

PARADISE LOST™

Deluxe Cabinet System Manual

040-0138-01

- Read this manual before use.
- Keep this manual with the machine at all times.



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Preface

Safety

Please read this page before preparing your arcade cabinet for game play.

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be included throughout this manual.

Use the following safety guidelines to help protect the system from potential damage and to ensure your personal safety:



- Make sure that the switch on the back of the computer is set to match the AC power in use at your location:
 - 115 volts / 60Hz in most of North and South America and some Far Eastern countries such as Japan, South Korea and Taiwan
 - 230 volts / 50Hz in most of Europe, the Middle East and the Far East
- To help prevent electric shock, plug the system into a properly grounded power source. The AC power cables are equipped with 3-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.
- To help protect your system from sudden increases and decreases in electrical power, use a surge suppressor, line conditioner or Uninterruptible Power Supply (UPS).
- Be sure nothing rests on the system's cables and that the cables are not located where they can be stepped on or tripped over.
- Keep your system far away from radiators and other heat sources.
- Do not block cooling vents.

Precautions for Game Operation

GLOBAL VR[®] assumes no liability for injuries incurred while playing our games.

Operators should be aware that certain health and physical conditions may make people susceptible to injury when playing video games, particularly when the game moves or creates a sense of motion.

Warnings

	To avoid electrical shock, unplug the cabinet before performing installation or service procedures.
	GLOBAL VR assumes no liability for any damages or injuries incurred while setting up or servicing the cabinet. Only qualified service personnel should perform installation or service procedures!

Environmental Conditions

Cabinet is intended for indoor use only. Be sure to keep the cabinet dry and maintain operating temperatures of 10°-40°C (50°-104°F).

FCC Notices (United States)

Electromagnetic Interference (EMI) is any signal or emission radiated in free space or conducted along power or signal leads, that endangers the functioning of radio navigation or other safety service, or that seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include, but are not limited to, AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices (including computer systems) contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electronic environment. While this computer system has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio communications services, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Relocate the cabinet relative to the receiver.
- Plug the game into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, consult an experienced radio/television technician for additional suggestions. You may find the [FCC Interference Handbook](#), to be helpful. It is available from the U.S. Government Print Office, Washington, DC 20402.

This device has been tested and complies 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 generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, it may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Chapter 1 — Introduction

Cabinet Specifications

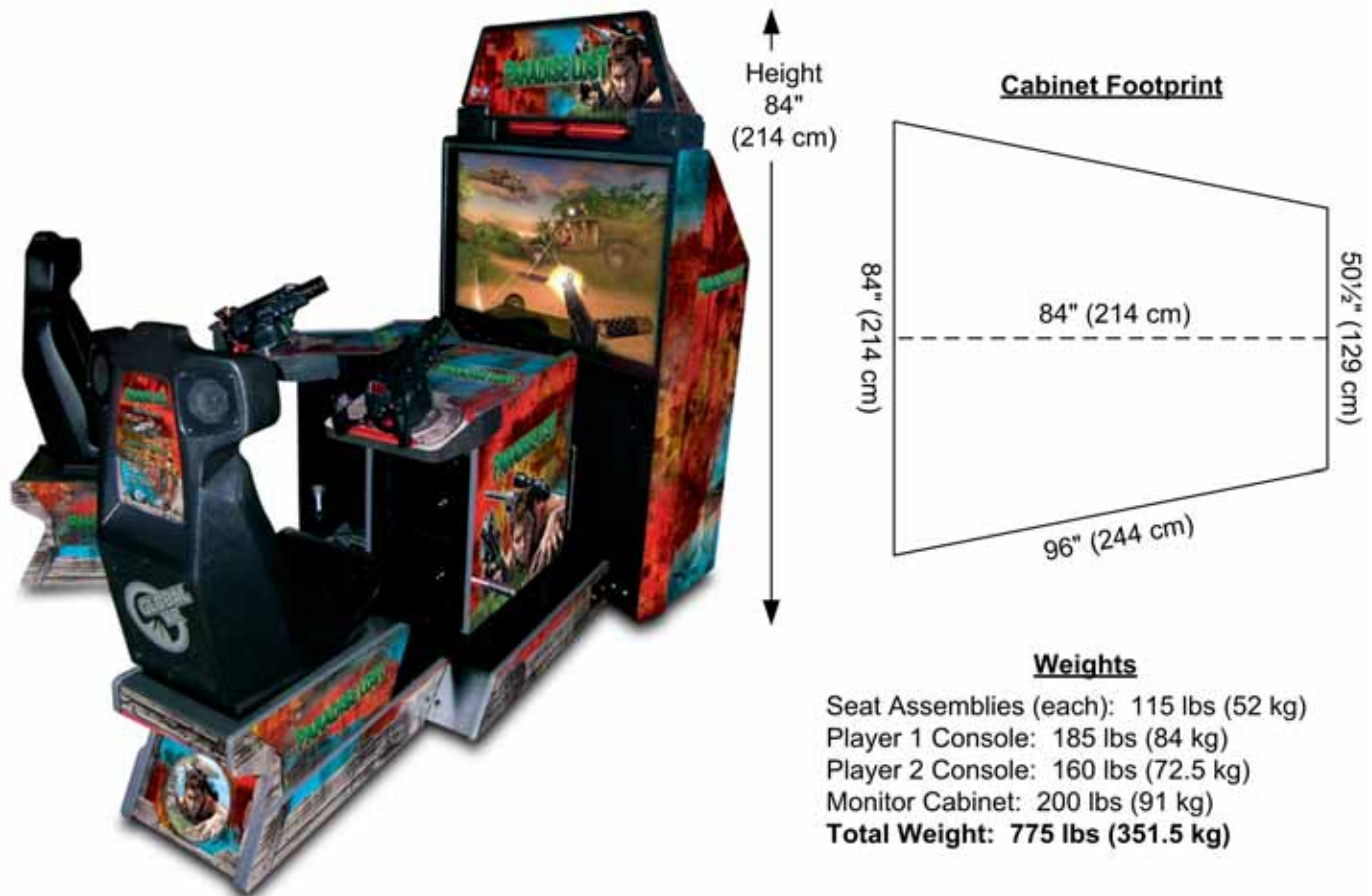


Figure 1. Cabinet Dimensions and Weights

Power Requirements (Approximate)

115 VAC

- Inrush AC Current: 7 Amps
- Operating AC Current: 5 Amps

230 VAC

- Inrush AC Current: 3.5 Amps
- Operating AC Current: 3 Amps

Hardware Features

- Pentium® 4 computer
- Nvidia® GeForce® graphics
- 512 megabytes RAM
- 52-inch LCD monitor
- Supports dollar bill validator
- Unique cabinet configuration with dramatic lighting effects
- Mounted guns with force-feedback recoil action and LED kill-count readout
- USB Gun interface

Chapter 2 — Installing a New Cabinet

This chapter describes how to unpack and install your new cabinet.

Unpack the Assemblies

- Carefully remove the assemblies from the shipping containers, giving yourself plenty of space. Inspect the exterior of the assemblies for any damage. The main assemblies are as follows:
 - Main monitor cabinet
 - Player-1 and Player-2 consoles
 - Two seat assemblies
 - Rear door for the player console
- Remove the keys from the coin return slot of each coin mech in the player consoles. Open each coin door to locate the second set of keys (see Figure 2). The keys for the rear doors should be in the Player-1 console coin door.
- Locate the package of assembly hardware. You should find the following parts:
 - Fifteen (15) ¼-20 x 1½" Torx security bolts with washers
 - Sixteen (16) ¼-20 x 1½" hex bolts with washers
 - Eight (8) ¼-20 x 2¼" Torx[®] security bolts with lock washers and flat washers

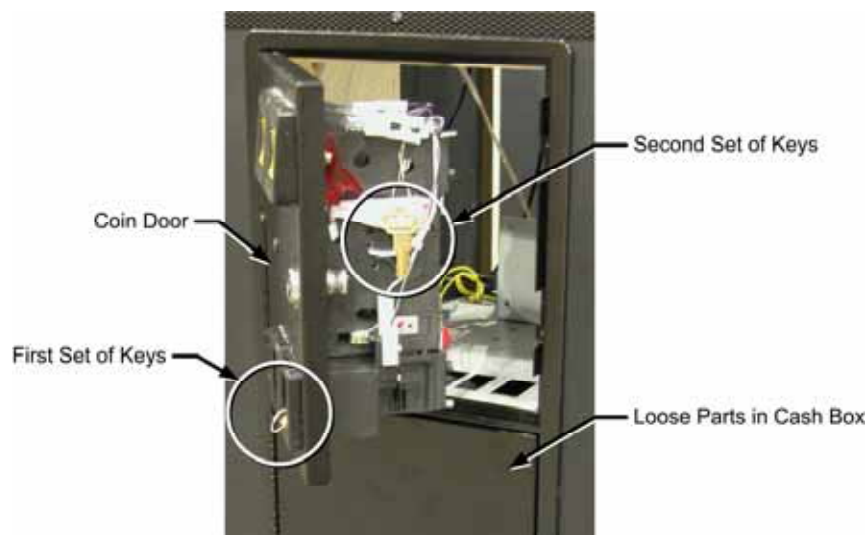


Figure 2. Coin Door with Key Locations

Assemble the Player Console

Note: The assembled system is large and heavy. In most cases it is advisable to move the components to the final location before assembly.

Follow the steps below to assemble the two sections of the Player Console. Once the console is assembled, the rear door can be installed in the opening at the back of the console.

- Place the two player console sections together so that Player 1 is on the left as you face the cabinet. The computer is in the Player 1 side.

2. Secure the Console Light Box, located between the consoles, to the Player 2 side using three (3) ¼-20 x 1-¼" bolts and washers, as shown in Figure 3.
3. Secure the grill on the front of the light box with six (6) 10/32 machine screws, as shown in Figure 3.

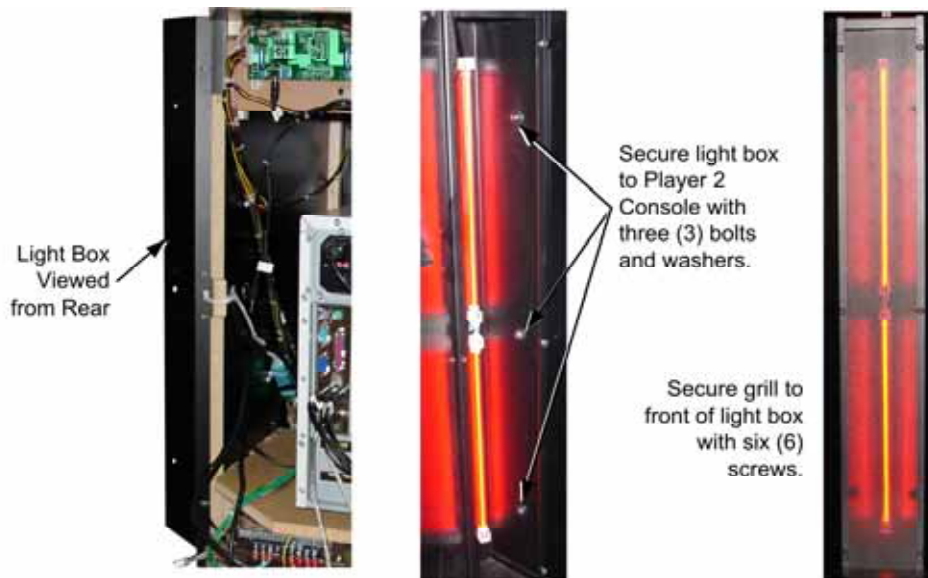


Figure 3. Securing the Console Light Box

4. Locate the two mounting plates. They are 5-sided wood pieces with T-molding trim.
5. Refer to Figure 4 for the placement of the mounting plates. Place one mounting plate on top of the two player consoles so that it covers the seam between them. The holes in the plate will align with the holes and T-nuts in the consoles.
6. Place the other mounting plate on the lower shelf area where the two player consoles meet, so that it covers the seam between them. The holes in the plate will align with the holes and T-nuts in the shelf.
7. Secure each of the mounting plates with six (6) 1-½" black ¼-20 bolts and washers.

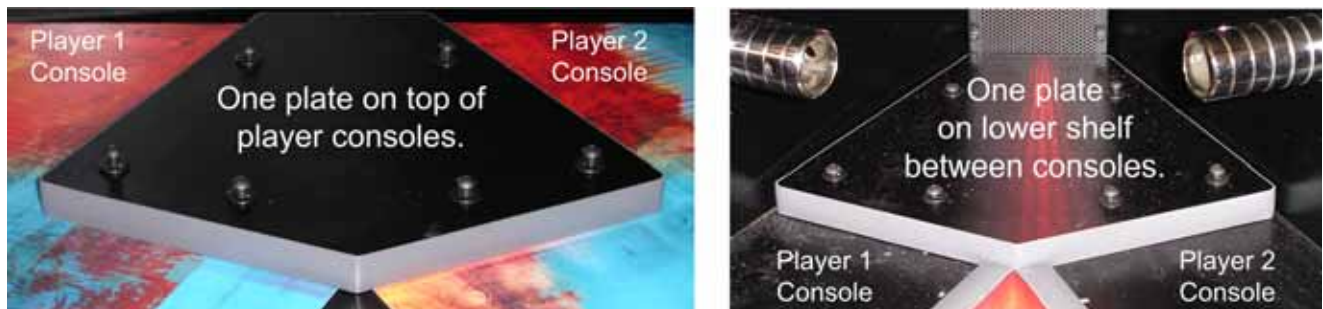


Figure 4. Securing Player Consoles with Mounting Plates

8. Connect the following cables between the two sides of the Player Console:
 - Two (2) 3.5 mm Audio cables from computer to Audio Amp in Player 2 console. Check labels on Cables and Audio Amp for proper connection.
 - AC power cable from Power Supply in Player-1 console to Power Strip in Player-2 console.
 - AC power cable from Computer to Power Strip in Player 2 console.

Install the Seat Assemblies

Note: The two seat assemblies are interchangeable.

1. Install two wooden mounting braces to the console, as shown in Figure 5, and secure each brace with two (2) $\frac{1}{4}$ -20 x $1\frac{1}{2}$ " hex bolts with lock washers and flat washers. Make sure the T-nuts are facing each other on the part of the brace sticking out from the console, as shown.
2. Place each seat in position in front of the player console, and connect the two harnesses between the console and each seat, as shown in Figure 5. (One harness is for the speakers, the other provides DC power for the light under the seat.)
3. Slide each seat into place on the wooden mounting braces, being careful not to pinch the wires.
4. Secure each seat with four (4) $\frac{1}{4}$ -20 x $2\frac{1}{4}$ " Torx bolts with washers (two on each side), as shown below. The Torx bolts will screw into the T-nuts on the mounting braces.

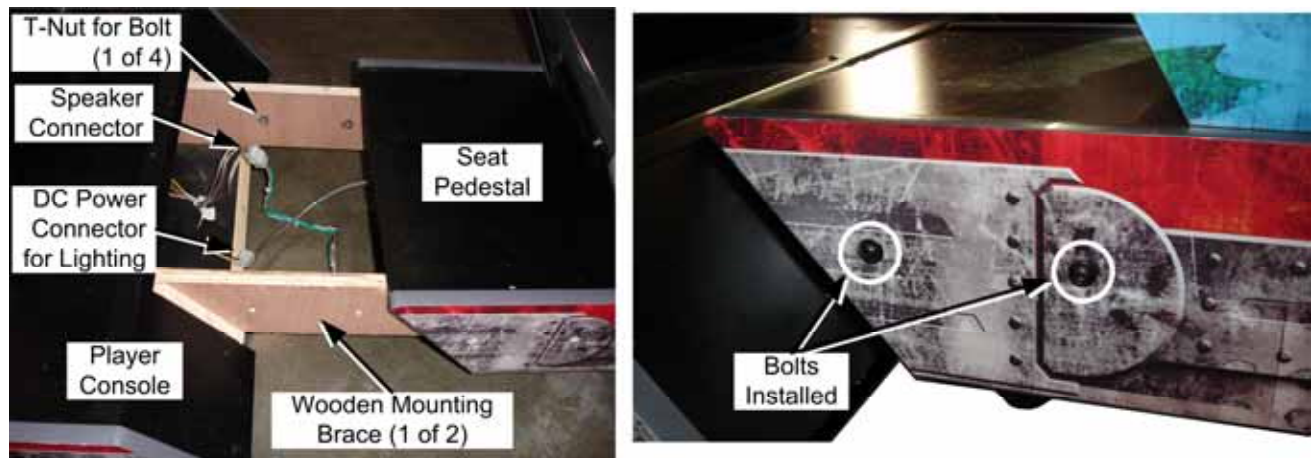


Figure 5. *Installing the Seat Assembly*

Secure Player Console to Monitor Cabinet

1. Position the player console/seat assembly in front of the main monitor cabinet.
2. Connect the HTMI to DVI video cable from the monitor cabinet to the DVI port in the computer (see Figure 36 on page 49 for a diagram of the computer connectors).
3. Make the following five connections between the monitor cabinet and the player console:
 - 4-Pin Connector for Speakers
 - 4-Pin DC Power Connector
 - AC Power Connector
 - Two (2) 6-Pin Molex™ Connectors for Chassis Ground Wires
4. Once all of the connections are made, connect the main AC power cord to the back of the monitor cabinet and a grounded AC wall outlet.
5. Power on the cabinet and play a game with each gun to verify everything is working properly. Power off the cabinet to complete the setup.
6. Place the rear door on the player console assembly and lock it in place with the key.
7. Install the two (2) player console mounting brackets on the monitor cabinet with two (2) ¼-20 x 1 ½" hex-head bolts with washers on each side, as shown in Figure 6.
8. Position the player console, being careful not to pinch any wires, and secure it with two (2) ¼-20 x 1 ½" hex-head bolts with washers in each mounting bracket.
9. Lower all leg leveler. There are four (4) under the Monitor Cabinet, three (3) under each player console, and two (2) under each seat assembly.
10. Your cabinet is now ready for play. Refer to Chapter 4 for information on using the Operator menus to set up your game.

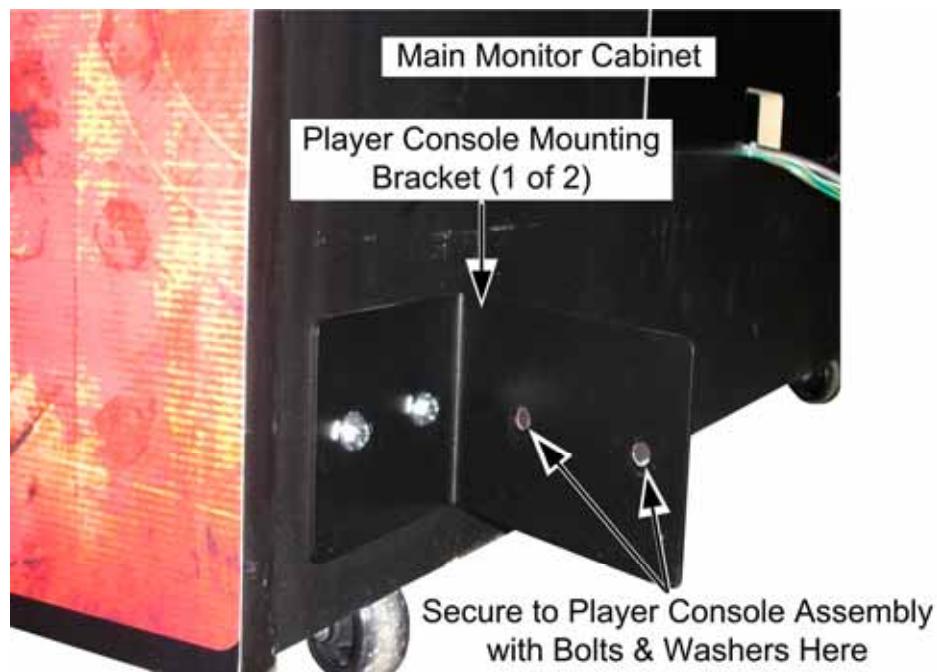


Figure 6. *Player Console Mounting Bracket*

Chapter 3 — Playing a Game

The picture below shows a gameplay screen with the General information and Player-1 information fields labeled. The corresponding information fields for Player-2 are displayed on the right side of the screen.



1. Insert coins in the coin mech below the gun you want to use. When the menu screen appears, point the gun at the level you want to play, and pull the trigger. (Another player can join by inserting coins in the coin mech for the other gun.)
Note: Each coin mech is specific to one gun. You cannot use the Player-1 gun to play with coins inserted on the Player-2 side, or vice versa.
2. Shoot at everything that moves—there are no friends in this game! Shoot the enemies before they shoot you.
3. Shoot at crates to pick up rockets and grenades, armor, and health. Use the triggers to fire the machine gun, and the thumb buttons to fire the grenades and rockets.
4. Once you complete a level, you will return to the main menu to select another level. Complete any level to unlock Level 5.
5. When your game is about to end, a countdown appears onscreen. To continue, insert coins in the coin mech on your side.

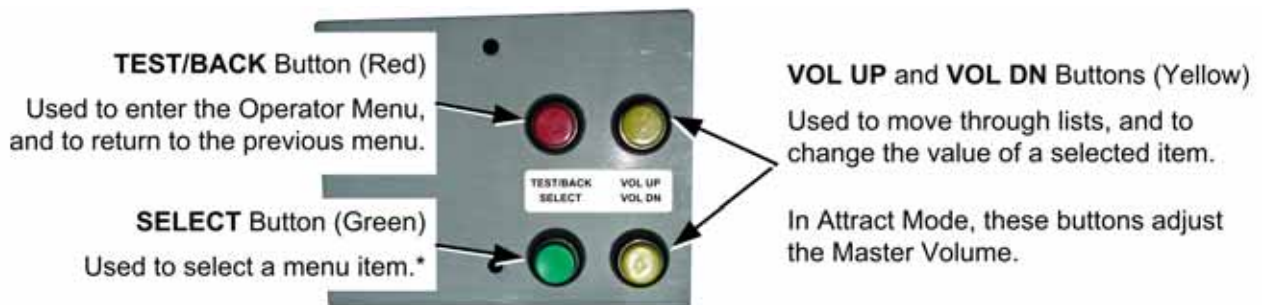
Note: To insert Service Credits for testing the game, press the **SELECT** button during Attract Mode. Each press will add one credit for each player.

Chapter 4 — Operator Menu and Game Setup

This chapter describes the Game Operator menus, their functions, and default settings. These menus let you set up the game, diagnose problems, and view gameplay and earnings statistics.

Navigating the Menus

1. Open the coin door on the Player-1 console and press the red **TEST/BACK** button to open the Operator **Main Menu**.
2. Use the **VOL UP** and **VOL DN** buttons to navigate through the list of submenus on the left side of the screen. The name of each submenu will change color as it is highlighted, and the submenu will appear, grayed out, in the main pane. Press the green **SELECT** button to select a submenu.
3. After you select a submenu, use the **VOL UP** and **VOL DN** buttons to highlight items in the submenu, and then press the **SELECT** button to select an item.
4. Once you have selected a menu item, use the **VOL UP** and **VOL DN** buttons to change the setting. When you finish, press **TEST/BACK** to exit from the item.
5. To exit from a submenu, press the **TEST/BACK** button. To close the Operator Menu, highlight **Return to Game** (pressing the **TEST/BACK** button when you are not in a submenu will automatically highlight this item) and press **SELECT**.



*Press the **SELECT** button during Attract Mode to add Service Credits for testing game play without affecting the coin count.

Figure 7. Operator Buttons

Menu Screen Layout

The left side of the screen displays a list of menus. As you use the **VOL UP** and **VOL DN** buttons to move through the menu list, each menu is displayed in the center pane of the screen. The menu is shown in gray until you enter it. To enter a menu, press the **SELECT** button.

The right side of the screen displays important information about the cabinet and software. These items are explained in the table below.

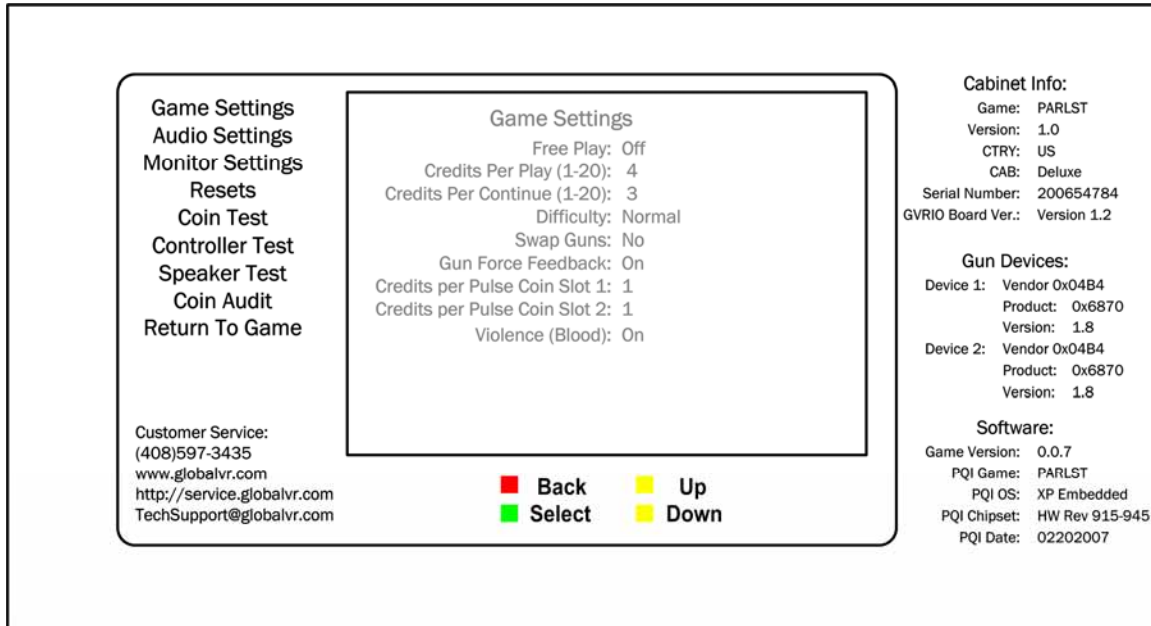


Figure 8. Overall Menu Screen Layout

Item	Description
Cabinet Info	This section lists information about the cabinet and game dongle
Game	Abbreviation for name of game installed
Version	Game Dongle Version
CTRY	Country where the game is licensed, as set by the game dongle
CAB	Style of cabinet, <i>Deluxe</i> or <i>Standard</i>
Serial Number	Serial Number of the Game Dongle
GVRIO Board Ver.	Version of the GVRIO Mini PCB Installed
Gun Devices	This section lists specs on each gun
Vendor	Gun Vendor Number
Product	Gun Product Number
Version	Gun Version Number
Software	This section lists specs for the software
Game Version	Game software version
PQI Game:	Abbreviation for name of game installed
PQI OS	The operating system (OS) used by the computer
PQI Chipset	Computer chipsets supported by the software
PQI Date	Revision date of the Operating System

Game Settings Menu

The Game Settings menu lets you set up the general pricing and game play settings.

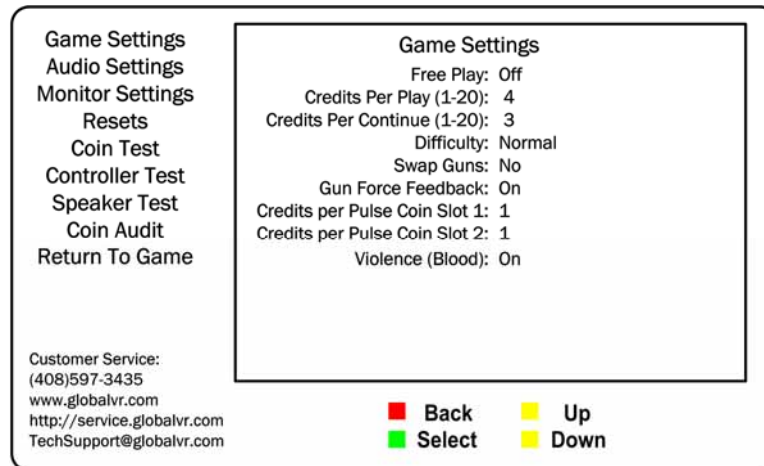


Figure 9. Game Settings Menu

Menu Item	Description
Free Play	Turns Free Play On or Off (default: Off).
Credits Per Play	Sets the number of credits to start a game (default: 4).
Credits Per Continue	Sets the number of credits to continue a game (default: 3).
Difficulty	Sets overall game difficulty (<i>Very Easy, Easy, Normal, Hard, or Very Hard</i>) (default: Normal).
Swap Guns	Setting Yes swaps guns 1 and 2. This lets you compensate if the guns are connected backwards and the force-feedback recoil and LED flash occurs in the wrong gun.
Gun Force Feedback	Turns force-feedback recoil On or Off (default: On).
Credits per Pulse	Sets the credits per pulse for each coin mech (default: 1).
Violence (Blood)	Setting this to Off turns the blood off, and changes "head-shots" to "power shots." Options are On or Off (default: On).

Audio Settings Menu

This menu lets you adjust volume levels.

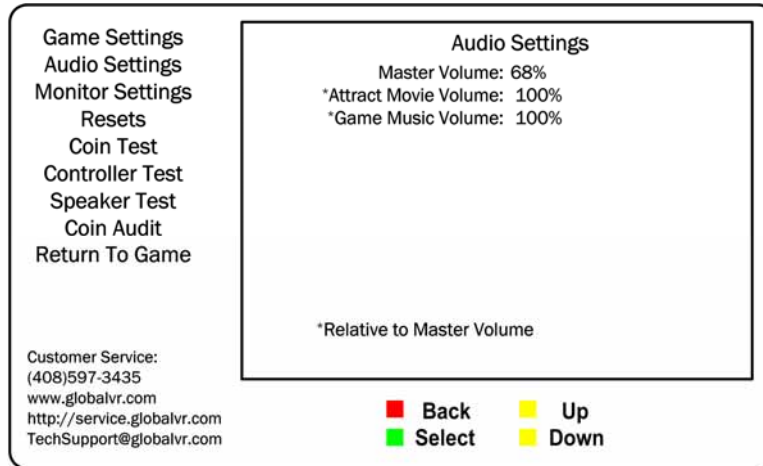


Figure 10. Audio Settings Menu

Menu Item	Description
Master Volume	Sets Master Volume.
Attract Movie Mode	Sets Attract Movie Volume relative to Master Volume.
Game Music Volume	Sets Game Music Volume relative to Master Volume.

Monitor Menu

This menu lets you adjust the video image quality, and view monitor test screens.

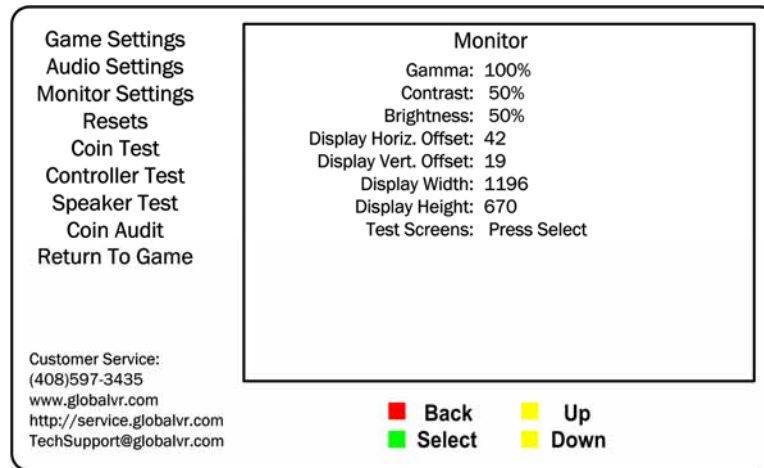


Figure 11. Monitor Menu

Menu Item	Description
Gamma	Increases or decreases the overall screen brightness.
Contrast	Adjusts screen contrast.
Brightness	Adjusts screen brightness.
Display Horiz. Offset	Lets you move the image left or right in pixels.
Display Vert. Offset	Lets you move the image up or down in pixels.
Display Width	Lets you adjust the width of the image in pixels.
Display Height	Lets you adjust the height of the image in pixels.
Test Screens	Displays test screens designed to help you adjust video geometry and colors. Once you select the test screens, use the VOL UP and VOL DOWN buttons to cycle through the screens, and the BACK button to exit.

Resets Menu

This menu lets you reset coin audits and available credits, or restore the cabinet to factory default settings. Highlight an item and press the **Select** button to reset. Text on the screen will confirm the item has been reset.

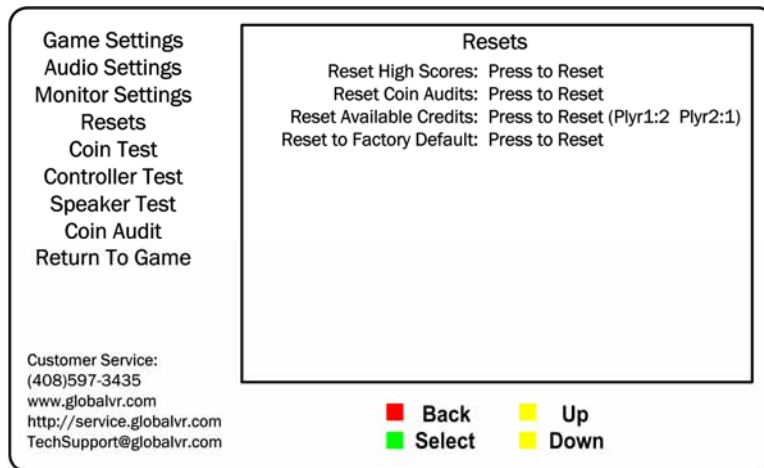


Figure 12. Resets Menu

Menu Item	Description
Reset High Scores	Clears the high scores saved in the software.
Reset Coin Audits	Resets Current Coin Audits to zero (0). Does not affect Lifetime Coin Audits.
Reset Available Credits	Resets Available Credits to zero (0) for both players. The number of available credits for each player is shown in parentheses.
Reset to Factory Default	Restores cabinet to factory default settings. Does not affect scores or audits.

Coin Test Menu

This menu lets you test the coin inputs. Activate each coin input or optional dollar bill validator and confirm that the **Coin Count** number increments by the expected amount.

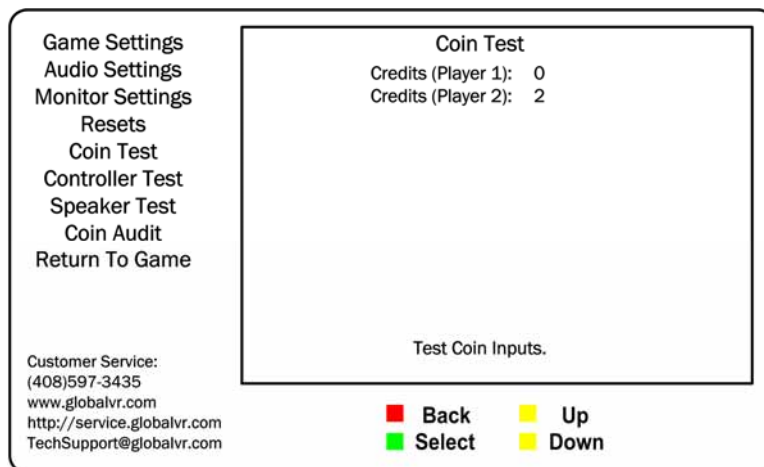


Figure 13. Coin Test Menu

Controller Test Menu

This menu lets you test and calibrate the guns.

The menu displays two large squares on the screen. Each square represents the range of motion for one of the guns. The numbers above each square show the current X and Y range for the gun and the current position. The small blue cursor in the square represents the current position of the gun. As you move the gun, the cursor will move and the current position numbers will change.

Under each large square you will see a small block labeled **Trigger** that will highlight when you pull the trigger for that gun. The small block labeled **Hat** will highlight when you press the thumb button.

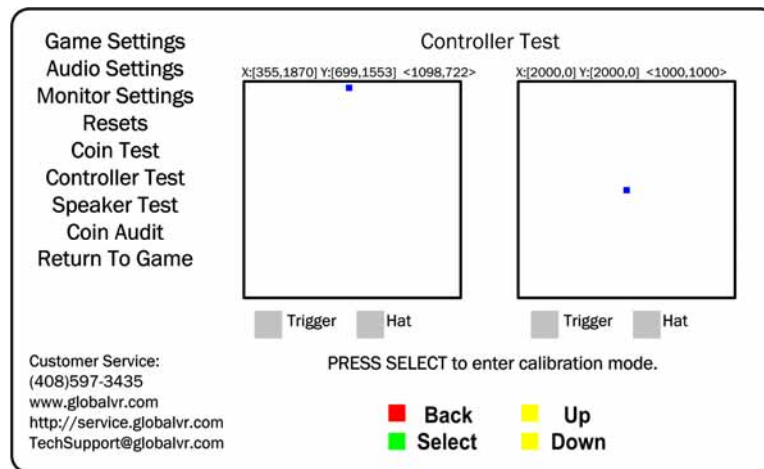


Figure 14. Controller Test Menu

Perform the steps below to calibrate a gun from the Controller Test screen:

1. Press the **SELECT** button to enter Calibration Mode.
2. Pull the trigger of the gun you wish to calibrate, and refer to the square on that side of the screen.
3. An arrow will appear on the left side of the screen, and a prompt will tell you to point the gun all the way to the left and pull the trigger. Be sure to point the gun all the way to the left before pulling the trigger.
4. Follow the onscreen instructions as you are prompted to point the gun to the right and pull the trigger, followed by up, and then down.
5. Once you finish, you can calibrate the other gun, or press the **BACK** button to exit.

Speaker Test Screen

This screen tests each speaker on the cabinet. As soon as you press **SELECT** to open this screen, the test sounds will start playing. Each speaker, in turn, will play its name, and the subwoofer will play a low-pitched sound. Curved lines by the onscreen icons show which speaker is playing (as shown for the Front Left speaker below). The test will continue until you press the **BACK** button to exit.

Note: Both sets of seat (rear) speakers are tested simultaneously.

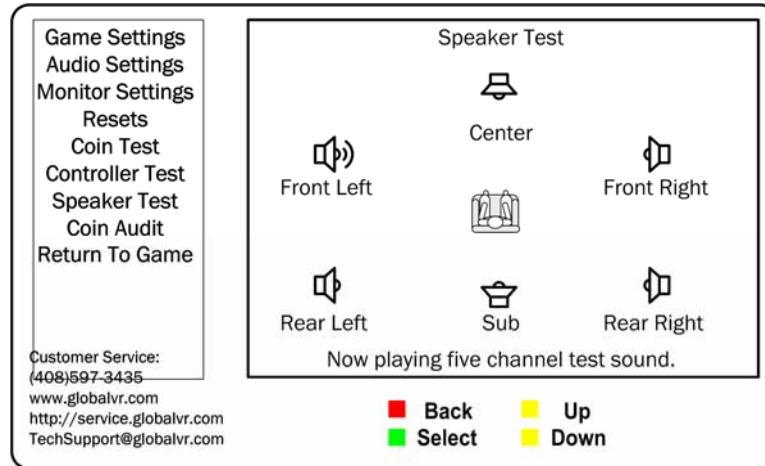


Figure 15. Speaker Test Menu

Coin Audit Menu

This menu displays current and lifetime coin audit information. The top half displays data since the last time the Coin Audits were reset from the Resets menu, and the bottom half displays lifetime data since the software was installed.

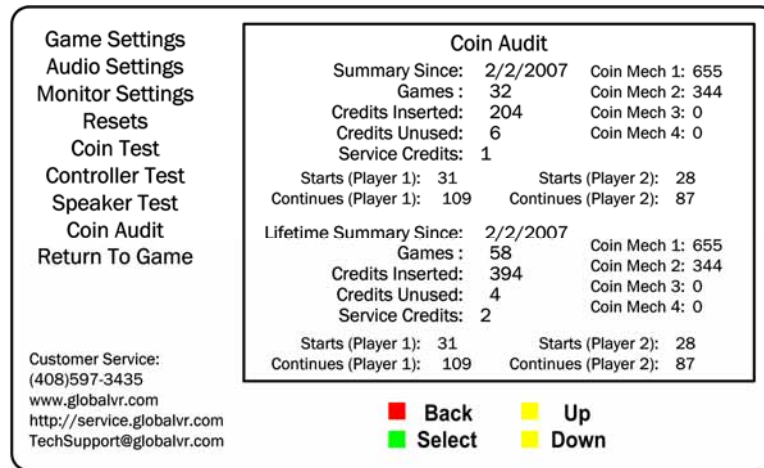


Figure 16. Coin Audit Menu

Menu Item	Description
Summary Since	Displays the date when the Coin Audits were last reset from the Resets menu.
Lifetime Summary Since	Displays the date when the software was installed and began recording coin audit data.
Games	Displays total games played.
Credits Inserted	Displays total Credits inserted.
Credits Unused	Displays total unused Credits.
Service Credits	Displays total Service Credits inserted. Operators can insert Service Credits for testing the game by pressing the SELECT button during Attract Mode. Each press adds one credit for each player.
Starts	Lists games started for Player 1 and Player 2.
Continues	Lists games continued for Player 1 and Player 2.

Chapter 5 — Software Restoration



Follow the instructions below if you need to re-install software on your cabinet.
Total installation time is about 15-20 minutes.

Important: When you use the System Recovery Disk, you will erase all game settings, and coin and game audits. It is advisable to contact Technical Support before using the System Recovery Disk to resolve a problem.

System Recovery Disk

1. With the cabinet powered ON, open the DVD-ROM drive and insert the CD labeled **System Recovery Disk**. Power the cabinet OFF and then ON. The computer will boot from the CD, and you will see the Symantec™ Ghost installer screen on the monitor.
2. After about 5 minutes, when you are prompted, remove the CD and turn the cabinet OFF and then ON. (**Do not** insert the Game Install Disk yet!)
3. When the computer reboots, you will see a series of processing screens. After about 3-4 minutes the computer will automatically reboot. You will briefly see a message saying "Insert Game Disk 1", followed by the GLOBAL VR logo on the screen. Proceed to install the Game Install Disk as described below.

Game Install Disk

1. Open the DVD-ROM drive and insert the DVD labeled **Game Install Disk 1 of 1**. The computer will read the DVD automatically (do not reboot). You will see the Installer screen as the software copies files, and after about 6-7 minutes the computer will reboot.
2. After about 1 minute more, Initial Calibration screen will appear. Remove the disk from the DVD-ROM drive.
3. Press the **TEST/BACK** button to open the Operator Menu. Select **Controller Test** and follow the onscreen prompts to calibrate both guns (see page 18 for more information).
Note: The Initial Calibration screen will be displayed until you open the Operator Menu.
4. Use the Operator Menus to change any desired settings.
5. Play a game and use both guns to verify proper operation. (Press the **SELECT** button in Attract Mode to insert Service Credits for testing the game.)

Chapter 6 — Service and Repair



CAUTION: GLOBAL VR assumes no liability for any damage or injuries incurred while servicing the cabinet. Only qualified service personnel should perform service and installation of cabinet hardware.

To prevent electrostatic discharge (ESD) damage, handle PCBs by the edges only and use a grounding wrist strap or similar precaution.

Please read the service instructions before working on the cabinet.



Always turn the cabinet OFF and disconnect the AC power cord before performing any repair work.

Gun Service

The subsections that follow describe steps for testing and repairing the guns.

The gun body contains two coil and plunger assemblies that create the force-feedback recoil effect when the gun is fired, and the Gun PCB that controls gun operation and provides the LED readout on the gun.

The gun handgrips contain the micro switches for the trigger and thumb buttons.

The base of the gun contains pots that relay the gun position to the computer. If the gun position is not being read properly, and calibration does not fix the problem, refer to the gun pot service steps on page 26.

Gun Power Harness Fuses

The gun power harness has two fuses, one for each gun. The fuses are located on the harness near the power supply in the right side player console. If a gun has no power, check the fuse and replace if necessary. Spare fuses are supplied near the fuse holder. Replace only with MDL 2A Slo Blo fuses.

Removing the Gun from the Cabinet

Gun service procedures generally can be performed without removing the gun from the cabinet, but the gun assembly can be removed easily for service on a workbench.



Disconnect the cabinet from AC power before disconnecting or connecting the gun USB cable. Failure to do so may damage the Gun PCB.

1. Turn off the game and disconnect the AC power cord.
2. Remove the ten (10) screws that secure the metal cover on the control panel below the gun, and remove the cover.
3. Disconnect the gun USB, ground, and power harnesses from under the control panel.

4. Remove the four (4) Nylock nuts that secure the gun assembly in place from under the control panel.
5. Lift the gun up to remove it, carefully pulling the harnesses through the control panel.
6. Reverse these steps to install a gun.

Trigger & Thumb Button Service

Refer to Figure 17 for the placement of components inside the hand grip.

1. Remove the four (4) screws from the hand grip. Note that the two lower screws secure the hand grip to the gun frame and the plug inside the hand grip. Be careful not to pull the wires that run between the hand grip and the gun.
2. To replace the trigger micro switch, lift the trigger spring assembly out of the handgrip, being careful not to pull the wires. Remove the two screws that hold the assembly together. De-solder the two wires from the micro switch and install them to the same terminals on the replacement switch. (Connect the signal wire to **NO** (middle connector) and the black ground wire to **C**.)
3. To replace the thumb button micro switch, remove the trigger and spring assembly to access the thumb button components. Remove the screw that secures the micro switch to the button assembly. De-solder the two wires from the micro switch and install them to the same terminals on the replacement switch. (Connect the signal wire to **NO** (middle connector) and the black ground wire to **C**.)
4. When you reassemble the handgrip, install the plastic trigger against the trigger spring and the micro switch actuator as shown.
5. Re-install the four (4) screws, securing the hand grip to the frame.
6. Test the trigger and thumb buttons from the **Controller Test** screen in the Operator Menu.

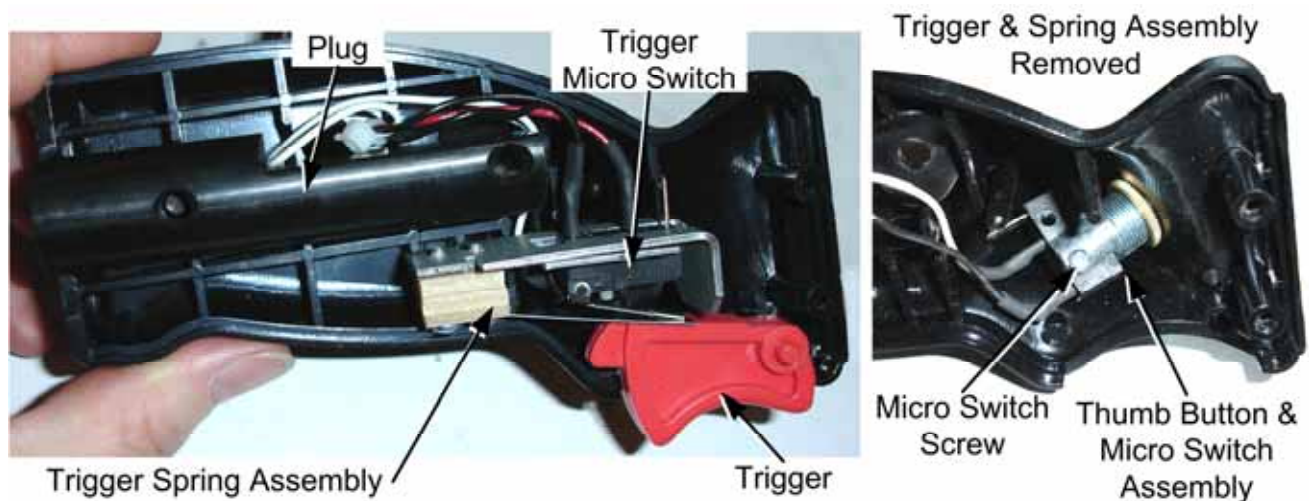


Figure 17. Inside Gun Handgrip

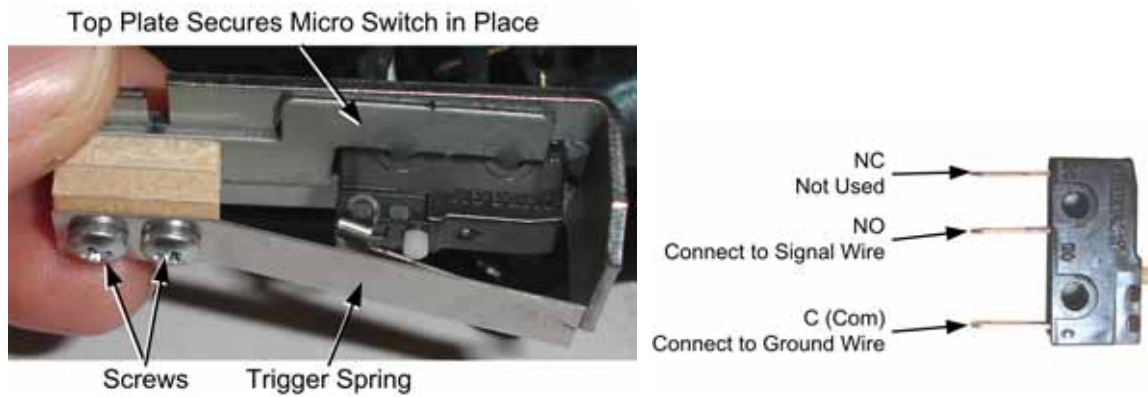


Figure 18. Trigger Assembly Detail

Opening the Gun Case

Open the gun case to service the coil assemblies, Gun PCB, and the pots in the gun base.

1. Remove the two (2) nuts and bolts shown by the squares in the picture below. Remove the metal top straps from the bellows and push the bellows down so it is out of the way.
2. Remove the seven (7) Torx security screws in the right side cover, shown by the circles and arrows in the picture below, and remove the right side cover.
3. If you need to remove the left side cover (not necessary for all procedures), remove the five (5) screws from the left side, shown by the circles and arrows in the picture below, and remove the left side cover. (Leave the two screws on the left top in place.)
4. Remove the red plastic tube from around the gun barrel light so it doesn't fall off.



Figure 19. Gun Case Screws

Closing the Gun Case

To close the gun case, first replace the red plastic tube around the gun barrel light, next install the left side cover and secure it with the seven (7) screws, and then install and secure the right side cover. Secure the bellows with the nuts and bolts shown by the squares in Figure 19.

Gun Coil Assembly Service

The two coil assemblies provide the force-feedback recoil when weapons are fired. Coil 1 provides feedback for the machine gun, fired with the trigger. Coil 2 provides feedback for the grenades and rockets fired with the thumb button.

Refer to Figure 20 and perform the following steps to replace either coil assembly:

1. Open the gun case as described on page 24.
2. For Coil 1 only, remove the nut that secures the ground wire to the ground lug on one end of the coil mounting plate.
3. De-solder the two wires connected to the coil assembly, noting their positions for reinstallation.
4. Remove the four screws that secure the coil mounting plate to the gun frame.
5. Reverse these steps to re-install the coil assembly. Be sure to secure the ground wire to the ground lug on the Coil 1 mounting plate.

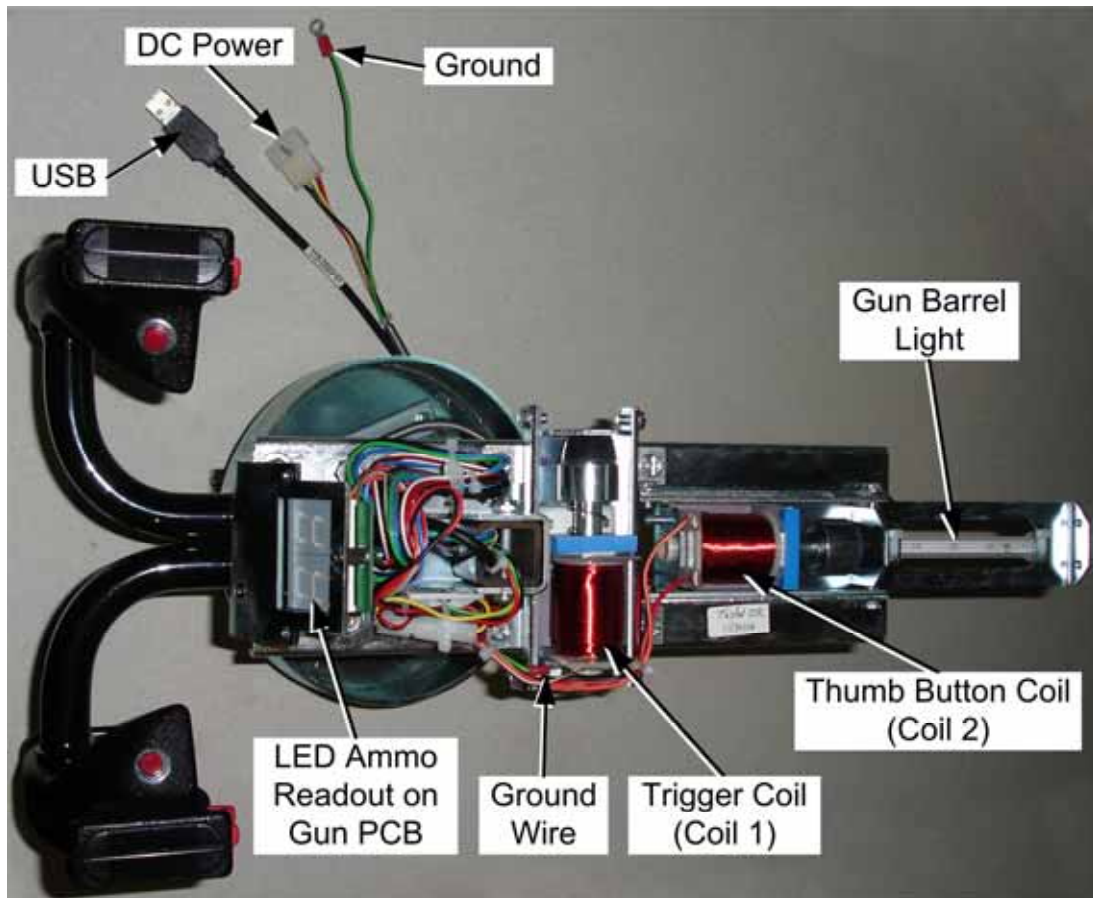


Figure 20. Components Inside Gun Case

Gun Pot and Gear Service

Each gun has two pots that measure the movement of the gun on the X-axis (left and right) and Y-axis (up and down). The X-axis pot is located under the gun base below the LED readout. The Y-axis pot is located on the right side of the gun base.

Use the **Controller Test** screen from the Operator menu to test gun motion. To test a pot, power off the game and test resistance at the pot. When you move the gun, you should see a steady linear increase or decrease in resistance, with no jumps. Replace the gears if they are worn or cracked.

Refer to Figure 21 for gun base components, and perform the following steps to replace a pot or gear shaft:

1. Open the gun case as described on page 24.
2. Remove the two mounting nuts and remove the metal mounting plate from the pot to be replaced.
3. Use an Allen wrench to loosen the set screw from the gear shaft, and remove the gear shaft.
4. Using a ½" wrench, remove the nut and lock washer that secure the pot to the frame.
5. De-solder the wires from the pot and solder them on the same terminals on the replacement pot.
6. Install the new 5K Ω pot with the same orientation. Make sure that the plastic keys on the pot mate properly with the metal.
7. Re-install the lock washer and nut, being careful not to over-tighten.
8. Re-install the gear shaft and tighten the set screw.
9. Calibrate the gun using the **Controller Test** screen in the Operator menu after replacing a pot.

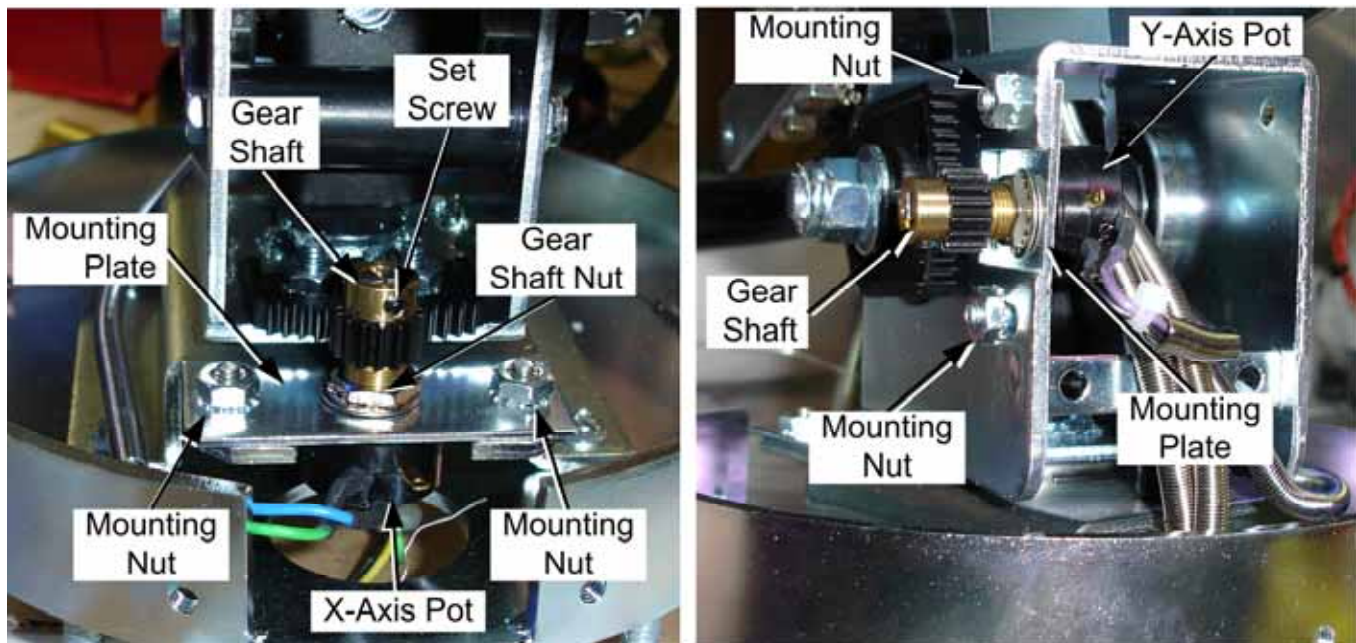


Figure 21. Gun Pot Replacement

Gun Barrel Light Service

If you need to replace the red LED tube light in the gun barrel, perform the following steps:

1. Open the gun case as described on page 24.
2. Observe how the cable ties are used to secure the light and the wires, and then carefully snip the cable ties from the light and the wires, until you get to the 4-pin DC connector.
3. Disconnect the DC connector and connect the new LED tube light assembly.
4. Secure the wires and the light with cable ties the same way the old light was secured.

Gun PCB Service

The Gun PCB routes all signals within the gun, and between the gun and the system computer. It also has an LED display that shows the player's kill count during game play. Each connector on the Gun PCB is keyed to fit only to the correct harness connector. Refer to the picture below to locate the connectors on the PCB. See Figure 29 on page 45 for detailed gun wiring information.

1. To replace the PCB, open the gun case as described on page 24.
2. Remove the two screws that secure the PCB in place and carefully remove the PCB.
3. Remove the spacers from the PCB and install them on the new PCB.
4. Disconnect all connectors and connect them to the new PCB.

CAUTION: Disconnect the cabinet from AC power before making any connections to the Gun PCB. Hot-plugging any connector will damage the PCB.

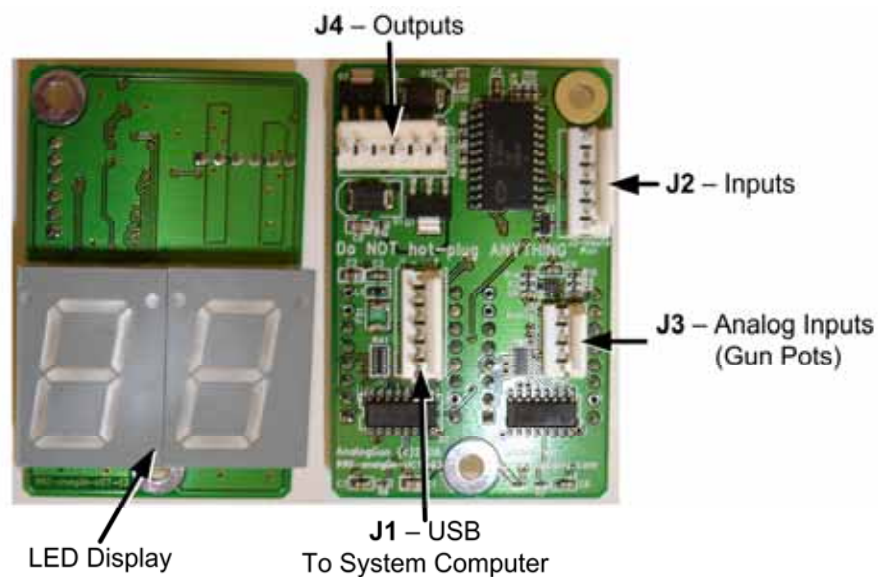


Figure 22. Gun PCB

Bellows Replacement

If you need to replace the bellows around the gun base, remove the gun assembly as described in the previous section, and then remove the two bolts that secure the bellows to the gun assembly.

GVRI/O Mini PCB Service

The GVRI/O Mini PCB relays all signals between the system computer and the guns. Each connector on the GVRI/O Mini PCB is keyed to fit only to the correct harness connector. Refer to the picture below to locate the connectors and fuses on the PCB. The two 5 Amp fuses are for the coin meter power wire only. See Figure 28 on page 44 for detailed wiring information.

CAUTION: Disconnect the cabinet from AC power before changing the fuses or making any connections to the PCB.

Important: This game requires a jumper at Position 2 of Mode Select (J5).

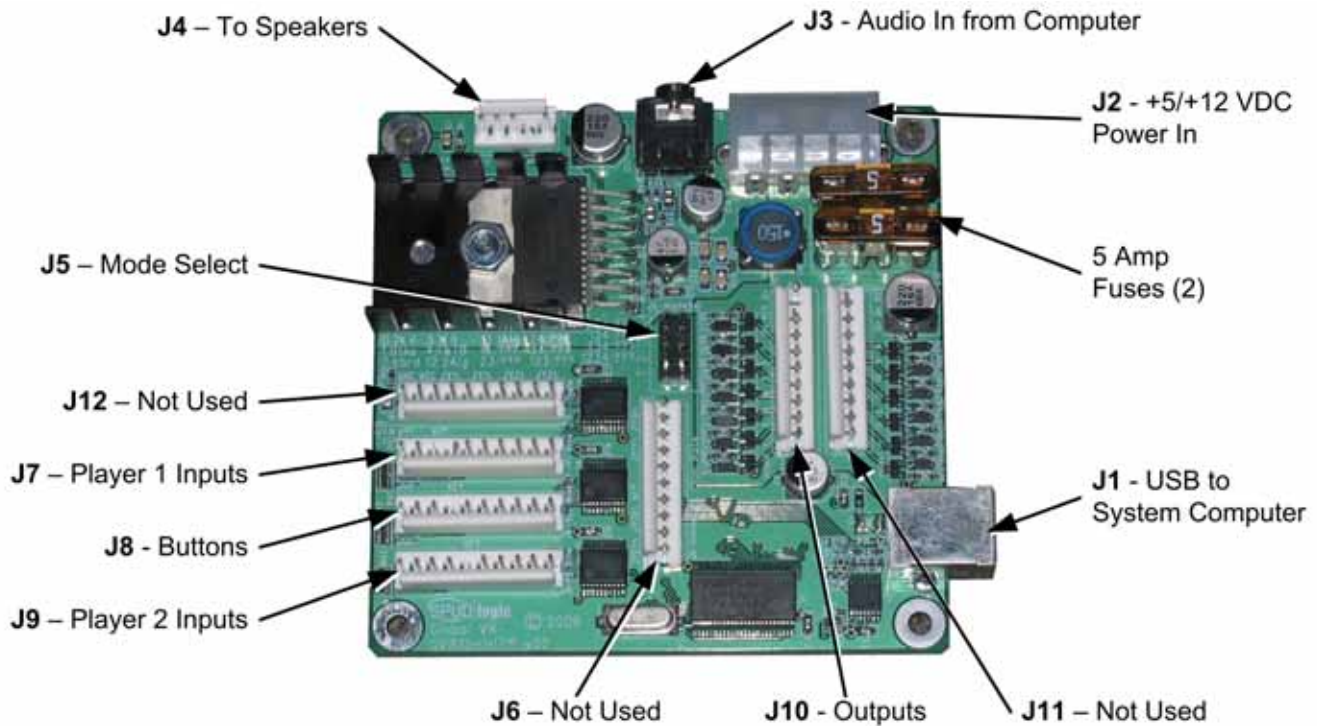


Figure 23. GVRI/O Mini PCB

Audio System Service

The primary components of the audio system are as follows:

- Audio Amp on the GVRI/O Mini PCB (Drives the marquee speakers)
- Left and right front speakers next to the marquee
- 3.1 Audio Amp PCB in each Player Console (Drives seat speakers and subwoofer)
- Left and right rear speakers in each seat
- Subwoofer in each seat
- Audio cables and speaker wires

The 3.1 audio amp supports 3-channel Surround Sound. Each audio amp is powered by +12 VDC from the +12/+24 volt DC power supply through a standard PC power connector.

The volume level for each channel on the audio amp can be manually adjusted using a small screwdriver to turn the pots. For best results, turn each pot counterclockwise to turn the volume levels all the way down. Next, turn each pot 1/5 of a turn clockwise to bring the volume levels

up. Fine-tune the sound levels for your location from this point. Use the Speaker Test screen in the Operator Menu to test each speaker on the cabinet.

The three audio ports on the computer are connected to the Audio Amps and GVRI/O Mini PCB with 3.5 mm stereo audio cables. Y-Cables split the audio signal for the Player 1 and Player 2 seat speakers. The computer audio ports are color coded as follows for easy identification:

- **Red** audio port: Subwoofer in both seats
- **Green** audio port: Front speakers, left and right
- **Blue** audio port: Rear speakers, left and right, in both seats

3.1 Audio Amp PCB Replacement

CAUTION: To prevent electrostatic discharge (ESD) damage, handle PCBs by the edges only and use a grounding wrist strap or similar precaution.

1. Disconnect the power harness, speaker wires, and 3.5mm audio cables from the audio amp PCB.
2. Use a small Phillips screwdriver to remove the four (4) screws holding the PCB to the cabinet. Always keep the audio amp PCB inside an ESD anti-static bag when not installed in the cabinet to prevent electrical damage.
3. Reverse these steps to install a 3.1 Audio Amp PCB.

Rear (Seat) Speaker or Subwoofer Replacement

The rear speakers are located behind the two small grills at the top rear of each seat. The subwoofer is located behind the large grill at the center rear of each seat.

1. Remove the four (4) 1/4-20H Torx security screws that secure the speaker grill to the back of the seat.
2. Remove the four (4) screws that secure the speaker or subwoofer to the seat.
3. Remove the wires from the speaker or subwoofer and install them to the same connectors on the replacement speaker or subwoofer.
4. Reverse these steps to re-install the speaker or subwoofer.

Front (Marquee) Speaker Replacement

1. Remove the four wood screws that secure the speaker bracket to the top of the cabinet.
2. Disconnect the speaker harness.
3. Remove the screws that secure the bracket to the speaker and install it on the new speaker.
4. Reverse these steps to install the new speaker.

Monitor Replacement

Perform the following steps if you need to replace the monitor:

1. Remove the back door from the Main Monitor Cabinet and disconnect the cables from the back of the monitor.
2. Remove the bolts that secure the Player Console Mounting Brackets to the Player Console Assembly (see Figure 6 on page 10), and separate the Player Console assembly from the Main Monitor Cabinet. Be careful not to pull the cables that run between the monitor cabinet and player console.
3. Remove the Front Access Panel from the Main Monitor Cabinet.
4. Remove the screws from the top and bottom retainers that hold the display shield glass in place and carefully remove the glass.
5. Remove the three wood screws that hold the wooden cleat in place across the top of the monitor.
6. Remove the two side cleats at the base of the monitor.
7. Carefully slide the monitor out through the front of the cabinet.
8. Reverse these steps to install the new monitor.

Computer Replacement



The computer is serviced as one unit. YOU WILL VOID YOUR WARRANTY if you open the computer without direct authorization from the GLOBAL VR technical support staff.

Shipping the computer without enough padding can VOID THE WARRANTY if the computer is visibly damaged from shipping.

Perform the following steps to remove the computer from the cabinet:

1. The computer is located in the Player-1 console. Remove the bolts that secure the Player Console Mounting Brackets to the Player Console Assembly (see Figure 6 on page 10), and separate the Player Console assembly from the Main Monitor Cabinet. Be careful not to pull the cables that run between the monitor cabinet and player console.
2. Remove the rear door from the player console to access the computer.
3. Disconnect all of the cables and the Game Dongle from the computer.

Important: Keep the Game Dongle with your Cabinet. Do not ship it with the computer.

4. Note the position of the computer for re-installation. Open the buckle on the strap that secures the computer in place and carefully remove the computer from the cabinet.
5. Reverse these steps to replace the computer. Make sure that the computer air vents are not blocked. There is an air vent under the bottom front panel of the computer that is easily blocked by padding or debris.

When shipping the computer, always use plenty of padding and protection. GLOBAL VR recommends shipping the computer in a box with three inches of foam padding on all sides.

Coin Mech Replacement

Perform the following steps to remove the coin mech. You can replace the coin mech with any standard arcade coin mech.

1. Unscrew the thumbscrews on the latches as shown by the arrows in step 1 of the figure below.
2. Slide the latches apart from each other and remove the Coin Mech as shown in steps 2 and 3.
3. Reverse these steps to re-install a coin mech. It is important to verify the operation of the newly installed coin mech with both good and bad coins.

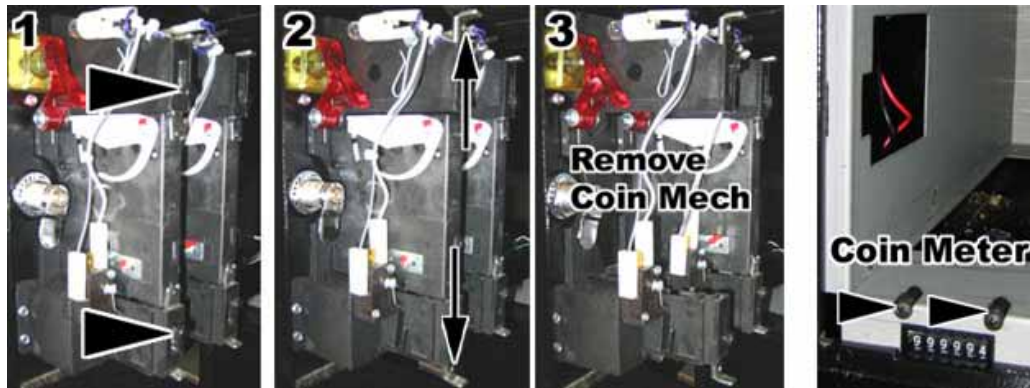


Figure 24. Servicing the Coin Mech and Coin Meter

Coin Meter Replacement

The coin meter is located in the bottom left-hand corner of the Player 1 coin vault. It counts coins from all coin mechs. (The meter in the Player 2 side is not used.) The meter receives power via the GVRI/O Mini PCB. If the meter stops working, first check the 5A fuses on the GVRI/O Mini PCB and replace if blown. Perform the following steps to replace the coin meter:

1. Turn the cabinet OFF and disconnect the AC power cord.
2. Remove the two Phillips screws securing the coin meter to the cabinet and remove the coin meter.
3. Cut the two wires from the coin meter and strip the ends of the wires to attach the new meter.
4. Use two butt splices to connect the wires to the new coin meter.
5. Secure the new coin meter with the two screws removed previously.

Power Distribution Service

AC Power Plate

The AC power plate provides the external AC power connection. An AC EMI Filter in the power plate removes electrical noise that can cause interference with the hardware inside the cabinet. If the cabinet has no power, check the 6A Slo Blo fuse in the power plate (see Figure 25) and replace if blown.

AC power from the power plate is connected to a terminal block, and then to two 7-outlet AC power strip/surge suppressors that provide power to all components in the cabinet. A power

transformer may be installed between the power plate and the terminal block. See Figure 33 on page 47 for detailed AC Power Distribution information.

Caution: The cabinet must be connected to a secure ground to function properly.

Ground wires from system components must be securely connected to the ground lug on the power plate, as shown below and in Figure 33 on page 47. Components must **not** be grounded to the power plate mounting bolts.

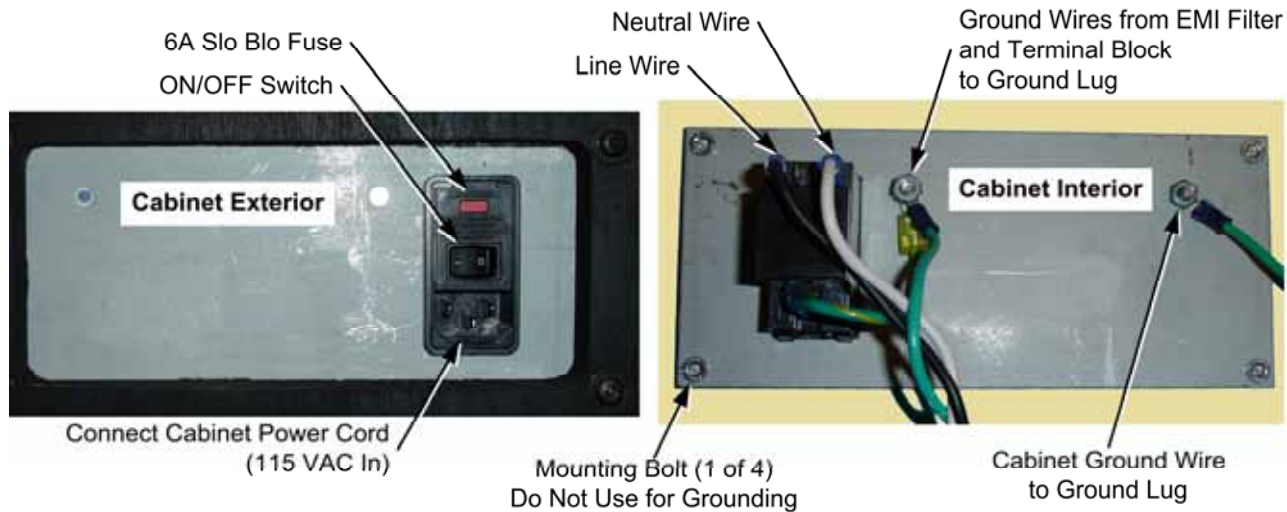


Figure 25. AC Power Plate (Shown Without Labels)

AC Power Strip Replacement

There are two AC power strips in the cabinet assembly. One is located in the monitor cabinet and provides power to the monitor and marquee florescent light. One is located in the player console, and provides power to all of the remaining components. Perform the following steps to replace a power strip:

1. Turn the cabinet OFF and disconnect the AC power cord.
2. Disconnect all components from the power strip.
3. For the Player Console Power Strip, unplug the power strip from the AC extension cord.
4. For the Monitor Power Strip, disconnect the power strip from the AC Terminal Block.
5. Remove the power strip; it is held in place with Velcro[®].
6. Replace the power strip with an appropriate unit from GLOBAL VR (part # 49-0963-40). Do not attempt to use a different power strip. Be sure to connect each wire to the correct terminal (See DC Power Harness Diagram on page 48.)

Caution: Be sure to connect each wire to the correct terminal. The ground wire must be securely connected to the ground lug on the power plate or the game will not function properly.

DC Power Supply Replacement

The system uses two +12/+24 VDC power supplies. These power supplies provide +24-volt power to the gun coils, and +12-volt power to the cold-cathode lighting, coin lamps, audio amp PCB, GVRI/O Mini PCB, and ventilation fans. See Figure 34 on page 48 for DC power distribution information.

Perform the following steps to replace a DC power supply:

1. Turn the cabinet OFF and disconnect the AC power cord.
2. Remove the bolts that secure the Player Console Mounting Brackets to the Player Console Assembly (see Figure 6 on page 10), and separate the Player Console assembly from the Main Monitor Cabinet. Be careful not to pull the cables that run between the monitor cabinet and player console.
3. Remove the rear door from the Player Console.
4. Make sure that all wires connected to the DC power supply are properly labeled for easy re-assembly, and then disconnect the wires from the terminals on the DC power supply.
5. Remove the four (4) screws that secure the power supply to the cabinet.
6. Reverse these steps to install the new power supply. Adjust the +5V output to a maximum of 5.4V **before** connecting the power supply to the cabinet harnesses, or about 5.2V if the power supply is connected. If the voltage is too high it will damage electronic components. If it is too low, some or all of the cold-cathode florescent lights will look dim.
7. Be sure to connect all wires to the correct terminals on the power supply. Refer to Figure 35 on page 48 for a diagram.

Cabinet Lighting Service

Marquee Florescent Light

The marquee is lit by a 24-inch florescent fixture. To gain access to the marquee fixture, remove the seven (7) screws that secure the marquee retainer in place, and then remove the retainer, marquee artwork, and clear plastic.

Replace the florescent tube with another 24" florescent tube.

To replace the fixture, disconnect the fixture's AC power cord from the power strip and pull it out of the cabinet (cut tie wraps as necessary). Remove the screws that secure the fixture to the cabinet and remove the fixture. Replace only with a comparable unit from GLOBAL VR.

Cold-Cathode Florescent Lights

Cold-cathode lights are used in the light box between the player consoles, below the marquee, and under the seats. All of the light tubes are 12-inch red.

1. To change a light tube, remove the screws that secure the grill in front of the lights, or the clear plastic under the seat.
2. Snip the cable ties that secure the light tube in place.
3. Locate the power inverter the light tube connects to, either inside the cabinet or under the seat, and disconnect the tube from the inverter.
4. Reverse these steps to install the replacement light tube.

Note: If both lights in a set fail, make sure the DC power connector is firmly attached to the power inverter. Connect the lights to another power inverter as a test. Replace the power inverter if faulty; it is held in place with Velcro and/or cable ties.

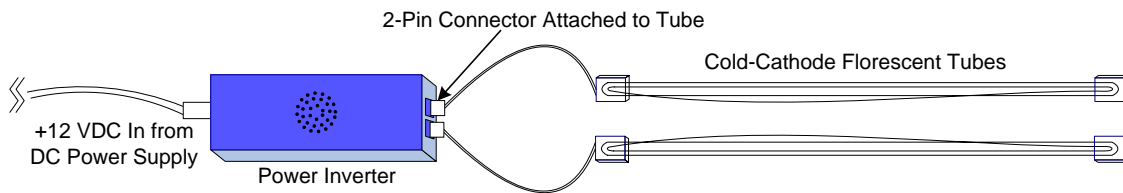


Figure 26. Cold-Cathode Light Detail

LED Light Tube Service

LED light tubes are used for the lighting near the guns on the player consoles, and in the gun barrels. Each tube light has two wires connecting to a 4-pin DC power connector. The tubes and wires are held in place by cable ties.

To replace the gun barrel lights, refer to the procedure on page 27. To replace the console lights, perform the following steps:

1. Remove the two screws that secure the clear red plastic over the light.
2. Disconnect the DC connector. If you cannot reach the connector, remove the ten (10) screws that secure the metal control panel cover in place and remove the cover.
3. Carefully snip the cable ties, noting their placement for reinstallation.
4. Reverse these steps to install the new light.

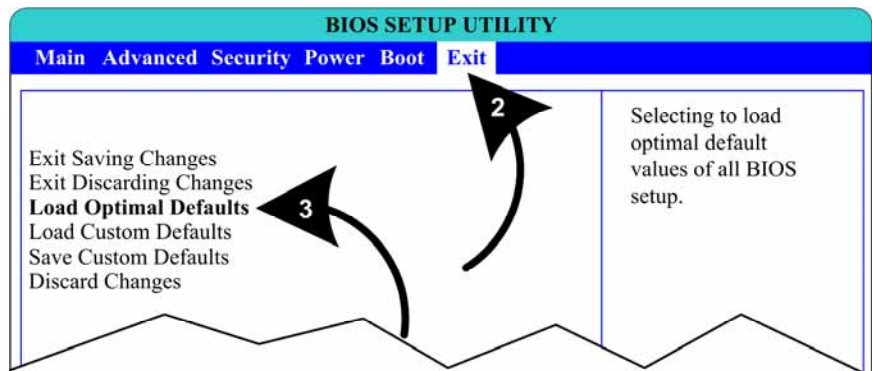
Setting the Computer BIOS (CMOS)

This procedure applies only to systems with the Intel 915GAG Motherboard.

Note: In the BIOS screens, use the left and right arrow keys (→←) to move between the menus listed at the top of the screen, and the up and down arrow keys (↑↓) to move up and down between menu items, and to change settings for selected items.

1. Press the **F2** key during boot. The BIOS Setup Utility Main Menu will appear.

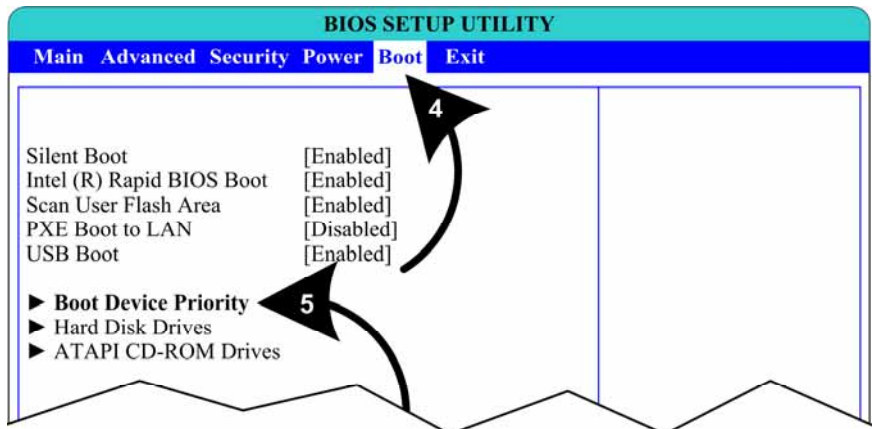
2. Use the left and right arrow keys (→←) to select the **Exit** menu.



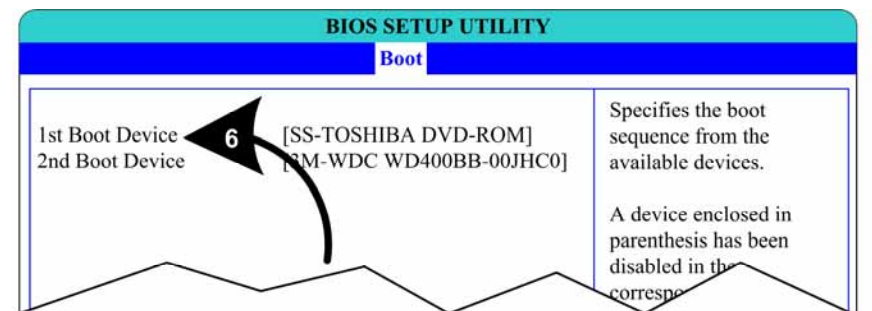
3. Use the up and down arrow keys (↑↓) to select **Load Optimal Defaults**, and press **Enter**. A confirmation box will appear. With **Ok** selected, press **Enter**.

4. Use the left and right arrow keys (→←) to select the **Boot** menu.

5. Use the up and down arrow keys (↑↓) to select **Boot Device Priority**, and press **Enter**. A pop-up window will appear.

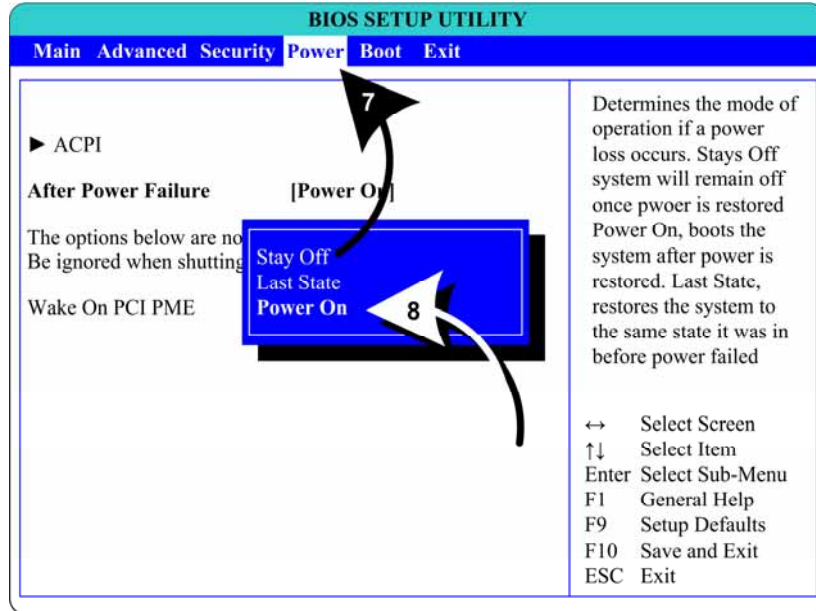


6. Use the up and down arrow keys (↑↓) to select **1st Boot Device**, and press **Enter**. The hard drive will automatically be set as the 2nd Boot Device. Press the **Esc** key to exit from the submenu.



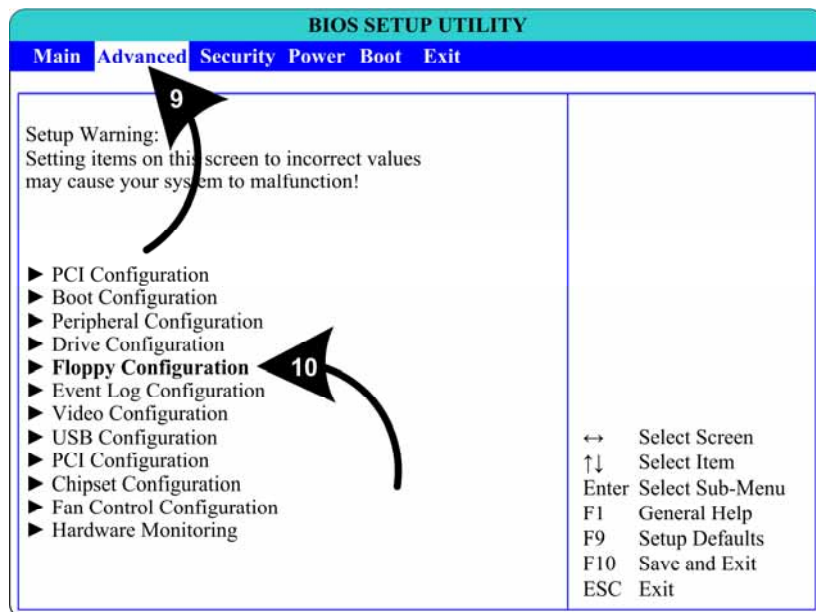
7. Use the left and right arrow keys (→←) to select the **Power** menu.

8. Use the up and down arrow keys (↑↓) to select **After Power Failure**, and press **Enter**. A pop-up window will appear. Use the up and down arrow keys (↑↓) to select **Power On**, and press **Enter**.

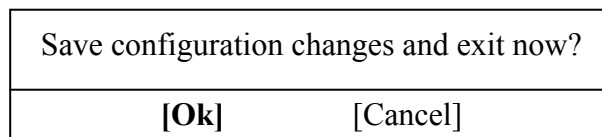


9. Use the left and right arrow keys (→←) to select the **Advanced** menu.

10. Use the up and down arrow keys (↑↓) to select **Floppy Configuration**, and press **Enter**. The **Floppy Configuration** menu will appear. Use the up and down arrow keys (↑↓) to select **Diskette Controller**, and press **Enter**. Use the up and down arrow keys (↑↓) set the Diskette Controller to **Disabled**, and press **Enter**. Press the **Esc** key to exit from the submenu.



11. Now that all settings are correct, press **F10**. The following prompt will appear:



12. Make sure **Ok** is selected (use the arrow keys to select if necessary) and press **Enter**.

Chapter 7 — Troubleshooting

Video Troubleshooting

Problem	Cause	Possible Solution
No picture or Corrupted picture on monitor	Power problem	Check the monitor power cord and power strip.
	Loose or faulty video cable	Verify that the video cable is firmly connected from the monitor to the video card in the computer. While the monitor is powered ON, disconnect the video cable. You should briefly see a message on-screen saying <i>No Signal</i> if the monitor is working. Check the video cable and make sure it is not pinched or frayed. Connect the cable to a different monitor to verify the signal.
	Loose or faulty video card	When the computer boots up, it performs a PC self-diagnostic test. If you hear 3 beeps from the computer, this indicates a problem with the video card. If the video card is faulty, contact Technical Support. If instructed by Technical Support, open the computer and check the following: <ul style="list-style-type: none"> • Make sure the video card is seated properly in the motherboard. Reseat the video card. • Check the power connector to the video card inside the computer. Make sure it is connected properly and is not connected backwards. • Power on the computer and make sure the fan on the video card is spinning fast.
Picture is dim or faded	Video output needs adjustment	Adjust the brightness, contrast, and gamma setting from Monitor Settings in the Operator Menu.
Picture color is poor	Color needs adjustment	Use the monitor remote control to adjust the red, green, and blue color settings. Use the Test Screens in Monitor Settings in the Operator Menu to aid with color adjustments.
Picture geometry is misaligned	Geometry needs adjustment	Use the monitor remote control to adjust the picture height and width, and other geometry. Use the Test Screens from Monitor Settings in the Operator Menu to aid with adjustments.
No video and no audio (Note: It may take nearly 2 minutes to boot and start the game)	No power to computer	Verify the computer is ON by the LED on the front of the computer. Verify the line voltage switch on the back of the computer is set to the correct input voltage, 115V or 230V. Make sure the AC power cord is firmly connected to the computer and the power strip, and the power strip LED is on. Turn off the power strip, wait 20 seconds, and then turn it back on to reboot the computer. If the computer does not power on, make sure the On/Off switch on the back of the computer is in the On (I) position and <i>After Power Failure</i> in the BIOS is set to <i>Power On</i> (see page 35).
	Corrupted software	Reload the software from the disks. If you continue to have problems, you may have a faulty hard drive.
	Faulty hard drive	If you continue to have problems after you reload the software, you may have a faulty hard drive. Contact Technical Support.

Audio Troubleshooting

Problem	Cause	Possible Solution
No audio or Poor sound from one or more speakers	Volume set too low	Use the VOL UP button on the Operator Button Panel (see Figure 7 on page 12) to raise the volume.
	Faulty wiring	Verify that all the wires are firmly connected to the speakers, audio amps, and computer audio ports. Verify that each wire is connected to the correct port and no wires are frayed or improperly shorting to ground.
	Blown speakers	Remove the grill and inspect each speaker for visible damage. Run the Speaker Test from the Operator Menu to verify each speaker is working.
	Reversed wires	A weak or low muffled sound is a sign of reversed speaker wires. Check for reversed wires on each affected speaker.
	Faulty Audio Amp	To verify audio is working at the computer, connect stereo headphones to each computer audio port.
Audio hum	Faulty power supply	A constant low hum in the speakers can be caused by a faulty power supply. This could be either an external DC power supply or the computer power supply.
	Open ground	Check all ground wires in the cabinet. Make sure the AC wall outlet is properly grounded.

Gun Troubleshooting

Caution: Disconnect the cabinet AC power cord before disconnecting or connecting **any** gun cables. Failure to do so may damage the gun PCB.

Problem	Cause	Possible Solution
Gun(s) not working or Message at boot indicates gun(s) not detected	Faulty wiring	Verify that all wires are firmly connected and no wires are frayed or improperly shorting to ground.
	Disconnected USB or DC power	Check all power and USB connections. If all gun lights are off, this indicates a problem with +12 VDC power.
	Blown fuse in gun power harness	Check the fuses (MDL 2A Slo Blo) in the gun power harness.
	Gun(s) connected to faulty USB port	To test a USB port, turn off the game, disconnect the device from the port, and then connect the game dongle to the port. Reboot the game. A <i>No Dongle</i> message indicates the port is bad. If the game starts, the port is working. After the test, turn off the cabinet, reconnect all devices to the correct USB ports, and reboot. See Figure 36 on page 49 for PC connection information. Important: Disconnect power before changing any USB connections.
	Faulty power supply	Verify the DC power supplies are putting out the correct voltages.
A button or trigger does not work	Faulty micro switch or wiring	Check micro switch inside gun. Check wiring. Make sure no wires are pinched in the gun case.

Problem	Cause	Possible Solution
No force-feedback recoil in gun	Faulty DC power supply	Make sure the DC power supply is putting out +24 VDC.
	Kicker turned off	Turn on the Gun Force Feedback under Game Settings in the Operator Menu.
	Faulty coil	Check wiring inside gun. Replace coil if faulty.
Force-Feedback recoil and LED flash in the wrong gun	Gun wiring is reversed	To compensate, change the Swap Guns setting under Game Settings in the Operator Menu.
Gun does not aim properly	Gun out of Calibration	Calibrate the gun from the Controller Test screen in the Operator Menu.
	Faulty pot or gear	Check gun pots and gears (see <i>Gun Pot and Gear Service</i> on page 26).
No lights on gun	Check +12 VDC power	Check wiring and make sure the DC power supply is putting out +12 VDC
Fuses blow	Pinched wires	Make sure no wires are pinched by the gun case.
	Faulty power supply	Test voltage output and replace power supply if faulty.
LED readout on gun not working or looks strange	Faulty Gun PCB	Check all connections to the Gun PCB (it is powered by +5 VDC from the USB connection). Replace PCB if faulty.

Miscellaneous Troubleshooting

Problem	Cause	Possible Solution
No power	Power strip not plugged in or turned off	Make sure the power indicator light on the power strip is on. If it is off, make sure the connections to the AC Terminal Block are secure and the power strip ON/OFF switch is ON. Make sure the power strip in the player console is plugged into the Extension Cord that connects to the AC Terminal Block.
	Cabinet not connected or turned off	Make sure the main AC power cord is firmly connected to the power plate and an active AC outlet, and the cabinet ON/OFF switch is ON.
	Blown fuse in power plate	Check the fuse in the power entry module in the power plate.
Computer will not boot	Power cycling the PC only, instead of cabinet, can cause the PC to not power up	Sometimes, if you power cycle the PC but not the cabinet, the PC will not power up. To fix this, power OFF the cabinet, disconnect the guns and GVRI/O PCB from the USB ports, and then power ON the cabinet. Once the computer reboots and you see the error screen saying devices are missing, power OFF the cabinet. Reconnect the USB devices (be sure to connect to the correct ports) and power ON the cabinet. Note: It is better to always reboot the cabinet rather than just the PC. Power OFF before you connect or disconnect USB devices or you will damage the gun PCB.

Problem	Cause	Possible Solution
Game dongle not found by system computer	Game dongle not connected	Connect the game dongle. Power the cabinet off and then on.
	Faulty game dongle or wrong dongle version	Make sure the dongle is connected properly. (USB dongles illuminate when recognized by the computer.) Contact Tech Support if you need to order a new dongle.
	Faulty port	Test the dongle in a different USB port.
Cabinet gets very warm	Faulty ventilation fan	Verify that the ventilation fans are working. One is located under the vents at the top of the Monitor Cabinet. The other is located at the back of the player console. Replace a fan if it is worn or spinning slowly. Make sure the fan is getting +12 VDC from the DC power supply.
	Cabinet ventilation holes are blocked	Make sure you have proper clearance between the cabinet rear and the wall. Make sure the vent holes are clear of dust and debris and that air can flow freely.
Marquee lamp does not light or is intermittent	Faulty florescent tube	Check the florescent tube for darkened or cracked ends. Replace the florescent tube if it looks worn.
	Faulty florescent fixture	Verify the florescent tube pins make a good connection with the lamp fixture. Check the ballast for proper operation. Replace fixture if faulty.
Improper number of credits given when coins or bills are inserted	Incorrect setting in Operator Menu	Adjust settings from Game Settings in the Operator Menu.
	Faulty wiring	Disconnect the cabinet from AC power. Verify that all wires are firmly connected to the coin mech and bill validator, and ground wires are properly connected. Verify that no wires are frayed or improperly shorting to ground.
	Faulty coin mech	Verify the coin mech is not jammed. Make sure the coin mech is properly aligned and latched to the coin door. Repair or replace if faulty.
Coin meter does not work	Blown fuse(s) on GVRI/O Mini PCB	Replace the 5 Amp fuse(s) on the GVRI/O Mini PCB.

Chapter 8 -- Replacement Parts

Software and Documents

Part Number	Description
040-0138-01	System Manual
040-0149-01	Software Restore Guide
050-0105-01	System Recovery Disk (One CD)
050-0106-01	Game Install Disk (One DVD)

Cables

Part Number	Qty	Description
115-0008-01	2	110 VAC to +24 VDC Power Supply
115-0046-01	2	12/5 VDC Harness
115-0049-01	1	Power Plate ground cable, 3.5"
115-0058-01	4	12/5 VDC, 5' Extension Cable
115-0101-01	2	12 VDC Extension Cable
115-0113-01	2	Load Resistor & Cable
115-0119-01	2	Speaker Cable
115-0123-01	1	Player 1 Coin Door to GVR I/O Mini
115-0124-01	1	Player 2 Coin Door to GVR I/O Mini
115-0125-01	2	Player 1 Seat Speaker & Earth
115-0126-01	2	Gun Power Harness w/Fuse
115-0127-01	1	Ground Harness to Power Plate Ground Lug
115-0128-01	1	GVRI/O Mini Speakers Out Harness
115-0129-01	1	Marquee Speaker Harness
115-0130-01	1	Player 2 Coin Mech Extension Harness
115-0132-01	1	AC Extension Cord, Terminal Block to Console Power Strip
115-0134-01	1	AC Input to-Terminal Block
V2-420035-00	1	DC Power Extension Cable, 12'
USB-AB06MM	1	USB Cable, 6', USB 2, ABO6
USB-EXT-6	2	USB Extension Cable, 6', USB 2, A Plug/A Jack
80-0213-00	2	Power Cord, 6'
96-0539-00	5	Stereo Audio Cable, 3.5 mm 6'
AV-Y01	2	3.5mm Stereo Cable, 1 Male To 2 Female Splitter
40321	1	Cable, HDMI to DVI, 3 Meters Long
115-0082-00	1	Cable for Power Transformer (If Used)

Gun Parts

Part Number	Qty	Description
990-0012-01	2	Gun PCB
26105-01	2	Right Housing
26105-02	2	Left Housing
26128-00	2	Gun Bellows
26130-00	2	Plastic Plate for Gun Bellows
37175-00	4	Strap for Gun Bellows
37176-00	2	Metal Plate for Gun Bellows
96-0847-00	2	Gun Assembly

Computer Parts

Part Number	Qty	Description
45070-00	1	Computer Assembly
290-915GAGL-INT	1	Motherboard, Intel 915GAGL
300-40GB3.5-ATA	1	Hard Drive, 3.5 Inch ATA100 40GB
315-256M400-DDR	2	Memory, PC3200 DDR400 32 X 8
DVD-1615BK	1	DVD-ROM Drive
ENP-5240G	1	Power Supply 400W V2.2 Dual Core 24/20 PIN
JM80547PG0802MM	1	CPU, Intel P4, 3.0 GHZ, 800MHZ, 2MB LGA775
VIDEO-PX6600-256	1	Video Card, PX6600 PCI EXPRESS, 256MB, TV/DVI/2H
08324	1	4-Port PCI USB Card

Additional Functional Components

Part Number	Qty	Description
49-0963-40	2	7-Outlet Surge Protector, 6' 15 A, 1500 Joules
990-0006-01	2	3.1 Audio Amp
990-0013-01	1	GVR Mini I/O PCB
241-PEGS	2	Foot Pegs, Pair
50-0400-00	2	Seat Slide Kit
50-9986-00	1	Marquee Speakers, Pair
Q-250D	2	DC Power Supply, Quad 250W, 5V, 12V, 24V
CCM1600-ND	1	Power Entry Module w/EMI Filter
2-30-2434	1	Power Transformer (If Used)
0001.2512	1	Fuse, 6A, 5mm x 20mm (Power Plate)
CCFL2R	4	Cold-Cathode Florescent Light Kit, Red, 12"
METL6R	6	LED Light Tube, Red, 12VDC
49-4027-00	1	Florescent Light Fixture, 24" w/Ballast & Starter
91-3009-00	1	24" Florescent Tube, Cool White
USB-KQRTG-HL-PL	1	Game Dongle with Code (Exchange Only)
WD-52531	1	Monitor, Mitsubishi 52"

Cabinet Artwork

The picture below shows the part numbers for all of the cabinet artwork.

Additional Decals (Not Shown) on Inner

Sides of Player Console Base:

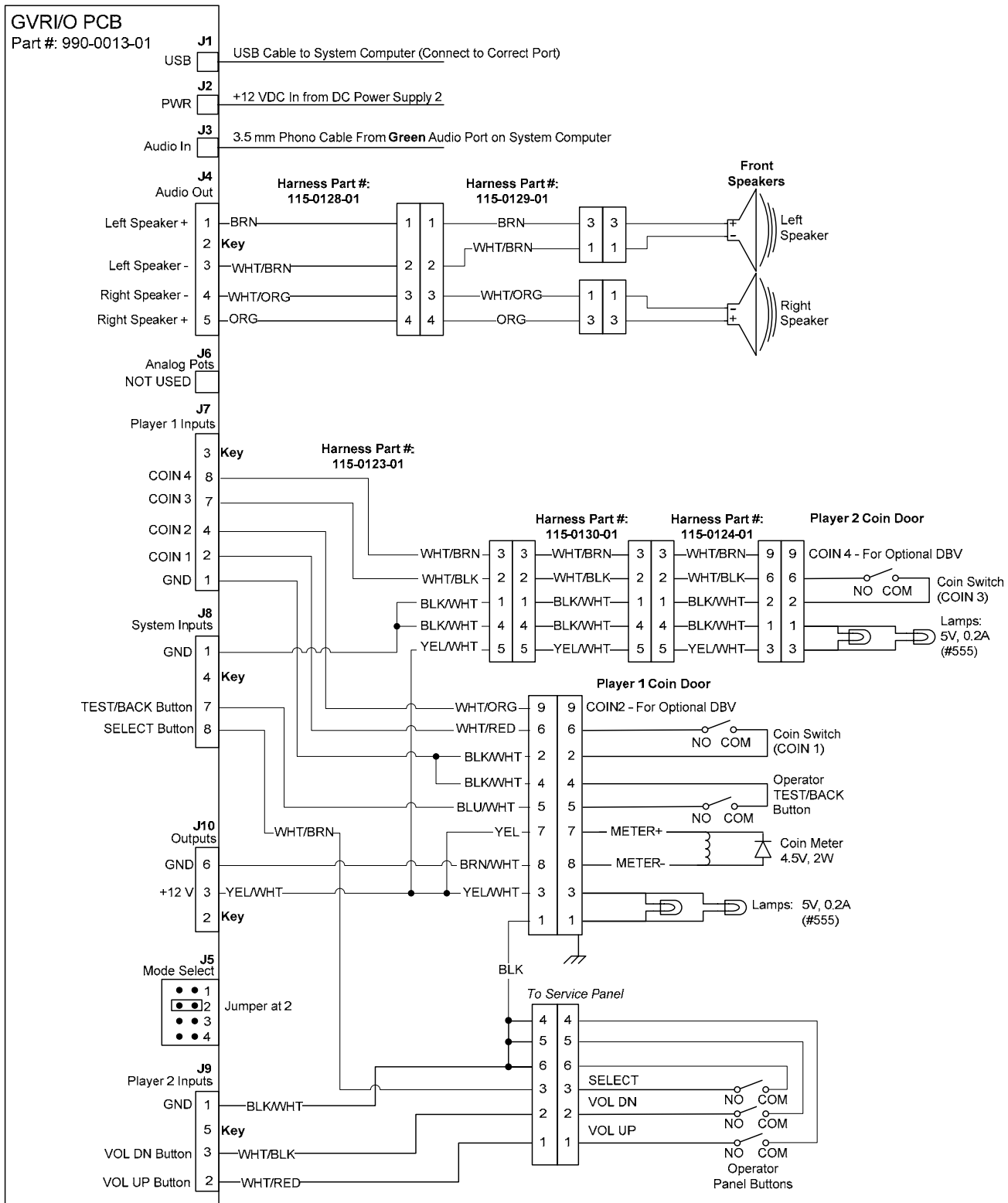
- Left Pedestal Base Right Side Decal (FC-AW-09)

- Right Pedestal Base Left Side Decal (FC-AW-10)



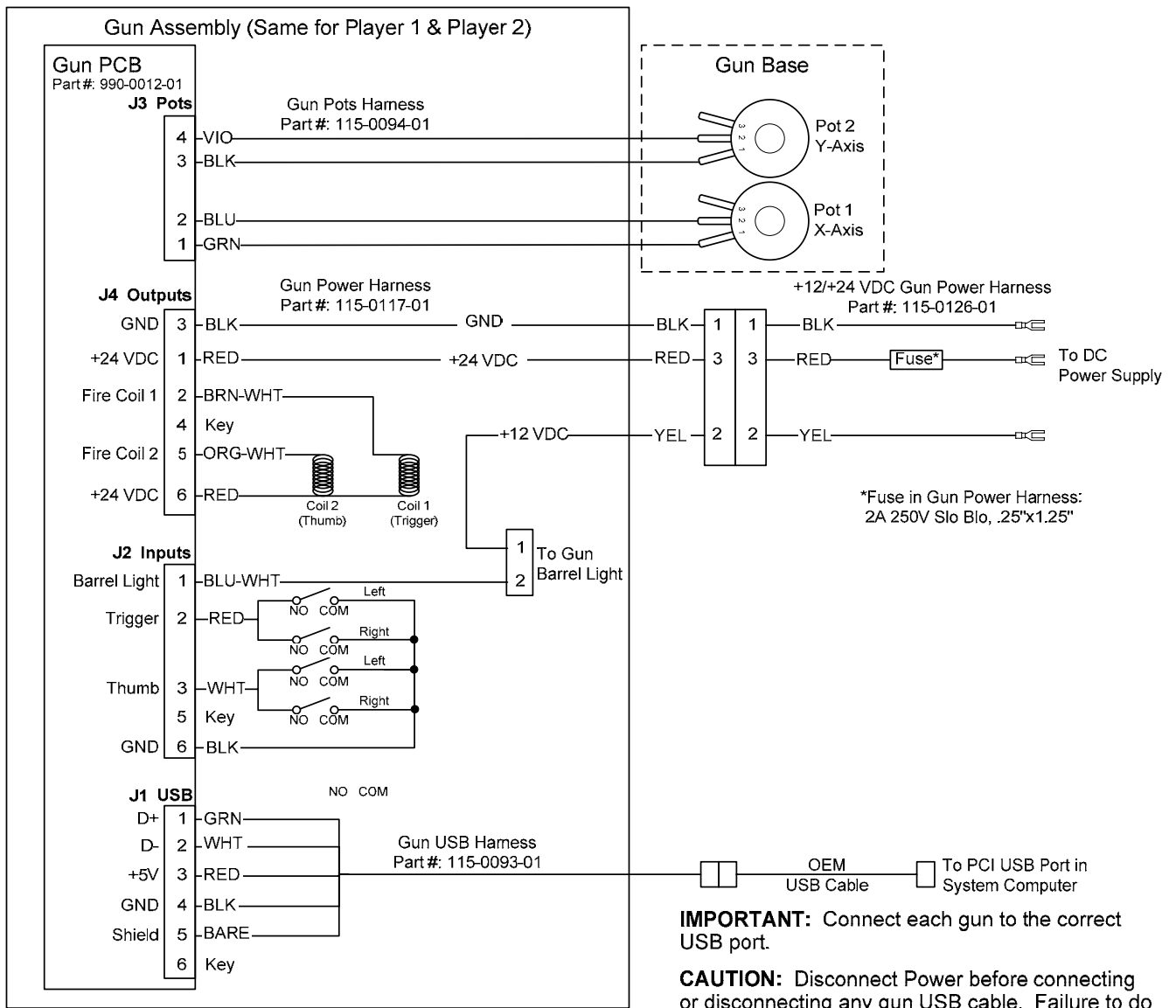
Figure 27. Cabinet Artwork

Chapter 9 — Diagrams and Schematics



NOTES: Wire colors may vary due to harness revisions.
Unused pins are not shown.

Figure 28. I/O Wiring Diagram



NOTE: Wire colors may vary due to harness revisions.

IMPORTANT: Connect each gun to the correct USB port.

CAUTION: Disconnect Power before connecting or disconnecting any gun USB cable. Failure to do so may damage the Gun PCB.

Figure 29. Gun Wiring Diagram

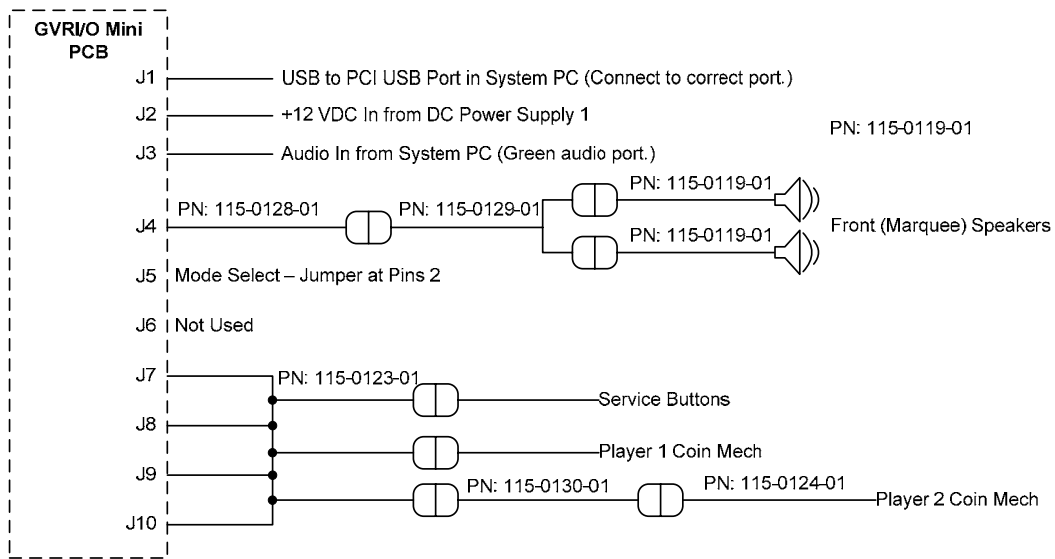


Figure 30. I/O Simplified Wiring Diagram

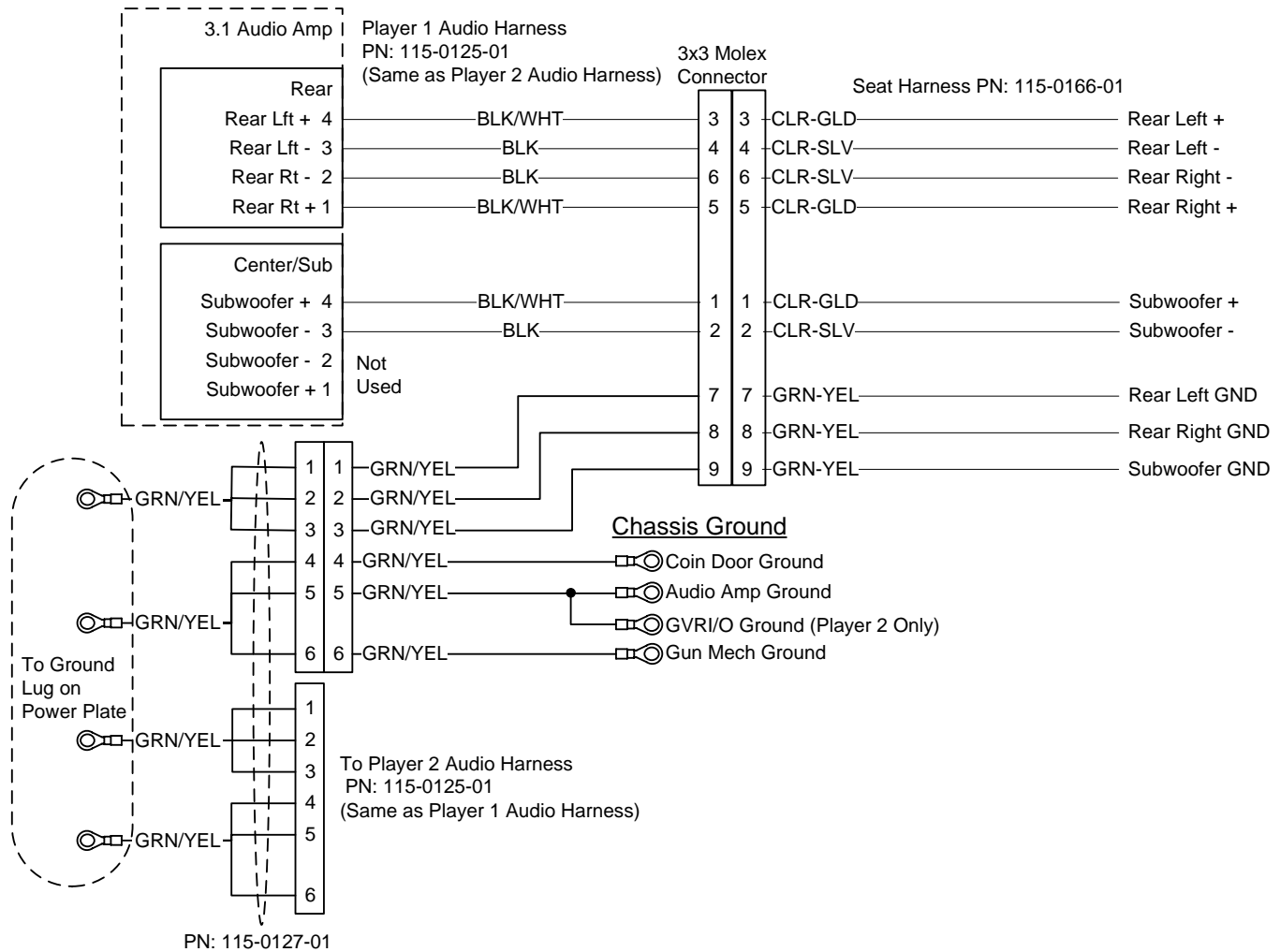


Figure 31. Seat Speaker & Ground Detailed Wiring Diagrams

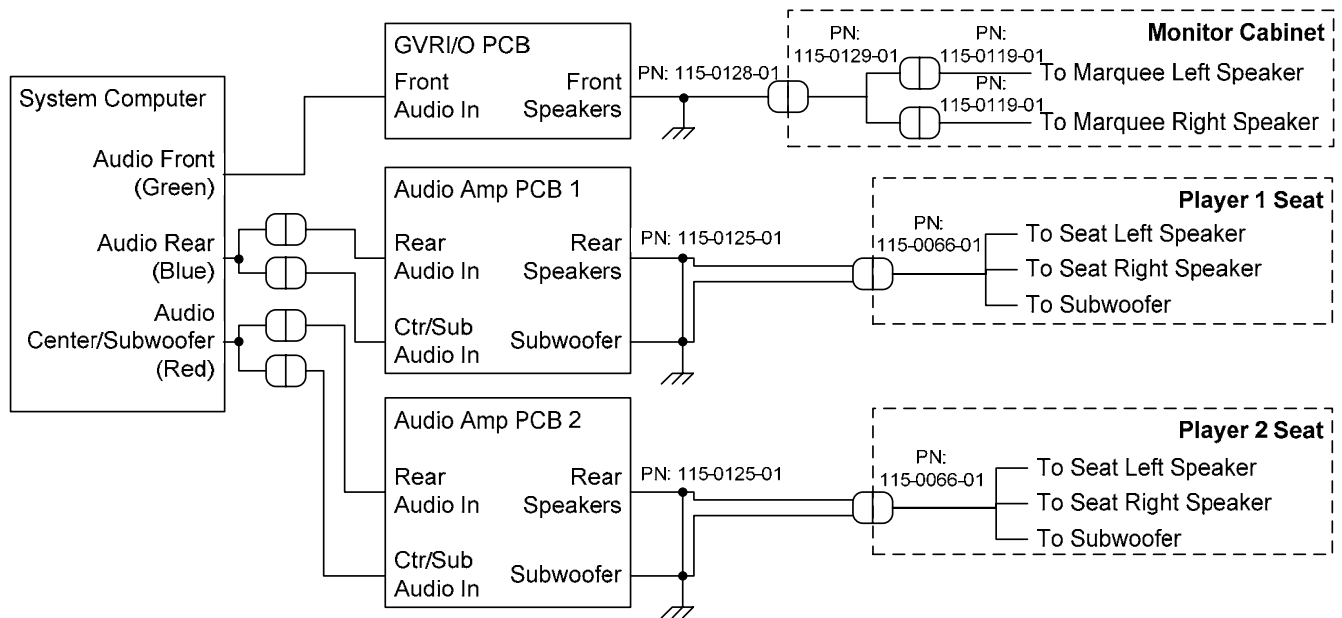


Figure 32. Audio Simplified Wiring Diagram

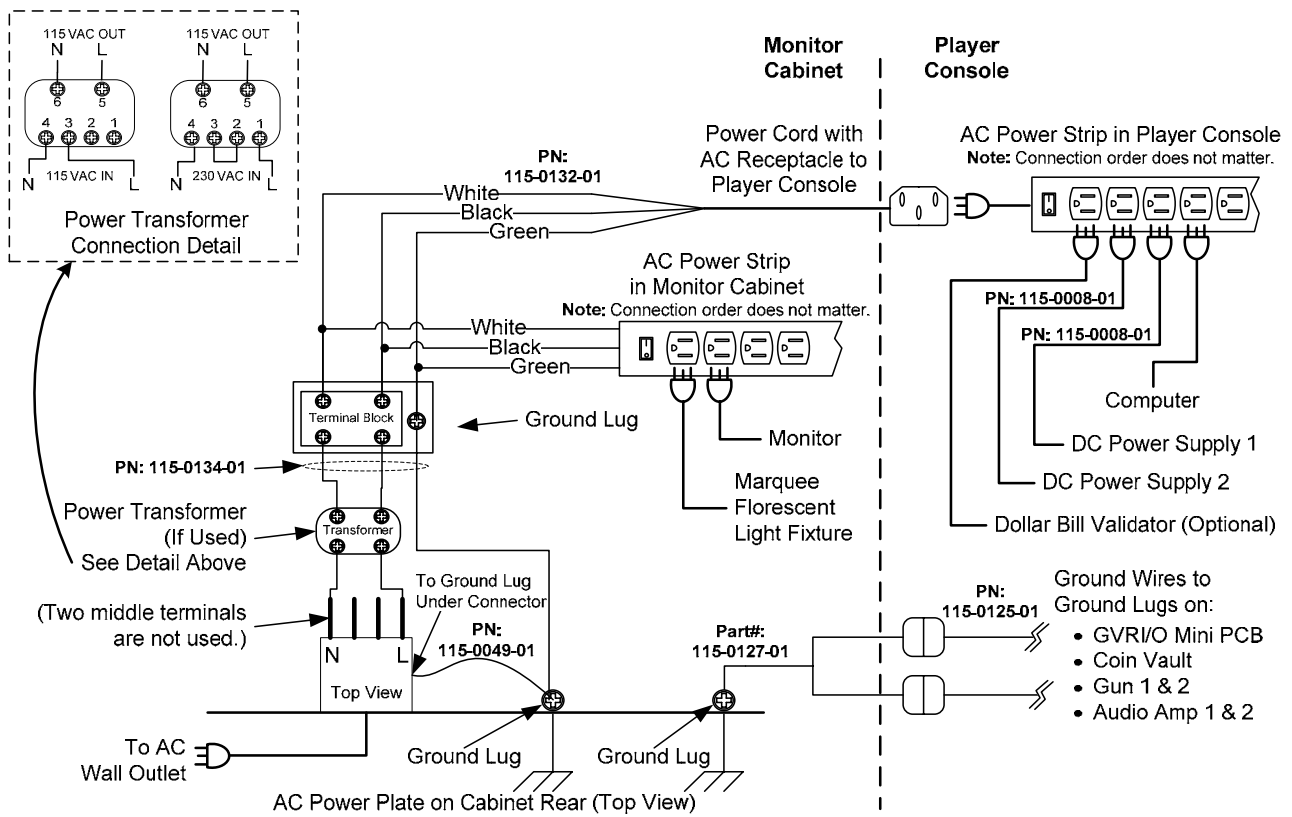


Figure 33. AC Power Distribution & Ground

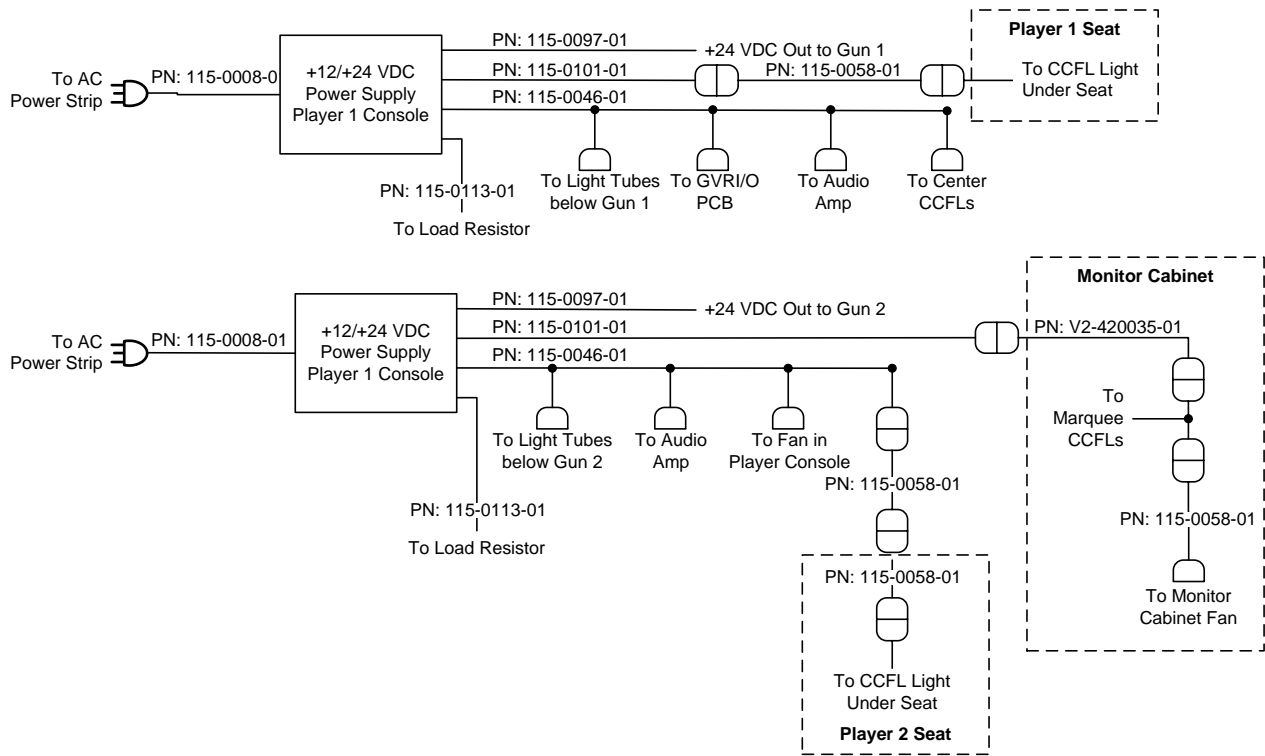


Figure 34. DC Power Harness Diagram

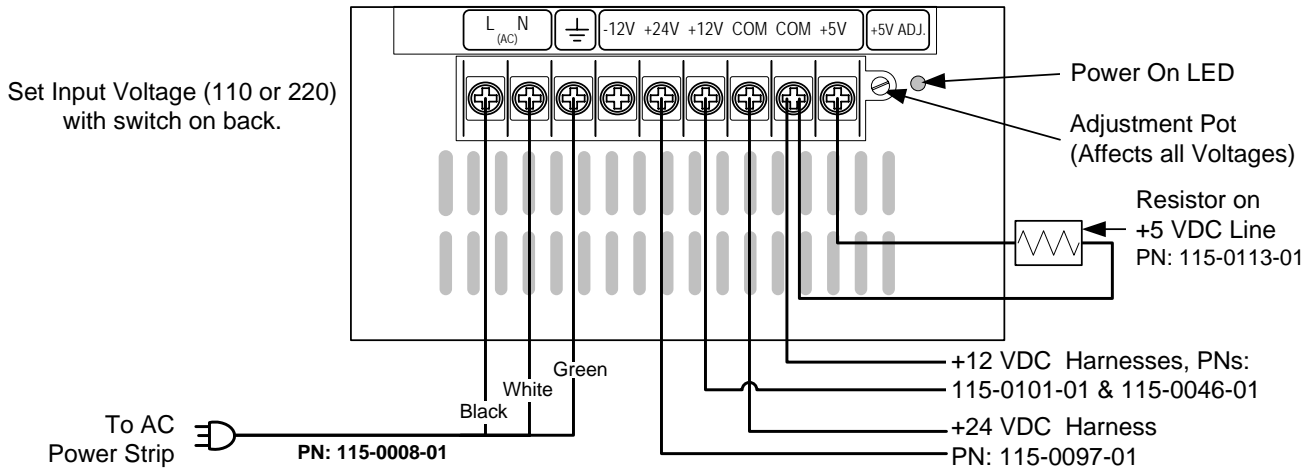


Figure 35. DC Power Supply Connections

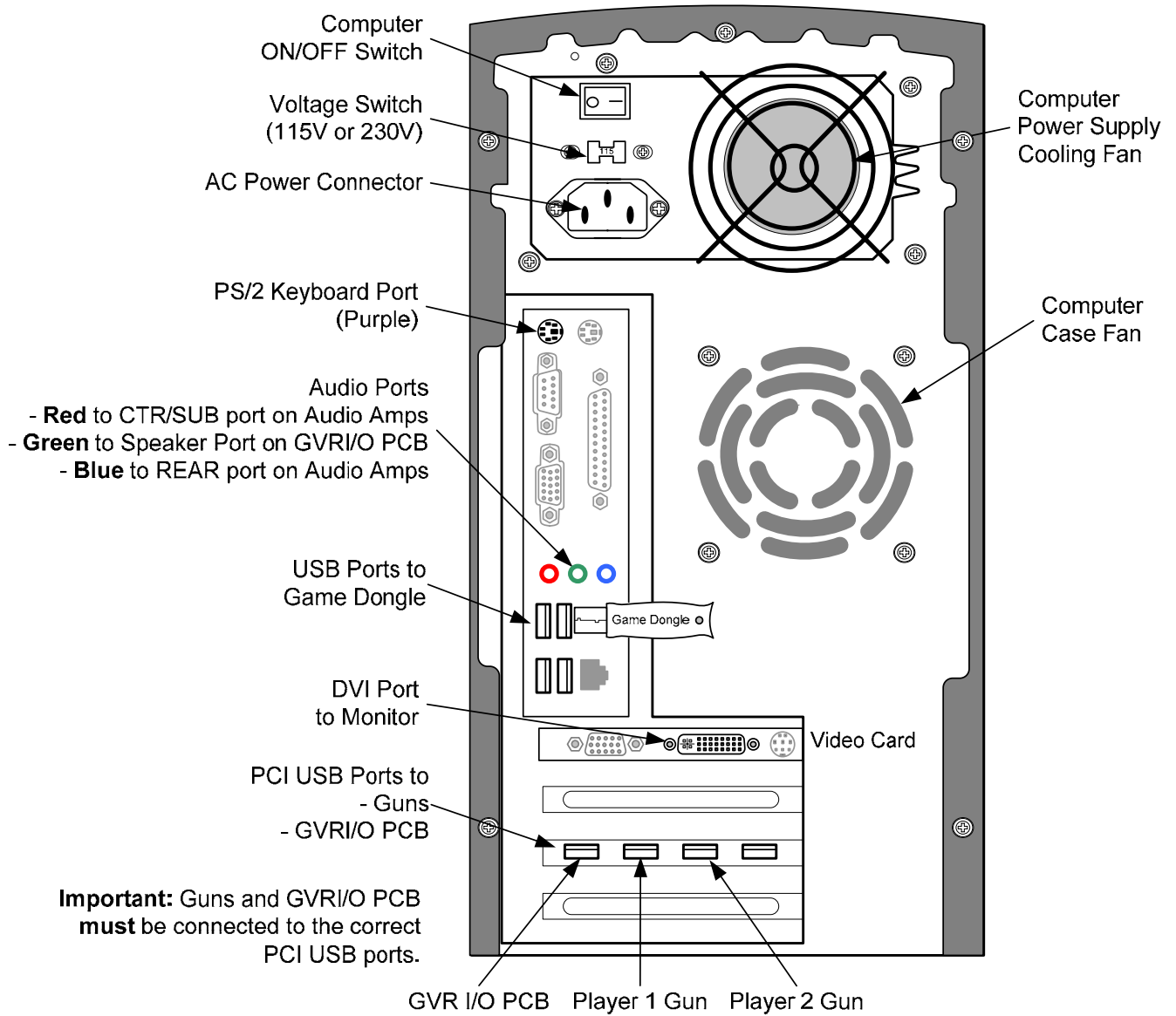


Figure 36. Computer Rear Panel Diagram

Warranty Service

If at some point you require warranty service, contact your authorized GLOBAL VR distributor.

Warranty Information

LIMITED WARRANTY

GLOBAL VR® warrants that its computer circuit boards, hard drives, power supplies, monitors, displays, controls, sensors, and mechanical structures are free from defects in materials and workmanship under normal use and service for a period of ninety (90) days from the date of shipment.

All software and accompanying documentation furnished with, or as part of the Product, is supplied “AS IS” with no warranty of any kind except where expressly provided otherwise in any documentation or license agreement furnished with the Product.

During the warranty period, GLOBAL VR® will, at no charge, repair the Product, provided:

- Purchaser believes that the Product is defective in material or workmanship and promptly notifies GLOBAL VR® in writing with an explanation of the claim;
- All claims for warranty service are made within the warranty period;
- Products are returned adequately packed and freight prepaid to GLOBAL VR®’s designated service center;
- GLOBAL VR®’s inspection or test of the Product verifies to GLOBAL VR®’s satisfaction that the alleged defect(s) existed and were not caused by accident, misuse, neglect, unauthorized or attempted repair or testing, unauthorized modification, incorrect installation, vandalism, failure to follow the maintenance schedule or procedures; or operation in out-of-specification environmental conditions.

GLOBAL VR® will return the repaired Product freight prepaid to the Purchaser. All freight costs associated with replacement of warranty parts after expiration of the original warranty period are the responsibility of the Purchaser. GLOBAL VR® is not obligated to provide the Purchaser with a substitute unit or on-site service during the warranty period or at any time. If after investigation GLOBAL VR® determines that the reported problem was not covered by the warranty, Purchaser shall pay GLOBAL VR® for the cost of investigating the problem at its then prevailing per incident billing rate. No repair or replacement of any Product or part therein shall extend the warranty period as to the entire Product. The warranty on the repaired part only shall be in effect for a period of ninety (90) days following the repair or replacement of that part or the remaining period of the Product parts warranty, whichever is greater.

Purchaser’s exclusive remedy and GLOBAL VR®’s sole obligation is to supply or pay for all labor necessary to repair any Product found to be defective within the warranty period and to supply, at no extra charge, new or rebuilt replacements for defective parts. If repair or replacement fails to remedy the defect, then, and only in such event, shall GLOBAL VR® refund to Purchaser the purchase price for said Product. Purchaser’s failure to make a claim as provided above or continued use of the Product shall constitute an unqualified acceptance of said Product and a waiver by Purchaser of all claims thereto.

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Technical Support

Service & Parts

Hours: 7:00AM–5:00PM Pacific Time, Monday–Friday

Phone: 408.597.3435

Fax: 408.597.3437

E-mail: techsupport@globalvr.com

Website: <http://service.globalvr.com>

Extended Service Hours: Monday–Friday 5pm—Midnight
Saturday & Sunday 7:00am—Midnight Pacific Time

Free telephone, e-mail, and online support are provided for systems during the warranty period. GLOBAL VR Technical Support can help you troubleshoot problems and diagnose defective parts. We can also answer questions about the operation of your game.

When you contact Technical Support, please provide the information listed below, as applicable, to assist the Technical Support representative in solving your problem quickly. For your convenience, space is provided to write important numbers.

- Cabinet Serial Number: _____
- Game Version and PQI Date from Operator Menu: _____
- Proof of Purchase information
- Your mailing address and telephone number
- A summary of the question or a detailed description of the problem
- Specific error message
- Date of latest install or upgrade
- Any changes made to the system
- For game-play issues, the level and number of players

To comment on this document, please e-mail: techpubs@globalvr.com