



**EA SPORTS™ PGA TOUR® Golf**  
**Team Challenge**  
System Manual  
040-0062-02 Rev. B

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



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## Preface

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### Safety

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

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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

	<p>To avoid electrical shock, unplug the cabinet before performing installation or service procedures.</p>
	<p>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!</p>

### Environmental Conditions

Cabinet is intended for indoor use only. Be sure to keep the cabinet dry and maintain operating temperatures of 59°—86°F (15°—30°C).

## 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

---

### EA SPORTS PGA TOUR® Golf Team Challenge

#### **New Play Modes, New Courses, *More Revenue!***

The developers of EA SPORTS™ PGA TOUR® Golf have done it again. Exciting new play modes attract new players while challenging the old. New courses and new golfers update the golf setting while the addition of exciting new competitive play and training modes make **EA SPORTS™ PGA TOUR® Golf Team Challenge** fun and easy for the novice and challenging for pros.

#### ***New Game Features:***

- **Team Play:** 2-player co-operative or 4-player versus, where each team hits their best ball.
- All new **Driving Range** with high-score leaderboard helps train new and old players alike.
- New amusement courses including the ***Fantasy Tour***.
- **9-hole Training Course** helps beginners learn the game quickly.
- **Button Combos** let you instantly step through leaderboards or attract video:
  - **Rotate Golfer:** Advance to the next or previous Attract Movie or Ad.
  - **Fly Over:** Advance to the next Amusement leaderboard.
  - **Press and hold Shot Type:** Holds on current leaderboard.

## Cabinet Specifications



Figure 1. Cabinet Dimensions

### Hardware Features

- Pentium 4 computer
- Nvidia GeForce graphics
- 512 megabytes RAM
- 27-inch, 800 x 600, Super VGA flat-screen monitor
- Players' Card reader
- Players' Card dispenser
- Dollar bill validator

## Chapter 2 — Installing a New Cabinet

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### Basic Setup

Use the following procedure to install a new cabinet:

1. Carefully remove the cabinet from the shipping container, giving yourself plenty of space around the cabinet. Inspect the exterior of the cabinet for any damage.
2. Remove the keys from the coin return slot. Open the coin door to locate the second set of keys (see Figure 2).

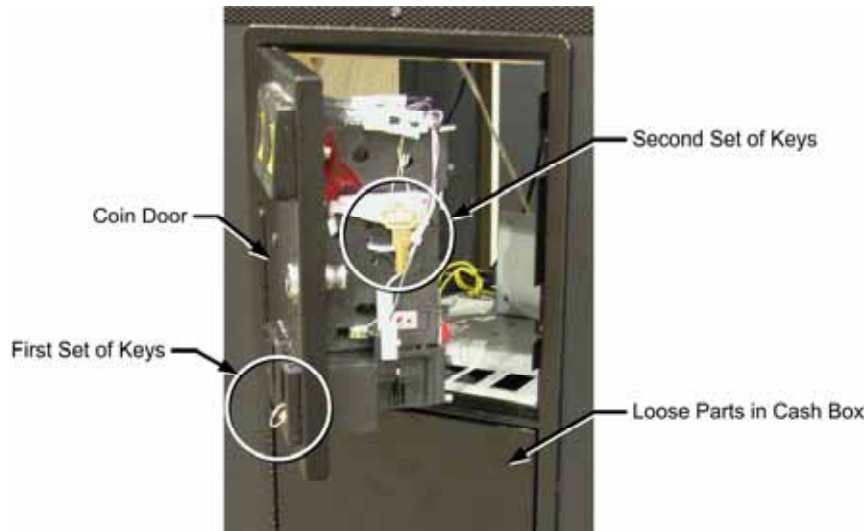


Figure 2. Coin Door with Key Locations

3. Open the control panel by reaching up through the coin door and releasing the two latches shown by the arrows in the picture below. Inspect the interior for any signs of damage. Verify that all cables and major assemblies are securely mounted.



Figure 3. Releasing the Latches Under the Control Panel

4. Remove the back door from the cabinet and inspect the computer system. Verify that all cables and wires are securely connected to the computer. Refer to Figure 45, Computer Rear Panel Diagram, on page 54 to verify the cable connections.



5. Connect the AC power cord to a grounded (3-terminal) AC wall outlet.
6. Power ON the game using the On/Off switch located on the lower rear of the cabinet.  
When the game boots for the first time, the **Instant Online** screen will appear (USA and Canada only). Since online services are no longer available, use the trackball to select **No, do not ask me again** and then press the **START** button.
7. Verify the game starts and runs properly.
8. Refer to Chapter 4, beginning on page 11, to set up your game in the Operator Menu.

## Fill the Players' Card Dispenser

The Players' Card dispenser sells SmartCard-format Players' Cards. Perform the following steps to open and fill the dispenser:

**Important:** The dispenser will not work unless it is fully closed and in a vertical position (no more than a 5-degree angle), with the back cover in place.

1. Open the Players' Card dispenser door with the key; it will rotate downward on a hinge.
2. Slide and lift the back panel as shown below.
3. Insert the Players' Cards as shown, with the magnetic stripe down. The dispenser will hold up to 185 cards. Make sure the cards are stacked evenly and the bottom plate is firmly against the cards.

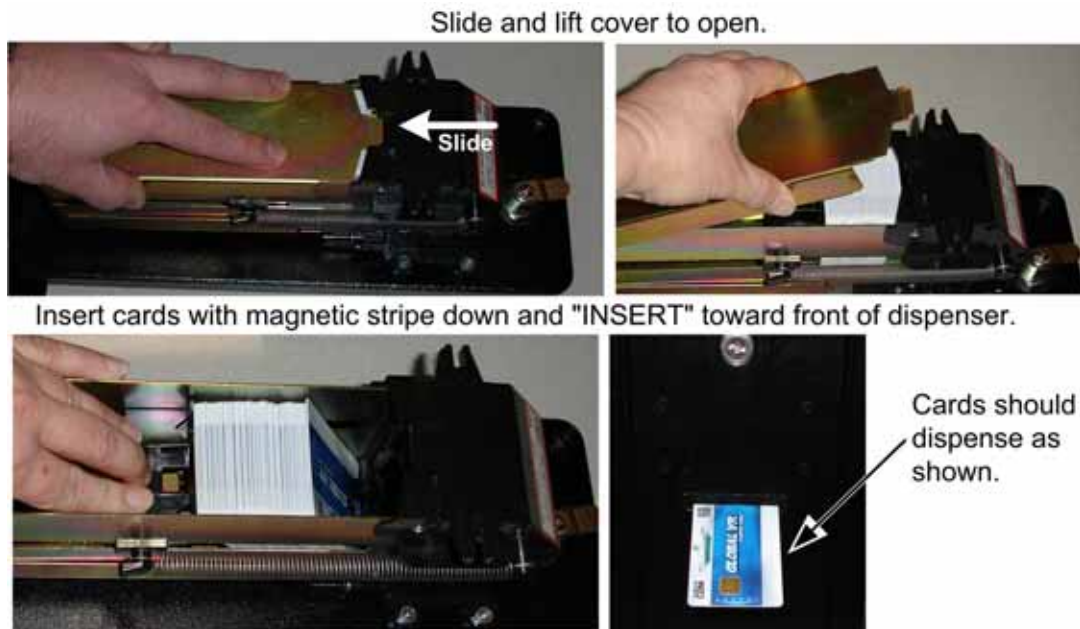


Figure 4. Filling the Players' Card Dispenser

## Checking the Game Dongle



*Figure 5. Parallel Game Dongle*

The cabinet uses a game dongle to activate the game software. The game dongle connects to the parallel port on the back of the computer.

For a dongle to be recognized correctly, it must be connected to the parallel port **before** the cabinet is powered ON. If the dongle is not recognized, power the cabinet OFF, make sure that the dongle is connected properly, and then power ON to see if this resolves the problem.

If the dongle should come off while the game is running, a NO DONGLE screen will appear. If this happens, the dongle can usually be re-installed without rebooting the game.

**Note:** The dongle supplied with the cabinet is specific to the game and software version. Future software upgrades may require you to also upgrade the dongle.

**Important:** Some of your cabinet information is stored in the dongle, so if you replace your computer, remove the dongle and keep it with the cabinet.

## Chapter 3 — Playing a Game

This chapter describes how to play a game. Refer to *Modes of Play* on page 14 for details on the different types of games. Visit our website, [www.globalvr.com](http://www.globalvr.com), for detailed game play information plus hints and tips.

When you start a game, you will be prompted to select the mode of play, golfer, and course. With a Players' Card, you will have the additional option of Game Face. The game has been designed to be as intuitive as possible for beginners, yet flexible enough to challenge advanced players. When a player makes a great shot, the game awards special **Great Shot Points**. These points are used to determine the winner of a game in the event of a tie.

### Screen Layout

During game play, the screen displays information about the course, club, player, and weather conditions, as described below.



Figure 6. Basic Game-Play Screen Layout

### Using the Controls

Now that you are familiar with the onscreen information, you are ready to take your first shot.

Begin by using the trackball to scroll from side-to-side to choose a club. Be sure not to scroll the trackball up or down, as this will begin the swing.

You can use the **SHOT TYPE** button to define the type of shot used with your swing. The current shot type is displayed just below the club in the lower right corner of the screen.

**Full:** A normal golf swing

**Top-Spin:** Adds top-spin to the ball. The ball will roll forward when it lands.

**Back-Spin:** Adds back-spin to the ball. The ball will roll backward when it lands.

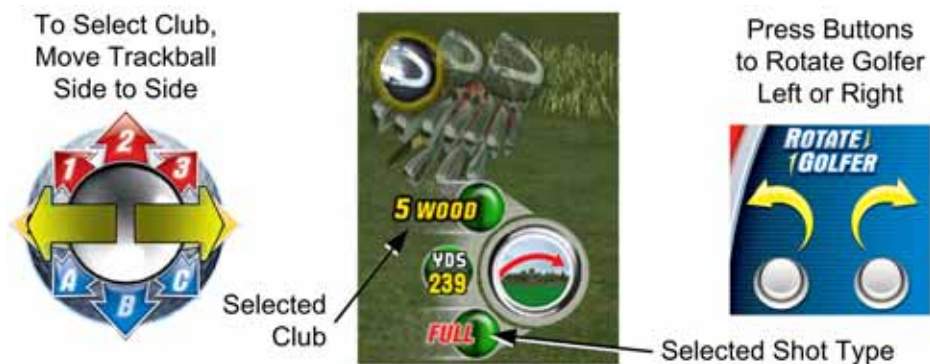


Figure 7. Using the Controls

Use the **ROTATE GOLFER** buttons to change the shot direction by rotating the player.

If you would like an overview of the hole, hit the **FLY OVER** button before taking your swing. The view will start from your position on the course and fly over to the hole.

Begin your shot by scrolling down on the trackball (1) to start the back swing, and then spin the trackball forward forcefully (2) to complete the shot. See the figure below.



Figure 8. Swinging the Club

The distance of your shot depends on the amount of back swing, and the force used on the forward roll of the trackball.

### Shot Shaping

Use shot shaping to refine your golf shot. The control panel graphic (shown below) shows the nine different types of shot shaping. You control the degree of shot shaping by the amount of directional input on the trackball. On the control panel, the blue arrow represents the backstroke, and the red arrow represents the forward stroke of your swing.



Figure 9. Shot-Shaping Techniques

## Putting

Once you make it onto the putting green, the overhead map turns into a smaller map showing the directional slope of the putting green and distance to the hole. Press the **SHOT TYPE** button to turn a helpful grid on and off. See the picture below.



Figure 10. Putting Screen Layout

## Pausing the Game

At any time, a player can press the **START** button to pause the game. The game will remain paused for 20 seconds before automatically returning to game mode if no more buttons are pressed. The Paused Game screen gives you the option of quitting, buying a Mulligan, or returning to the game.

## Mulligans

When the game is paused in Amusement Play, you have the options of purchasing a “Mulligan” (redo) shot for your last shot played, or you can quit playing the match.



## Game Face

Game Face lets players create a custom golfer, and save the golfer on their Players' Card.



Figure 11. Creating a Golfer with Game Face

## Modes of Play

**Stroke Play:** This is a regular golf game, with points for each hole totaled at the end of the game. 1—4 players can play together.

**Team Play:** Based on traditional *scramble* rules, this mode lets players of different skill levels play and learn together. Playing in two-person teams, each team member hits a tee shot. The team then selects the best shot, and each member hits from that position. The team again selects the best shot, and plays from that position. This continues until the hole is completed.

**Shootout Match:** 3—8 players can compete in a Shootout Match. At each hole, the player with the worst score for the hole is eliminated.

**Driving Range:** Players can practice their driving, pitching, and chipping skills, and view vital swing statistics.

## Chapter 4 — Operator Menu and Game Setup

This chapter describes the Game Operator Menu screens, their functions, and default settings. The Operator Menu is used to set up the game or diagnose problems. All game audits, settings and control diagnostics are accessed from the Operator Menu.

Press the Operator button behind the coin door to enter the Operator Menu. You will see a list of menu selections on the left side of the screen. Each selection will open a screen with information and settings for your game. Use the trackball and **START** button to navigate the screens, as described below.

### Using the Trackball to Navigate the Menus

Once you press the Operator button to enter the Operator Menu, use the trackball to move up and down through the menu list on the left side of the screen. When you move over a menu item, a gray highlight will appear around it, and the submenu items will appear below it in about half a second. When you use the trackball to move over a submenu item, a blue highlight will appear around the item.

Once you highlight a menu item, press the **START** button to enter the menu. At the bottom of each menu you will see a box with specific instructions for using that menu, but in most menus, use the trackball and **START** button to make selections. You can also use the **ROTATE GOLFER** buttons to move through selections and menus, and **FLY OVER** to go back..

Some screens, such as the Pricing menu (see Figure 18 on page 22) use sliders to set numeric values. A slider, as shown below, will appear when you highlight the item and press **START**. To set the slider, move the trackball right or left, or use the **ROTATE GOLFER** button to increase or decrease the value, and then press **START** again.



Some menu items use popup menus to select settings, as shown below. The popup menu will appear when you highlight the item and press **START**. Use the trackball to select from the popup menu, and then press **START** again.



To exit from a menu, press the **FLY OVER** button.

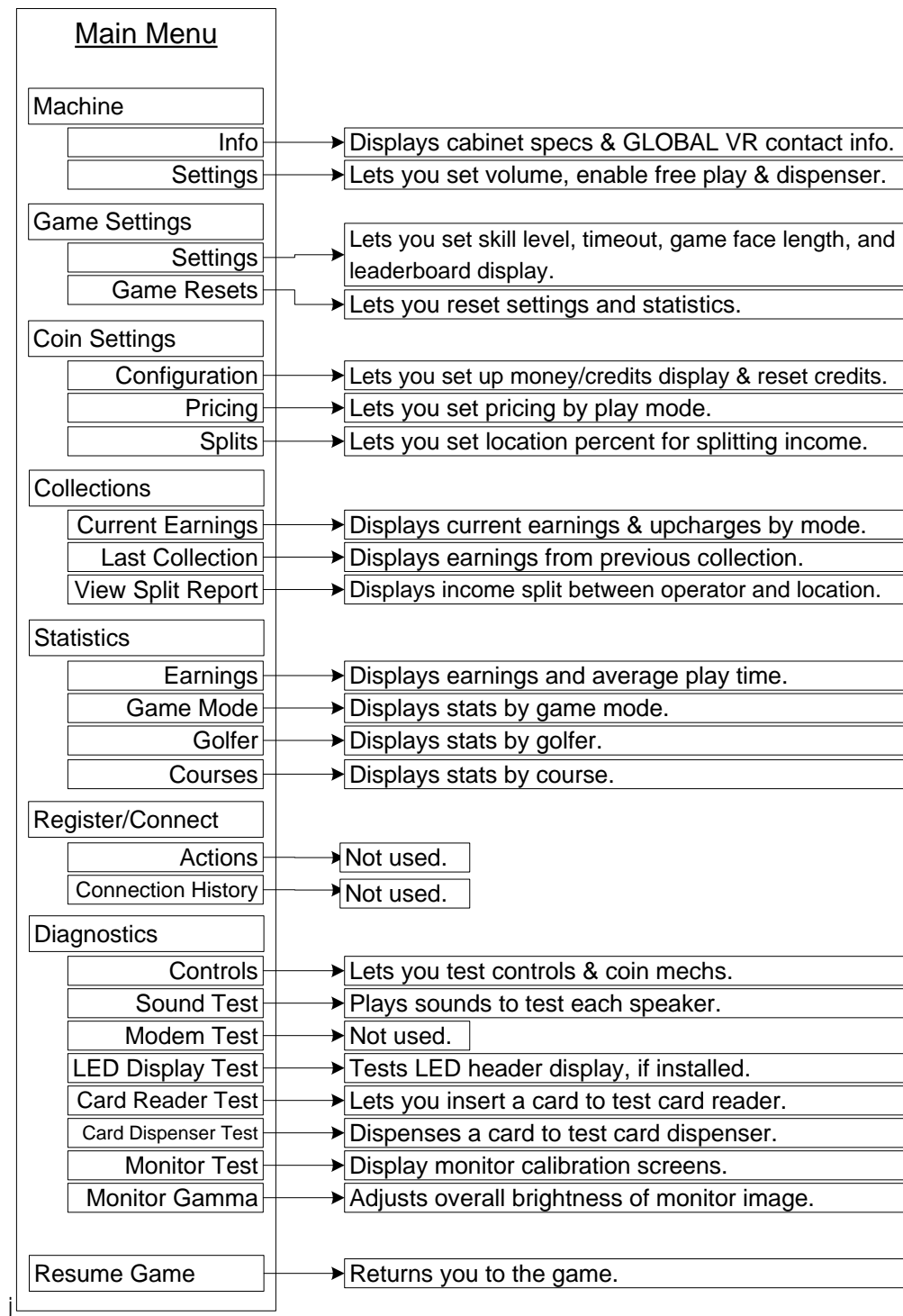


Figure 12. Operator Menu Flowchart



## Machine Info Screen

Machine Info is the first screen displayed when you press the Operator Button. It displays important information about the cabinet, as well as contact information for GLOBAL VR.

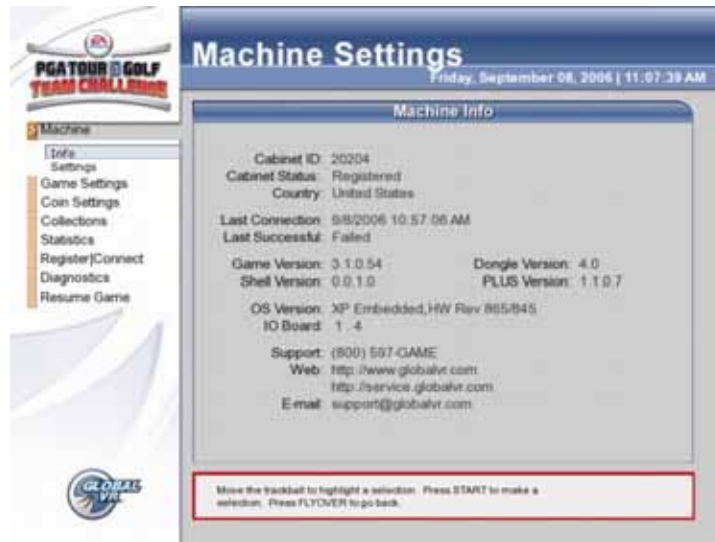


Figure 13. Machine Info Screen

Menu Item	Description
Cabinet ID	Software ID number previously used for Tournament Play.
Cabinet Status	Indicates whether the cabinet is registered for Tournament Play (no longer used).
Country	Displays the country of operation.
Last Connection	Displays date and time of the last connection attempt to the GLOBAL VR servers.
Last Successful	Displays the status of the last connection attempt to the GLOBAL VR servers.
Game Version	Displays the current game software version.
Dongle Version	Displays the localized version of the software, as read from the game dongle.
Shell Version	Displays the software shell version.
PLUS Version	Displays the PLUS data engine version.
OS Version	Displays the operating system version.
IO Board	Displays the version of the USB I/O card installed in the computer.
Support	Displays GLOBAL VR support phone number.
Web	Displays GLOBAL VR website URLs.
E-mail	Displays GLOBAL VR support e-mail address.

## Machine Settings Menu

The Machine Settings menu lets you set audio volume, turn free play on or off, and set up the Players' Card dispenser.

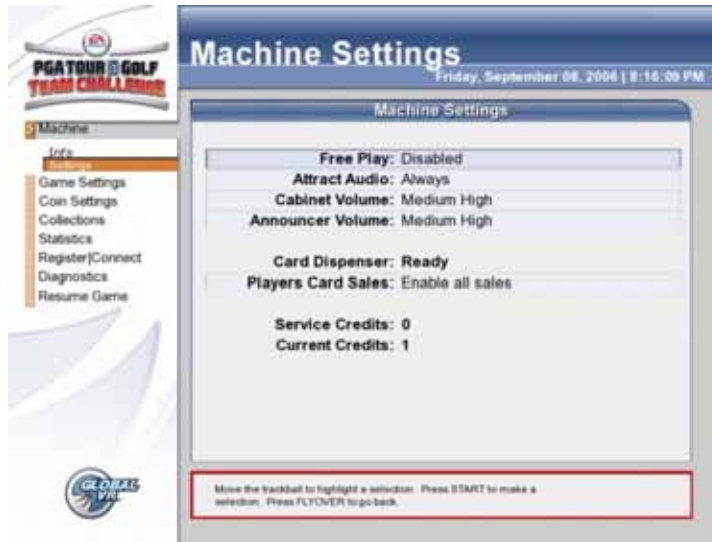


Figure 14. Machine Settings Menu

Menu Item	Description
Free Play	Turns Free Play to Enabled or Disabled.
Attract Audio	Sets how often the Attract Mode sound plays. Options are Never, Occasionally, or Always.
Cabinet Volume	Sets the overall cabinet volume. Options are: Off, Low, Medium Low, Medium, Medium High, High, and Deafening.
Announcer Volume	Sets the volume for the announcer's voice during game play. Options are: Off, Low, Medium Low, Medium, Medium High, High, and Deafening.
Card Dispenser	Shows status of card dispenser.
Players Card Sales	Lets you set Players' Card sales to Enable all sales, Disable all sales, or Disable sales if empty (prevents card sales if dispenser is empty).
Service Credits	Indicates service credits available on the cabinet.
Current Credits	Indicates regular (coin drop) credits available on the cabinet.

## Game Settings Menu

This menu lets you set the difficulty, idle timeout, and Game Face time, and set the leaderboard display format.



Figure 15. Game Settings Menu

Menu Item	Description
Difficulty	Sets how hard it is for a player to sink the ball. Each level (from 1 to 5) sets the size of the hole and the strength of the wind. Level 1 is the easiest, and level 5 is the hardest with the smallest hole and the strongest potential wind.
Idle Timeout	Sets Idle Timeout to On or Off. When Off, players have an indefinite amount of time to play each shot. When On, the game times out as set below.
Idle Timeout	Sets how much time before the game times out if a player does not touch the controls. After the set time, a prompt appears, and the player must press a button or use the trackball within 10 to 15 seconds or the game is forfeited and the cabinet returns to Attract Mode.
Game Face Length	Sets the time, in minutes, a player gets per Game Face purchase to work on their custom golfer.
National Tournament Prompt	No longer used.
Leaderboard Display	Sets the leaderboard display to City and State, or Location Name and State.

## Game Resets Menu

This menu lets you reset cabinet statistics and available credits. When you select any reset button except Reset Credits, a confirmation box will appear, allowing you to accept or cancel your reset selection.



Figure 16. Game Resets Menu

Menu Item	Description
Factory Settings	Returns all the Game settings to the default factory settings. Does not affect records and statistics. Also turns the <b>Instant Online</b> prompt back on, so it appears when the cabinet is booted. You can cancel this prompt by selecting <b>No, do not ask me again</b> when it appears.
All Course Records	Resets the eagles, birdies, longest drive and putt, Great Shot Points, and best score records for all of the golf courses. Does not affect the lifetime records stored by the game software.
Selected Course Records Only (Select Course)	Resets the eagles, birdies, longest drive and putt, Great Shot Points, and best score records for the course selected below. Does not affect the lifetime records stored by the game software.  To select a course, highlight the course displayed directly below the Selected Course Records Only button, and press <b>START</b> . Use the trackball to select a course from the list that appears, and press <b>START</b> again.
All Game Stats	Resets all of the Game Statistics. Does not affect the lifetime records stored by the game software.
All Player Number Stats	Resets stats showing the number of players per game. Does not affect the lifetime records stored by the game software.
All Golfers Stats	Resets stats showing how many times each golfer has been played. Does not affect the lifetime records stored by the game software.
Reset Credits	Resets available credits to 0. Does not affect service credits. The number next to the button shows available credits.

## Coin Settings, Configuration Menu

This menu lets you configure whether pricing is displayed in money or credits, set coins per monetary unit, and reset credits.

**Important:** Whenever you change the **Coins per \$** setting, the **Coin Settings, Pricing** screen (see page 22) will change automatically. Always check the **Coin Settings, Pricing** screen before you exit to verify the pricing is the way you want it.

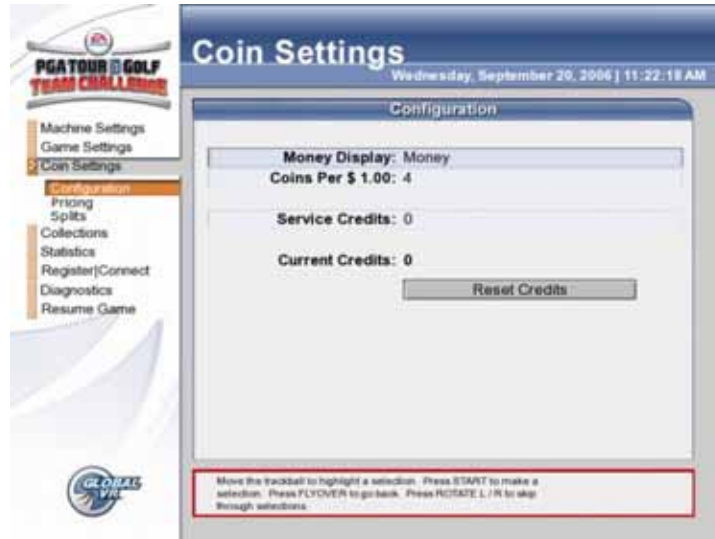


Figure 17. Coin Settings, Configuration Menu

Menu Item	Description
Money Display	Sets whether the cabinet displays pricing in Money or Credits.
Coins Per \$ (Symbol varies by country.)	Sets the number of coin drips it takes to reach a unit of money. Default is 4 in the USA and Canada (4 quarters per \$). Options are 1–20.
Service Credits	Lets you add service credits for testing game play. These credits are not counted on the collection statistics, and can be used for amusement play only.
Current Credits	Displays regular (coin drop) credits currently available.
Reset Credits	Resets available credits to 0. Does not affect service credits.

## Coin Settings, Pricing Menu

This menu lets you set pricing for each mode of play. The Money column displays the set price in money. The Fee column displays any applicable upcharge fees.



Figure 18. Coin Settings, Pricing Menu

Menu Item	Default	Description
3 Hole Stroke	3	Each of these items allows you to set the number of credits for the specified Amusement Play game.  If Money Display is set to Money in the Coin Settings, Configuration menu (see page 21), the Money column shows the price in money, based on the coins per \$ setting in the Coin Settings, Configuration menu.
9 Hole Stroke	8	
18 Hole Stroke	12	
3 Hole Training Course	3	
9 Hole Training Course	8	
3 Hole Team Play	3	
9 Hole Team Play	8	
18 Hole Team Play	12	
Shootout Match	4	
Driving Range	2	
Mulligan	1	Number of credits for a Mulligan (a replay of the last shot).
Game Face	2	Number of credits for a Game Face purchase.
Dispensed Player's Card	12	Number of credits to buy a Players' Card from the installed dispenser.
Player's Card Ordered	12	No longer used
9 Hole National Tournament	16	These Tournament Modes are no longer used.
18 Hole National Tournament	20	
Monday Tournament	16	
18 Hole World Tour	16	
9 Hole Challenge Match	12	
18 Hole Challenge Match	16	

## Coin Settings, Splits Menu

Many operators set up cabinets at various locations that they do not own. In such cases, the operator can define what percentage of cabinet coin collection will be paid to the location owner. The software will calculate these amounts automatically, and display them in the Collections, Split Report screen (see page 25). The operator can define the split percentage separately for each category.

If you change the split percentage in any category, select **Reset Bookkeeping (Do Collection)** from the Collections, Current Earnings screen (see page 24). This will cause the software to reset the coin collection data and start using the newly defined location split percentage.



Figure 19. Coin Settings Splits Screen

Menu Item	Description
Non Tournament	Each of these items allows you to set the percentage of earnings from the specified play mode that is to be paid to the location. Entering <b>50</b> means a 50/50 split. Entering <b>40</b> means the location gets 40% and the operator gets 60%. Each item can be set separately, allowing you to give the location a higher percentage of certain play modes.
National Tournament	
Local Tournament	
World Tour	
Challenge Match	
Players' Cards	
Unspent Monies	Percentage of Unspent Monies to be paid to the location.
<b>Expenses</b>	Items below this line are operating expenses that are paid to GLOBAL VR.
Online Service Fee	Not applicable.
Software Update Fee Split	Percentage of Software Update fees paid by the location.
Software Update Fee Amount __ per Month	Amount ( <i>not</i> percentage) paid by the location per month for software update fees.



## Collections, Current Earnings Screen

The screenshot shows the 'Collections' screen with a sidebar menu on the left and a main data table. The sidebar menu includes: Machine Settings, Game Settings, Coin Settings, Collections (highlighted), Current Earnings, Last Collection, Split Report, Statistics, Register/Connect, Diagnostics, and Resume Game. The main table is titled 'Current Earnings' and shows data for the period 'Since 10/18/2006 9:54:34 PM'. The table has five columns: Product, Earnings, PLUS Fees, Expenses, and Net. A 'Reset Bookkeeping (Do Collection)' button is visible at the bottom of the table area.

Product	Earnings	PLUS Fees	Expenses	Net
Amusement	15.00	0.00	0.00	15.00
National Tournament	99.00	29.70	0.00	69.30
Local Tournament	0.00	0.00	0.00	0.00
World Tour	70.00	16.80	0.00	53.20
Mulligan	0.00	0.00	0.00	0.00
GameFace	0.00	0.00	0.00	0.00
Challenge Match	8.00	1.60	0.00	6.40
Players' Cards	5.00	2.00	2.00	1.00
Unspent Monies	28.00	0.00	0.00	28.00
Online Service Fee	0.00	0.26	0.00	(0.26)
Software Updates	0.00	0.00	0.00	0.00
<b>Total</b>	<b>225.00</b>	<b>50.36</b>	<b>2.00</b>	<b>172.64</b>

Figure 20. Collections, Current Earnings Screen

This screen displays earnings, fees, expenses, and net income for the current period. To end the current period, select **Reset Bookkeeping (Do Collection)**. This will zero out all of the amounts, and move the data to the Last Collection screen, shown below.

## Collections, Last Collection Screen

The screenshot shows the 'Collections' screen with the same sidebar menu as Figure 20. The main table is titled 'Last Collection' and shows data for the period '10/18/2006 9:54:34 PM to 10/19/2006 1:41:03 AM'. The table structure is identical to the 'Current Earnings' screen, with the same columns and data rows. The 'Reset Bookkeeping (Do Collection)' button is no longer visible.

Product	Earnings	PLUS Fees	Expenses	Net
Amusement	15.00	0.00	0.00	15.00
National Tournament	99.00	29.70	0.00	69.30
Local Tournament	0.00	0.00	0.00	0.00
World Tour	70.00	16.80	0.00	53.20
Mulligan	0.00	0.00	0.00	0.00
GameFace	0.00	0.00	0.00	0.00
Challenge Match	8.00	1.60	0.00	6.40
Players' Cards	5.00	2.00	2.00	1.00
Unspent Monies	28.00	0.00	0.00	28.00
Online Service Fee	0.00	0.26	0.00	(0.26)
Software Updates	0.00	0.00	0.00	0.00
<b>Total</b>	<b>225.00</b>	<b>50.36</b>	<b>2.00</b>	<b>172.64</b>

Figure 21. Collections, Last Collection Screen

This screen displays earnings, fees, expenses, and net income for the previous collection period. This data is replaced when **Reset Bookkeeping (Do Collection)** is selected from the Collections, Current Earnings screen described above.



## Collections, Split Report Screen



Product	Earnings	PLUS		Operator Net	Location Net
		Fee	Expenses		
Amusement	15.00	0.00	0.00	7.50	7.50
National Tournament	99.00	29.70	0.00	34.65	34.65
Local Tournament	0.00	0.00	0.00	0.00	0.00
World Tour	70.00	10.00	0.00	28.00	28.00
Mulligan	0.00	0.00	0.00	0.00	0.00
GameFace	0.00	0.00	0.00	0.00	0.00
Challenge Match	8.00	1.00	0.00	3.20	3.20
Players' Cards	5.00	2.00	2.00	0.50	0.50
Unspent Monies	28.00	0.00	0.00	14.00	14.00
Online Service Fee	0.00	0.26	0.00	(0.13)	(0.13)
Software Updates	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>225.00</b>	<b>50.36</b>	<b>2.00</b>	<b>86.32</b>	<b>86.32</b>

Figure 22. Collections, Split Report Screen

For operators who split cabinet income with a location, this screen displays the total earnings, fees and expenses, and the operator and location net income based on the Split percentages set up in the Coin Settings, Splits menu (see page 23).

## Statistics Screens

The Statistics screens allow the operator to view the game play statistics collected by the cabinet. The lifetime totals are never reset unless the operating system is restored using the System Recovery Disk.

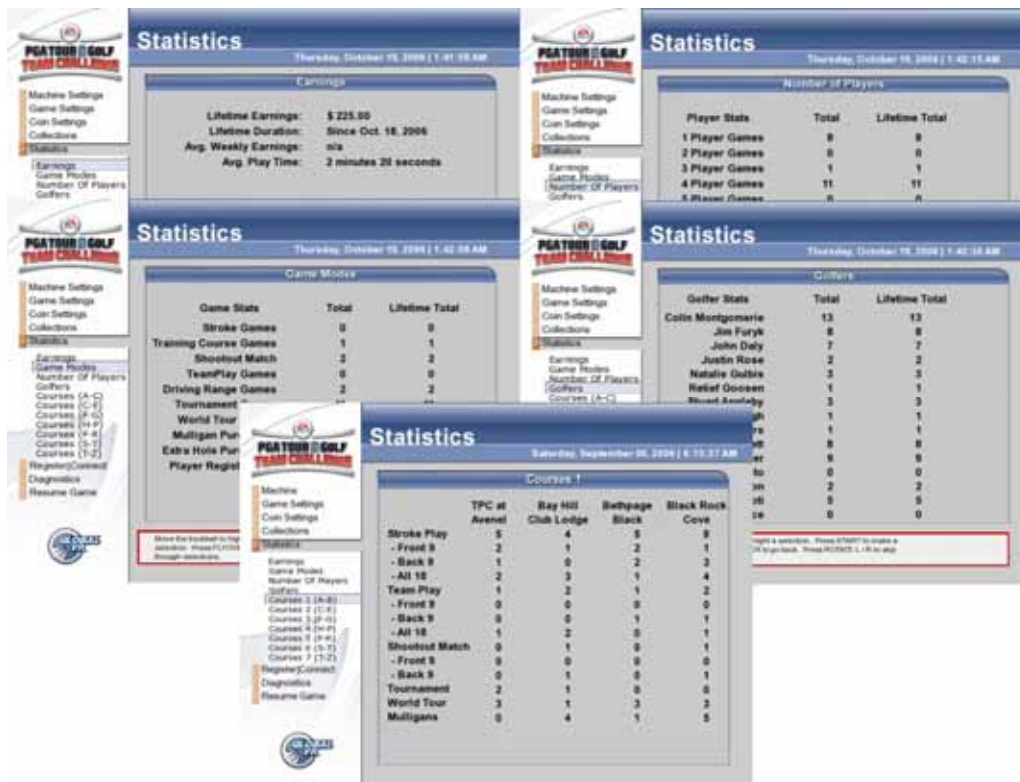


Figure 23. Statistics Screens

- **Earnings:** Displays the Lifetime Earnings for the cabinet since the last software install, the start date for the lifetime totals; average weekly earnings, and average play time per game.
- **Game Mode:** Displays the total number of games played in each mode, plus Mulligans and extra holes purchased. Shows Total for the current period, and Lifetime Total.
- **Number Of Players:** Displays the number of games played by the number of players per game. Shows Total for the current period, and Lifetime Total.
- **Golfers:** Displays the number of times each golfer, including custom Game Face golfer, has been played. Shows Total for the current period, and Lifetime Total.
- **Courses:** Each of the Courses screens shows the number of games played on each course, sorted by play modes and which holes were played. Shows current period only.

## Register/Connect, Actions Menu

This screen was previously used with online services. It is no longer used.

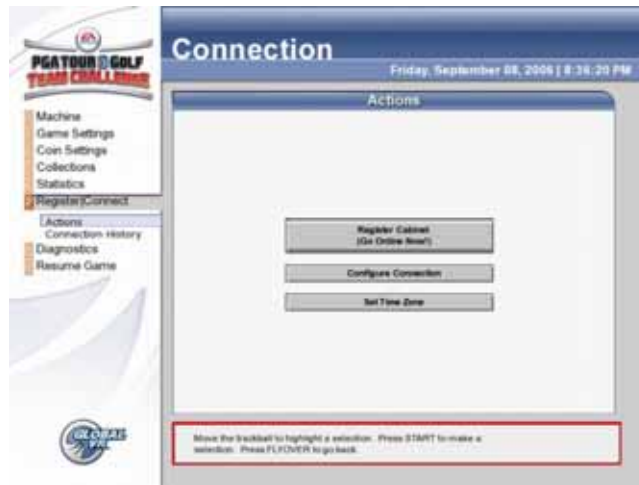


Figure 24. Register/Connect Actions Menu

## Register/Connect, Connection History Screen

This screen was previously used with online services. It is no longer used.



Figure 25. Connection History Screen

## Diagnostics, Controls Test Screen

The Controls Test allows the operator to test the player controls and coin mechs.

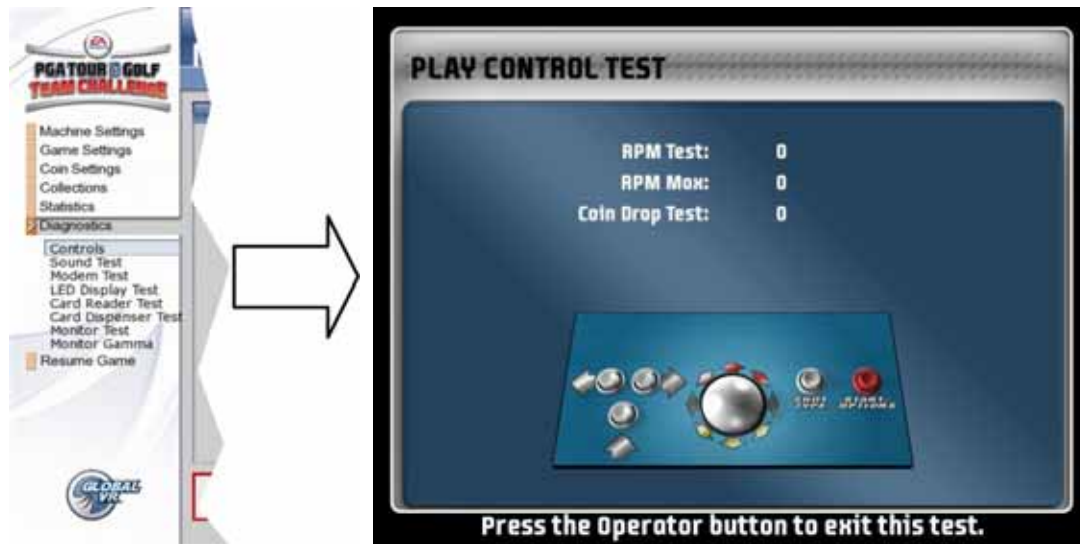


Figure 26. Controls Test Screen

- When you press a control panel button, an arrow appears on the screen next to the button you pressed. When you roll the trackball in any direction, an arrow shows the direction of spin.
- **RPM Test / RPM Max:** When you roll the trackball, the current and maximum RPM are displayed. The average RPM Max should be between 9,000 RPM and 15,000 RPM. If you get readings lower than 9,000 RPM, it is probably time to service the trackball. See page 32 for trackball cleaning, repair, and replacement information.
- **Coin Drop Test:** When you insert a coin or a bill in a coin mech or dollar bill validator, the counter increments, showing the number of credits inserted. This verifies that the device is working and the signal is being received by the computer.

When you are finished testing the player controls, press the Operator button to exit back to the main Operator Menu.

## Diagnostics, Monitor Test

When you select Monitor Test, the first of a series of monitor calibration screens will appear. Use the trackball or any button to cycle through the series of calibration screens. Various screens are designed to help you align the horizontal and vertical sync, adjust the white balance and color hues, or adjust the picture size and geometry. Some of the screens are shown below.

When you finish adjusting the monitor, press the Operator button to return to the Operator Menu.

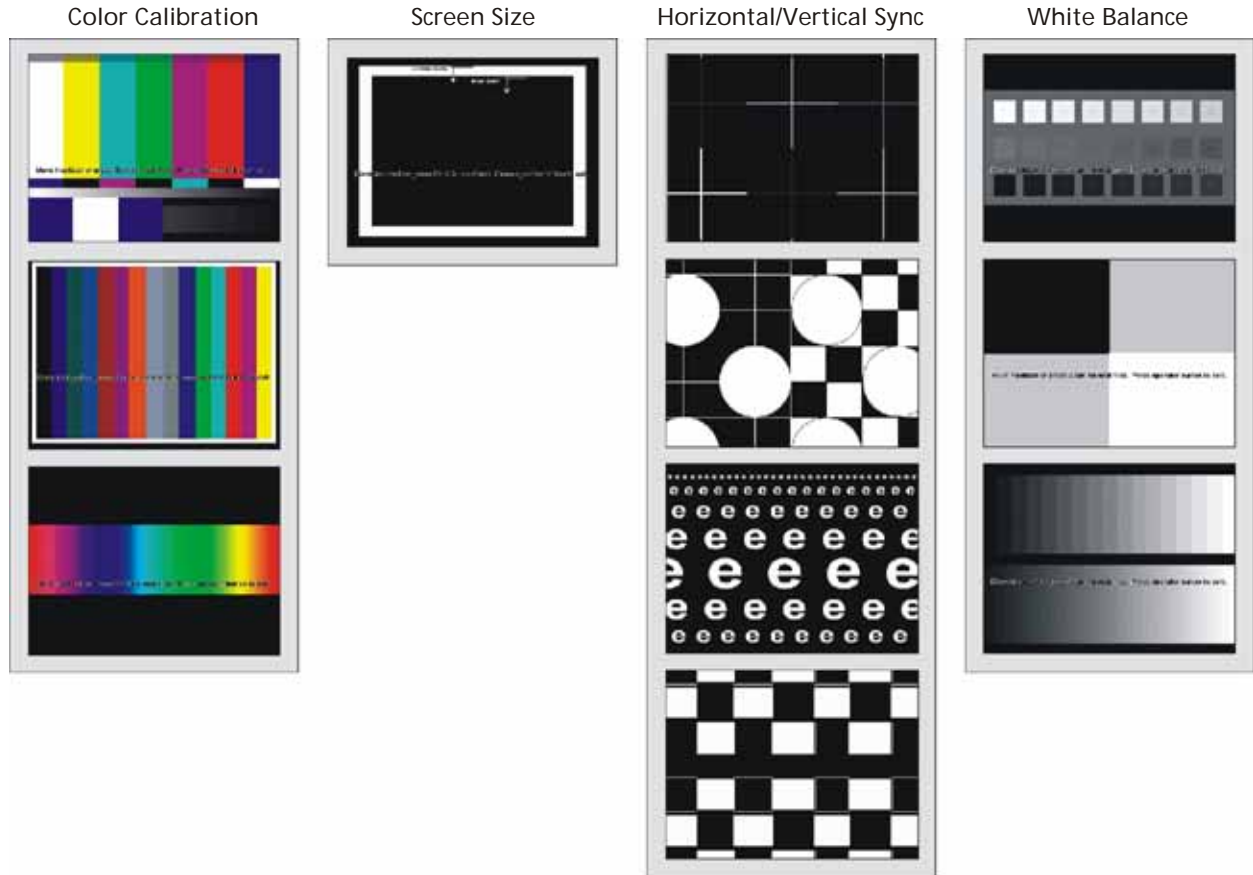


Figure 27. Monitor Calibration Test Screens

Use the monitor remote control board, mounted inside the coin door, to adjust the monitor. The buttons on the monitor control panel allow you to access several menus for adjusting picture quality, size, and position. If you notice color distortion on the monitor, select Degauss.

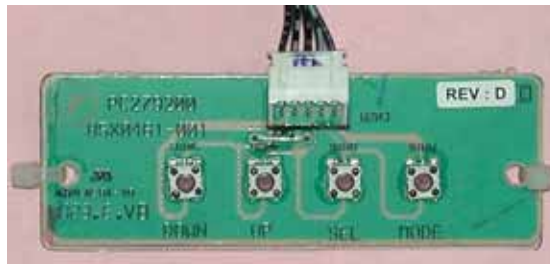


Figure 28. Monitor Remote Control Board

## Diagnostics, Additional Test Screens

The picture below shows the additional screens available under the Diagnostics menu.



**Speaker Test:** When you select this option, you hear sound from each speaker, followed by both speakers working together in stereo, while the onscreen graphic indicates the speaker(s) being played. Listen to verify that audio is working properly.

**Modem Test:** This was previously used with online services.

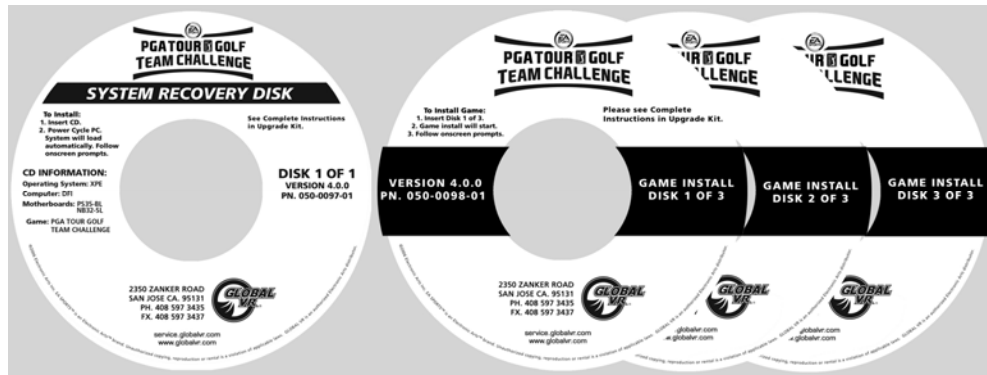
**LED Display Test:** For upgrade cabinets with an LED header, selecting this causes all of the LEDs to turn red, then orange, and then green. Visually verify that all LEDs are working correctly. The LEDs will return to normal operation after 10 seconds.

**Card Reader Test:** Select this option and insert a Players' Card or Operator Card when prompted. If the card reader is working properly, the screen will indicate whether a Players' Card or Operator Card was detected.

**Card Dispenser Test:** When you select this option with a card dispenser installed, the dispenser will dispense a card to confirm it is working.

**Adjust Monitor Gamma:** Select this option to adjust the monitor's overall screen brightness through a software setting. The higher the Gamma value, the brighter the picture becomes. (This setting is different from the hardware brightness adjustments made using the monitor remote control board.) The default setting is 1.00.

## Chapter 5 — Software Restoration



Follow the instructions below if you need to re-install software on your cabinet. Please be aware that installation will erase all cabinet settings and statistics.

**Total installation time is about 35 minutes.**

1. With the cabinet powered ON and the game running in Attract Mode, press the Operator button to launch the Operator Menu.
2. From the Operator Menu, record any cabinet settings that you wish to restore after software installation. For your convenience, write your settings on the Cabinet Settings Worksheet (Part #: 040-0111-02).
3. Open the CD drive and insert the CD labeled **System Recovery Disk**. Reboot the computer.
4. When the computer powers on, the CD will automatically run and begin the installation process. After about 30 seconds, you will see screens indicating that the installation is in progress.
5. When prompted, remove the CD and power cycle the cabinet. **DO NOT put the game CD in the drive yet.** After the reboot, the software will finalize the installation and then the system will automatically reboot again.
6. After the second reboot, the software will run a few more processes, and then you will briefly see a prompt to insert the game disk, followed by a large GLOBAL VR<sup>®</sup> logo with the Windows Start menu and taskbar. Insert the disk labeled **Game Install Disk 1 of 3**. The disk will run automatically and you will see a progress bar onscreen.
7. When prompted, remove the CD and insert **Game Install Disk 2 of 3**. The CD will run automatically.
8. When prompted, remove the CD and insert **Game Install Disk 3 of 3**. The CD will run automatically.
9. When Disk 3 finishes, the computer will reboot and you will see a screen saying that there is a disk in the drive. Remove the CD from the drive.
10. If the cabinet is located in the USA or Canada, the **Instant Online** screen will appear. Since online services are no longer available, use the trackball to select **No, do not ask me again** and then press the **START** button.
11. Use the Operator Menu to set up your pricing, sound volume, and other settings.
12. Play a game to verify that everything is working properly.



## 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.**

### Opening the Control Panel

To open the control panel, reach up through the coin door and release the two latches under the control panel, as shown in the picture below. Lift the control panel; it has a hinge at the front.



Figure 29. Releasing the Latches Under the Control Panel

### Trackball Service

This section describes the steps for disassembling the trackball to clean or replace parts.

1. Disconnect power and open the control panel as described in the previous section.
2. Disconnect the trackball harness.
3. Remove the four nuts that secure the lower mounting bracket under the trackball. Note the locations of the two ground wires for reassembly.
4. Remove the lower mounting bracket and the trackball assembly.



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

5. To replace the red sensor PCBs, unscrew the six (6) Phillips screws about halfway and then separate the plastic trackball housing enough to remove the PCBs. Note the orientation of each PCB relative to the sensor wheel. Follow electrostatic discharge (ESD) precautions and handle the PCBs by the edges only.
6. To completely disassemble the trackball, remove the six (6) Phillips screws from the plastic trackball housing, making note of the locations of the two ground wires. Be careful not to damage the copper foil at the ground wire connection points.
7. Carefully separate the plastic housing and remove the trackball. Wash the trackball with mild soap and water, and dry.
8. Lift the metal shafts and bearings out of the housing. Clean the shafts and bearings with a soft cloth. If the bearings have been sticking, clean them with a light oil such as WD-40<sup>®</sup>, and then wipe them thoroughly to remove all excess oil. If any oil gets on the trackball, it will trap dust and grime, interfering with trackball performance.
9. Re-assemble the trackball in the reverse order of disassembly. Be careful to align the red sensor PCBs with the grooves in the top and bottom pieces of the plastic housing. (**Hint:** Tighten the screws about halfway and then re-position the PCBs.) Be sure to connect all of the ground wires removed previously. (The trackball housing is grounded to the mounting plate, which is grounded to the lug inside the coin door.)
10. Go to the Control Test screen in the Operator Menu and verify proper trackball operation.

## Player Control Panel Button Service

The player buttons activate micro switches, as shown below. Perform the following steps to replace the micro switches or the buttons:

1. Open the Control Panel assembly as described in the previous section.
2. Gently press the plastic micro switch to the side to release it from the button housing.
3. Disconnect the two wires from the micro switch.
4. To remove the button, unscrew the retaining ring.
5. Reverse these steps to install the replacement button and micro switch. Connect the **black-white** ground wire to the COM connector on the bottom of the switch housing, and the signal wire to the NO connector, as shown in the figure below:

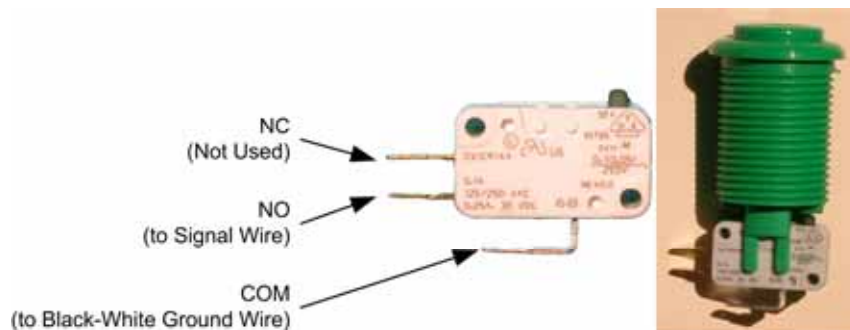


Figure 30. Player Button and Micro Switch

## Wells-Gardner® Monitor Replacement

Perform the steps that follow to remove the monitor from the cabinet for service or replacement. Be sure to follow all safety precautions while working with a monitor.

**Tip:** When removing the monitor from the cabinet, it is always best to have two people to support the weight of the monitor.

1. Turn the cabinet OFF and disconnect the AC power cord.
2. Disconnect all cables that connect the monitor to the cabinet, typically the following:
  - VGA Video cable from the back of the Monitor.
  - Monitor remote control board cable from the Control Panel mounted near the coin mech. Coil this cable and tie it to the monitor to prevent it catching while the monitor is being removed.
  - Power cable that connects to the monitor chassis PCB, located on your left as you face the monitor rear.
  - **Green** ground wire from the monitor frame on some models.
3. Inspect the disconnected cables and monitor frame to make sure that there are no wire ties holding the monitor to the cabinet.
4. Open the control panel (see page 32).
5. Remove the four (4) screws from the lower bracket of the sub-marquee and remove the bracket.
6. Remove the monitor bezel.
7. Remove the two wood screws with washers that secure the bottom of the glass display shield and remove the display shield.
8. Remove the four (4) 1/4-20 monitor mounting nuts, as shown in Figure 31.



Figure 31. Monitor Mounting Nut Locations



**DANGER: Components in the monitor chassis can be charged with a VERY HIGH VOLTAGE even when powered OFF.**

**The monitor is very heavy. Two-person lifting is advised.**

9. Carefully remove the monitor through the front of the cabinet and set it in a safe place. Most of the weight of the monitor is in the CRT at the front of the monitor.
10. Reverse these steps to re-install the monitor. Always clean the front of the CRT and the glass display shield before re-installing.
11. After replacing a monitor, use the Monitor Calibration screens from the Operator Menu to verify proper operation and adjust the monitor (see page 29).

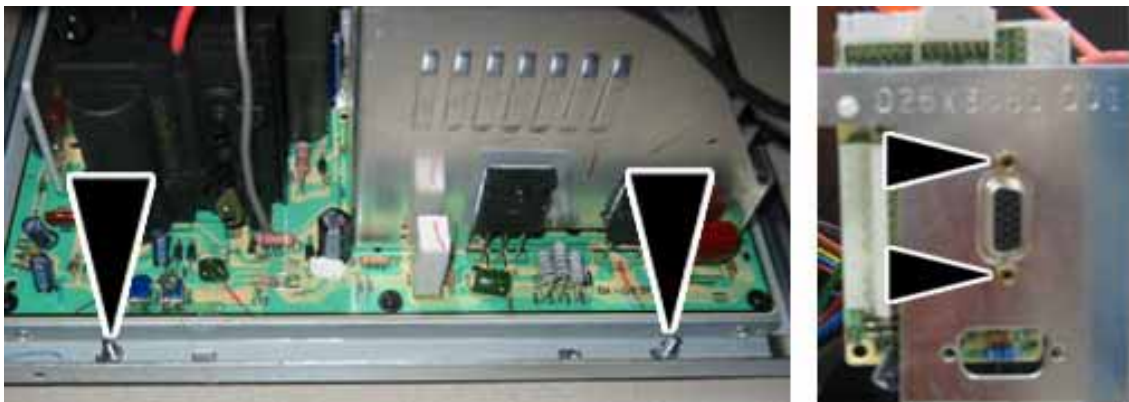
### Wells-Gardner® Monitor Chassis PCB Removal

You can replace the monitor chassis PCB if you have problems with just the PCB.

**Caution: Only a certified technician should attempt to remove or service the Monitor PCB. GLOBAL VR® assumes no responsibility for damage while removing the PCB.**

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

1. Turn the cabinet OFF and disconnect the AC power cord.
2. Remove the four nuts that hold the monitor chassis to the monitor frame.
3. Remove the two 4/40 Jack nuts that hold the video signal PCB to the monitor frame. See the figure below.



*Figure 32. Removing the Monitor PCB Mounting Hardware*

4. Disconnect the Chassis Neck PCB from Chassis Tube Neck of the CRT by pulling back on the Chassis Neck PCB. You will need to slide the Chassis Neck PCB to the side to clear the Chassis Tube Neck.



**DANGER: The Second Anode Lead (H.V. CRT Feed) can be charged with a VERY HIGH VOLTAGE even when powered OFF.**

5. Disconnect the second anode lead that connects to the CRT just above the Chassis Tube. Be very careful as the second anode lead can be charged with a VERY HIGH VOLTAGE even when powered OFF. Pinch the gray rubber flange and slightly push in to un-hook the metal prongs that hold the second anode lead to the CRT, shown by the arrows in Figure 33.

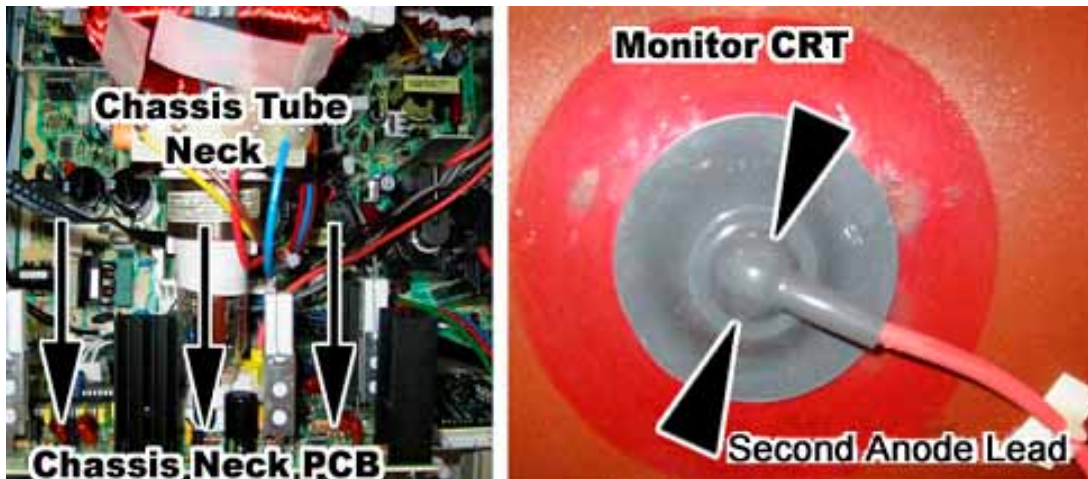


Figure 33. Disconnecting the Chassis Neck PCB and Second Anode Lead

6. Refer to Figure 34 to disconnect the next three cables:
  - a. Disconnect the CRT 2-wire ground cable that connects to the Chassis Monitor PCB (Item 1 below).
  - b. Disconnect the CRT 2-wire ground cable that connects to the Chassis Neck PCB (Item 2 below).
  - c. Disconnect the Color and Sync 4-wire cable that connects from the Chassis Tube Neck to the Monitor chassis PCB (Item 3 below). Note the color alignment of this connector for installing the new monitor chassis PCB.



Figure 34. Monitor PCB Cables

7. You can now slide the monitor chassis PCB and other PCBs out the side of the monitor chassis as one unit.

## Audio Amp and Speakers Service

### 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. Always keep the audio amp PCB inside an ESD anti-static bag when not installed in the cabinet.

1. Disconnect the power harness, speaker wires, and 3.5 mm audio cables from the audio amp PCB.
2. The PCB is mounted on four standoffs that are secured to the cabinet by Phillips screws. Each standoff has a clip on the tip that protrudes above the PCB and secures the PCB in place. To release the clip, squeeze the tip of the standoff with small needle-nose pliers, or use a small tool such as a screwdriver to press the clip inward, and then remove the PCB from the standoff.
3. Reverse the steps to re-install the audio amp PCB.
4. Run the Sound Test from the System Test screen in the Operator Menu to verify proper operation.

### Speaker Replacement

The speakers are located on either side of the marquee.

1. Remove the three (3) 1/4-20H Torx<sup>®</sup> security screws that secure the speaker grill to the cabinet.
2. Remove the four (4) screws that secure the speaker to the cabinet.
3. Remove the wires from the speaker and install them to the same connectors on the replacement speaker.
4. Reverse these steps to re-install the speaker.
5. Run the Sound Test from the System Test screen in the Operator Menu to verify proper operation.

### Computer Replacement

**Caution:** The computer is serviced as one unit. **YOU WILL VOID YOUR WARRANTY if you open the computer without direct authorization from the GLOBAL VR<sup>®</sup> Technical Support staff.**

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

1. Disconnect all of the cables from the computer.
2. Remove the Game Dongle and keep it with your cabinet. Do not ship the game dongle with the computer.
3. Remove the four Phillips screws that secure the computer bracket to the cabinet, and remove the bracket.
4. 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<sup>®</sup> recommends shipping the computer in a box with three inches of foam padding on all sides.

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

## 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.

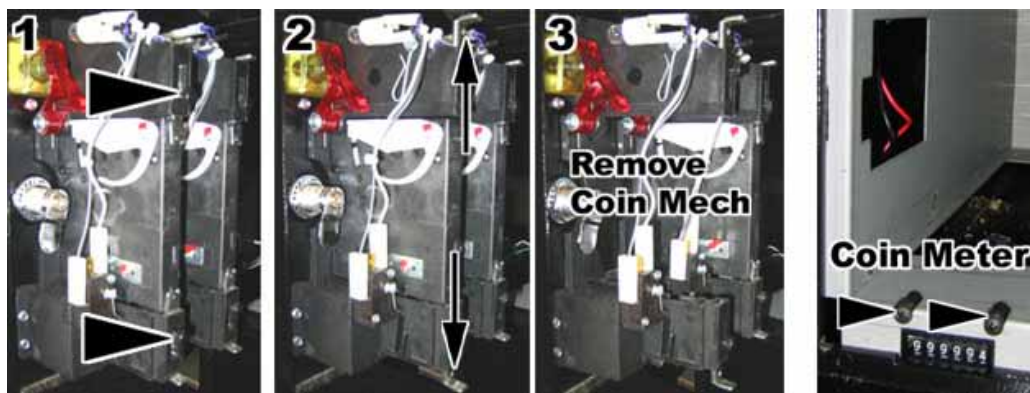


Figure 35. Servicing the Coin Mech and Coin Meter

## Coin Meter Replacement

The coin meter is located in the bottom left-hand corner of the cash box. Perform the following steps to remove the coin meter:

1. Turn the cabinet OFF and disconnect the AC power cord.
2. Remove the two Phillips screws holding 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. Use the two screws to install the new coin meter.

## Dollar Bill Validator Replacement

1. Disconnect the dollar bill validator control harness and ground wire from the cabinet.
2. Remove the cash box from the dollar bill validator.
3. Remove the four nuts that hold the dollar bill validator in place.

4. Reverse the steps to install a new unit. If the dollar bill validator has a green ground wire, make sure it is connected to the ground lug on the coin vault, and the cabinet is properly grounded, or the unit will not work properly.
5. Refer to the following figure to set the DIP switches.

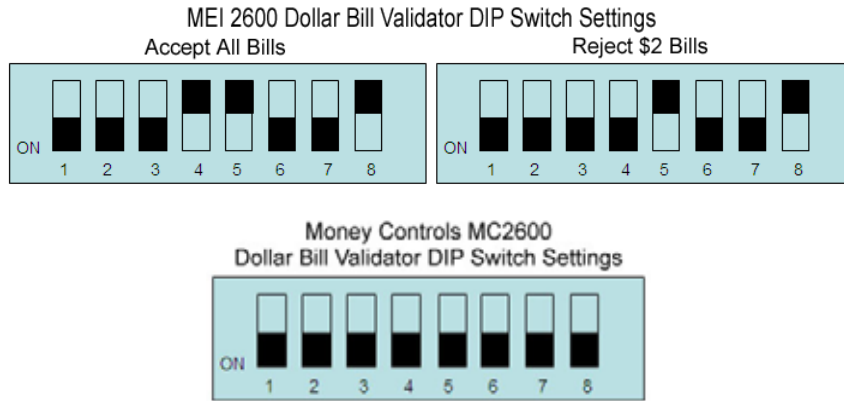


Figure 36. Dollar Bill Validator DIP Switch Settings

## Players' Card Reader Replacement

The Players' Card reader is located below the control panel near the coin mechs. It is mounted to an assembly that is designed to minimize ESD interference. Perform the following steps to replace the Players' Card reader:

1. Disconnect the Players' Card reader cable from the computer.
2. Open the control panel as described on page 32.
3. Reach down through the control panel opening and remove the four nuts and bolts that secure the Players' Card reader to the cabinet, and remove the Players' Card reader assembly.
4. Refer to the figure below and remove the four (4) screws that secure the Players' Card reader to the mounting assembly. Slide the Players' Card reader out of the mounting assembly.
5. Reverse these steps to install the new Players' Card reader.
6. After servicing the Players' Card reader, always test it from System Test in the Operator Menu.

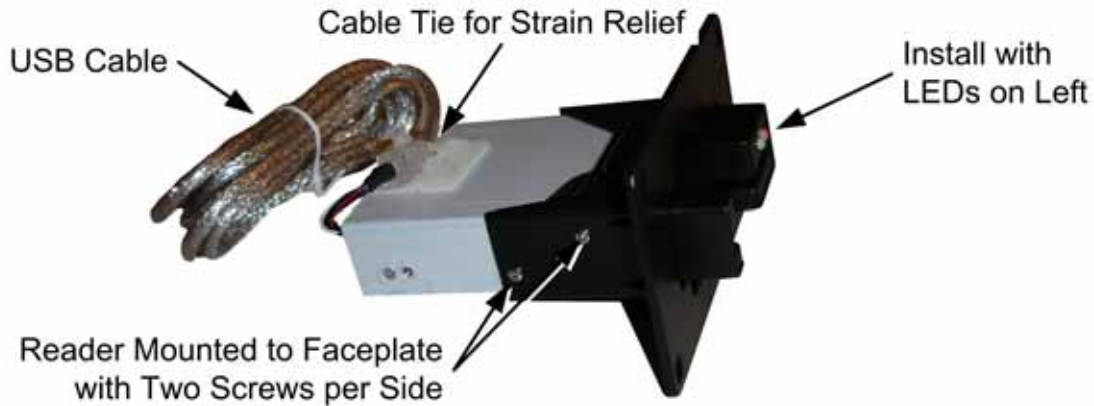


Figure 37. Players' Card Reader Assembly

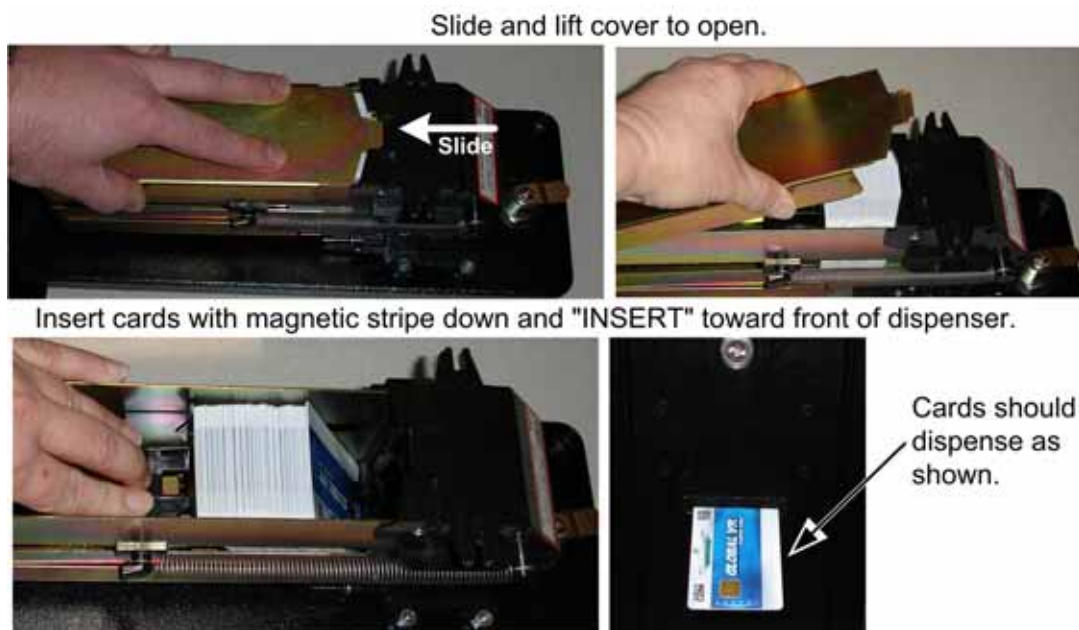
## Players' Card Dispenser Service

The Players' Card dispenser sells SmartCard-format Players' Cards. Perform the following steps to open the dispenser to refill or count the Players' Cards.

**Important:** The dispenser will not work unless it is fully closed and in a vertical position (no more than a 5-degree angle), with the back cover in place. If you reboot the computer only, rather than power cycling the cabinet, the dispenser may dispense a card.

1. Open the Players' Card dispenser door with the key; it will rotate downward on a hinge.
2. Slide and lift the back panel as shown below.
3. Insert Players' Cards as shown, with the magnetic stripe down. The dispenser will hold up to 185 cards. Make sure the cards are stacked evenly and the bottom plate is firmly against the cards.
4. After filling, it is a good practice to test the dispenser from System Test in the Operator Menu.

**Note:** The Players' Card dispenser must be closed, and in a fully vertical position, or it will not dispense cards.



*Figure 38. Filling the Players' Card Dispenser*

## Players' Card Dispenser Replacement

**Note:** The Players' Card dispenser must be closed, and in a fully vertical position, or it will not dispense cards.

1. To remove the dispenser from the cabinet, disconnect the wire harness and remove the four Kep nuts that secure the dispenser to the door.
2. When you re-install the dispenser, the plastic lip around the card slot must line up with the hole in the door. When properly installed, the plastic around the slot is flush with the face of the door.
3. After servicing the Players' Card dispenser, always test it from the System Test in the Operator Menu.



## Power Distribution Service

### AC Power Plate

The AC power plate provides the external AC power. It also has the Phone (modem), and Ethernet connections that were previously used with online services.

AC power from the power plate is connected to a 7-outlet AC power strip/surge suppressor in the cabinet. An AC EMI Filter in the AC power plate removes the electrical noise that can cause interference with the hardware inside the cabinet.

**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. Components must **not** be grounded to the power plate mounting bolts.

The **Ethernet** and **Phone** ports on the power plate are no longer used.



Figure 39. AC Power Plate

### AC Power Strip Replacement

The AC power strip provides power to all of the components in the cabinet. Perform the following steps to replace the power strip:

1. Turn the cabinet OFF and disconnect the AC power cord.
2. Disconnect all components from the power strip.
3. Disconnect the power strip from the AC power plate terminals.
4. Remove the power strip; it is held in place with Velcro®.
5. 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 Power Distribution Diagram on page 53.)

**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 may not function properly.**

## Marquee Florescent Light Service

The marquee and sub-marquee are each lit by a fluorescent fixture.

To gain access to the marquee fixture, remove the eight (8) Torx screws that secure the marquee artwork and clear plastic in place.

To gain access to the sub-marquee fixture, remove the six (6) Torx screws that secure the marquee support brackets, artwork, and clear plastic in place.

Replace the florescent tube with another 18" florescent tube.

To remove the fixture, disconnect the cabinet from AC power. Disconnect the AC power cord from the fixture. Remove the two Phillips screws that secure the fixture to the cabinet and remove the fixture. Replace the fixture with part # 49-1001-00.

## Cold-Cathode Florescent Light Service

The cold-cathode florescent light adds dramatic lighting to the front of the cabinet, below the control panel. Perform the following steps to replace the light:

1. Unscrew the five (5) Torx screws that secure the clear plastic panel below the light.
2. Snip the cable ties that secure the cold-cathode tube to the cabinet and remove the tube.
3. Open the control panel and disconnect the tube from the power inverter.

Reverse these steps to install the new tube and replace the light assembly.

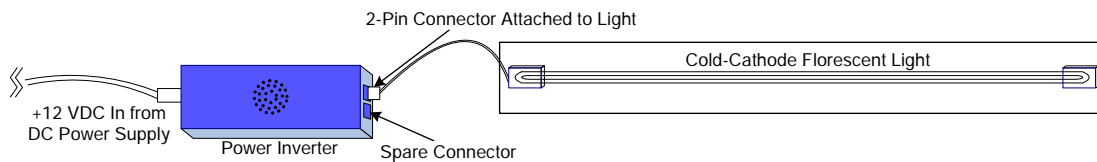


Figure 40. Cold-Cathode Light Wiring

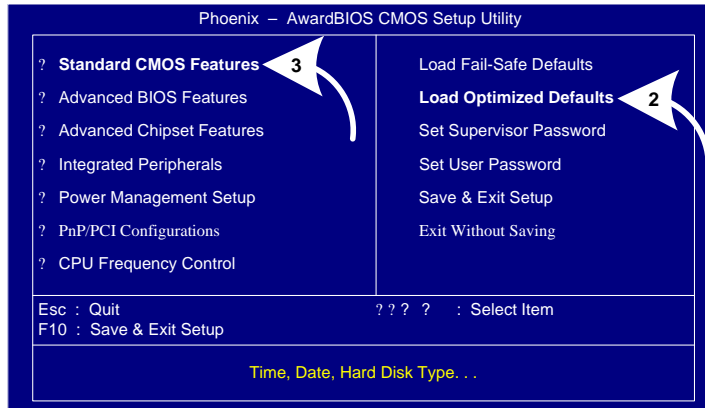
## Setting the Computer BIOS (CMOS)

This procedure applies only to the PS35-BL Motherboard.

**Important:** Your screens may not look exactly like the screens shown below, and some settings shown on the screens below may be different from your system. **Do not change any settings that are not specifically described in this document.**

1. Press the **DEL** key during boot. The CMOS Setup Utility Main Menu will appear:

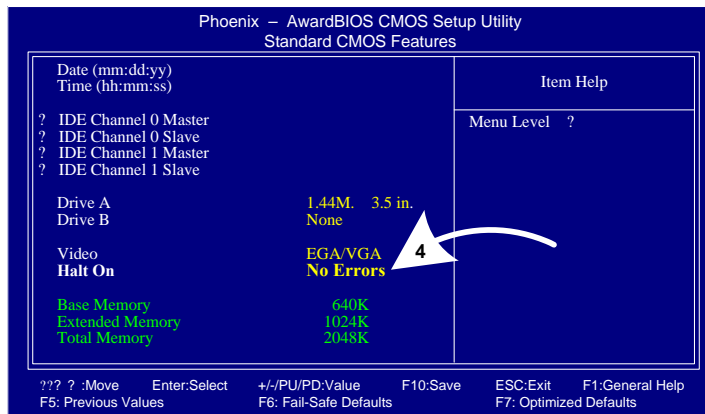
2. Use the Arrow keys (↑↓→←) to select **Load Optimized Defaults**, and press **Enter**. Press **Y** and **Enter** when prompted to confirm the change.



3. Use the Arrow keys to highlight **Standard CMOS Features**, and then press **Enter**.

A screen similar to the following will appear:

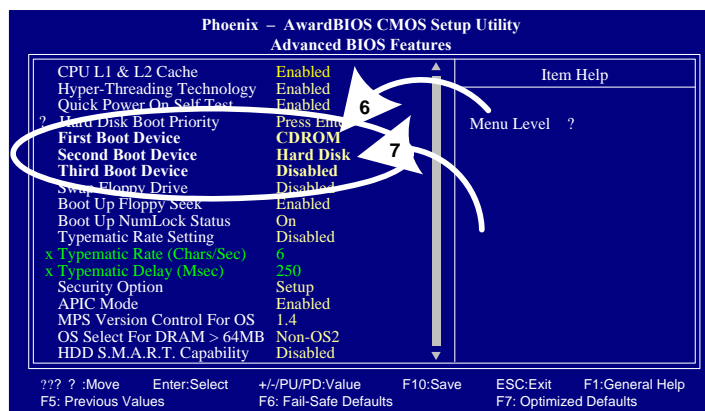
4. Use the Arrow keys to highlight the setting for **Halt On** and press **Enter**. Use the **Page Up** and **Page Down** keys to change the setting to **No Errors**.



Press **ESC** to go back to the Main Menu.

5. Now use the Arrow keys to highlight **Advanced BIOS Features** and press **Enter**. A screen similar to the following will appear:

6. Use the Arrow keys to highlight the setting for **First Boot Device** and press **Enter**. Use the **Page Up** and **Page Down** keys to change the setting to **CDROM**.

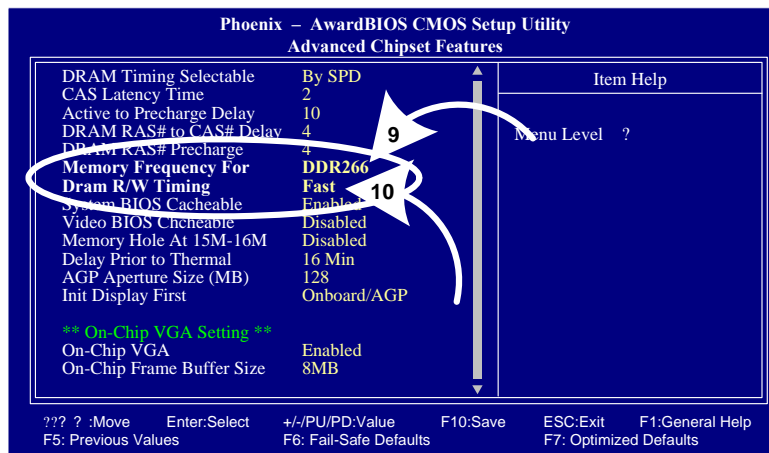


7. Set **Second Boot Device** to **Hard Disk** and **Third Boot Device** to **Disabled** the same way. Press **ESC** to go back to the Main Menu.

8. Now use the Arrow keys to highlight **Advanced Chipset Features** and press **Enter**. A screen similar to the following will appear:

9. Use the Arrow keys to highlight the setting for **Memory Frequency For** and press **Enter**. Use the **Page Up** and **Page Down** keys to change the setting to **DDR266**.

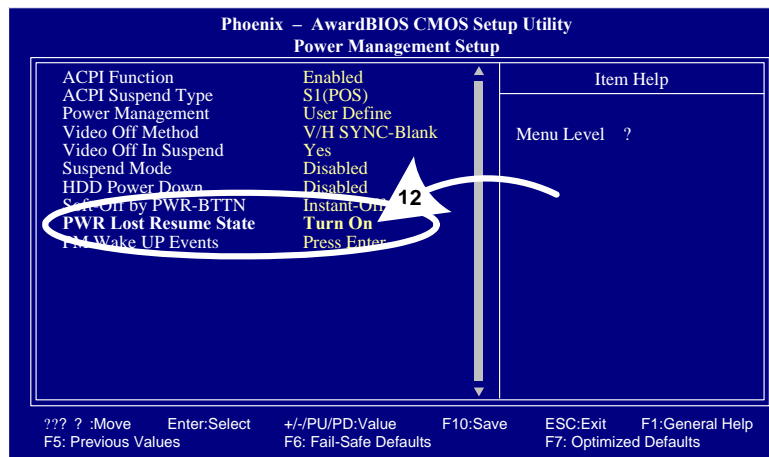
10. Use the Arrow keys to highlight the setting for **Dram R/W Timing** (if listed) and press **Enter**. Use the **Page Up** and **Page Down** keys to change the setting to **Fast**.



Press **ESC** to go back to the Main Menu.

11. Now use the Arrow keys to highlight **Power Management Setup** and press **Enter**. A screen similar to the following will appear:

12. Use the Arrow keys to highlight the setting for **PWR Lost Resume State** and press **Enter**. Use the **Page Up** and **Page Down** keys to change the setting to **Turn On**.



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

Save to CMOS and EXIT (Y/N) Y

14. Make sure "Y" shows at the end of the prompt (use the arrow keys to select, if necessary), and press **Enter** to save the settings and exit.

## Chapter 7 — Replacement Parts

If you need replacement parts, please reference these part numbers when contacting GLOBAL VR<sup>®</sup> technical support or your distributor.

### Documents, Software, and Cards

Part Number	Qty	Item Description
040-0062-02	1	System Manual
040-0063-02	1	Software Restore Guide
050-0097-01*	1	System Recovery Disk
050-0098-01*	1	Game Install Disks (2 CDs)
90524-00	1	Players' SmartCards, Pack of 100

\*Part numbers may change due to software revisions.

### Cables

Part Number	Qty	Item Description
115-0008-01	1	Cable, 110 VAC TO +24VDC Power Supply
115-0030-01	2	Cable, 110 VAC to Fluorescent Light, 8'
115-0034-01	1	Fan Power Cord, 90° Angle T-Style Plug, 72"
115-0076-01	1	Cable, USBIO to Controls, Card Dispenser, & Audio Amp
115-0077-01	1	Cable, Audio Amp to Speakers
115-0078-01	1	Cable, Main GND to Coin & Trackball
115-0079-01	1	Cable, 12 VDC/5 VDC Power Harness
USB-AB06MM	1	USB Cable, 6'
80-0213-00	1	Cabinet Power Cord, 6'
TDC053-7	1	RJ45 Modular Cable, 7' straight (Ethernet)
TDC207	1	Modular Cable RJ-11, Crossed Wiring (Phone Line)
96-0539-00	1	Cable, Stereo, 3.5 mm, 6', PC to Audio Amp

### Cabinet Functional Components

Part Number	Qty	Item Description
3100-0002	1	Players' Card Dispenser, 12V-"C" Interface
WGM2792-UOTS53D	1	Monitor, Wells-Gardner 27" Flat-Screen
03-30001	1	27" Monitor Glass Shield
49-1857-20	1	Monitor Bezel
1123LBT	1	Cabinet Fan, 115 VAC, 11 Watts, 120sqmm x 38mm
44-1100-01	1	Power Supply, 5V/12V 115 W
49-0963-40	1	Power Strip, 7 Outlet Surge Protected, 6', 15Amps, 1500 Joules
49-1001-00	2	Florescent Light, 18"
5.25 SPEAKER PAIR	1	5.25" Speakers, Pair
37037-00	2	Marquee Speaker Grill
CCFL-18BU	1	Cold Cathode Florescent Light, Blue, w/ Inverter
MC2611G5A0141	1	Dollar Bill Validator, MC 2600 w/ 500 Stacker Upgrade
45010-00	1	Players' Card Reader Assembly
26068-00	2	ESD Isolation Block for Players' Card Reader
SCR28I-S033U	1	Players' Card and Magnetic Stripe Reader
56-0100-HLWB	1	Trackball Assembly (See diagram on next page)
58-9111-LG	4	Pushbutton, White w/ Micro Switch and Nut
58-9155-LG	1	Pushbutton, Yellow w/ Micro Switch and Nut

## Computer

Part Number	Qty	Item Description
45006-00	1	System Computer Assembly
08324	1	4-Port USB 2.0 Card, PCI
315-0512-40	1	DDR RAM, 512MB PC2700-32x8
4300-0004	1	Modem, PCI, Creative Lab Blaster, 56K, V.90
4300-0005	1	Motherboard, Intel 865G Chipset, PS35-BL (ACP)
CDR-SN5221	1	CD-ROM Drive, 52x IDE
CPU-2400	1	CPU, P4, 2.4Ghz 256k FSB-533, w/ Heat Sink & Fan
GFX5700-256MBAGP8X	1	Video Card, Jaton GeForce FX5700, 256 MB, AGP 8X
HD-WD200BB	1	Hard Drive, IDE ATA 100, 7200RPM, 20GB
G80-00005	1	License, Microsoft XP, Embedded
USBIOEXT	1	Nytrix USB I/O Extreme PCB (USB I/O Card)
H4-MEMOHASP	1	Game Dongle

## Power Plate

115-0049-01	1	Ground Cable 3.5" (Power Plate)
283-2025-ND	1	Fuse, SLO BLOW, 250V, 6 AMP (Power Plate)
CCM1600-ND	1	Power Entry Module, EMI Filter, Un-Shielded (Power Plate)
ECF504-4C	2	RJ11 Coupler (6X4), Crossed, 30u (Power Plate)
ECF504-8SK	1	RJ 45 Coupler (8X8), Straight, 30u (Power Plate)

## Trackball Parts

ITEM NO	QTY	PART NO.	DESCRIPTION
1	1	195-0560-00	3" TRACKBALL BOTTOM BRK
2	1	195-1604-00	3" TRACKBALL TOP BRK (1/8" SHORT)
3	1	155-0200-XX	3" TRACKBALL BALL
4	2	95-0576-00	3" TRACKBALL ROLLER SHAFT
5	1	95-0575-00	3" TRACKBALL IDLER SHAFT
6	2	95-1422-00	PLASTIC STAR WHEEL
7	2	A052-1011-00	NEW STYLE PCB ASSY FOR T-BALL, RED
8	6	90-1005-00	SCREW, #8 X 1/2 PH. PN. HD. TYPE B
9	6	95-0570-00	BEARING FOR TRACKBALL OILED
10	4	95-0555-140	TAPE, COPPER SMOOTH 1/2 WIDE
11	1	95-0577-00	GROUND WIRE HAPP TRACKBALL
12	1	95-0303-00	HARNESS T/BALL STANDARD TRACKBALL
13	1	90-1013-00	TIE WRAP 4" LENGTH, SOLD EA.
14	1	95-1828-00	TRACKBALL MOUNTING SHIM FOR 3" TRACKBALL
15	2	43-2253-00	SCREW 4-40 X 3/8 PHIL TRUSS HEAD MS W/LIGHT PATCH ZINC

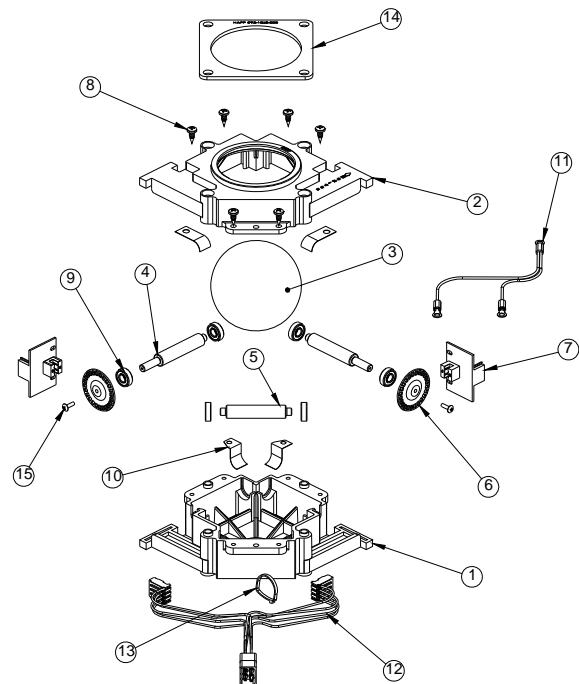


Figure 41. Trackball Exploded-View Drawing



## Artwork and Exterior Formed Components

Part Number	Qty	Item Description
47009-00	1	Tournament Header
45033-00	1	Marquee Assembly
26000-00	1	Formed Marquee Housing
26004-00	1	Marquee Clear Plastic
PGATC-AW-03	1	Marquee Artwork
AW-FB01-10	1	GLOBAL VR <sup>®</sup> Nameplate
PGA-AW-14	1	Control Panel Artwork, Polycarbonate
PGATC-AW-04	1	Sub-Marquee Artwork
26063-00	1	Sub-Marquee Clear Plastic
26069-00	1	Clear Plastic Lighting Panel Below Control Panel
PGA05-AW-01	1	Left Side Graphic
PGA05-AW-02	1	Right Side Graphic
PGA05-AW-05	1	Card Dispenser Graphic
PGA05-AW-06	1	Card Reader Graphic
PGATC-AW-08	1	Control Panel Front Graphic



Figure 42. Cabinet Artwork and Formed Components

## Chapter 8 — Troubleshooting

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### Video Troubleshooting

Problem	Cause	Possible Solution
No picture on monitor	Power problem	Check the AC power connection to the monitor. You can verify that the monitor has power by looking for a small glow in the neck of the CRT.
	Loose or faulty video cable	Verify that the video cable is firmly connected from the monitor to the video card on the computer. While the monitor is powered ON, disconnect the video cable. You should 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.
	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.
	Faulty monitor chassis PCB	Verify that the fuses on the monitor chassis PCB are good and that all connections are secure.
Picture is dim or faded	Gamma needs adjustment	Use the monitor remote control board to adjust the brightness and contrast settings. Adjust the monitor gamma setting from System Test in the Operator Menu to increase overall brightness.
Picture color is poor	Color needs adjustment	Use the monitor remote control board to adjust the red, green, and blue color settings. (See page 29.)
Picture geometry is misaligned	Geometry needs adjustment	Use the monitor remote control board to adjust the picture height and width and other geometry. (See page 29.)
No video and no audio  ( <b>Note:</b> It may take nearly 2 minutes to boot and start the game)	No power to computer	Verify the computer is ON by the green LED on the front of the computer. Verify the line voltage switch on the back of the computer is set to the correct voltage for your area: 115V or 230V. Make sure the AC power cord is firmly connected to the computer and the power strip. Turn off the power strip, wait 20 seconds, and then turn it back on to reboot the computer.
	Corrupted software	Reload the software from the CDs. 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.
Poor picture	Monitor connected to wrong port	The monitor must be connected to the VGA Video port on the video card, <b>not</b> to the video port in the computer motherboard. Make sure that the monitor video cable is connected to the VGA Video port located below the audio connectors (see Figure 45 on page 54).

## Audio Troubleshooting

Problem	Cause	Possible Solution
No audio	Volume set too low	Enter the Operator Menu and adjust Audio Settings to raise the volume. Verify that the Master Volume is set high enough. Verify the volume is not turned all the way down at the Audio Amp PCB.
	Faulty wiring	Turn off the game. Verify that all the wires are firmly connected to the speakers and Audio Amp PCB. Verify that each wire is connected to the correct port. Verify that no wires are frayed or improperly shorting to ground.
	Blown speakers	Remove the grills and inspect each speaker for visible damage. Run the Sound Test from System Test in the Operator Menu to verify each speaker is working.
	Faulty audio amp PCB	You can verify the Audio Amp PCB is working by installing it into another working cabinet. If that is unavailable to you, plug a simple computer speaker into the audio ports on the computer and verify that sound is working at the computer.
Poor sound from one or more speakers	Blown speakers	Remove the grills and inspect each speaker for visible damage. Run the Sound Test from System Test in 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 speaker.
	Faulty audio amp PCB	You can verify the Audio Amp PCB is working by installing it into another working cabinet. If that is unavailable to you, plug a simple computer speaker into the audio ports on the computer and verify that sound is working at the computer.
	Faulty wiring	Verify that all the wires are firmly connected to each speaker and the Audio Amp PCB. Verify that no wires are frayed or improperly shorting to ground.
Audio hum	Faulty power supply	A constant low hum in the speakers can be caused by a faulty power supply.

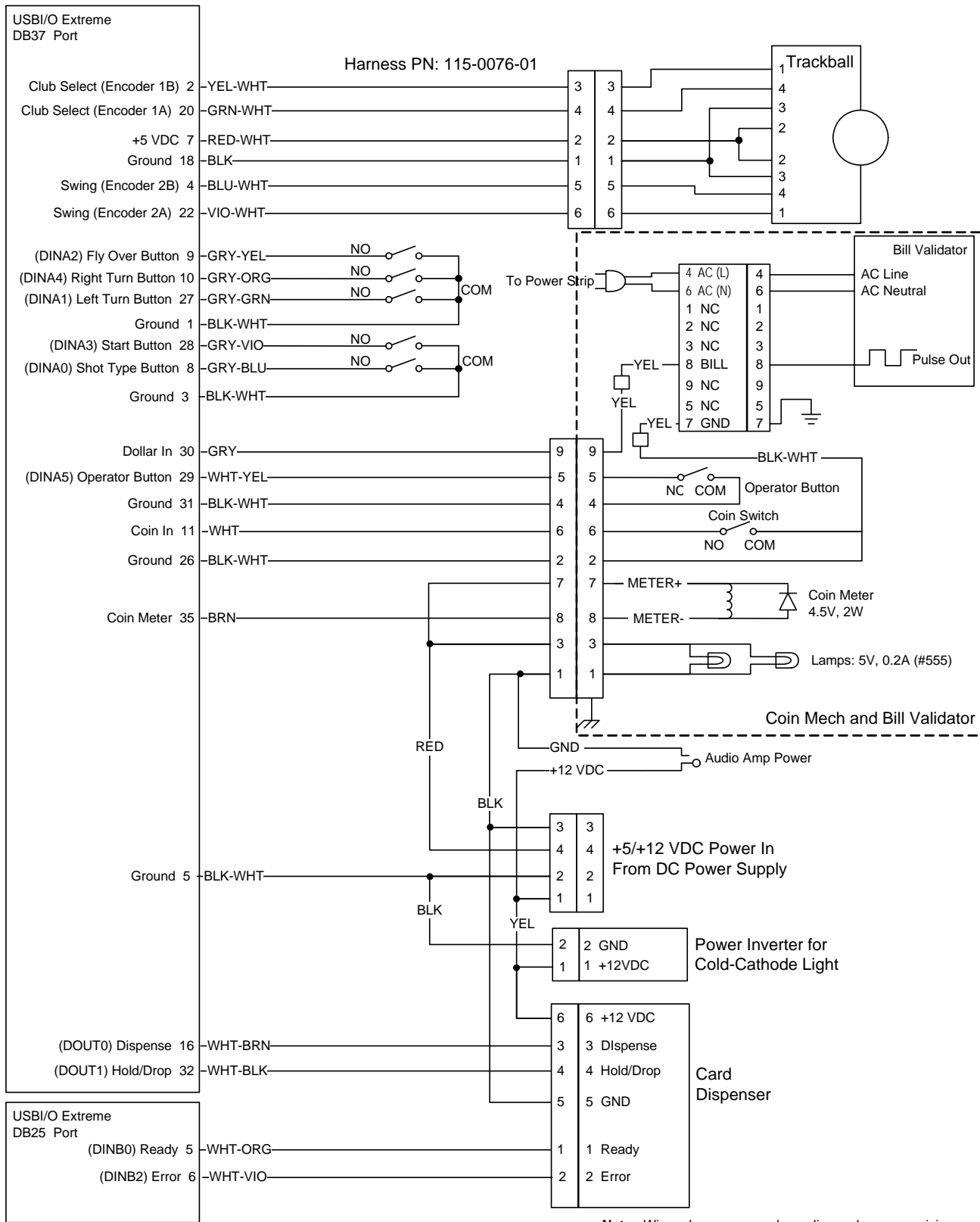
## Control Troubleshooting

Problem	Cause	Possible Solution
Buttons do not work	Faulty micro switch	Replace the micro switch on the button and re-test. Verify that the wires are connected to the correct spades on the micro switch.
	Faulty wiring	Disconnect the cabinet from AC power. Verify that all wires are firmly connected to each button and the USB I/O card. Verify that no wires are frayed or improperly shorting to ground.
	Faulty USB I/O card	Make sure that all connections to the card are secure. Replace card if faulty.
Trackball does not work	Faulty wiring	Verify that no wires are frayed or improperly shorting to ground.
Sloppy or poor trackball response	Faulty TTL sensors	Go into the Operator Menu and run the Player Control test. Spin the trackball in all directions and verify that you are getting a good response. Hit the trackball as hard as you can and verify that the RPM displayed is over 9000 RPM. To replace the sensors, see Trackball Service on page 32.
	Dirty trackball shafts and bearings	Disassemble and clean the trackball shafts and bearings. (See Trackball Service on page 32.)
No trackball or button functions	No power to the USB I/O card	Make sure that the USB I/O card has DC power connected to it inside the computer. The LED on the USB I/O card will light when connected to either DC power or USB. To check, disconnect the USB connector. If the LED remains lit, the PCB is receiving DC power. Otherwise, open the computer and check the internal power connector.
	Faulty wiring	Verify that the DB-37 connector is firmly connected to the USB I/O card. Verify that no wires are frayed or improperly shorting to ground.
	Faulty USB I/O Card	Replace USB I/O card.

## 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 power plate terminals are secure and the power strip ON/OFF switch is ON.
	Cabinet not connected or turned off	Make sure the AC power cord is firmly connected to the power plate and an active AC outlet, and the cabinet ON/OFF switch is ON.
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. Parallel dongles do not.) Contact Tech Support if you need to order a new dongle.
	Faulty USB or parallel port	If you try a different game dongle and reboot the game, but the dongle still is not recognized, contact Tech Support.
Cabinet gets very warm	Faulty ventilation fan	Verify that the exhaust fan is working. It is located under the vents at the top of the cabinet. Replace the fan if it is worn or spinning slowly.
	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 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.
	Faulty bill validator	Repair or replace the bill validator (see page 38).
Bill validator rejects too many bills	Faulty bill validator	Verify the bill validator is powered on and working. If the bill validator is faulty it will usually blink an error code on the inside of the coin door. Check the DIP switch settings (see page 38).
	Poor ground	Verify the cabinet is properly grounded. If the bill validator has a green ground wire, verify it is properly connected to the coin vault ground lug.

# Chapter 9 — Diagrams and Schematics



Note: Wire colors may vary depending on harness revision.

Figure 43. Wiring Diagram



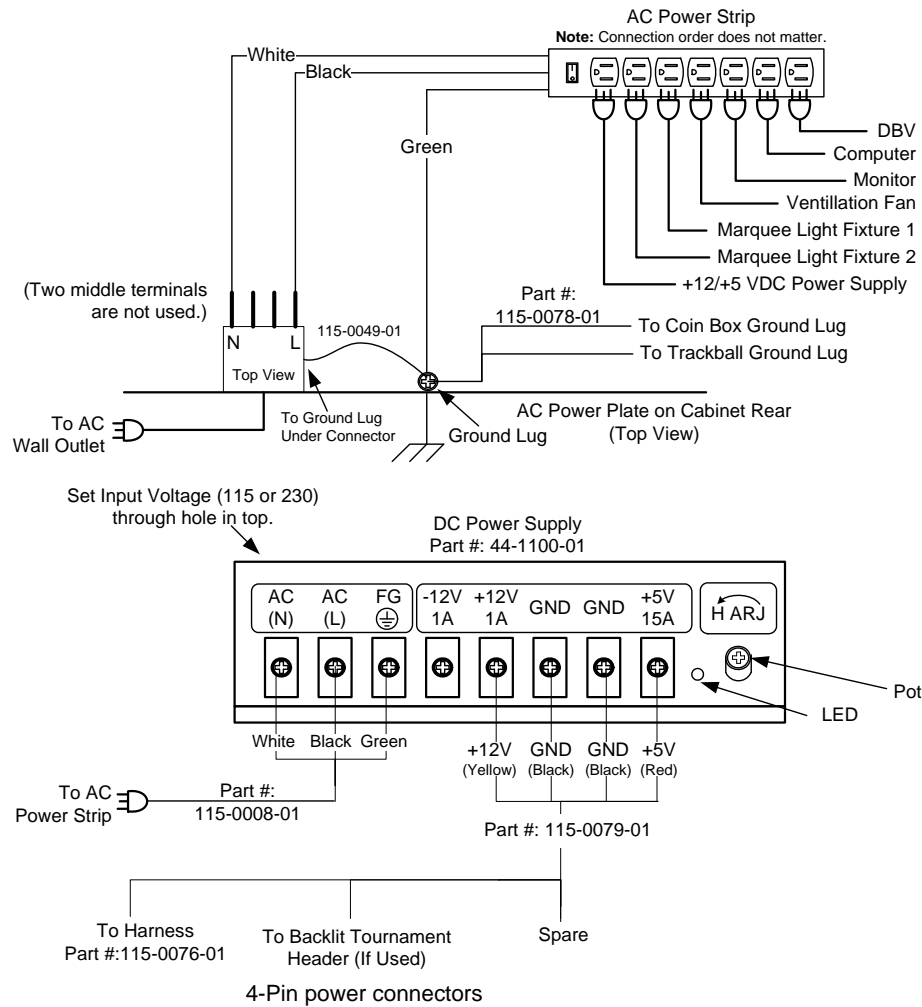


Figure 44. Power Distribution Diagram

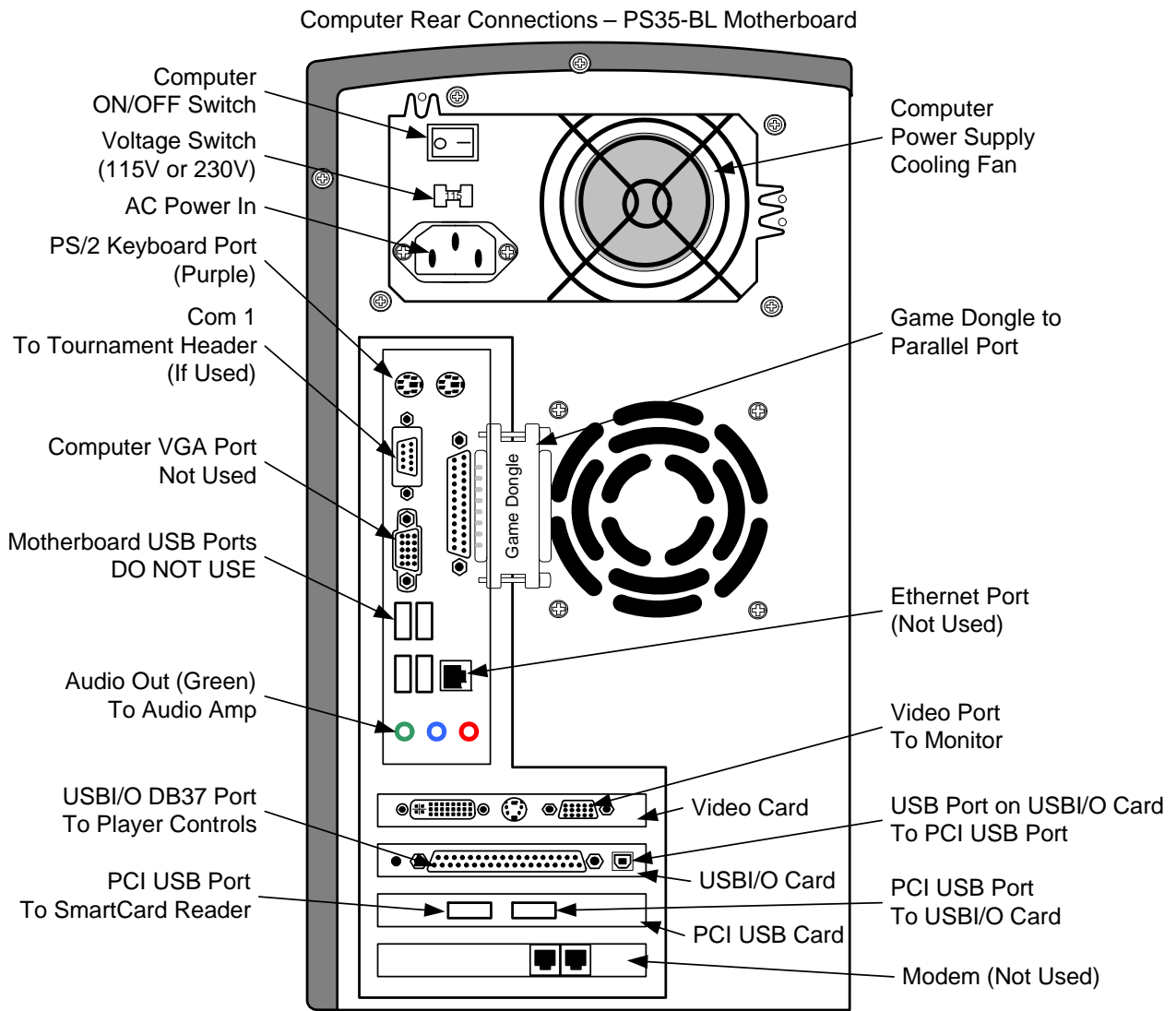


Figure 45. Computer Rear Panel Diagram

## Warranty Service

If at some point you require warranty service, contact your authorized GLOBAL VR<sup>®</sup> distributor.

## Warranty Information

### LIMITED WARRANTY

GLOBAL VR<sup>®</sup> 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<sup>®</sup> will, at no charge, repair the Product, provided:

- Purchaser believes that the Product is defective in material or workmanship and promptly notifies GLOBAL VR<sup>®</sup> 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<sup>®</sup>'s designated service center;
- GLOBAL VR<sup>®</sup>'s inspection or test of the Product verifies to GLOBAL VR<sup>®</sup>'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<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> determines that the reported problem was not covered by the warranty, Purchaser shall pay GLOBAL VR<sup>®</sup> 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<sup>®</sup>'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<sup>®</sup> 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.

IN NO EVENT SHALL GLOBAL VR<sup>®</sup> BE LIABLE FOR LOSS OF PROFITS, LOSS OF USE, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM OPERATION OF THE GAME IN ANY CONDITION. GLOBAL VR<sup>®</sup> SHALL NOT BE RESPONSIBLE FOR THE SUITABILITY, PERFORMANCE, OR SAFETY OF ANY NON- GLOBAL VR<sup>®</sup> PART OR ANY MODIFICATION PERFORMED BY ANY PRODUCT DISTRIBUTOR UNLESS SUCH WORK IS EXPRESSLY AUTHORIZED IN ADVANCE BY GLOBAL VR<sup>®</sup>.

THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON GLOBAL VR<sup>®</sup>'S PART, EXCEPT FOR ANY EXPRESS WARRANTY SET FORTH IN A WRITTEN CONTRACT BETWEEN GLOBAL VR<sup>®</sup> AND PURCHASER CONTAINING SPECIFIC TERMS WHICH SUPERSEDE THE TERMS HEREIN. THIS WARRANTY DOES NOT AUTHORIZE ANY OTHER PERSON TO ASSUME OTHER LIABILITIES, IF ANY, CONNECTED WITH THE SALE OF PRODUCTS BY GLOBAL VR<sup>®</sup>.

## Technical Support

### Service & Parts

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

Phone: 408.597.3435

Fax: 408.597.3437

E-mail: [techsupport@globalvr.com](mailto:techsupport@globalvr.com)

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

### Extended Service Hours (Pacific Time):

Monday–Friday: 5pm—Midnight

Saturday & Sunday: 7:00am—Midnight

Free telephone, e-mail, and online support are provided for systems during the warranty period. GLOBAL VR<sup>®</sup> 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 following background information to aid our technical support process:

- Cabinet Serial Number (found on the back of the cabinet). Write your serial number below for easy reference.

**Cabinet Serial Number:** \_\_\_\_\_

- Your mailing address and telephone number.
- A summary of the question or a detailed description of the problem with your cabinet.

The additional information listed below, as applicable, may assist Technical Support in solving your problem quickly.

- Specific error message
- Game and Shell version numbers (From the Machine Info screen.)
- Date of latest install or upgrade
- Any changes made to the system
- For game-play issues, the game mode and number of players

Find technical documents and service bulletins online at: <http://service.globalvr.com>

To comment on this manual, please e-mail: [techpubs@globalvr.com](mailto:techpubs@globalvr.com)