to check for clearance.
- WARNING: Bike handgrips and riders may collide during game play if the cabinets are not spaced away from one another, walls, or other games!**
19. Multiple cabinets should be attached together to form a game array. Each cabinet comes with its own metal divider panel and mounting hardware to mechanically connect the pedestals.
  20. Place a divider panel in between two pedestal bases. Align the mounting holes. Install a lockwasher and a flat washer onto each of the tamper resistant screws. The screws and washers may already be installed in the pedestal bases. In this case, remove the screws and washers before placing the divider in place. Insert one screw into each mounting hole and tighten it firmly.

## SERVICE

Only qualified service personnel should perform maintenance and repairs. The product guidelines apply to all game operators and service personnel. There are specific notes, cautions, and warnings throughout this manual where they apply. Read the SAFETY pages thoroughly before beginning service.

This game uses complex electronic components that are very SENSITIVE to static electricity. Observe and follow these precautions prior to handling the game electronics:

1. Ensure that the A.C. power to the game is turned OFF prior to servicing the electronics.
2. Discharge any static electricity build up in your body by touching the metal power supply chassis. Do this BEFORE touching or handling the electronic assemblies.
3. Store the electronic assemblies in an anti-static area. Use anti-static bags to store or transport the hard disk drive, the CPU Board Assembly, and all other electronics.
4. DO NOT remove or connect any electronic assemblies when the cabinet power is ON. Doing so will damage the electronic assemblies and void the warranty.
5. Always replace ground wires, shields, covers, etc., when maintenance or service is completed.

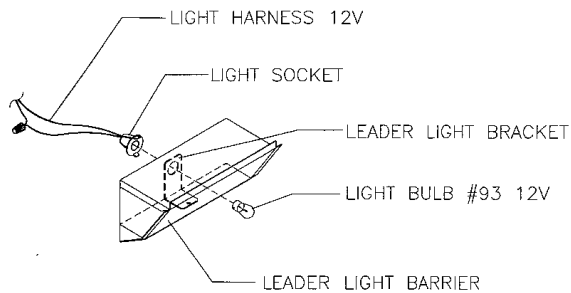
### ◆ Marquee Housing and Leader Light

Remove three tamper-resistant screws from the top of the marquee housing. Remove two screws on the bottom of the housing and pull it forward to separate it from the cabinet. Remove three hex-head screws from the marquee retaining strip while holding the glass in place. Lift the retaining strip to remove it from the marquee glass and cabinet assembly. Lift the glass away from the cabinet to expose the Leader light box. Push in and turn the Leader light bulb one-quarter turn counterclockwise to remove it. Clean the marquee glass and leader bulb before replacing the marquee.



#### WARNING

The marquee glass could fall out of the cabinet and break when the retaining strip is removed. Hold the glass in place until it can be removed.



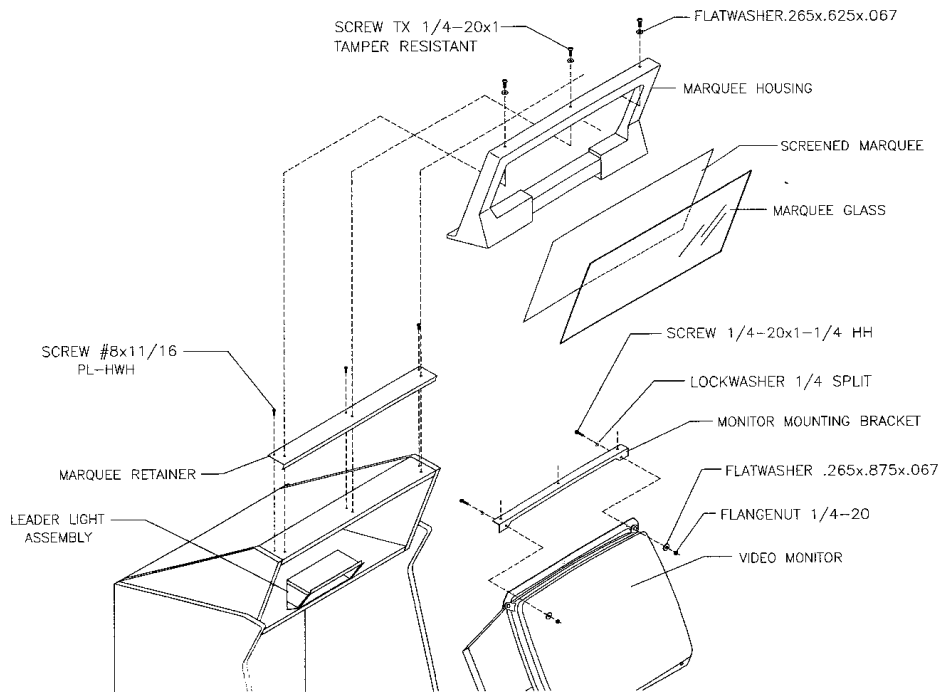
LEADER LIGHT ASSEMBLY

### ◆ Viewing Glass

Remove the marquee housing as described above. Slide the glass the glass up and swing it outward until it is free from the cabinet. Store the glass in a safe place until it is reinstalled.

### ◆ Fluorescent Lamp

Remove the marquee housing, retaining strip, glass, and artwork. Grasp the tube, give it a quarter turn and pull it from its sockets. Carefully place a new tube into the socket and rotate it a quarter turn to reinstall. Clean the tube to remove fingerprints and dust.



**MARQUEE ASSEMBLY**



**WARNING**  
**If a fluorescent tube drops and breaks, it will implode and shatter glass!**  
**Use care in handling.**

◆ **Fluorescent Light Assembly**

Remove the marquee housing, retaining strip, glass, and artwork. 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.

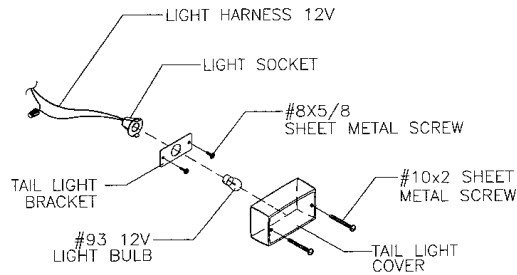
◆ **Speakers**

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

Two full range speakers mount in the cabinet front. One woofer is mounted in the seat assembly.

Remove the speaker grille. The game speakers come out from the front of the cabinet. Remove the top two screws first, then remove the others and lift the speaker out. Mark the wires and disconnect them. Carefully reseal the screws (*do not over tighten!*) upon completing any task in a speaker enclosure. Refer to the Cabinet Wiring Diagram for correct speaker polarity.

To remove the woofer, remove the speaker cover on the front of the seat assembly. Remove the top two screws first, then remove the others and lift the speaker out. Mark the wires and disconnect them. Carefully reseal the screws (*do not over tighten!*) when reinstalling the speaker.



#### TAIL LIGHT ASSEMBLY

##### ◆ Tail Light Assembly

Remove two screws holding the tail light cover. Lift the cover off and set it aside. Press the bulb in and turn counterclockwise a quarter turn to remove it. To remove the lamp socket, remove two tamper-resistant screws from the tail light bracket and pull the assembly away from the seat. Mark and remove the wires from the socket. Press the sides of the socket to release it from the mounting bracket. Upon reinstallation, do not overtighten screws.

##### ◆ Steering Mechanism

Use a T-25 tamper-resistant wrench to remove the screws and washers holding the steering mechanism cover in place. Lift the cover from the steering mechanism. Turn the steering mechanism fully left and hold it. Remove the bottom right mounting screw through the hole in the base of the steering mechanism below the throttle potentiometer. Return the steering mechanism to its center position and remove the remaining three screws. Carefully lift the mechanism upwards to separate it from the seat assembly and expose the wiring connectors. Mark and disconnect the wiring harness.

##### ◆ Steering Mechanism Potentiometer

Remove the steering mechanism cover. Mark and disconnect the potentiometer wiring harness. Use a 7/16" wrench to remove the nut and lockwasher holding the potentiometer mounting bracket to the steering mechanism. Slide the mounting bracket upward slightly to disengage the pinion gear from the steering mechanism gear. Lift the mounting bracket away from the steering mechanism. Use a hex-key wrench to loosen the set screw holding the pinion gear to the potentiometer shaft. Lift the gear off of the potentiometer shaft. Remove the potentiometer nut and washer.

NOTE: Upon reinstallation, it is very important to make sure that the potentiometer pinion gear mates completely with the steering mechanism gear. Set the potentiometer to the center of its rotation before mating the gears. Any other position may impair calibration and operation.

##### ◆ Steering Mechanism Gear

Remove the steering mechanism cover. Remove the steering mechanism potentiometer, but do not disconnect it from its mounting bracket or disconnect its wiring connector. Use a hex-key wrench to loosen the steering mechanism gear set screw, then pull upward on the gear to remove it from the steering mechanism shaft.

NOTE: Upon reinstallation, it is very important to make sure that the potentiometer pinion gear mates completely with the steering mechanism gear. Set the potentiometer to the center of its rotation before mating the gears. Any other position may impair calibration and operation.

##### ◆ Hand Brake Return Spring

Use a T-25 tamper-resistant wrench to remove the screws and washers holding the steering mechanism cover in place. Lift the cover from the steering mechanism. Use pliers to lift the upper end of the spring from the brake lever post retainer. Lift the spring upward to remove it.

◆ **Throttle Control Potentiometer**

Remove the steering mechanism cover. Use a hex-key wrench to remove the set screw from the potentiometer shaft. Pull the potentiometer with its mounting bracket from the throttle control arm. Separate the potentiometer from the mounting bracket by removing the hex nut holding it in place. Mark and disconnect the potentiometer.

◆ **Throttle Return Spring and Handle**

Use a T-25 tamper-resistant wrench to remove the screws and washers holding the steering mechanism cover in place. Lift the cover from the steering mechanism. Use pliers to relieve the spring tension by lifting one end of the spring away from its retainer. Remove the E-ring from the inner end of the throttle handle shaft. Pull the throttle handle away from the steering mechanism to free the spring and remove the handle.

◆ **Hand Brake Switch**

Use a T-25 tamper-resistant wrench to remove the screws and washers holding the steering mechanism cover in place. Mark and disconnect the wires to the hand brake switch. Use a screwdriver to remove the switch mounting screws and lift the switch from the mechanism. Upon reinstallation, ensure that the switch actuator mates correctly with the hand brake shaft. Install the longer switch mounting screw in the bottom mounting hole of the switch.

◆ **Start and Music Buttons/Switches**

Open the cover of the steering mechanism to expose the switches. Label and disconnect switch wires. Separate the switch from its push-button. Bend the large prong away from the switch just enough to slide the switch off the housing. Unscrew the switch mounting nut and pull the entire pushbutton out from the front of the panel.

◆ **Seat Assembly Potentiometer**

Use a T-25 tamper-resistant wrench to remove the screws and washers holding the lower left side seat assembly molding. Loosen the set screw holding the potentiometer shaft to the pivot mechanism retainer. Slide the potentiometer with its mounting bracket forward to disengage it from the pivot mechanism retainer. Mark the potentiometer wires and disconnect them. Remove the nut and washer holding the potentiometer to the mounting bracket. Upon reinstallation, slip the potentiometer shaft into the pivot mechanism retainer and insert the mounting bracket stud into its mounting hole. The potentiometer shaft and pivot mechanism retainer are keyed. Tighten the set screw securely.

◆ **Coin Meter**

Switch off power to the game. Unlock the cash door and swing it open. Remove the cash tubs. The meter is located on lower right corner of the door opening. Insert a finger through the hole and locate the wires. Disconnect wiring at the connector. Remove the screws from the front. Record the meter count before testing or replacement. Ensure that the replacement has a voltage suppression diode.

◆ **Coin Mechanism**

Switch off power to the game. Unlock the coin door and swing it open. Unlatch and remove each coin mechanism separately to clean or replace with a different type. Ensure that 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.

◆ **Monitor Bezel**

Remove the viewing glass. Grasp the monitor bezel at the bottom and lift it up and out of the cabinet. Remove the bezel from the cabinet. Reinstall the bezel with the labels oriented so they can be read.

◆ **Monitor**

*Read these precautions thoroughly before beginning this procedure.*



**WARNING**

**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 REMOVED FROM THE CABINET.**



**The monitor does not require isolation from the A.C. line voltage in normal operation. However, when operating outside the cabinet or servicing the monitor on a test bench, YOU MUST ISOLATE THE MONITOR FROM LINE VOLTAGE WITH AN ISOLATION TRANSFORMER.**

Turn off the AC power. Remove the viewing glass and monitor bezel. Disconnect the monitor from the wiring harness and ground wires. Remove four ¼-20 flange nuts securing the monitor mounting flanges to the mounting panel. Pull the monitor carefully from the cabinet and set aside.

To install a different monitor, remove the three 3/8-16 hex bolts from the bracket at the bottom of the monitor. Install this bracket and its bolts onto the bottom of the new monitor. Slide the bottom of the monitor into the cabinet and tilt it up from the top. Replace the flange nuts at the top of the monitor, and the screws on the outside of the cabinet.

◆ **Power Supply**

Switch off power to the game. Remove screws, then unlock and remove the rear door. Unplug the IEC A.C. connector from the rear of the supply and the D.C. connector from the front. Remove four front screws from the supply. Loosen the rear nut and slide the supply free. Note voltage setting.

To reinstall the power supply, set the voltage switch to the correct value. Set the supply on its bracket and slide it under the nut. Align the mounting holes. Install all four screws. Reconnect the cables.

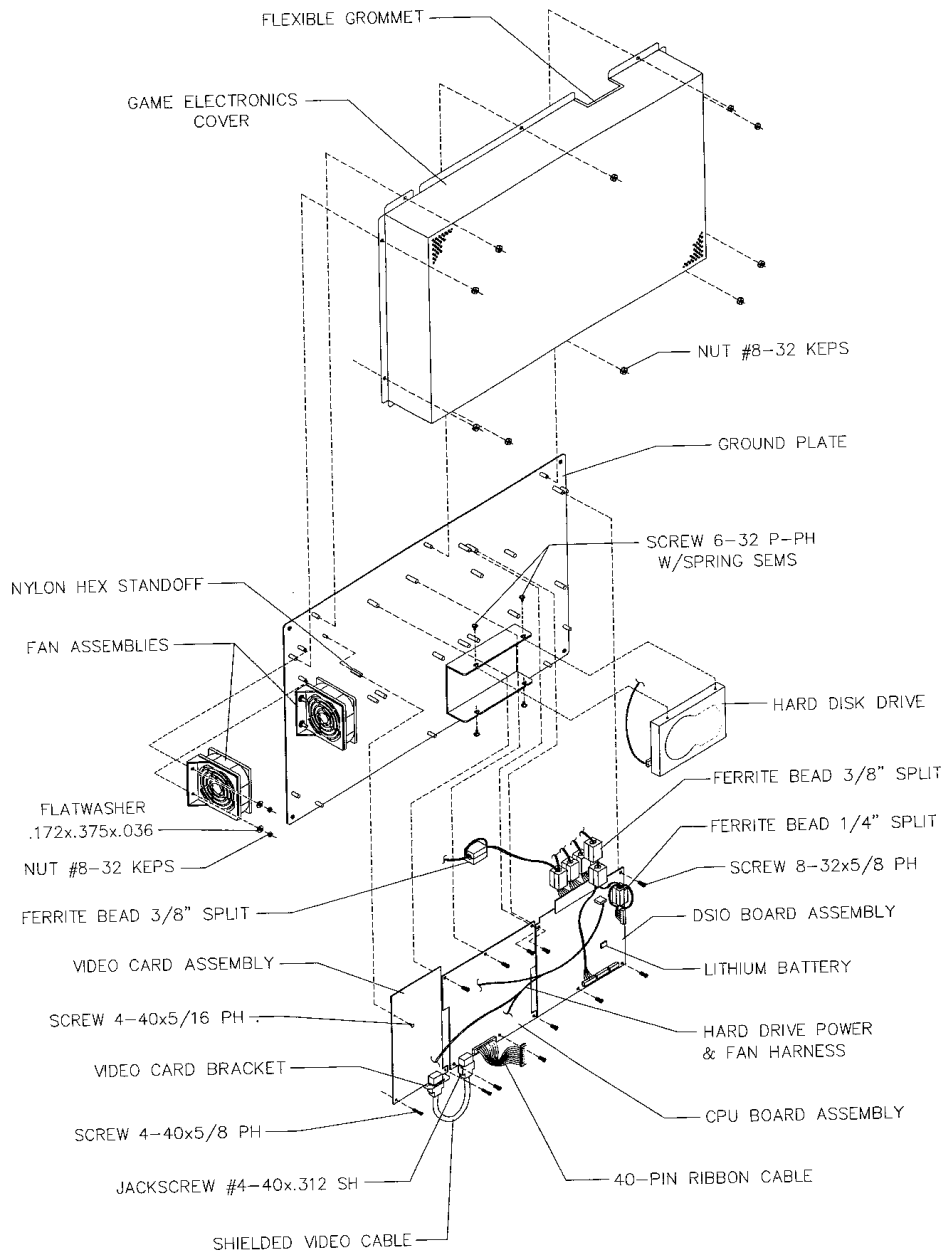
◆ **Hard Disk Drive**

Switch off power to the game. Unlock and remove the rear door. Remove the perforated metal cover from the electronics assembly. Disconnect the D.C. power cable from the hard disk drive. Unplug the ribbon cable from the hard drive and leave it attached to the CPU board. Carefully remove the screws and lift the drive assembly out of the cabinet. *Do not stack or drop hard disk drives. Store hard disk drives in anti-static bags or approved shipping containers.*



**CAUTION**

**Hard disk drives are very fragile! Do not move a game with the power on. Never stack or drop hard disk drives.**



**GAME ELECTRONICS COMPONENTS**



◆ **Video Card Assembly**

Switch off power to the game. Unlock and open the rear door and the coin door. Remove the perforated metal cover. Disconnect and remove the DSIO Board Assembly and the CPU Board Assembly and set them aside. Loosen the screws and disconnect the VGA cable from the Video Card output connector. Use anti-static bags and protective containers to store the assembly if it is not reinstalled.



**CAUTION**

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



**NOTE:** To avoid explosion, all replacement batteries must match the original in size, voltage rating, and composition. Manufacturer recommended equivalent types are acceptable. These batteries are designed for very long life. Do not attempt to recharge these batteries! Avoid direct shorts across the terminals or from terminals to ground. Remove them from their holders and store in a safe place until repairs have been completed. Dispose of used batteries according to the manufacturer's instructions.

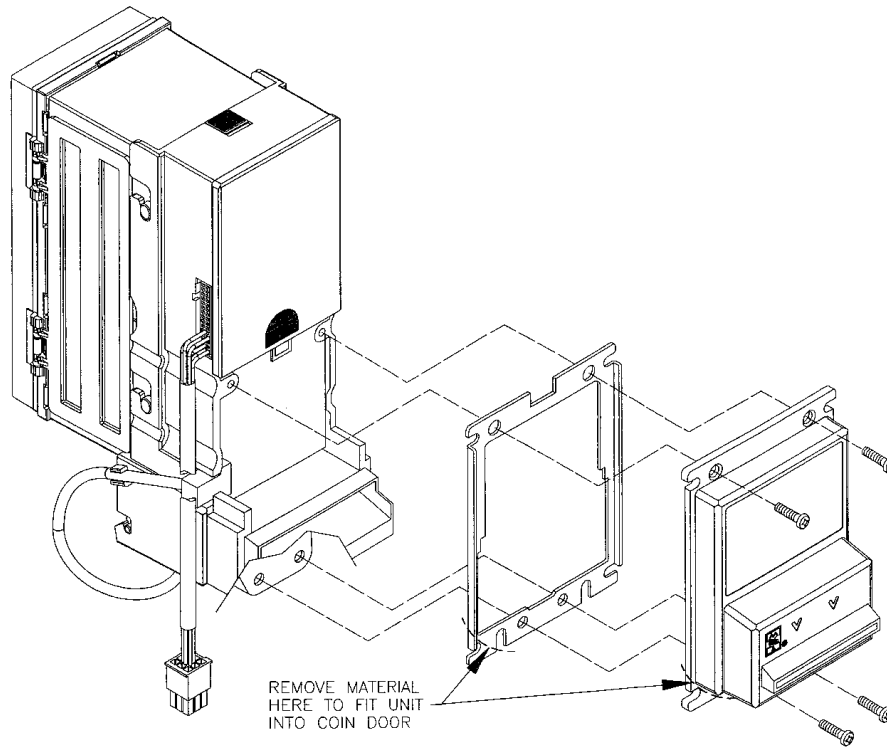
◆ **Battery**

Switch off power to the game. Unlock and remove the rear door. Remove the perforated metal cover. The battery is mounted on top of the integrated circuit at DSIO Board Assembly location U28. Use a chip extraction tool to grasp the battery edges and pull up firmly to remove the device. Set aside with pins facing up. When installing a battery, align the key with the slot in the integrated circuit.

◆ **Dollar Bill Validator**

(Use MARS AE2411-U3 U.L. Recognized currency changer)

Dollar bill validators or other currency acceptors may be installed in games that were manufactured with the additional wiring connector. Switch off power to the game and unplug the A.C. line cord. A stand alone dollar bill validator is installed in place of the blank plate on the cabinet face. This plate is located on the right side at the front of the cabinet, opposite from the coin door.



Remove the blank cover plate from the cabinet. Change switch settings or make adjustments before mounting the unit. The validator must be a stand alone unit with its own door and key, which mounts in place of the blank panel. Place the complete validator door into the cabinet cutout. Install spacers on threaded studs, then align the validator mounting holes with the studs and seat the unit in the opening. Install the nuts and tighten firmly. Attach the ground wire (green with yellow stripe). Mate the wiring harnesses and press to fully seat connectors. Route wires away from door edges. Inspect for proper bill chute alignment. Plug in the line cord and turn on the game. Change the mechanism setup and pricing, then test known good and bad bills to verify proper operation. Close and lock the validator door when correct. Reverse these steps to remove a validator for service or replacement.

---

## **GAME OPERATION**

### **Initial Start Up**

When the game is first turned on, power is restored, or a reset occurs, it executes the boot ROM code. Automatic self-diagnostic tests verify and report the condition of the hardware, memory, hard disk drive, etc. If any of the individual tests fails, then an error message displays for that particular test. Record any messages that appear on the screen if the game halts or freezes (this will help customer service personnel troubleshoot the problem). If no errors have occurred the system boot process will continue.

- ◆ If no buttons are pressed, the system will quickly complete all tests. The game will then load and enter the attract mode. This is the normal "ready to play" condition.
- ◆ Press and hold the coin door TEST button to activate the Operator Menu System.

Once Power-up tests have been completed, the game goes into ATTRACT MODE. This mode will be in use whenever the game is inactive. The constantly changing images prevent CRT burns (screen saver).

### **Attract Mode**

Before the game starts, the ATTRACT screens show scenes and sounds from typical races on each of the tracks. Alternating with these scenes are views of the bikes, best track times, game production team acknowledgements, etc. The attraction screens cycle endlessly until a player or operator starts the game.

### **Test Mode**

The operator may enter the menu system at any time to analyze the game or adjust it if required.

**NOTE: Do not enter Test Mode with other linked games in progress. This may halt linked games.**

---

## GAME RULES

### Individual Play (Stand Alone Operation)

Choose any cabinet. Insert currency to start the game. The player must choose the following variables:

1. Select a track by turning handle controls left or right. There are five unique tracks from beginner, intermediate to expert: Washington DC, Paris, London, Las Vegas and Isle of Man. Each of these tracks can be selected in reverse mode by pressing and holding the MUSIC button during track select.
2. The player selects one of six bikes by turning the controls left or right. Players can select from nine bike colors by using the brake control. Player can also select from 10 riders by pressing the MUSIC button during bike select. Hidden riders include a skeleton, an alien, a flying monkey and a spaceman.

### Head to Head Play (Linked Operation)

Choose a linked cabinet (optional overhead signs identify the linked games). Insert currency at the START message. There are now some restricted choices:

1. The first player selects a track, bike, rider and color. Each additional player selects a bike, rider and color. All players who insert currency and START the game while other players are in the select screens are automatically linked into the same game.
2. The message WAITING FOR OTHER PLAYERS is displayed until all other players finish making their selections.

#### LINKED OPERATION NOTES:

1. To avoid linked play, players should not press the START button to start the game until the linked race has started. Only players that enter the select process while other players are selecting will be linked.
2. Once a linked race is started, new players can not join. Players who have declined linking and begun individual play must wait to join linked play at the beginning of the next race.

---

## GAME PLAY

1. Twist the throttle (the right handgrip) to adjust speed. Use the handgrips to steer. The bike also responds to tilt, so lean into the corners. Use the brake lever to stop or slow down.
2. Once speed reaches 200 MPH, players can quickly open the throttle twice to lift the front wheel off the ground and gain extra speed. A Wheelie Timer comes on screen to show how long players can stay in this position. During a wheelie, players get a speed boost, but can only steer by pivoting the bike to add extra challenge. At the end of the game, a statistic is displayed for the longest wheelie time.
3. Another added challenge feature is the Tuck Timer, which shows how long players stay in tucked or top speed position. Again, at the end of the game a statistic is displayed for the longest tuck time.
4. A radar display shows the relative position of all competitors during game play and they are indicated on screen by large arrows during the race, and optionally by a cabinet number.
5. All tracks have up to six shortcuts or alternate paths. As players take shortcuts, the computer-controlled racers also start to take these shortcuts. The race follows the rider!

## PLAYER CONTROLS

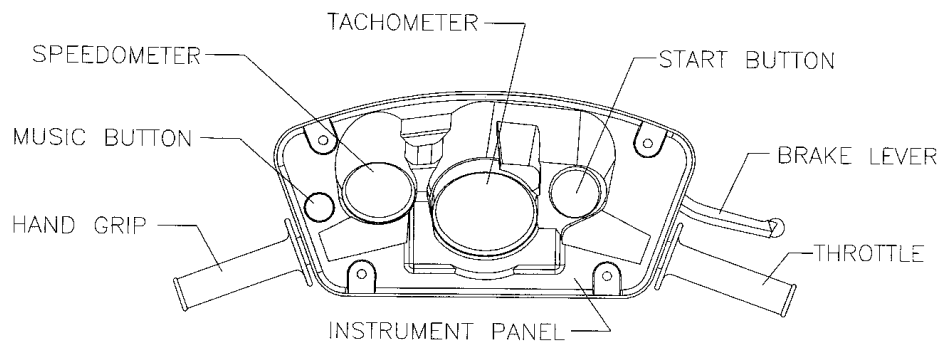
The player controls are used to regulate the speed and direction of the motor bikes during game play. They are also used to select game variables and enter high score information.

### Hand Controls and Gauges

- ◆ The **HANDGRIPS** are used to aim the bike. The left handgrip is stationary and is used for steering. The right handgrip has the same function; in addition, it also rotates to accelerate (see **THROTTLE**).
- ◆ The **THROTTLE** adjusts the speed of the bike. Turn the Throttle counterclockwise to increase power. Apply full throttle two times in quick succession to lift the front of the bike off the track for more speed.
- ◆ The **BRAKE** is used to slow or stop the bike. The rear Brake Light goes on when brakes are applied. Use the Brake lever to select the color of the bike after the track and style have been chosen.
- ◆ The **SPEEDOMETER** is used to indicate road speed. The **TACHOMETER** indicates engine speed. The gauges on the instrument panel are not functional, but there are working virtual gauges on screen.

### Seat Controls and Buttons

- ◆ The **START BUTTON** activates the game. Use this button to select your choice of track and bike. During the game, each press of this button changes the view presented to the rider.
- ◆ The **MUSIC BUTTON** changes tunes heard during the game. Tap to turn off or to get another station. This button is used to choose the character who rides the bike during the race.
- ◆ The **SEAT TILT** sensor reacts to the angle of the bike. Lean into the track corners for better traction and speed. This feature can be disabled or enabled from the menu system (refer to Game Options).
- ◆ The **SEAT SPEAKER** provides players with road feedback. Players can feel each bump and turn. A high volume level will add to the realism of the game.



**PLAYER CONTROL LOCATIONS**

## OPERATOR CONTROLS

Operators have lock-and-key access to the menu system for statistics, adjustments, and testing to prevent tampering. On-screen messages guide the operator through menu options.

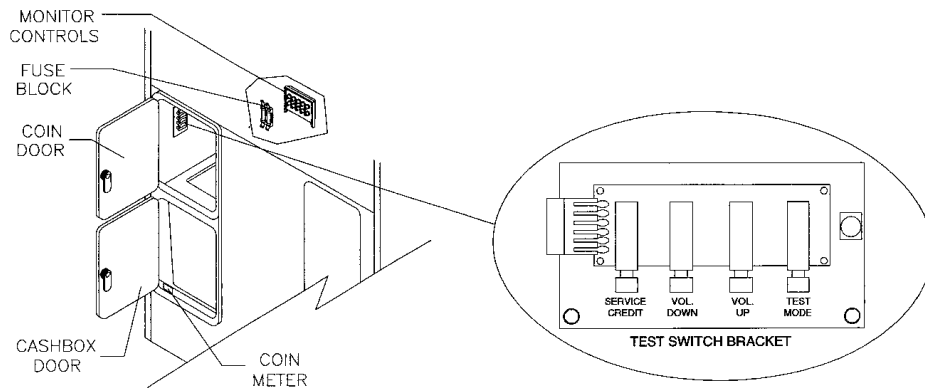
### Cabinet Switches

- ◆ The **ON/OFF SWITCH** is located on the power supply. The power supply is on the rear of the cabinet.
- ◆ The **MONITOR REMOTE ADJUSTMENTS** are located inside the coin door on the back wall. Use the monitor test screens with these controls to adjust the video image size, brightness, contrast, etc.
- ◆ The **SLAM TILT SWITCH** is located on the inside of the coin door opening near the lock. Although the switch wires are present in the harness, this switch is not monitored by the game electronics.

**NOTE: There is no SLAM TILT SWITCH on DBV ready coin doors. The switch is not monitored during the game, because sudden bike movements could activate the switch.**

### Control Buttons

- ◆ The **TEST BUTTON** activates the game SELF TEST menu system. Press the Test button to access the Main Menu and select individual diagnostics, audits, utilities, and other features.
- ◆ The **VOLUME UP BUTTON** moves up through the menu selections or adjustment items and raises the sound level in game play.
- ◆ The **VOLUME DOWN BUTTON** moves down through the menu selections or adjustment items or lowers the sound level in game play.
- ◆ The **SERVICE CREDIT BUTTON** allots credits without affecting the game's bookkeeping total. Press this button to get out of a menu selection or return to the main menu.



OPERATOR CONTROL LOCATIONS

---

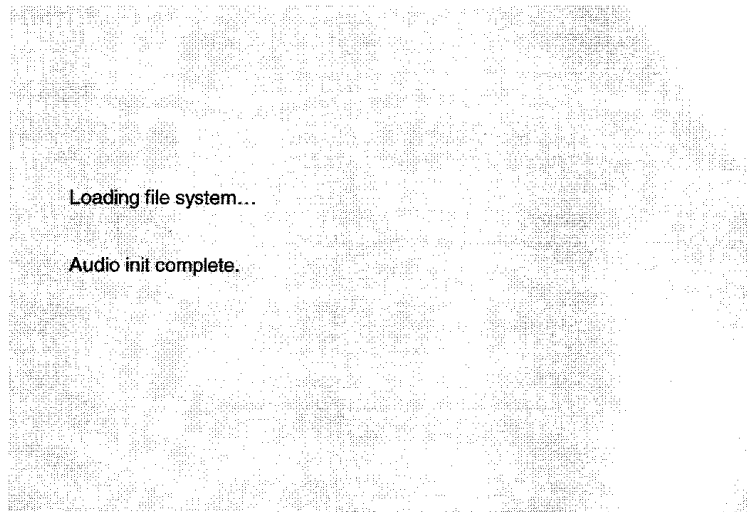
## POWER ON TESTS

The Power On Tests conduct internal checks to determine if individual components are operating properly. This routine occurs whenever the game is switched on or a press of the button on the circuit board resets the CPU. Once the hardware tests are successful, the CPU loads the software from the hard disk drive. A series of messages display briefly before the attract screen sequence begins.

Turning on the power or resetting the circuit board does NOT recalibrate the player controls. Refer to CONTROLS TEST for instructions on how to calibrate player controls.

Manual testing more thoroughly diagnoses errors (refer to CONTROLS TEST in this section).

A successful self-test takes less than one minute to complete. Write down any error messages before proceeding to menus or game play. Consult Troubleshooting (Section Four) for assistance with errors.



TYPICAL POWER ON TEST SCREEN

---

## SELF TEST MENU SYSTEM

### System Overview

A series of on-screen menus presents game variables and diagnostics. The Main Menu screen allows the operator to view information, make changes, or verify equipment operation. Each Sub Menu screen displays one specific group of choices. The Detail Menu presents data or runs the required test. You must be at the Detail Menu level to detect errors, make changes, or activate tests. Use either the operator controls or the player controls to move through the menus and start or stop particular routines. Press and hold the TEST coin door button until the SELF TEST main menu appears on screen.

### Screen Layout

Each menu screen is different, but the material presented stays in the same order each time.

\*The color bar at the top center of each screen displays the current menu title.

\*The center of the screen displays data (menu items, video signals, statistics, reports, etc.).

\*The bottom of the screen displays messages (control functions, revision levels, etc.).

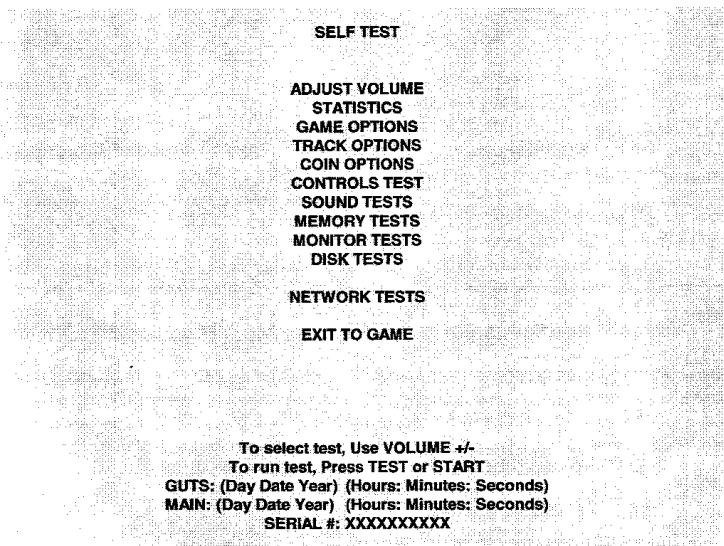
### Organization

Main Menu screen items fall into two categories: options and tests. Activate each item manually.

Sub Menu screen items offer the operator choices within a category. Some items have no Sub Menu while others may have more than one. You can get back to the previous menu or go on to the next menu.

Detail Menu screen items contain specific information. The operator must interact with the system to get results or to make changes. There is always a way to go back to the previous menus from this screen.

Use the control indicated to highlight an item on any menu. *Only one highlighted item can be selected at a time.* To return the game to normal, select EXIT TO GAME, then press the indicated button.



TYPICAL SELF TEST MENU SCREEN

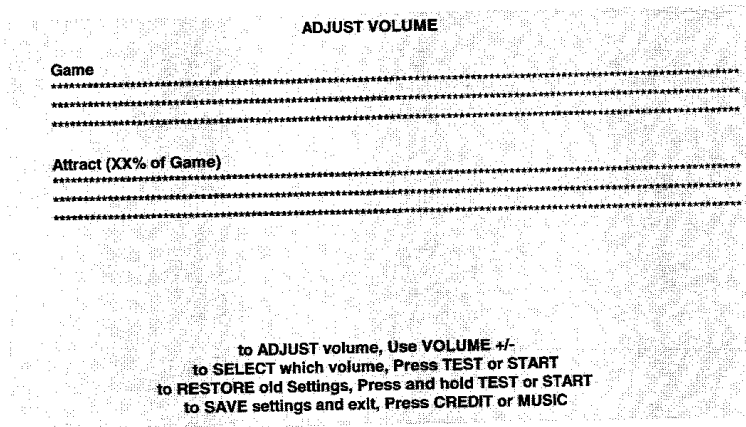


### Adjust Volume

The ADJUST VOLUME feature allows the operator to set the sound and music levels of the game.

The volume level can be adjusted separately for either the Attract or Game Mode. Press the TEST or START button to select Game Volume or Attract Volume. Press the VOLUME +/- buttons to adjust the volume level. Music plays continuously during this test.

**NOTE:** Open the coin door and use the VOLUME UP and VOLUME DOWN buttons to adjust the volume levels without going through the menu system during a game or when in attract mode.



#### ADJUST VOLUME MENU SCREEN

The "Game" volume ranges from zero to maximum. The game will seem more realistic if the player experiences high volume sounds during play.

The "Attract" volume ranges from zero to maximum. For greater profits, adjust your volume levels to a loud setting to draw attention to this game.

The length of a bar made of asterisks represents the current volume level. A longer bar indicates a higher volume setting than a short bar.

The "Attract" and "Game" volume levels may be adjusted to different values, but the "Attract" level cannot be set higher than the level chosen for normal game play. If the "Game" level is lowered, it will automatically lower the "Attract" level. Lowering the "Attract" level will not effect the "Game" volume.

**NOTE:** These adjustments affect the volume both of the tests and the game play. If the volume levels are set to minimum (zero), there will be no sounds from the speakers during any of the audio tests. Set the volume levels to a moderately high value each time the sound portion of the game is checked. After completing the tests, return the levels to their previous settings.

### Statistics

The STATISTICS report allows the operator to assess player skill level and game earnings. In addition to the earnings, STATISTICS tracks various game aspects to determine the players' skill level.

STATISTICS may be reset to zero or allowed to increase after each viewing. To reset the statistics, hold the TEST or START button, then press the CREDIT or MUSIC button. Press only the CREDIT or MUSIC button to see more statistics.

STATISTICS	
Left Coins	:0
Right Coins	:0
Aux Coins	:0
Idle Mins	:0
1 Player Mins	:0
2 Player Mins	:0
Session Mins	:0
New Games	:0
Cont Games	:0
Free Games	:0
Total Games	:0
Mech. Sessions	:0
BRAM Read Errors	:0
Total Coins	: 0
AVG TIME/COIN	: 0
Percentage Play	: 0

To clear these counters, Hold TEST or START and Press CREDIT or MUSIC  
For more stats, Press CREDIT or MUSIC

### STATISTICS REPORT MENU SCREEN

The illustration shows how the report screen looks after the game has been reset or is first turned on. Most of the statistics will increase as the game is played. It is normal for some values to remain at zero: for example, the Coins count will not change if the cabinet has been set up for free games, and the Error count will not change if no errors have occurred.

Low counts in both coin and player statistics may indicate that the game is too difficult for the skill levels of the players at the game location. High counts may result if Bonus or Winner option menu items are in activated. Adjust the difficulty level and other play characteristics from the Game Options menu.

Record the Statistics before doing any service or repairs on the game.

Press the TEST button to view additional game statistics displayed in the form of Histograms. If a game has not been played before, or if the counters have been cleared, there will be no additional statistics.

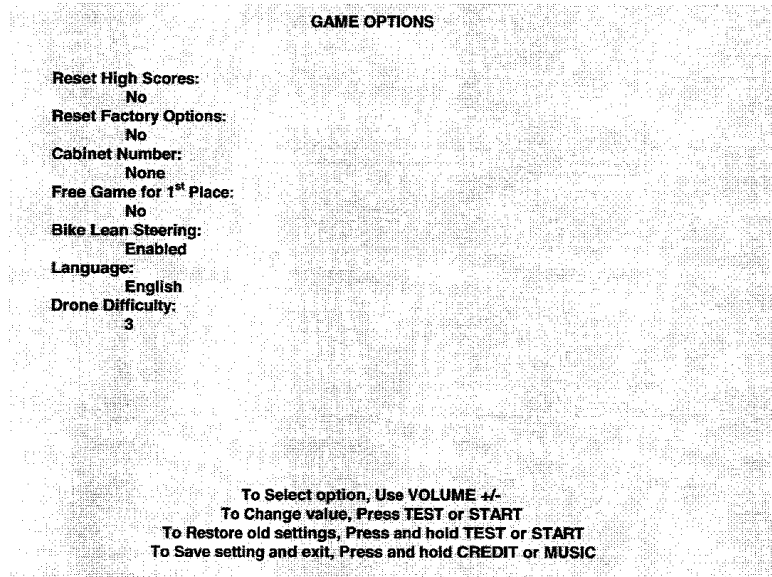
HISTOGRAMS allow graphical analysis of statistics. This permits visual comparisons between games. The HISTOGRAMS screens will have no bar graphs until the system has enough data. Press CREDIT button during the STATISTICS display to show a list of HISTOGRAMS.

A USER MESSAGES screen may appear if the game has stored error codes or other useful information. As with Statistics, record these messages before doing any service or repairs on the game.

## Game Options

These adjustments allow the operator to customize the game. Each of the variables will change some aspect of game appearance or play. Optimum settings cause high player interest and increase earnings.

Use the VOLUME +/- button to select a particular menu item. The TEST or START button changes variables. Options may be reset to factory default values or changed after each viewing.



### GAME OPTIONS MENU SCREEN

The illustration shows how this screen will look with all of the factory default settings. Use the VOLUME +/- buttons to select an option. Press the TEST or START buttons to advance a variable through its range of choices. Some items have more options than others do. Examine all choices before selecting one.

**Reset High Scores** returns all player scores to zero without affecting any other statistics.

**Reset Factory Options** selects whether to reset all game options to the factory default settings.

**Free Game for 1<sup>st</sup> Place** permits player incentives for performance. *Free games will reduce earnings.*

**Bike Lean Steering** allows the game to respond to seat tilt angles. This adds realism to the game.

**Language** sets the screen message wording. This setting does not affect the menu screens.

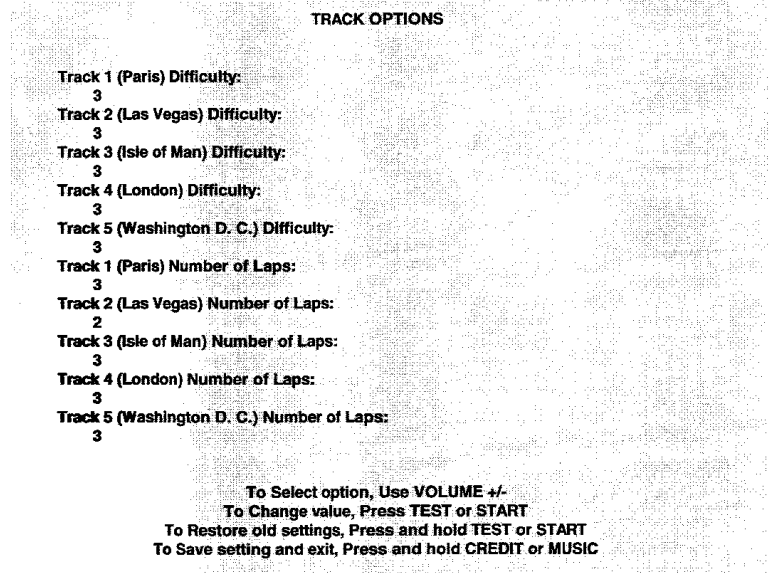
**Drone Difficulty** ranges from 0 (easiest) to 7 (hardest) in several steps. This adjustment affects only the computer controlled bikers. Select the level of difficulty appropriate for the game location and players.

Comparing statistics reports before and after making changes to options reveals their effect on game play. As players become familiar with the game, add new features or increase difficulty to maintain interest.

### Track Options

These adjustments allow the operator to customize the game. Each of the variables will change some aspect of game appearance or play. Optimum settings cause high player interest and increase earnings.

Use the VOLUME +/- buttons to select a particular menu item. The TEST or START button changes variables. Options may be reset to factory default values or changed after each viewing.



### TRACK OPTIONS MENU SCREEN

The illustration shows how this screen will look with all of the factory default settings. Use the VOLUME +/- buttons to select an option. Press the TEST or START buttons to advance a variable through its range of choices. Some items have more options than others do. Examine all choices before selecting one.

**Difficulty** ranges from 0 (easiest) to 7 (hardest) in several steps. Select the levels of difficulty appropriate for the game location and players. Increase difficulty as the players become more skilled at riding bikes.

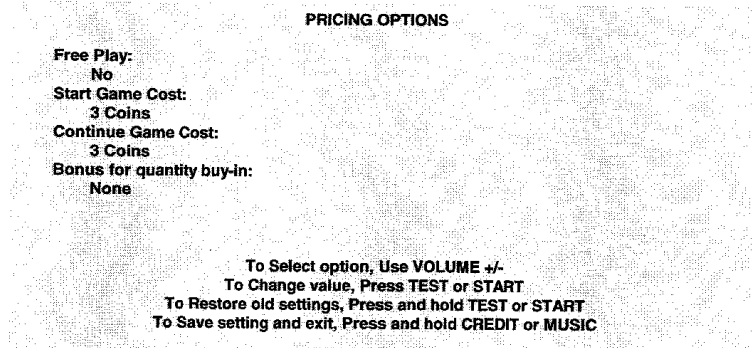
**Number of Laps** controls the number of times a player completes a circuit before the race is over. Long races will reduce earnings in busy locations.

Comparing statistics reports before and after making changes to options reveals their effect on game play. As players become familiar with the game, add new features or increase difficulty to maintain interest.

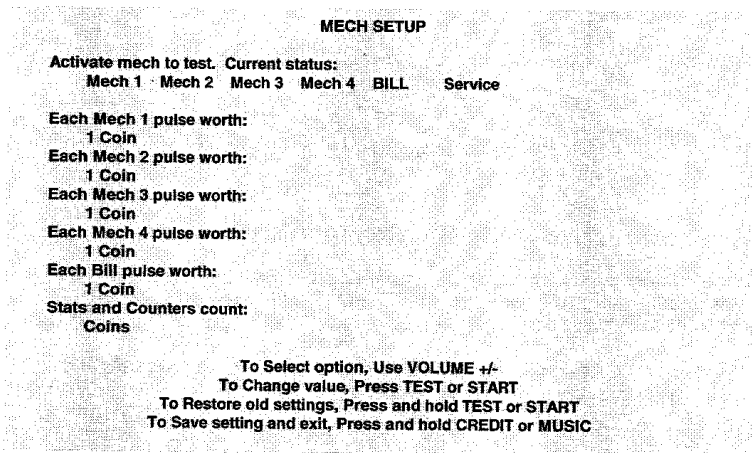
### Coin Options

The COIN OPTIONS set up the coin mechanisms and set the pricing of the games. Bills will be indicated as multiple quantities of coins. Factory default values can be considered standard.

Use the VOLUME +/- buttons to select a particular menu item. The TEST or START button changes variables. Options may be set to factory default values or changed after each viewing.



### PRICING OPTIONS MENU SCREEN



### MECH SETUP MENU SCREEN

The illustration shows how this screen will look with all of the factory default settings. Use the VOLUME +/- buttons to select an option. Press the TEST or START buttons to advance a variable through its range of choices. Some items have more options than others do. Examine all choices before selecting one.

#### PRICING OPTIONS

This sets the number of coins required to start and continue a game and adjusts rewards for quantity buy-in. Free play eliminates all other pricing options. Free game player incentives may reduce earnings.

#### MECH SETUP

MECH SETUP permits the operator to add, remove, or test coin or bill mechanisms. Although values are shown for all devices, changes to unused inputs have no effect if no such mechanism is installed.

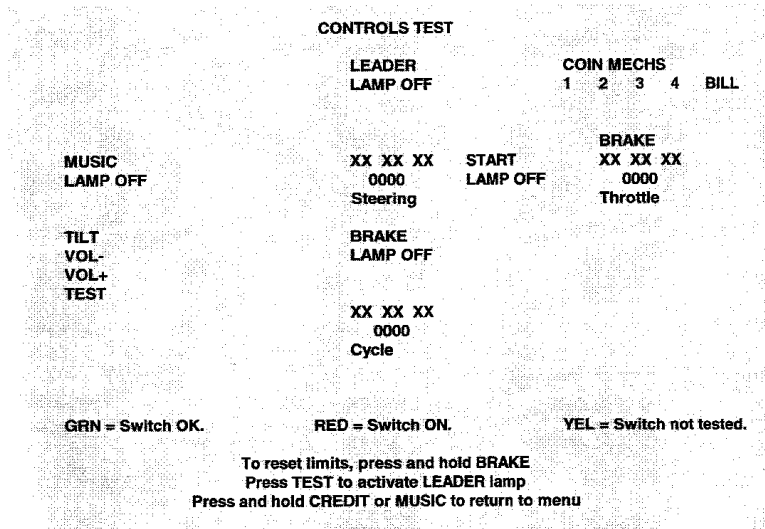
## Controls Test

These tests allow the operator to check each switch in the game and to calibrate certain player controls.

### NOTE

Some switches may not be used with this game. Check the wiring diagram and the mech setup items.

As switches are activated, the screen indicator changes. Switches may be tested in any combination. Game lamps may also be tested. Press and hold the CREDIT or MUSIC button to end the tests.



### CONTROLS TEST MENU SCREEN

The Controls on the screen appear as they are found on the steering mechanism and in the coin door area. Each control change should be duplicated exactly by a single indication on the menu screen.

The Controls Test screen is used to verify crossed wires, intermittent conditions, and stuck switches.

Press and hold the BRAKE lever to reset the steering, cycle (seat), and throttle (right handgrip) limits. The values of each should change color to RED. Push each mechanism fully in each direction and release them. The values change to green when the limits are correctly set.

Note and record the Coin Counter reading before beginning the test to avoid subsequent count errors.

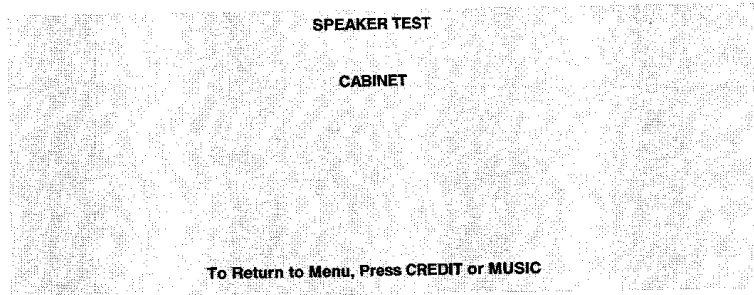
**NOTE: Perform calibrations and test the controls on a frequent basis. Defective or inaccurate player controls will decrease player enjoyment and earnings will be reduced.**

### Sound Tests

These tests verify the proper connection and operation of the audio components.

**NOTE:** Increase the VOLUME to a moderately high level to test the speakers accurately.

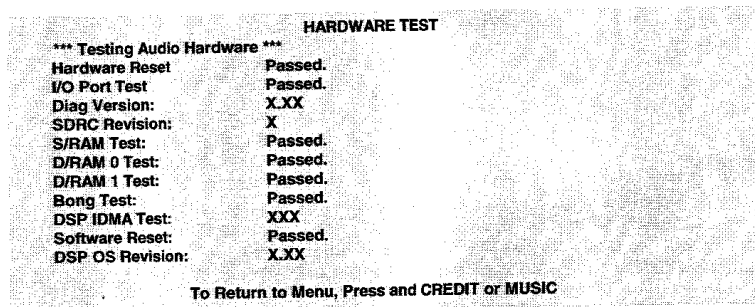
There are no custom settings or adjustable variables in these tests. The test is performed automatically.



#### SPEAKER TEST MENU SCREEN

**AUDIO SPEAKER TEST** sends alternating voice sounds to the cabinet and seat speakers. The voices should be clear and distinct from each other. Each voice must come from the location identified. Refer to ADJUST VOLUME screen if necessary to increase loudness for this test.

The Audio Speaker Test screen verifies crossed connections, incorrect phase, and distortion. Press the CREDIT or MUSIC button to end the Audio Speaker Test and return to the SOUND TESTS menu.



#### AUDIO HARDWARE TEST REPORT SCREEN

**AUDIO HARDWARE TEST** automatically tests the electronic components of the audio amplifier for problems and reports the results as "passed" or "failed." Each "failed" result should be noted and referred to qualified service personnel. This test also shows the revision numbers for the audio circuit software.

Sound should be heard from the speakers during the "Bong" test. Increase the game volume level and repeat this test before concluding that audio equipment may be faulty.

Press CREDIT or MUSIC to return to the SOUND TESTS menu after noting and recording any errors.

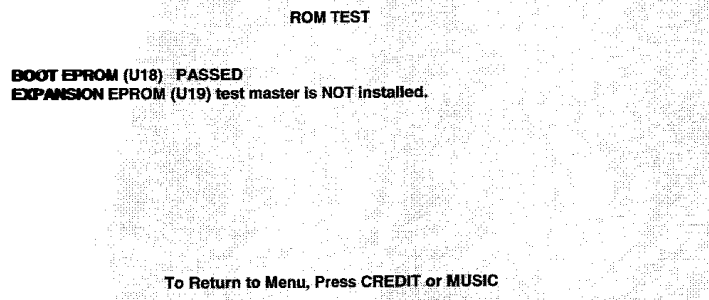
**NOTE:** If any test reports a "failed" result, refer to the Troubleshooting Section.

### Memory Tests

The MEMORY TESTS are used to verify some functions of the CPU Board Assembly memory circuits.

**NOTE: These tests detect system errors, not game errors. The game program is on the Disk Drive.**

Press the START or TEST button to begin this test. There are no custom settings or adjustable variables in these tests. To return to the previous menu, press the CREDIT or MUSIC button.



### ROM TEST MENU SCREEN

**BOOT EPROM TEST** performs a fast check of the storage area for the game instructions. This test takes less than 2 seconds to run. At completion, press the CREDIT or MUSIC button to return to the previous menu. The results of the test will be reported as pass or fail messages; there may be error messages.

**EXPANSION EPROM** is reserved for future uses. This device is not required in production games.

**NOTE: These memory areas store data for game play and video display. Audio memory tests are separate (refer to the AUDIO HARDWARE TESTS of the SOUND TESTS menu on a previous page).**



## Monitor Tests

The MONITOR TESTS provide patterns for verifying the monitor performance or making adjustments.

Use the VOLUME +/- buttons to choose a particular menu item. Press the START or TEST button to begin each test. The CREDIT or MUSIC button changes variables during each test. Press and hold the CREDIT or MUSIC button to end the test.

### MONITOR TESTS

COLOR BARS  
CONVERGENCE  
PURITY  
RECTANGLES

To select test, Use VOLUME +/-  
To run test, Press TEST or START  
To return to menu, Press and hold CREDIT or MUSIC

### MONITOR TESTS MENU SCREEN

**COLOR BARS** fills the screen with shades of colors to verify red, green, blue and white level dynamic adjustments. Each color bar should appear sharp, clear, and distinct from bars on either side.

The Color Bars screen is useful in adjusting the monitor brightness and contrast.

Press the TEST button twice to change the color of the screen border. Press CREDIT to exit.

**CONVERGENCE** tests fill the screen with a grid and a series of dots. The grid and the dots should be all one color, with no fringes or parallel images. The lines should be straight and the dots round.

The Convergence tests are useful in verifying the monitor convergence, linearity, and dynamic focus.

Press the TEST button to change the color of the screen grid lines. Press CREDIT to exit.

**PURITY** fills the screen with 100% of the chosen color at normal intensity. Each screen should be absolutely uniform from top to bottom and side to side. No retrace lines or noise should be visible.

The Purity tests verify monitor degaussing. There are eight separate color and brightness tests.

Press the TEST button to cycle through the tests. With each press of TEST, the screen briefly displays a new color and its name, then fills the screen entirely with the color. Press CREDIT to exit.

**RECTANGLES** displays solid color boxes over a contrasting background screen. The rectangle should be centered with all four sides visible. The sides of the background should not be visible.

The Rectangles tests are useful in verifying scan size and screen uniformity.

Press the TEST button to change the color of the screen. Press CREDIT to exit.

**NOTE: If any of the tests shows a need for correction, use the Monitor Remote Adjustment Board.**

## Disk Tests

The DISK TESTS verify the functions of the Hard Disk Drive Assembly. This affects game play.

These tests are automatic and the results appear on the menu screen as they occur. There are no custom settings or adjustable variables in these tests. The MUSIC button aborts the tests.

```

                                DRIVE READ TEST

Hard Drive Connected:  Yes
Drive Mfg:  XXXXXX
Logical Sectors Available:  XXXXXXXX

LBA      MB/sec
X.XXX   avg
X.XXX   min
X.XXX   max

Tests completed:  1

To return to menu, Press CREDIT or MUSIC

```

### DRIVE TEST MENU SCREEN

#### Hard Drive Connected

This test routine verifies the interface between the CPU Board Assembly and the Hard Disk Drive itself. The processor requests disk information. Data cannot be retrieved successfully if there is a problem.

#### Drive Mfg

This is an industry standard identification for Hard Disk Drive type and capacity. This is a manufacturer hardware number only; it will not identify the software or the game program stored on the drive assembly.

#### Logical Sector Test

This test performs a sector by sector read/verify test on the disk drive. As the status of each block of sectors is checked, the speed of the data transfer is compared to its acceptance limits.

#### Tests Completed

These tests run over and over. The number increases each time the test cycle repeats (approx. every 5 minutes). After at least one cycle ("pass") is complete, press CREDIT or MUSIC button to end the test.

```

                                FILE SYSTEM CHECK

Total files used:  XXXX
Passes completed:  1

Checking File:  XXXX

To return to menu, Press CREDIT or MUSIC

```

### FILE SYSTEM TEST SCREEN

#### Checking File

This routine performs a file by file check of data stored on the hard disk drive and reports its findings. If there are errors, the system tries to fix them (approx. 5 minutes per cycle). The system reports on the severity of the errors and advises if they will affect game performance.

#### Passes Completed

These tests run over and over. The number increases each time the test cycle repeats (approx. every 5 minutes). After at least one cycle ("pass") is complete, press CREDIT or MUSIC button to end the test.

## Network Tests

The NETWORK TESTS provide routines for verifying the communication circuits when games are linked. These tests are automatic and the results are reported on the menu screen as they occur.

There are no custom settings or adjustable variables. Press CREDIT or MUSIC button to end these tests.

```

                                NETWORK TESTS
Testing Local:  PASSED           Testing Cable:  OK
Testing Link:  FOUND X GAMES
S/N:          XXXXXXXXXXXX
XMIT:        XXXX   RCVD:   XXXX

                                To return to menu, Press CREDIT or MUSIC

```

### NETWORK TESTS MENU SCREEN

Several different options allow cabinet linking for head-to-head player competition. This screen allows the operator to determine if the linking equipment is networking or *not* working. The results of these tests either confirm proper operation or indicate the location of any problem. All linked games must be in network test mode to find any other games.

**NOTE: This group of tests checks only system hardware (cables and communications circuits). Inspect for disconnected or broken cables, crossover couplers, hubs, etc. Individual games are not affected by network faults; however, network performance is critical for linked operation.**

#### Testing Local

This test performs an internal check of the local communication circuits in the game cabinet. It does not test any cables, hubs, or the other game cabinets. An error message indicates CPU board difficulties.

#### Testing Cable

This verifies complete signal paths. "??" is a normal response to this test when the game is not linked. Linked games require all cabinets, couplers, hubs, etc. to be powered ON and connected to report OK.

#### Testing Link

This sends data out from each active game and looks for responses. At least two cabinets must be networked properly and in link testing mode for this test to report a result. The test reports the number of cabinets found. More linked games delay the test results response.

#### S/N (Serial Number)

This is the unique number of each game. The number is assigned at the factory and cannot be changed.

#### XMIT (Transmitted)

This number is a running count of the data packets sent by each game cabinet. It increases until you exit this screen. The local game location (your cabinet) is always listed first in the report.

#### RCVD (Received)

This number is a running count of the data packets acquired from the network. It increases until you exit. All cabinets must be receiving packets from the local cabinets or the communications network is faulty.

**NOTE: Multiple S/N, XMIT, and RCVD listings indicate other cabinets on the local area network.**

---

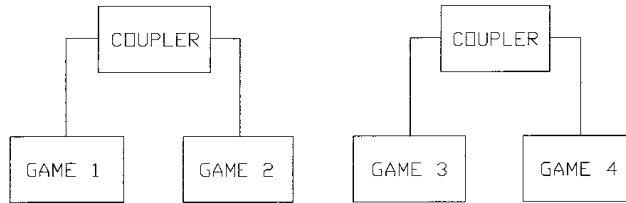
## LINKED OPERATION

### Equipment Requirements

Linked mode unites cabinets together and permits several players to play against each other in real time. The Linking program is player selectable so each cabinet can meet the needs of the players.

Games must be interconnected for linked operation. One cable is installed in each cabinet at the factory.

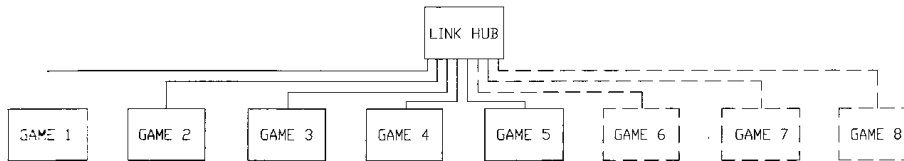
- ◆ **ALL GAMES** contain a crossover coupler (in the spare parts) to connect two cabinets together.



**BASIC LINKING DIAGRAM**

Each coupler connects only one pair of games. Passive electronics limit the cable length and the number of games. Cabinets are usually attached to form an array, but may be separated up to 30 ft. Linked pairs may be added as required.

- ◆ Hub kits contain a network hub. The active circuits allow the use of more cables of greater length.



**HUB LINKING DIAGRAM**

Each kit connects 2-8 games together. Active electronics permit larger networks than couplers. Cabinets are usually attached to form an array, but may be separated up to 300 ft.

Cabinets must communicate without errors before activating Linked Mode (refer to NETWORK TESTS).

---

## SWITCHES AND JUMPERS

The CPU Board has a number of hardware variables that can be changed to adapt this assembly to other uses. Jumpers determine which circuit paths are active, and DIP switches select instructions.

### ◆ Switches

There is one CPU Board push button switch (S2, near the battery). This switch resets the processor. This switch is used during service to restart the game without cycling the power off and on again.

There are two DIP Switch blocks (U12 and U13, near the JAMMA connector) on the game board set. Each consists of eight individual switches. These switches are factory set for normal game operation.

### ◆ Jumpers

Jumpers on the CPU Board match various system characteristics to optimize the memory circuits and video signals. These jumpers may require adjustment to accommodate future upgrades or service.

***NOTE: The circuit paths are optimized at the factory during the board test procedure. Each jumper should be left in its original position to avoid error messages or video sync problems.***

---

## ERRORS

The system detects errors at start up or during various diagnostic tests or operations and reports them on the screen. Some errors, such as minor disk data faults, are automatically repaired by the system. Other errors, such as player control calibration, are fixed by manually resetting the values in game memory. In most cases, the game will continue to operate with reduced performance after discovering minor errors.

Always record error messages before attempting to correct any problem. The USER MESSAGES report may store some additional temporary messages (refer to STATISTICS earlier in this section).

After recording the error messages, turn off the game's power, wait a few minutes, then turn the power back on again. Pay attention to the start-up screens and note any error messages during the Power On Tests. If possible, enter the SELF TEST MENU SYSTEM and run all of tests related to where the errors occurred. Record any new error messages and compare them to those previously recorded to determine whether the errors are random or continuous in nature.

***NOTE: Do not ignore error messages when the game can be forced to start and operate. Games with errors may generate reduced earnings due to poor performance.***

# ROAD BURNERS™

---

## SECTION TWO


## PARTS

**Warning**

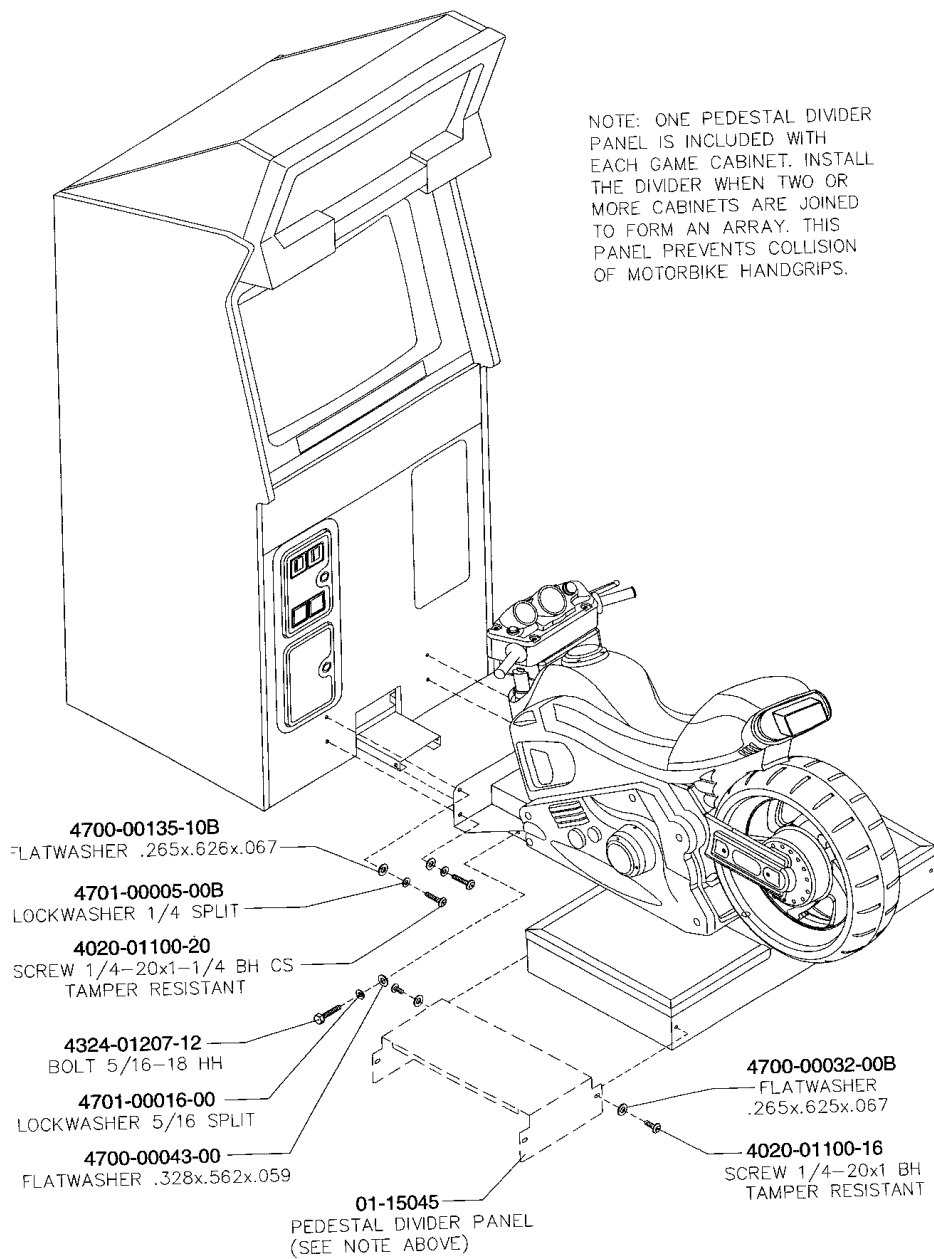
USE OF NON-ATARI PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY ATARI AUTHORIZED PARTS.

\* For safety and reliability, substitute parts and modifications are not recommended.

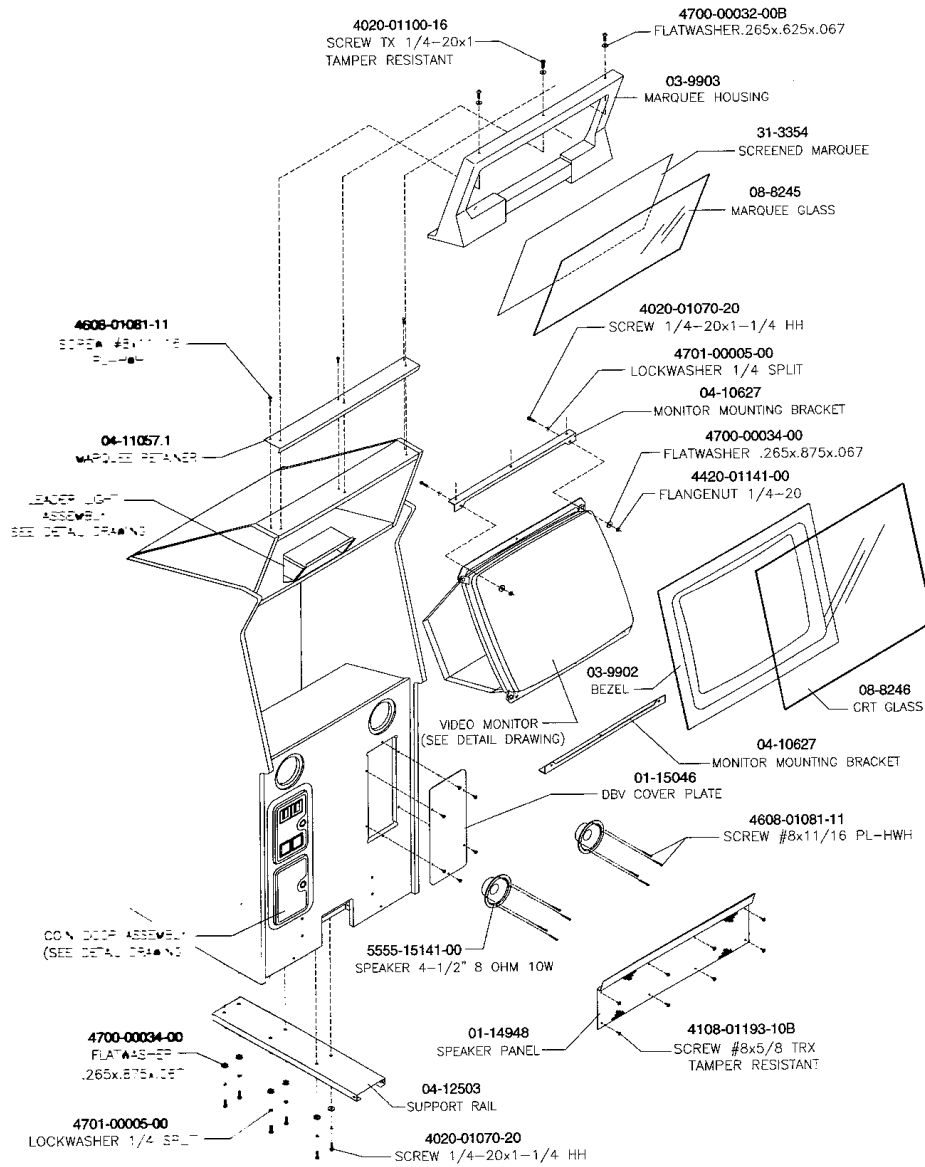
\* Substitute parts or modifications may void FCC type acceptance.



## GAME ASSEMBLY

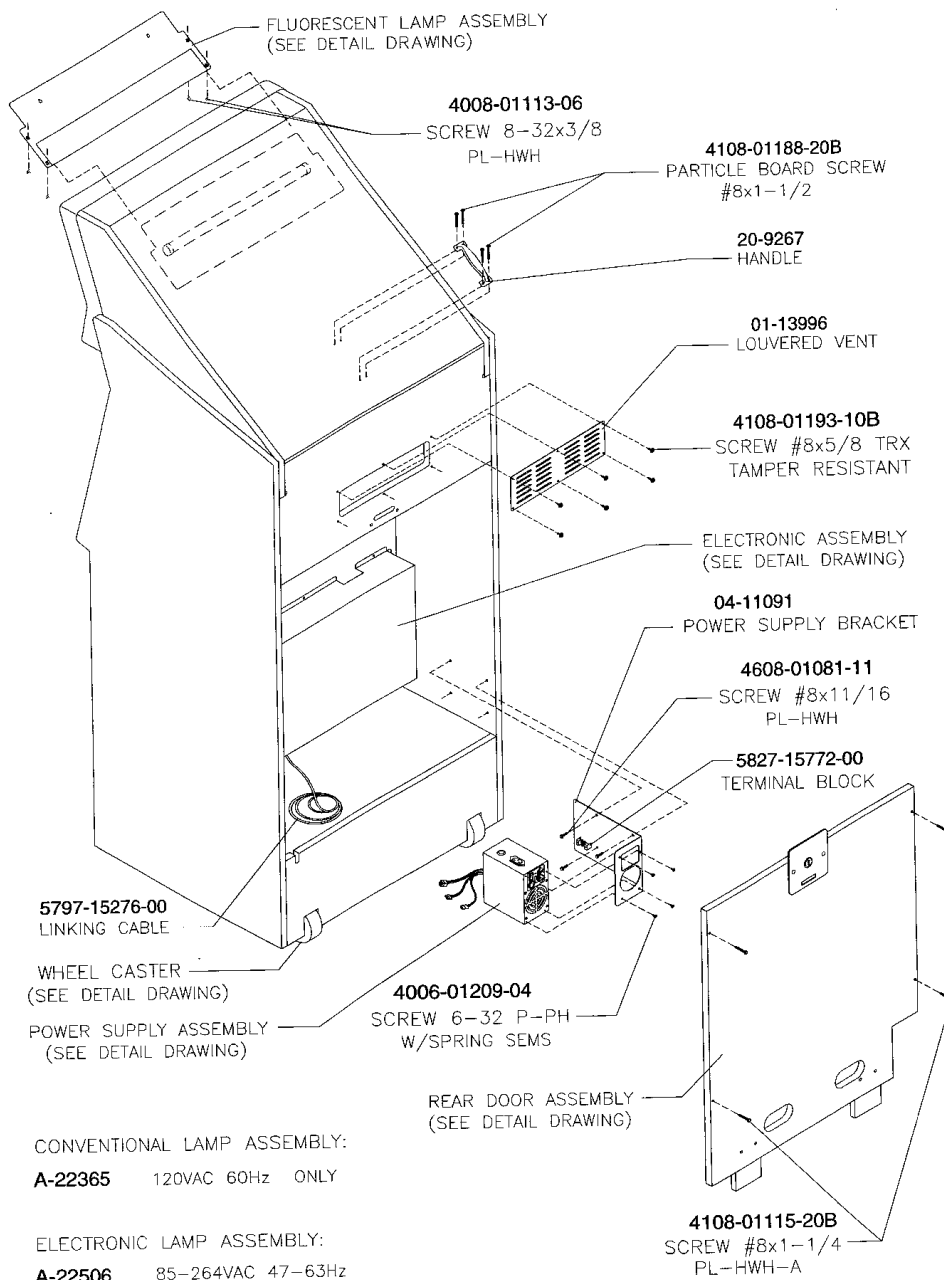


# CABINET FRONT VIEW





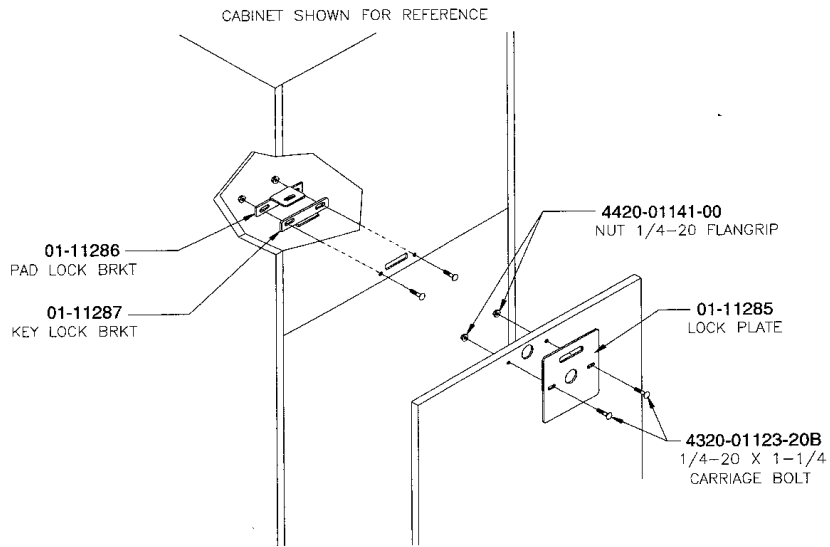
## CABINET REAR VIEW



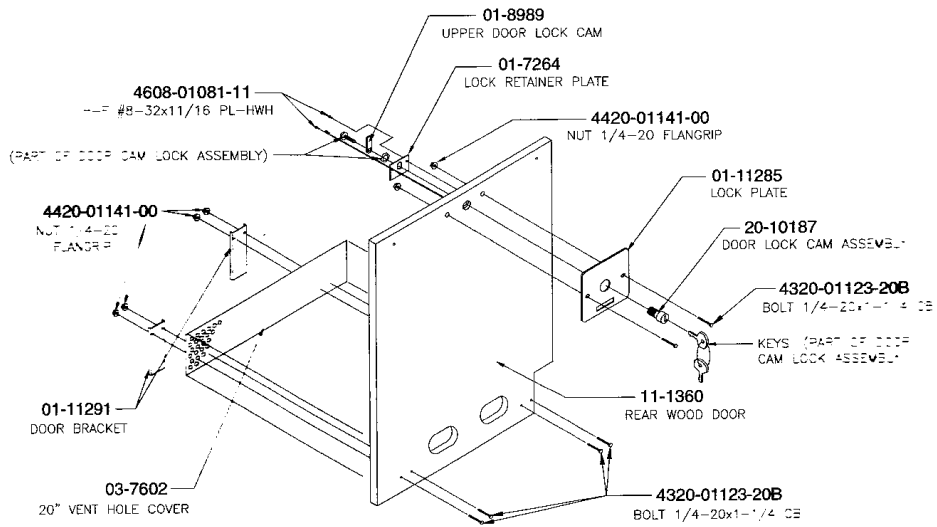
CONVENTIONAL LAMP ASSEMBLY:  
**A-22365** 120VAC 60Hz ONLY

ELECTRONIC LAMP ASSEMBLY:  
**A-22506** 85-264VAC 47-63Hz

## REAR DOOR LOCK ASSEMBLY

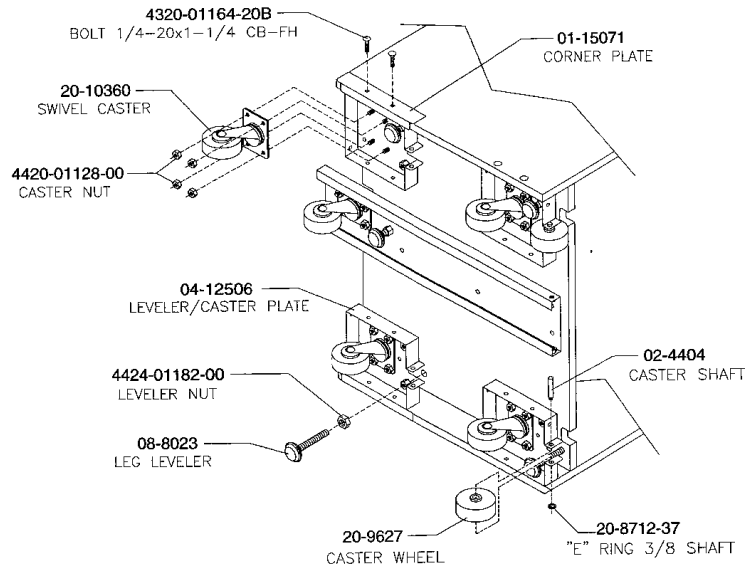


## REAR DOOR ASSEMBLY A-22830

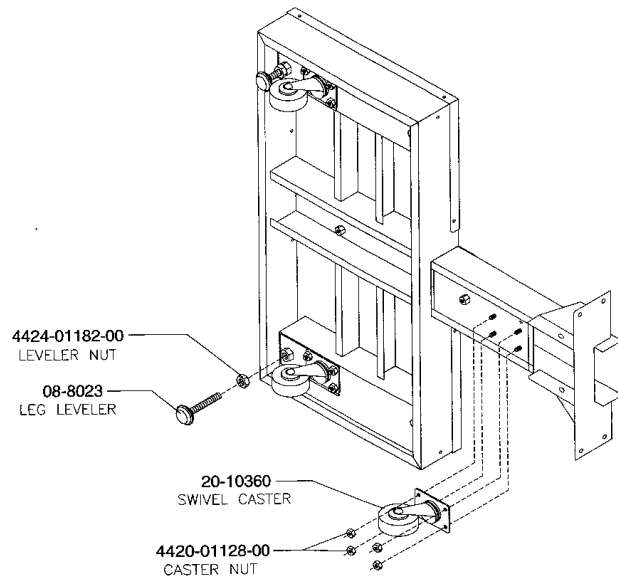


## CASTER AND LEVELER ASSEMBLIES

BOTTOM VIEW OF CABINET ASSEMBLY

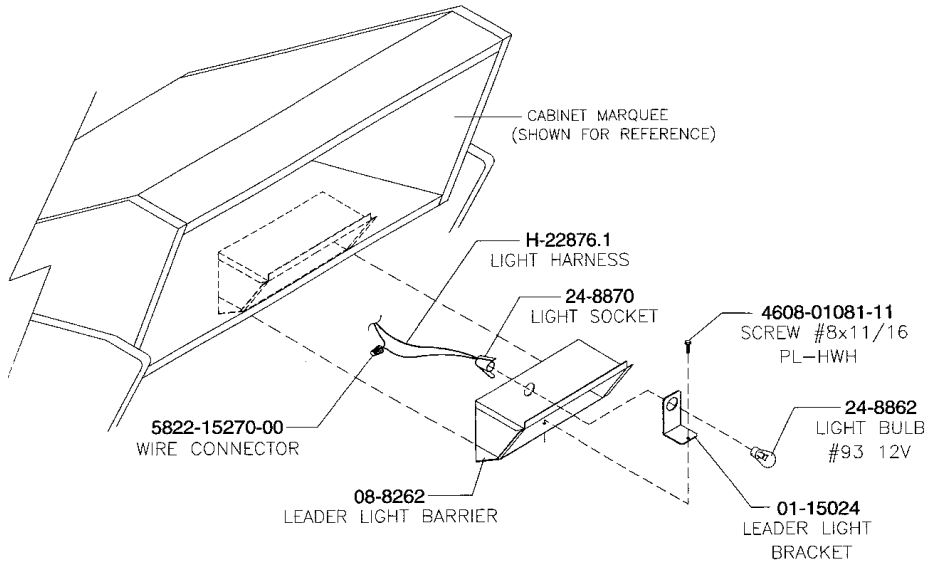


BOTTOM VIEW OF PEDESTAL ASSEMBLY

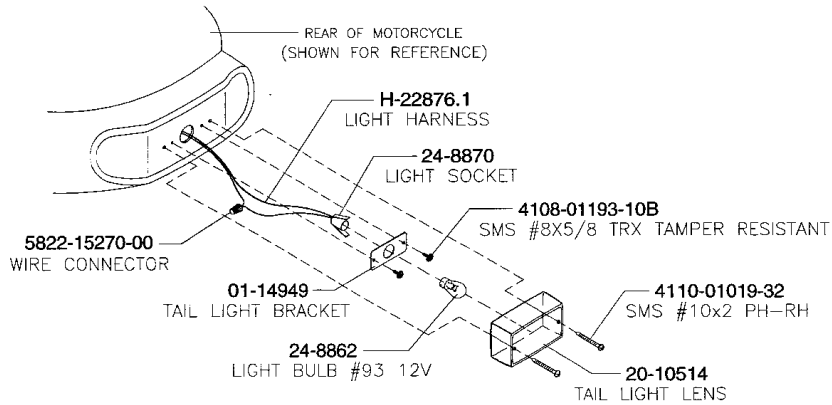


## GAME LIGHT ASSEMBLIES

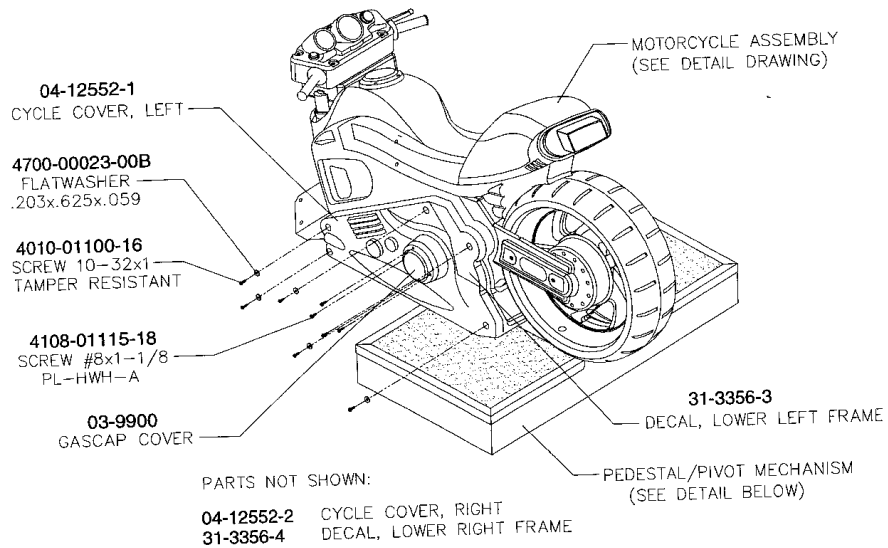
### A-22879 LEADER LIGHT ASSEMBLY



### TAIL LIGHT COMPONENTS

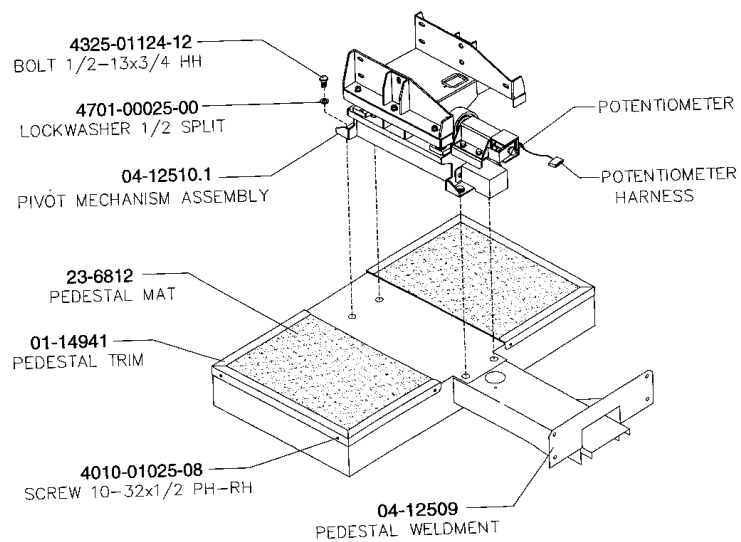


## A-22831 MOTORCYCLE MODULE ASSEMBLY

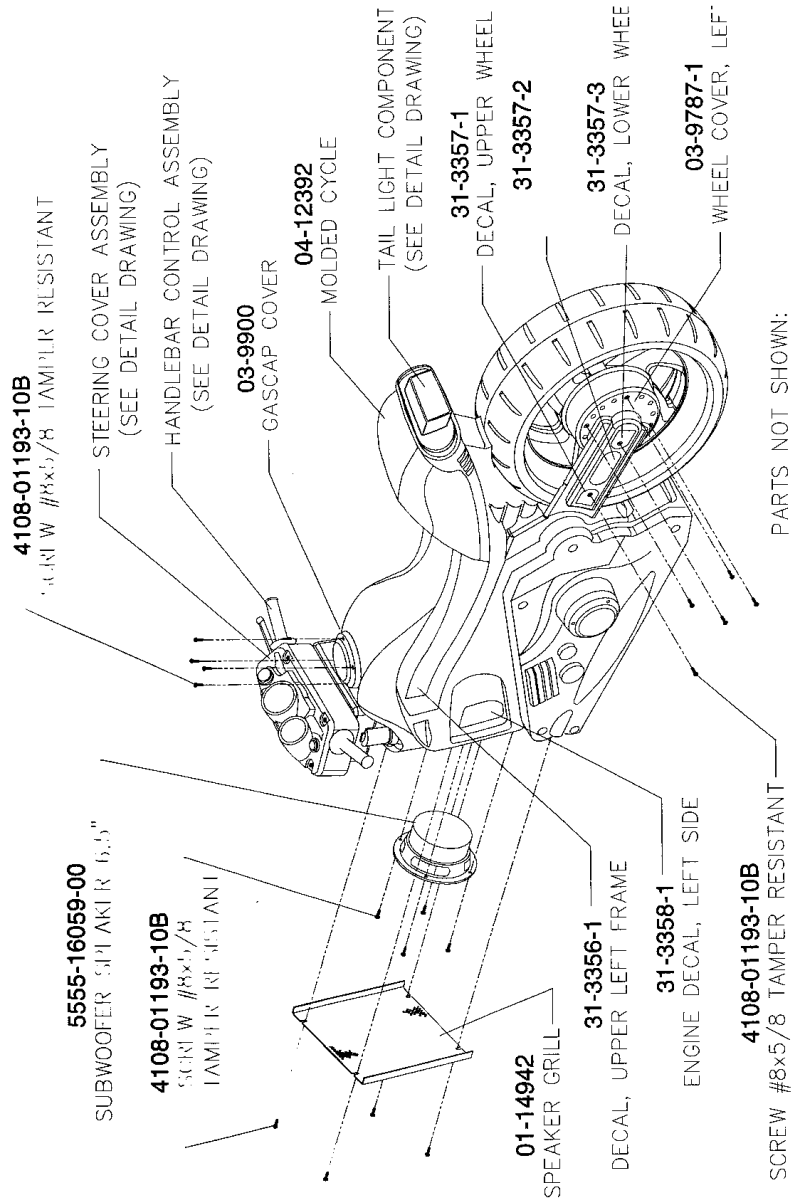


## A-22832 PEDESTAL/PIVOT MECHANISM

(RIGHT SIDE VIEW)



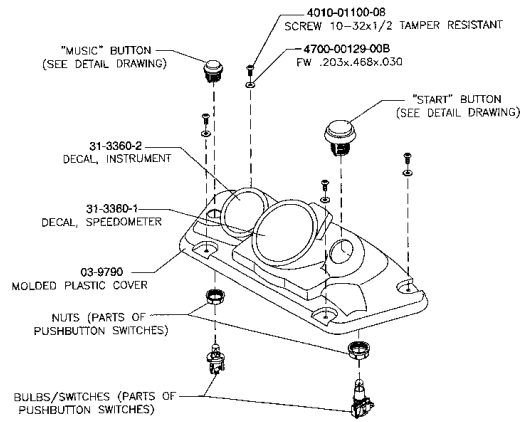
# A-22834 MOTORCYCLE ASSEMBLY



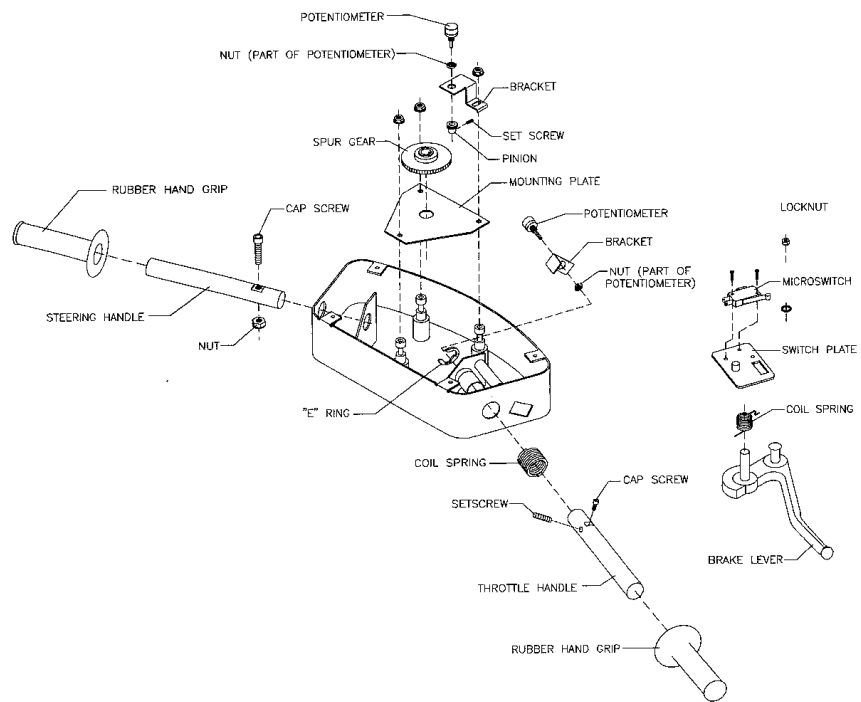
PARTS NOT SHOWN:

- 03-9787-2 WHEEL COVER, RIGHT
- 31-3356-2 DECAL, UPPER RIGHT FRAME
- 31-3358-2 ENGINE DECAL, RIGHT SIDE
- 20-10169-4 RUBBER INSERT 10-32x.63

### A-22835 STEERING COVER ASSEMBLY

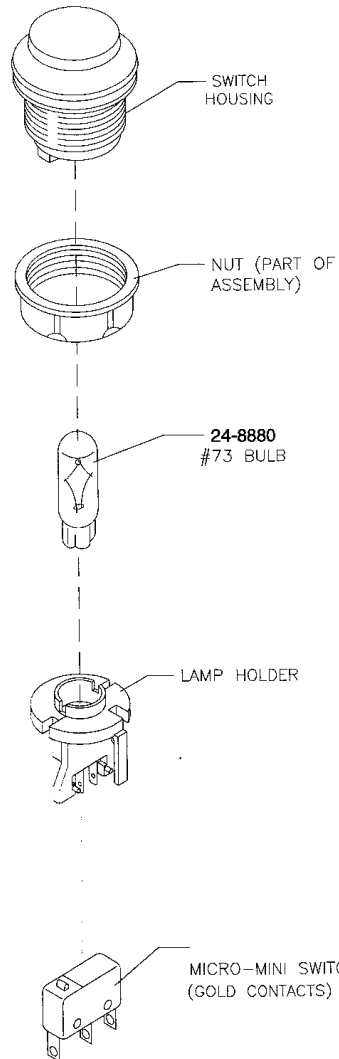


### 04-12511 HANDLEBAR CONTROL ASSEMBLY

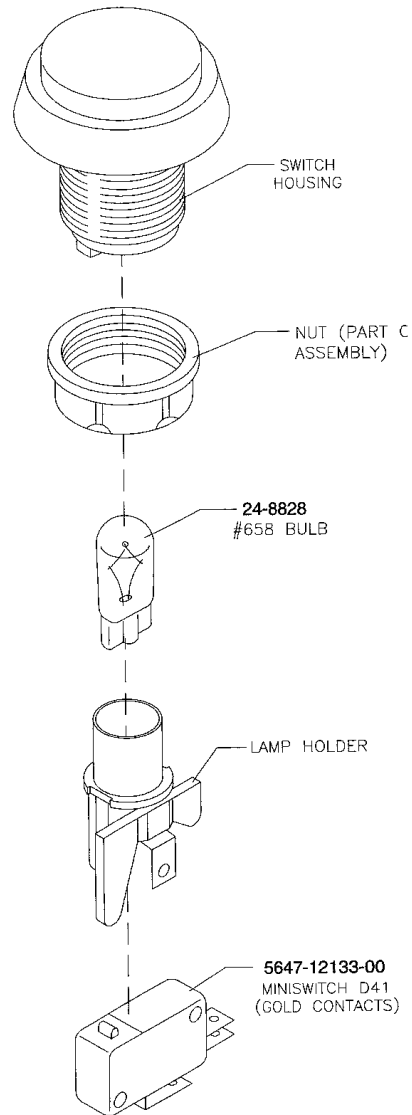


## PUSHBUTTON ASSEMBLIES

20-10520 (MUSIC)  
MINI ROUND ILLUMINATED RED

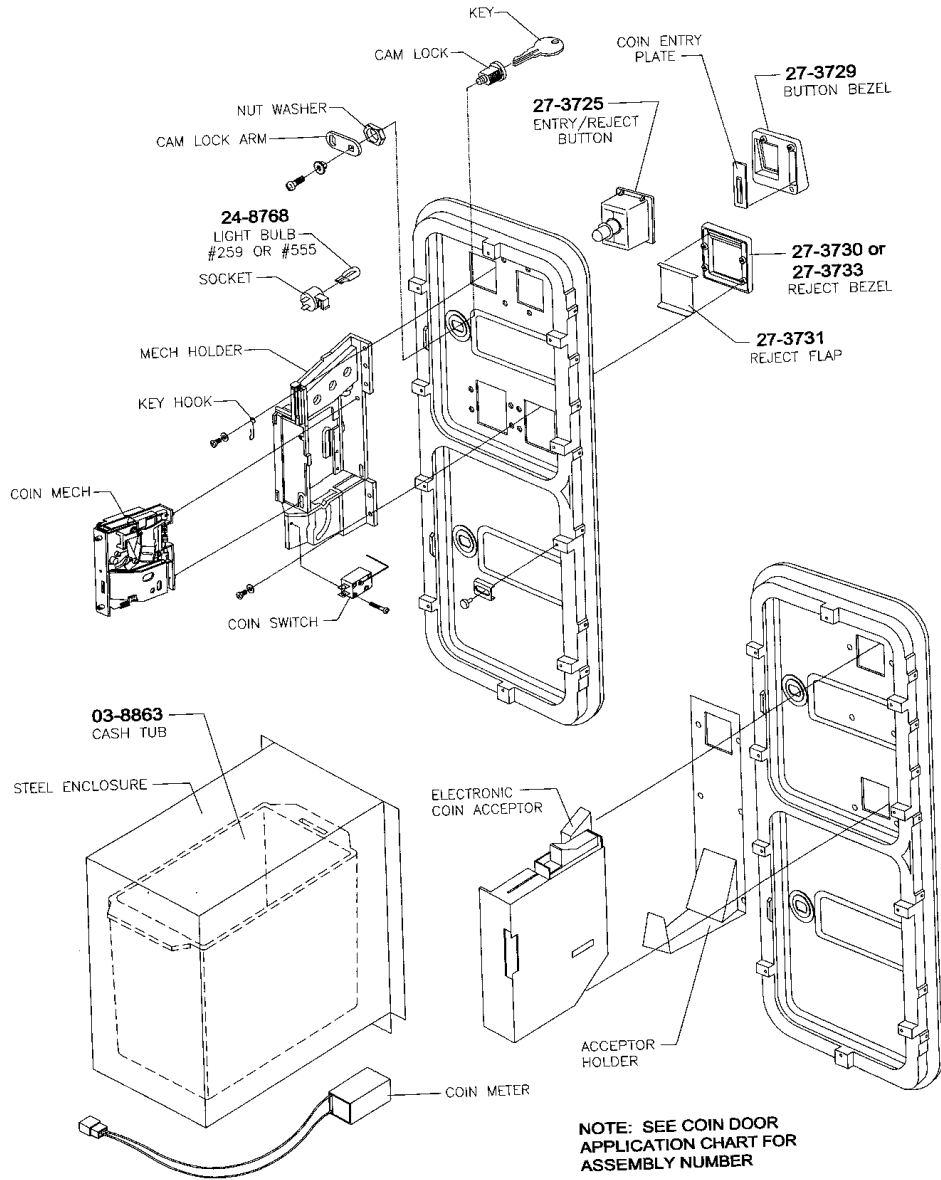


20-10513 (START)  
ROUND ILLUMINATED RED

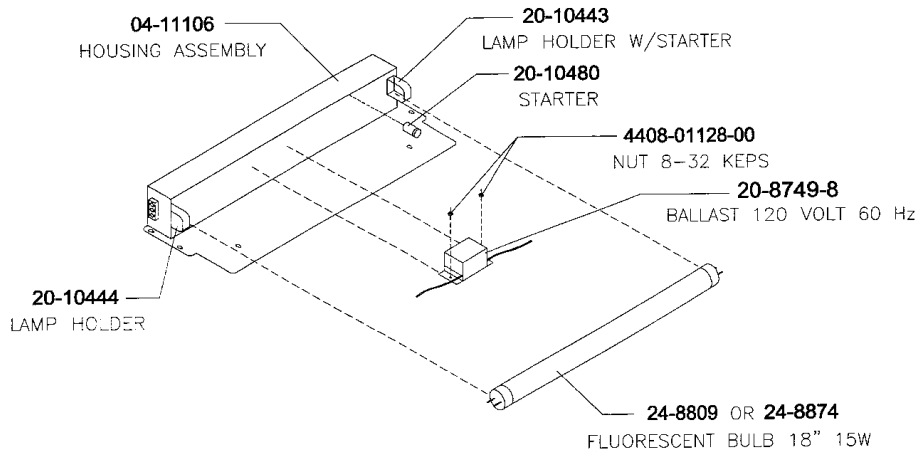




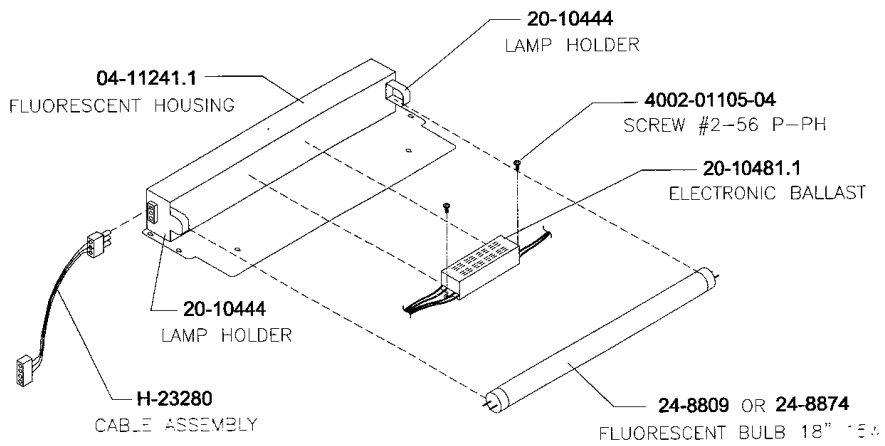
## COIN DOOR ASSEMBLY



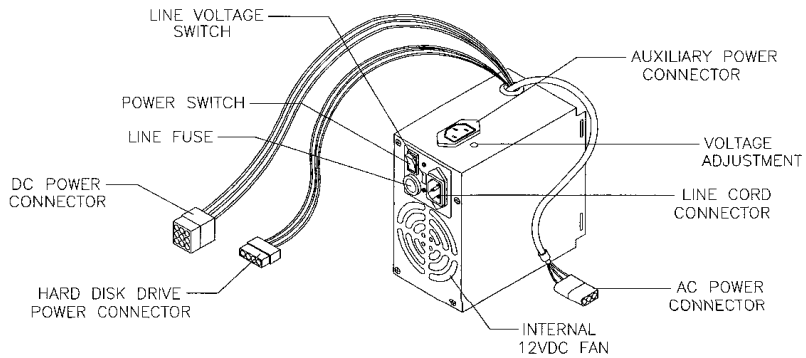
## A-22365 FLUORESCENT LAMP ASSEMBLY



## A-22506 FLUORESCENT LAMP ASSEMBLY



## POWER SUPPLY ASSEMBLY



### A.C. AUXILIARY POWER CONNECTOR

PINS	FUNCTION	COLOR
1	LINE	BLACK
2	GROUND	GREEN
3	NEUTRAL	WHITE

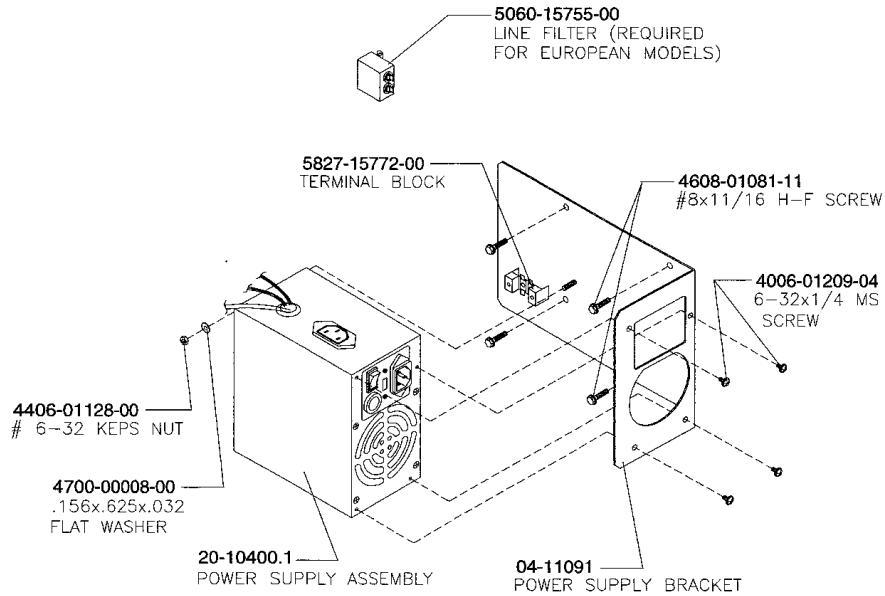
### D.C. MAIN POWER CONNECTOR

PINS	FUNCTION	COLOR
1,2,3	+5 VDC	RED
4,5,6	RETURN	BLACK
7	-5 VDC	BLUE
8	+12 VDC	YELLOW
9	-12 VDC	WHITE

### HARD DISK DRIVE POWER CONNECTOR

PINS	FUNCTION	COLOR
1	+5 VDC	RED
2,3	RETURN	BLACK
4	+12 VDC	YELLOW

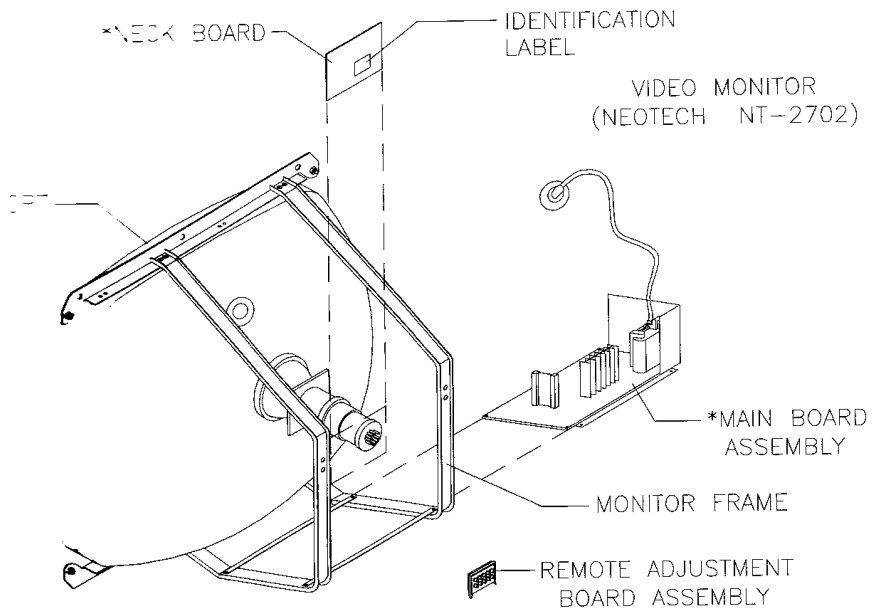
**NOTE:** Many computer grade power supplies use alternate wire colors. This is acceptable as long as the pinout is correct.



## VIDEO MONITOR ASSEMBLY 5675-15968-00

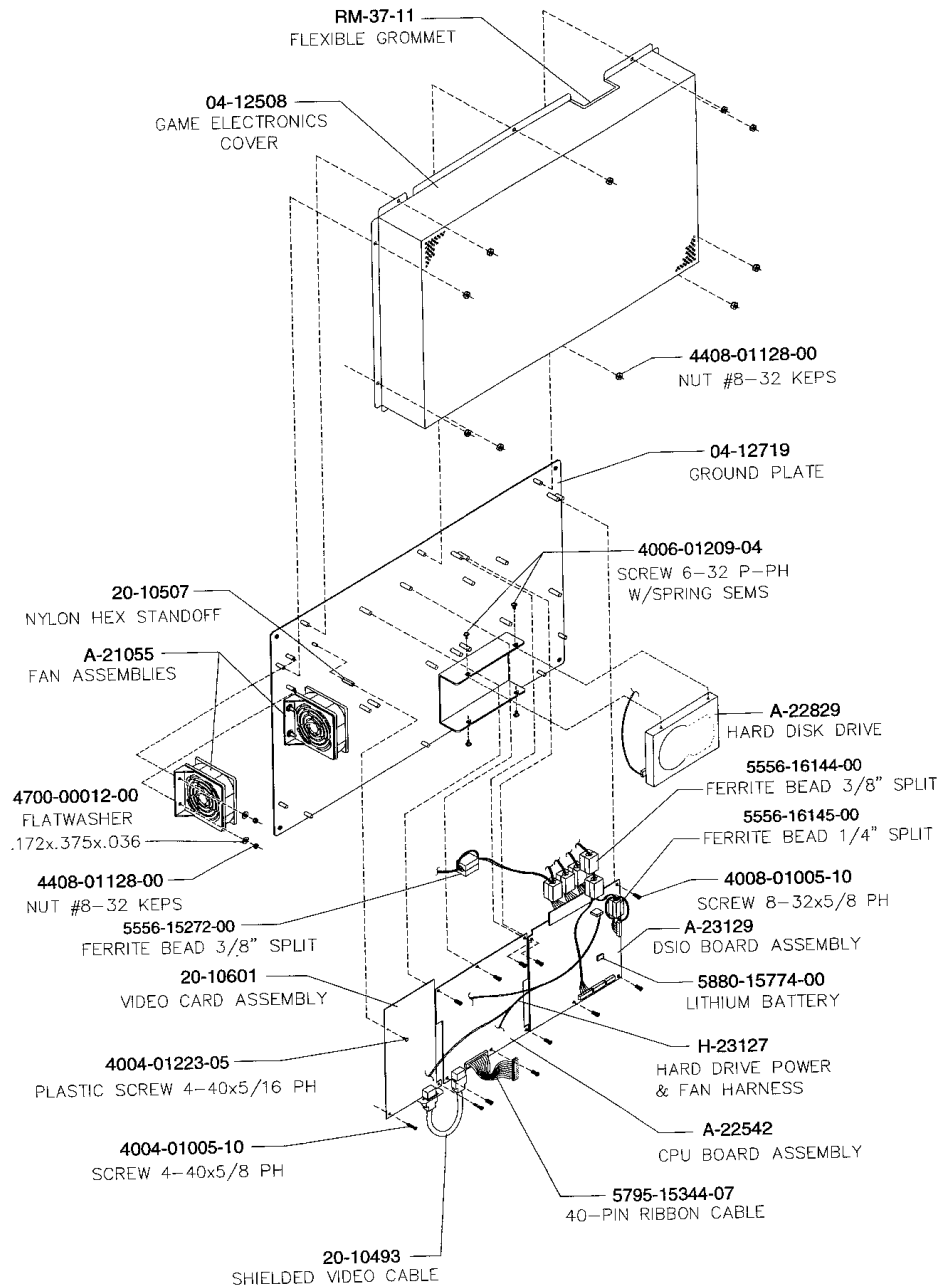
NOTE: When ordering any of the individual monitor components, you must identify the monitor and CRT manufacturers. Look for a label on the neck board or main board assemblies and on the CRT near the deflection yoke.

The CRT, frame, deflection yoke, and remote adjustment board assembly are not available separately. These components are specific to each video monitor and are not interchangeable. Complete monitor assemblies (CRT with frame, yoke, neck board, and main board) are interchangeable between cabinets.

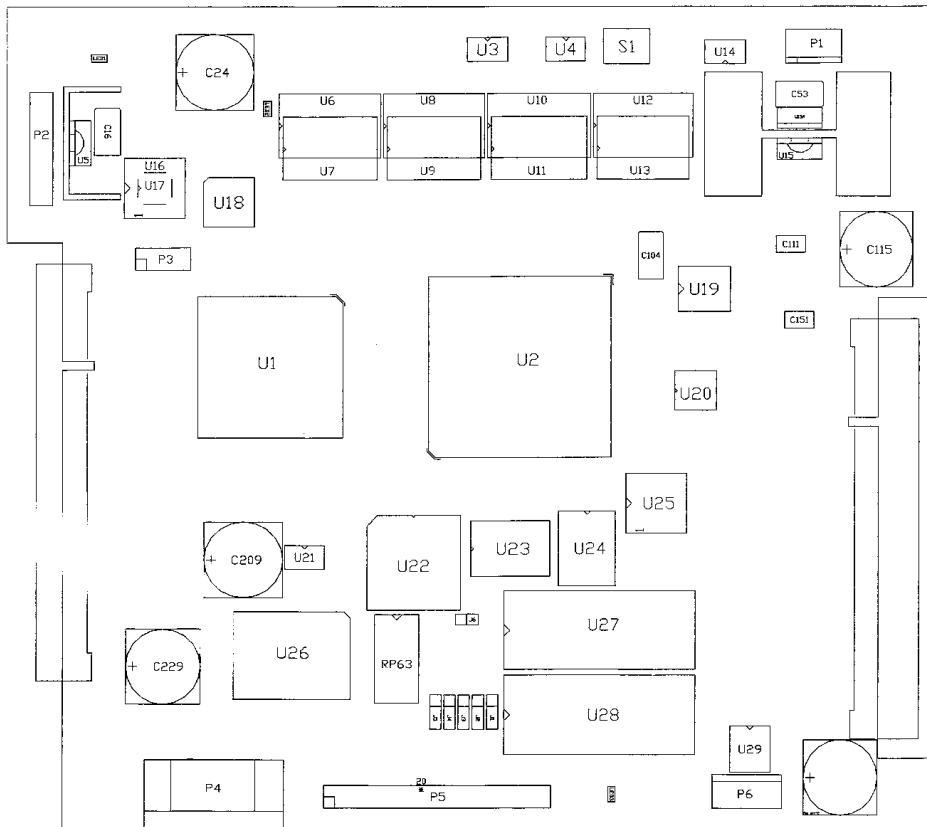


\*THESE PARTS ARE AVAILABLE ONLY AS  
A SET - ORDER PART NO. 04-12785

# A-22828 ELECTRONICS ASSEMBLY



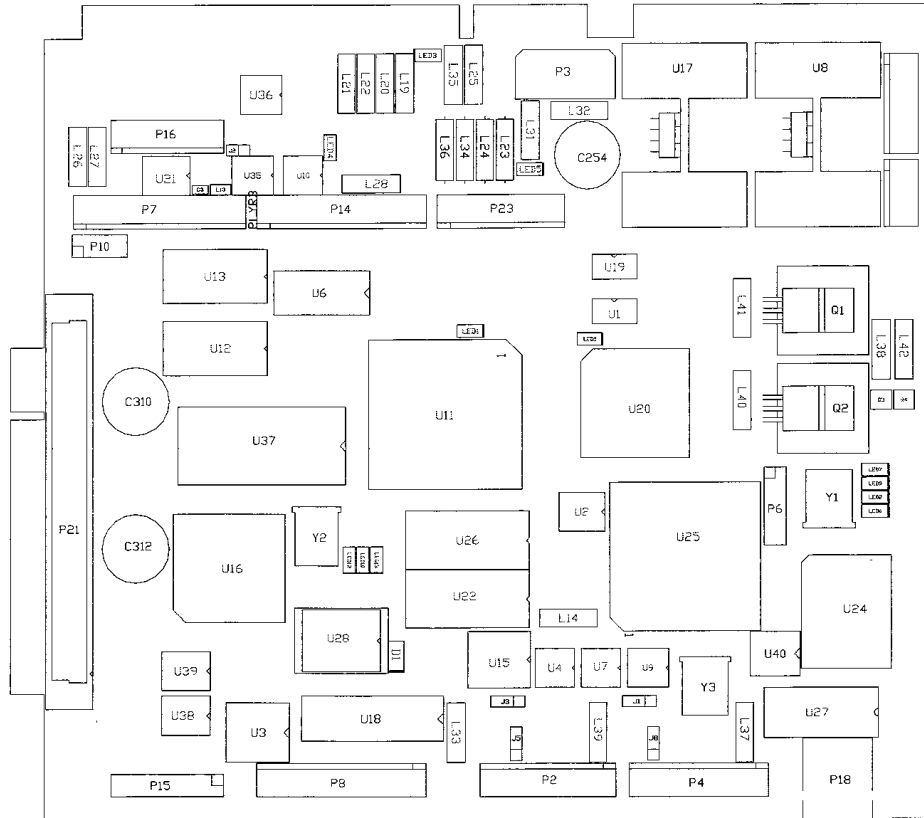
**5271 CPU BOARD ASSEMBLY  
A-22542**



**Field Replaceable Parts**

DESIGNATION	PART NUMBER	FUNCTION	DESCRIPTION
U5	5250-16015-00	+2V Regulator	Voltage Regulator 2.5VDC
U15	5460-15671-00	+3V Regulator	Voltage Regulator 3.3 VDC
U19	A-22911	Bus Controller Configuration	Programmed Logic Device
U22	A-22912	CPU Configuration	Programmed Logic Device
U27	A-5343-30025-1	CPU Boot ROM	EPROM Assembly
U28	--	CPU Expansion ROM	EPROM Assembly (empty)

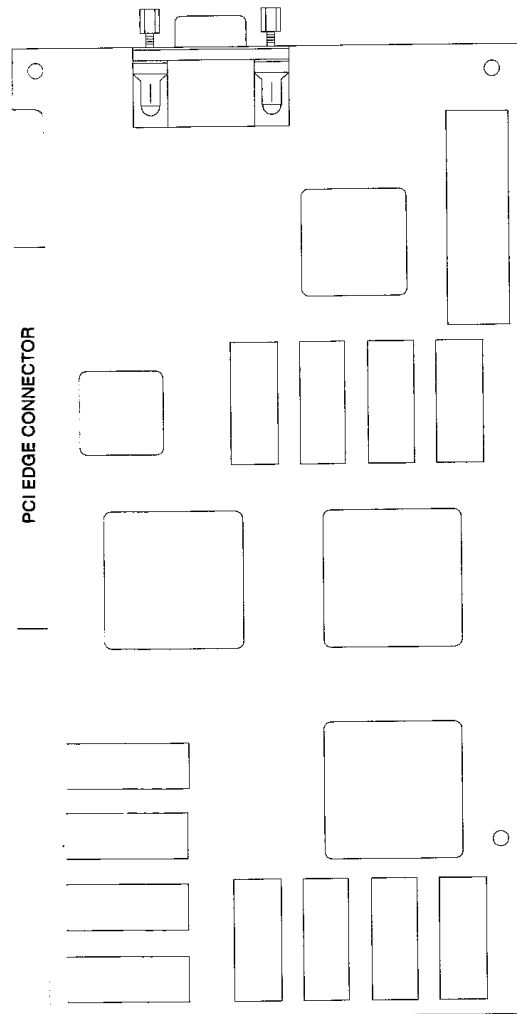
## DSIO BOARD ASSEMBLY A-23129



### Field Replaceable Parts

DESIGNATION	PART NUMBER	FUNCTION	DESCRIPTION
Q1, Q2	5162-15259-00	Power Transistor	TIP 120
U8, U17	5370-14146-00	Audio Amplifier	TDA 7240A
U28	5880-15774-00	Memory Backup	3V Lithium Battery
U37	A-22909	Game Instructions	PIC Assembly

**VIDEO CARD ASSEMBLY**  
**20-10601**



**Field Replaceable Parts**

There are no field replaceable parts in the Video Card Assembly.



### LINE CORD APPLICATION TABLE

Part Number / Country	5850-15521-00	5850-15521-01	5850-15521-02	5850-15521-03	5850-15521-04	5850-15521-05	5850-15521-06
Australia						■	
Austria			■				
Belgium			■				
Canada		■					
Denmark			■				
Finland			■				
France			■				
Germany			■				
Holland			■				
Hungary			■				
Italy	■						■
Japan						■	
New Zealand							
Norway			■				
Spain			■				
Switzerland					■		
UK				■			
USA		■					

### COIN DOOR APPLICATION TABLE

Part Number / Country	09-72000-1	09-72000-15	09-96010.1 (SEE NOTE)
Belgium			■
Canada	■		
France			■
Germany			■
Holland			■
Italy			■
Japan		■	
Spain			■
Switzerland			■
UK			■
USA	■		

NOTE: These coin doors are used with 09-77000 Electronic Coin Acceptors. This device must be programmed for the desired type of currency. Contact your authorized distributor for assistance in programming the acceptor.

### ***Other Parts Necessary***

#### Protection

Fuse, 1A, 250V, FB, ¼ x 1¼	5730-15278-00
Fuse, 3A, 250V, SB, ¼ x 1¼	5731-10356-00
Fuse, T2.5A, 250V, 5 x 20 mm	5731-14532-00
Fuse, T6.3A, 250V, 5 x 20 mm	5731-14529-00

---

#### Cables

AC Line Harness	H-22399
AC Power Harness	H-22874
Line Filter Harness	H-22393
12V Light Harness	H-22876.1
Motor Bike Wiring Harness	H-22875.1
Shielded Video Cable	20-10493
Ground Braid	H-21672
Hard Disk Drive Ribbon Cable	5795-15344-07
Hard Disk Drive / Fan Power Harness	H-23127
Main Wiring Harness	H-22873
Fluorescent Lamp Cable	H-21492
Fluorescent Lamp Adapter Cable	H-23280

---

#### Documents

Game Information Card	16-10650
Game Manual	16-30025-101

---

#### **Other Items**

T-20 Tamper-Resistant Wrench	20-9620
T-27 Tamper-Resistant Wrench	20-10140
Crossover Coupler	5796-15262-00

# ROAD BURNERS™

## SECTION THREE

---

### WIRING

**Warning**

Failure to reconnect all ground wires or replace metal shields and covers with each mounting screw installed and securely tightened may result in radio frequency interference.

**JAMMA Wires**

FUNCTION	WIRE COLOR	PIN	PIN	WIRE COLOR	FUNCTION
Ground	Black	A	1	Black	Ground
Ground	Black	B	2	Black	Ground
+5VDC	Red	C	3	Red	+5VDC
+5VDC	Red	D	4	Red	+5VDC
Not Used	N/C	E	5	Yellow	-5VDC
+12VDC	Orange	F	6	Orange	+12VDC
Key	N/C	H	7	N/C	Key
Not Used	N/C	J	8	Brown	Coin Counter 1
Not Used	N/C	K	9	N/C	Not Used
Speaker -, Seat	Red-Gray	L	10	Brown-Gray	Speaker +, Seat
Speaker +, Cabinet	Red-White	M	11	Brown-White	Speaker -, Cabinet
Video Green	Yellow-Green	N	12	Yellow-Red	Video Red
Video Sync	Yellow-White	P	13	Yellow-Blue	Video Blue
Service Credits	White-Gray	R	14	Yellow-Black	Video Ground
Slam Tilt	Black-Green	S	15	Black-Blue	Test
Coin 2	Black-Red	T	16	Black-Brown	Coin 1
Not Used	N/C	U	17	White	Start
Not Used	N/C	V	18	N/C	Not Used
Not Used	N/C	W	19	N/C	Not Used
Not Used	N/C	X	20	N/C	Not Used
Not Used	N/C	Y	21	N/C	Not Used
Not Used	N/C	Z	22	White-Yellow	Brake
Not Used	N/C	a	23	White-Green	Music
Not Used	N/C	b	24	N/C	Not Used
Not Used	N/C	c	25	N/C	Not Used
Not Used	N/C	d	26	N/C	Not Used
Ground	Black	e	27	Black	Ground
Ground	Black	f	28	Black	Ground
<b>SOLDER SIDE</b>			<b>COMPONENT SIDE</b>		

**Coin Door Wires**

Ground	Black	1
Coin 3	Black-Orange	2
+5VDC	Red	3
+12VDC	Orange	4
Key	N/C	5
Coin 4	Black-Yellow	6
Dollar	Black-White	7
Volume -	Orange-Red	8
Volume +	Orange-Green	9
Not Used	N/C	10
Not Used	N/C	11

**Lamp Wires**

Not Used	N/C	1
Key	N/C	2
Tail Light	White-Orange	3
Leader Light	White-Black	4
Start Light	White-Brown	5
Music Light	White-Red	6

**Motor Bike Wires**

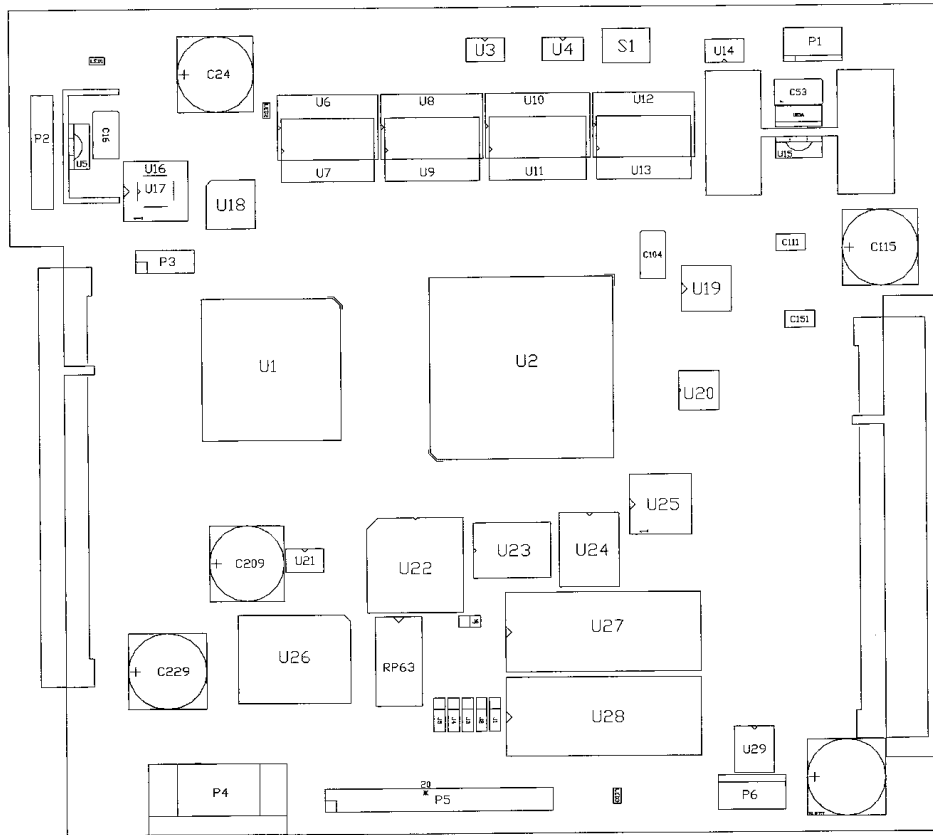
1	White	Start
2	Red	+5VDC
3	Black	Ground
4	Red	+5VDC
5	White	Music Light
6	Black	Ground
7	White	Brake
8	Black	Ground
9	N/C	Key
10	Red	+5VDC
11	White	Throttle
12	Black	Ground
13	Red	+5VDC
14	White	Steering
15	Black	Ground
1	Black	Ground
2	White	Seat Tilt
3	Red	+5VDC

**D.C. Power Source Voltage Limits**

FUNCTION	RANGE LIMITS	COLOR	FUNCTION	RANGE LIMITS	COLOR
Digital Circuits	+4.90V to +5.10V	Red	Coin Lights	-4.75V to -5.25V	Yellow
Audio, Lights	+11.5V to +12.5V	Orange	Auxiliary Power	-11.5V to -12.5V	Blue



## CPU BOARD ASSEMBLY



## CPU ASSEMBLY SWITCH

DESIGNATION	LOCATION	FUNCTION	POSITIONS	STATE	MEANING
S1	EDGE NEAR U4 AND U12	RESETS AND RESTARTS GAME	2	OFF	NORMAL OPERATION
				ON	FORCED RESET

**NOTE:** This switch resets the CPU Board without turning the power off at the power supply.

**CPU BOARD ASSEMBLY  
JUMPER POSITION CHART**

DESIGNATION	LOCATION	FUNCTION	MEANING	POSITION	DEFAULT
J1 (NOTE 1)	NEAR U28 & CONNECTOR P5	CPU Boot ROM Type (U18)	EPROM	PINS 1 & 2	●
			Flash ROM	PINS 2 & 3	
J2 (NOTE 2)	NEAR U28 & CONNECTOR P5	CPU Boot ROM Size (U18)	1,2, or 4Mbit Flash ROM	PINS 1 & 2	●
			8Mbit Flash ROM	PINS 2 & 3	
J3 (NOTE 1)	NEAR U28 & CONNECTOR P5	CPU Boot ROM Type	EPROM	PINS 1 & 2	●
			Flash ROM	PINS 2 & 3	
J4 (NOTE 2)	NEAR U28 & CONNECTOR P5	CPU Boot ROM Size (U18)	2Mbit ROM	PINS 1 & 2	●
			1Mbit ROM	PINS 2 & 3	
J5 (NOTE 3)	NEAR U28 & CONNECTOR P5	Expansion Boot ROM Size (U19)	4Mbit ROM	PINS 1 & 2	●
			8Mbit ROM	PINS 2 & 3	
J6	BETWEEN U22 & U27	Boot Program Location	Boot from CPU ROM	PINS 1 & 2	●
			Boot from DSIO ROM	PINS 2 & 3	

NOTES:

1. Set both jumpers J1 and J3 to EPROM or Flash ROM mode to use such devices.
2. These jumpers operate independently of one another.
3. This jumper is independent of the CPU boot ROM size selected.

**CPU BOARD ASSEMBLY  
LED INDICATOR STATUS CHART**

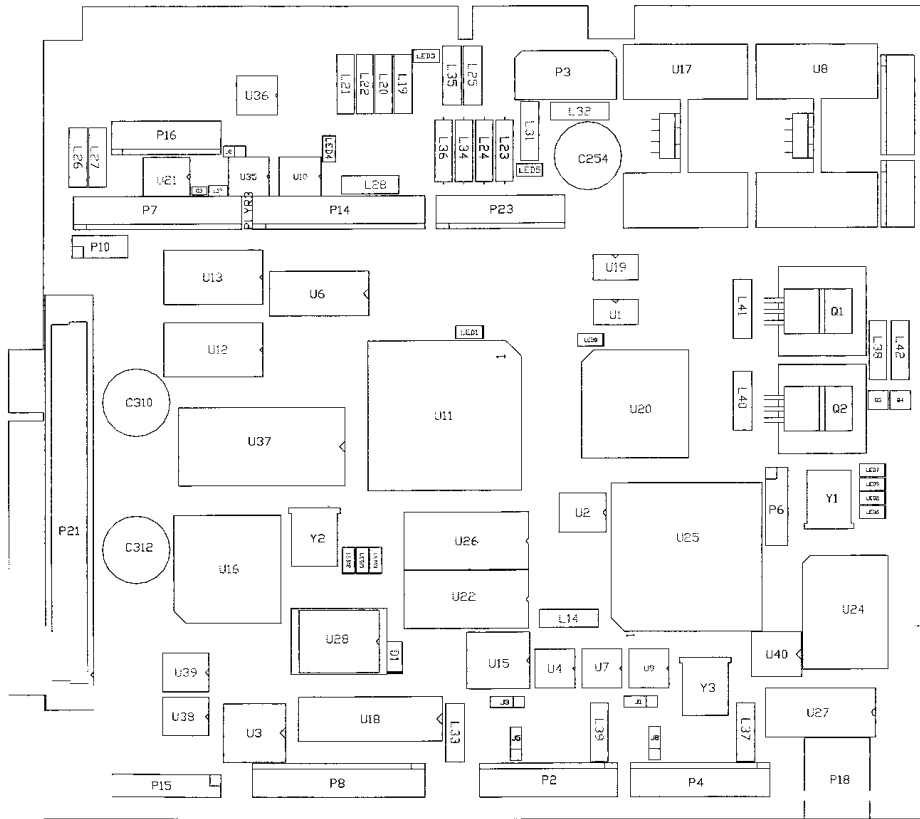
DESIGNATION	LOCATION	FUNCTION	COLOR	STATE	MEANING
LED 1 (NOTE 1)	NEAR C1 & U5	3.3V CPU POWER INDICATOR	RED	OFF	INSUFFICIENT POWER
				ON	POWER O.K.
				BLINKING	POWER FAULT
LED 2 (NOTE 2)	NEAR C24 & U6	5V CPU POWER INDICATOR	RED	OFF	INSUFFICIENT POWER
				ON	POWER O.K.
				BLINKING	POWER FAULT
LED 3 (NOTE 3)	NEAR P5 & U28	HARD DISK DRIVE ACTIVITY	GREEN	OFF	NOT IN USE
				ON	LOCKED UP
				BLINKING	NORMAL DISK ACTIVITY
LED 4 (NOTE 4)	NEAR U22 & U26	CPU ACTIVITY INDICATOR	RED	OFF*	*SEE NOTE 4 BELOW
				ON*	
				BLINKING* SEQUENTIALLY	

NOTES:

- LED 1 monitors CPU power (+3.3 Volts). If this LED is off or blinking, investigate the processor circuits. If other LEDs are off or blinking at the same time, check the +5 Volt circuits or the game power supply.
- LED 2 monitors CPU power (+5 Volts). If this LED is off or blinking, investigate the processor circuits. If other LEDs are off or blinking at the same time, check the +5 Volt circuits or the game power supply.
- LED 3 flashes when the hard disk is operating during game play. It may light continuously during startup. If this LED is lighted continuously, there may be a fault with the hard disk drive, which may be locked up.
- LED 4 initially indicates program start-up stages. It is a seven segment alpha-numeric display device. Under normal conditions, it displays a lowercase "b" or a sequentially blinking segments in an "O" pattern. During any of the self-test screens, it displays a "bouncing bar" resembling a hyphen ("-").



# DSIO BOARD ASSEMBLY



**DSIO BOARD ASSEMBLY  
JUMPER POSITION CHART**

DESIGNATION	LOCATION	FUNCTION	MEANING	POSITION	STATE
J1 (NOTE 1)	NEAR U9 & CRYSTAL Y3	GUN 1 I/O CONNECTOR P2	INPUT MODE	PINS 1 & 2	●
			OUTPUT MODE	PINS 2 & 3	
J2 (NOTE 3)	BETWEEN P16 & U35	VIDEO SYNC	NEGATIVE SYNC	PINS 1 & 2	●
			POSITIVE SYNC	PIN 1 ONLY	
J3 (NOTE 2)	BETWEEN P2 & U15	GUN 2 I/O CONNECTOR P4	INPUT MODE	PINS 1 & 2	●
			OUTPUT MODE	PINS 2 & 3	
J4 (NOTE 4)	NONE	NONE	NOT USED	NONE	---
J5 (NOTE 2)	BETWEEN P2 & U15	GUN 2 I/O CONNECTOR P4	INPUT MODE	PINS 1 & 2	●
			OUTPUT MODE	PINS 2 & 3	
J6 (NOTE 4)	NONE	NONE	NOT USED	NONE	---
J7 (NOTE 4)	NONE	NONE	NOT USED	NONE	---
J8 (NOTE 1)	BETWEEN P4 & U9	GUN 1 I/O CONNECTOR P2	INPUT MODE	PINS 1 & 2	●
			OUTPUT MODE	PINS 2 & 3	

NOTES:

1. Select the Gun 1 (P2) I/O port mode by setting both the J1 and J8 jumpers to input or output mode.
2. Select the Gun 2 (P4) I/O port mode by setting both the J3 and J5 jumpers to input or output mode.
3. Set the Video Sync Signal Polarity to Positive by setting the J2 jumper on pin 1 only. Do not remove.
4. These jumpers are not required for this game. They may not be present on the board assembly.

**DSIO BOARD ASSEMBLY  
LED INDICATOR STATUS CHART**

DESIGNATION	LOCATION	FUNCTION	COLOR	STATE	MEANING
LED 1 (NOTE 1)	NEAR U11	SIO BOARD ACTIVITY	GREEN	OFF	NO BOOT ROM
				ON	SIO BOARD LOCKED UP
				BLINKING	NORMAL OPERATION
LED 2 (NOTE 2)	NEAR U34 & CRYSTAL Y1	LINKING CONNECTOR STATUS	GREEN	OFF	NOT IN USE (NO GAME LINKING)
				ON	NORMAL LINKED OPERATION
				BLINKING	LINK FAULT
LED 3 (NOTE 3)	NEAR THE JAMMA CONNECTOR	-5V POWER INDICATOR	RED	OFF	NO POWER
				ON	NORMAL OPERATION
				BLINKING	POWER FAULT
LED 4 (NOTE 4)	NEAR U35 & CONNECTOR P14	+12V POWER INDICATOR	RED	OFF	NO POWER
				ON	NORMAL OPERATION
				BLINKING	POWER FAULT
LED 5 (NOTE 5)	NEAR CONNECTOR P23	+5V POWER INDICATOR	RED	OFF	NO POWER
				ON	NORMAL OPERATION
				BLINKING	POWER FAULT
LED 6 (NOTE 6)	NEAR U34 & CRYSTAL Y1	CPU LINKING ACTIVITY	RED	OFF	NOT IN USE
				ON	CPU LINKING IN PROGRESS
				BLINKING	NORMAL OPERATION
LED 7 (NOTE 7)	NEAR U34 & CRYSTAL Y1	LINKING TRANSMITTING DATA	RED	OFF	NOT IN USE (NO GAME LINKING)
				ON	SENDING DATA
				BLINKING	NORMAL OPERATION
LED 8 (NOTE 8)	NEAR U14 & CRYSTAL Y1	AUDIO ACTIVITY	YELLOW	OFF	NO SOUND BOOT ROM
				ON	LOCKED UP
				BLINKING	NORMAL OPERATION

**DSIO BOARD ASSEMBLY  
LED INDICATOR STATUS CHART (CONTINUED)**

LED 9 (NOTE 9)	NEAR U34 & CRYSTAL Y1	LINKING RECEIVING DATA	YELLOW	OFF	NOT IN USE (NO GAME LINKING) RECEIVING DATA
				ON	
				BLINKING	NORMAL OPERATION
LED 10 (NOTE 10)	NEAR U44 & CRYSTAL Y2	AUDIO ACTIVITY	GREEN	OFF	NOT IN USE (NO AUDIO DATA) RECEIVING DATA
				ON	
				BLINKING	NORMAL OPERATION
LED 11 (NOTE 11)	NEAR U44 & CRYSTAL Y2	NONE	RED	OFF	NOT IN USE (NORMAL)
				ON	CIRCUIT FAULT
				BLINKING	CIRCUIT FAULT
LED 12 (NOTE 12)	NEAR U44 & CRYSTAL Y2	INTERRUPT ACTIVITY	YELLOW	OFF	NOT IN USE (NO INTERRUPTS) RECEIVING DATA
				ON	
				BLINKING	NORMAL OPERATION
LED 13 (NOTE 13)	NEAR U44 & CRYSTAL Y2	DISK ACTIVITY	YELLOW	OFF	NOT IN USE
				ON	PROCESSING DATA
				BLINKING	NORMAL OPERATION

NOTES:

1. Boot ROM is active in short bursts only during start up. May appear irregular after a switched reset.
2. Must be on continuously when linked. Intermittent wiring or hub problems could cause blinking.
3. Monitors a regulated power source. Must be on continuously at all times for correct operation.
4. Monitors a regulated power source. Must be on continuously at all times for correct operation.
5. Monitors a regulated power source. Must be on continuously at all times for correct operation.
6. Indicates packet activity occurring on the network. May appear continuous during heavy game play.
7. This cabinet is sending network packet data. May appear continuous during heavy game play.
8. Sound ROM is active in short bursts only during start up. May appear continuous during game play.
9. This cabinet is getting network packet data. May appear continuous during heavy game play.
10. Sound ROM is active in short bursts only during start up. May appear continuous during game play.
11. This indicator is not required for this game. It may not be present on the board assembly.
12. Indicates internal game electronics communication. May appear continuous during heavy game play.
13. Hard Disk Drive is active in short bursts only during play. May appear continuous at start up.

# ROAD BURNERS™

## SECTION FOUR

### TROUBLESHOOTING

This game uses complex electronic components that are very SENSITIVE to static electricity. The following precautions must be observed and followed prior to handling the electronics.

1. Ensure that the A.C. power to the game is turned OFF prior to servicing the electronics.
2. Discharge any static electricity build up in your body by touching the safety ground stud of the power supply chassis while the line cord is connected to a properly grounded outlet. This is to be done BEFORE touching or handling the electronic assemblies.
3. Store the electronic assemblies in an anti-static area. Anti-static bags are to be used to store or transport the game CPU Board Assembly.
4. DO NOT remove or connect any electronic assemblies when the cabinet power is ON. Doing so will damage the electronic assemblies and void the warranty.
5. Always replace ground wires, shields, safety covers, etc. when maintenance or service is completed. Ensure that all ground and mounting screws are installed and tightened firmly.

## GAME DOES NOT START

### 1. Game appears completely non-functional; no audio, no illumination, no video display.

- A: Check that the Power Switch has been turned ON (on power supply at rear of the main cabinet). The Power Supply fan blows a gentle stream of air if the supply is operating.
- B: Turn OFF the game power. Unplug the A.C. line cord. Examine the Power Supply fuse or circuit breaker. The Power Supply Line Voltage Switch must be set to agree with the local line voltage.
- C: Remove the Line Cord. Test the line cord, power plug and I.E.C. connector for breaks or damage. Verify the continuity of each wire in the cord. Install the cord at the Power Supply and press firmly to fully seat the connector into the supply receptacle.
- D: Unlock, open, and remove the rear cabinet door. Ensure that cabinet wiring harness connectors are fully seated in the corresponding power supply and board connectors (refer to Wiring Diagram, Section Three). Inspect wiring for breaks or damage.
- E: Fully seat the A.C. plug in the power outlet. Verify that A.C. line voltage is present. Turn the game power ON. Check the D.C. wiring harness and connectors if fuse opens the circuit again.

### 2. Video game appears non-functional, but currency acceptor price indicator is illuminated.

- A: Unlock and remove the rear cabinet door. Inspect the board assemblies under low light level conditions. A glow will be seen from the Light Emitting Diodes if there is voltage in the processor circuits. This does not mean that voltages or signals are as they should be, but it does indicate that the boards are receiving some D.C. power from the power supply. The power supply fan should also be operating.
- B: Turn OFF the game power. Inspect the board assemblies. Ensure that the JAMMA Wire Harness connector is attached and fully seated onto the mating board connector. Check the other wiring harness connectors in the same way.

**CAUTION: DO NOT REMOVE OR INSTALL ANY CONNECTOR WHEN POWER IS TURNED ON. DOING SO WILL DAMAGE THE GAME CPU BOARD ASSEMBLY AND VOID THE WARRANTY.**

- C: Verify that the game switches and jumpers are set as intended. Refer to the Board Configuration Chart (Section Three) for variables and default settings.
- D: Turn ON the game power. Using the 20 Volt D.C. setting on a digital voltmeter, measure D.C. voltages present at the Hard Disk Drive Power connector pins. Adjust the +5V source if it is necessary. Refer to the Cabinet Wiring Diagram (Section Three) for specific wiring information and voltage limits.
- E: Using the 2 Volt A.C. setting on a digital voltmeter, measure the same D.C. voltages as above. Any reading here indicates that the supply voltages are unstable and may contain ripple or noise.
- F: Verify that the game runs and completes the power-up self-test sequence without any errors. Note errors and/or failures found during these tests. Compare the CPU Board Assembly Light Emitting Diodes with the LED Indicator Status Chart (Section Three) and note any discrepancies.
- G: Enter the game Menu System by pressing and holding the TEST MODE switch inside the coin door. From the SELF TEST menu, choose the MONITOR TESTS (refer to Section One for additional details). Use this set of tests to check the operation of each screen used in the game.

## **GAME CAN NOT BE PLAYED**

### **1. Game will not accept currency or tokens and cannot be started. Audio and video are present.**

- A: Unlock and open the cash door. Empty the cash box. Inspect the revenue for any counterfeit currency. Check the vault and remove any items that block the path from the mechanism.
- B: Unlock and open the coin door. Check each mechanism by hand to ensure proper mounting. Remove the mechanism and clear the currency path. Reinstall the mechanism and latch it.
- C: Verify that the mechanism is level when the doors are closed. Repair or replace the coin door if it is bent or damaged. Adjust the cabinet leg levelers if necessary to keep mechanisms vertical.
- D: Enter the game Menu System by pressing and holding the TEST MODE switch inside the coin door. From the SELF TEST menu, choose COIN OPTIONS (refer to Section One for additional details). Use these tests to confirm the pricing and setup of each mechanism used in the game.
- E: Enter the game Menu System by pressing and holding the TEST MODE switch inside the coin door. From the SELF TEST menu, choose the CONTROL TESTS (refer to Section One for additional details). Use this set of tests to check the operation of each coin or bill mechanism.

### **2. Game accepts currency or tokens, but does not start. Audio and video are present.**

- A: Unlock and open the coin door. Check each mechanism by hand to ensure proper mounting. Verify that each of the release latches is in the closed and locked position. Test known good and bad coins to see if the mechanism accepts and rejects the currency correctly.
- B: Ensure that no loose parts or wires are caught in the hinges, latches, or switch contacts.
- C: Inspect to see if the external coin door indicators (pricing, flashing arrows, etc.) are illuminated. Check connectors and cables for wiring continuity from CPU Board to the coin mechanisms.
- D: Enter the game Menu System by pressing and holding the TEST MODE switch inside the coin door. From the SELF TEST menu, choose COIN OPTIONS (refer to Section One for additional details). Use these tests to confirm the pricing and setup of each mechanism used in the game.
- E: Check for continuity in each of the suspect switch connections (Common to Normally Open or Common to Normally Closed). Replace faulty switches (bent levers, broken actuators, etc.).
- F: Verify that each coin mechanism is operating properly by placing it in a known good unit.

### **3. Bill validator does not function after field installation. Coin mechanisms operate properly.**

- A: Enter the game Menu System by pressing and holding the TEST MODE switch inside the coin door. From the SELF TEST menu, choose COIN OPTIONS (refer to Section One). Confirm pricing and setup. Check validator switch settings against manufacturer's instruction sheet.
- B: Inspect to see if the external coin door indicators (pricing, flashing arrows, etc.) are illuminated. Ensure that no loose parts or wires are caught in the hinges, latches, or switch contacts. Verify that the harness connectors are attached and fully seated. Check for validator cable continuity.
- C: Verify that the bill validator is operating properly by placing it in a known good unit.

### **4. Coin indicators do not light. Game operates normally.**

- A: Check the coin light fuse and coin light wiring harnesses. Replace the fuse if necessary.
- B: Good bulbs should be clear. Replace the bulb if the glass is white or darkened.

## AUDIO PROBLEMS

### 1. Audio is non-functional, but video is present and game appears to operate normally.

- A: Unlock and open the coin door. Enter the game Menu System by pressing and holding the TEST MODE switch inside the coin door. From the SELF TEST menu, choose ADJUST VOLUME (refer to Section One for additional details). Verify that the attract and game volume levels have not been set at Zero. Change the levels if necessary to make the game audible.
- B: Follow the on-screen instructions to return to the first menu. From the SELF TEST menu, choose SOUND TESTS. Run both the AUDIO HARDWARE and the SPEAKER tests. Use these tests to confirm the operation of each speaker in the cabinet and the motor bike seat.
- C: Inspect the wiring harnesses and verify the connections as indicated by the wiring diagram. See Section 3 for details on cabinet wiring. Check the connectors between the seat and the cabinet.
- D: Turn ON the game power. Using the 20 Volt D.C. setting on a digital voltmeter, measure D.C. voltages present at the Power connector pins. Verify the +5V, -5V and +12V sources. Refer to the Cabinet Wiring Diagram (Section Three) for specific wiring information and voltage limits.
- E: Using the 2 Volt A.C. setting on a digital voltmeter, measure the same D.C. voltages as above. Any reading here indicates that the supply voltages are unstable and may contain ripple or noise.
- F: Verify proper operation of game DSIO Board Assembly by placing it in a known good game.

### 2. The audio is distorted, muffled or missing frequencies. A constant low hum may be present.

- A: Unlock and open the coin door. Enter the game Menu System by pressing and holding the TEST MODE switch inside the coin door. From the SELF TEST menu, choose SOUND TESTS and test the SPEAKERS. These tests will verify some of the functions of the audio circuits in this game.
- B: Turn OFF the game power. Remove the grills and check the speakers. This game uses two full range speakers and a woofer. Ensure that each speaker is FULL RANGE (100 to 10,000 Hz response) and rated for at least 10 WATTS. The woofer must be rated for at least 25 WATTS.
- C: Turn OFF the game power. Remove grilles and inspect speakers. Ensure that no loose parts or wires are caught in speaker cones, terminals, mounting screws, or stuck to the magnets.
- D: Check that the speaker wiring is not reversed at one of the speakers. Weak low frequencies and a thin or hollow sound quality is a symptom of incorrectly phased speakers. This condition will not be detected by the SOUND TESTS, but it will be audible during normal game operation.
- E: Check that the cabinet wiring is correct for this game. Verify that the cabinet wiring provides separate wires (not a common return) for each speaker. Ensure that all cabinet ground wires are connected. Refer to the Cabinet Wiring Diagram (Section Three) for specific wiring information.
- F: Using the 2 Volt A.C. setting on a digital voltmeter, measure voltages at the speaker terminals. Any reading here indicates that the supply voltages are unstable and may contain ripple or noise.
- G: Verify that the speaker is operating properly by placing in a known good unit.



## VIDEO PROBLEMS

### 1. Monitor is weak or non-functional, but audio is present and controls operate as expected.

- A: Unlock and remove the rear cabinet door. Verify that A.C. Power is connected to the Video Monitor. Inspect the neck of the CRT under low light level conditions. A glow will be seen near the CRT base if there is voltage in the filament circuits. This does not mean that other voltages or signals are as they should be, but it does indicate that monitor circuits are receiving some power.
- B: Turn OFF the game power. Verify that both the Video Signal and the Remote Adjustment Board connectors are fully seated on the Video Monitor Board Assembly. Check the other monitor connectors in the same way. **Do not operate a monitor without a Remote Adjustment Board.**
- C: Examine the A.C. line fuse on the Video Monitor Board Assembly. If the fuse is faulty, replace it with an identically rated fuse of the proper voltage and current.
- D: Ensure that no loose parts or wires are caught on the chassis or the mounting brackets.
- E: Check that the brightness (intensity) and contrast have not been set to their minimum levels.
- F: Verify that the Video Monitor is operating correctly by placing it in a known good unit.

### 2. The power-up self-test will run, but the game does not appear. No audio is present.

- A: Note and record any error messages that occur during self-test. Open the coin door. Press and hold the TEST MODE switch to enter the menu system. From the SELF TEST menu, choose DISK TESTS. These tests will verify some of the Hard Disk Drive functions in this game.
- B: Turn OFF the game power. Unlock and open the front door. Inspect the board assemblies. Ensure that the Hard Disk Drive Assembly ribbon cable connector is fully seated into the mating connector on the CPU Board. Verify that all hard drive mounting screws are installed.

**CAUTION: DO NOT REMOVE OR INSTALL ANY CONNECTOR WHEN POWER IS TURNED ON. THIS WILL DAMAGE THE CPU BOARD OR HARD DISK DRIVE AND VOID THE WARRANTY.**

- C: Check that the Hard Disk Drive Assembly is the correct part for this game. Each Hard Disk Drive is labeled with the assembly number and the software version. Refer to Parts (Section Two).
- D: Verify that the ROM instruction set is correct for this game. There is more than one ROM in a game set. Each ROM circuit is labeled with the assembly number and the software version.
- E: Verify that the CPU Board Assembly is correct for this game. Each CPU Board is marked with the manufacturer name, assembly number and the hardware version.
- F: Turn ON the game power. Using the 20 Volt D.C. setting on a digital voltmeter, measure D.C. voltages present at the Power connector pins. Verify the +5V source if it is adjustable. Refer to the Cabinet Wiring Diagram (Section Three) for specific wiring information and voltage limits.
- G: Using the 2 Volt A.C. setting on a digital voltmeter, measure the same D.C. voltages as above. Any reading indicates that the supply voltages are unstable and may contain ripple or noise.
- H: Compare board assembly Light Emitting Diode states with the indicator charts (Section Three).

**3. Monitor will not lock onto the signal and provide a stable picture, colors are missing, etc.**

- A: Check connectors and cables for wiring continuity from the DSIO Board to the Video Monitor. Verify all jumpers are set correctly for this monitor. Refer to Board Configuration (Section Three).
- B: Ensure that the Video Monitor Assembly is correct for this game. Use of video monitors with different resolution will result in what appears to be horizontal tearing or complete loss of sync. Check the video sync jumper on the Vegas Sound I/O Board (see Section 3 for details).
- C: Verify that the Video Monitor is operating correctly by placing it in a known good unit.

**4. Game operates normally, but video picture wavers or rolls, has dark bars, uneven colors, etc.**

- A: Check connectors and cables for wiring continuity from the SIO Board to the Video Monitor.
- B: Ensure that all the cabinet ground wires are connected, especially at the Video Monitor Chassis.
- C: Move the cabinet farther away from machines, appliances, other games, etc. Very strong electrical or magnetic fields are emitted from some equipment when it is operating normally.
- D: Verify that the Video Monitor is operating correctly by placing it in a known good unit.

**PLAYER CONTROL PROBLEMS**

**1. Motor bike controls are completely non-functional. Can not start or play a game.**

- A: Observe bike tail light. If it does not flash on and off slowly, the cables may be disconnected where the pedestal and cabinet are joined. Turn off power and separate pieces to inspect wiring.
- B: Unlock and open the coin door. Check each of the fuses and replace any found to be defective.

**2. Throttle, steering and seat tilt do not respond as expected. Aim and cornering are inaccurate; rider can not maintain cycle speed with other cycles on track.**

- A: Unlock and open the coin door. Enter the game Menu System by pressing and holding the TEST MODE switch on the cabinet wall just inside the door. From the SELF TEST menu, choose CONTROLS TEST (refer to Section One for additional details), run the calibrate option.
- B: Remove the plastic steering cover to expose the throttle and steering potentiometers. Using the 20 Volt D.C. setting on a digital voltmeter, measure D.C. voltages present at each of the potentiometers. The outside terminals should read 0 and +5 Volts. The center terminal should change readings as the steering and throttle are varied.
- C: Check pivot mechanism potentiometer for correct voltage according the wiring diagram.

**3. START and MUSIC button indicators do not light. Game operates normally.**

- A: Check the Steering Cover wiring harnesses. Wires can be dislodged during maintenance.
- B: Remove the bulb sockets from the pushbutton assemblies and inspect the lamps. Good bulbs should be clear. Replace the bulb if the glass is white or darkened, or the bulb filament is open.
- C: Check D.C. fuses in the coin box area.

## WARNINGS & NOTICES

### WARNING

USE OF NON-ATARI PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY ATARI AUTHORIZED PARTS.

\* Substitute parts or modifications may void EMC directive or FCC type acceptance.

\* Use only authorized components and parts. Failure to do so will void warranty and may result in incorrect and/or unsafe operation. For safety and reliability, substitute parts and modifications are not recommended.

\* This game is protected by federal copyright, trademark and patent laws. Unauthorized modifications may be illegal under federal law. This also applies to ATARI logos, designs, publications and assemblies. Moreover, facsimiles of ATARI equipment (or any feature thereof) may be illegal under federal law, regardless of whether or not such facsimiles are manufactured with ATARI components.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generated, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**When ATARI ships a game, it is in compliance with FCC regulations. Your label is proof. If the label is missing or damaged, legal repercussions to the owner or distributor of the game may result. If your game does not contain an FCC label, call ATARI immediately.**

### WARNING

Plug this game into a properly grounded outlet to prevent shock hazards and assure proper game operation. Do not use a cheater plug to defeat the power cord's grounding pin. Do not cut off the ground pin.

### WARNING

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.

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.

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.

### NOTICE

Information in this manual is subject to change without notice. ATARI reserves the right to make improvements in equipment function, design, or components as progress in engineering or manufacturing methods may warrant.

### NOTICE

No part of this publication may be reproduced by any mechanical, photographic, or electronic process, or in the form of a phonographic recording, nor may be transmitted, or otherwise copied for public or private use, without permission from the publisher.

**FOR SERVICE: CALL YOUR AUTHORIZED ATARI DISTRIBUTOR.**

© Copyright 1999 All Rights reserved.

ATARI Games Corporation.  
675 Sycamore Drive  
Milpitas, CA 95035  
United States of America