



**EA SPORTS™ PGA TOUR® GOLF
CHALLENGE EDITION**
System Manual
040-0062-01 Rev. A

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



www.globalvr.com
<http://service.globalvr.com>
tournament@globalvr.com
techsupport@globalvr.com
Phone: 408.597.3400
Fax: 408.597.3431

© 2005 Electronic Arts Inc. Electronic Arts, EA, EA SPORTS and the EA SPORTS logo are trademarks or registered trademarks of Electronic Arts Inc. in the U.S. and/or other countries. All rights reserved. PGA TOUR, PGA TOUR and Swinging Golfer design, TPC, TPC and Swinging Golfer design and TPC at Sawgrass are trademarks of PGA TOUR, INC. and used by permission. Colonial Country Club name and logo are registered trademarks of Colonial Country Club. © 2004 Colonial Country Club. All rights reserved. Bay Hill is a trademark of TBHC, Inc Electronic Arts Inc. is the official licensee of St Andrews Links for EA SPORTS™ PGA TOUR® Golf 2005. A portion of the proceeds from the sale of this product are contributed towards the preservation and maintenance of the historic golf courses at St Andrews Links including the Old Course. Colonial Country Club name and logo are registered trademarks of Colonial Country Club. Use of Sahalee name, mark and course description is with the permission of Sahalee Country Club. Plantation Course is a trademark of Kapalua. All other trademarks are the property of their respective owners. EA SPORTS™ is an Electronic Arts™ brand.

Tournaments are not sponsored by or administered by Electronic Arts or the PGA TOUR.

GLOBAL VR IS AN AUTHORIZED ELECTRONIC ARTS DISTRIBUTOR.

Table of Contents

Preface	4	Operator Settings	31
Safety.....	4	Location Split	32
Warnings	5	Play Control Test	33
Environmental Conditions	5	Monitor Calibration Test.....	34
FCC Notices (United States).....	5	System Test Screen	35
Chapter 1 — Introduction.....	6	Chapter 6 — System Recovery and Game	
Cabinet Specifications.....	7	Install CDs	36
Hardware Features	7	Chapter 7 — Service and Repair.....	38
Chapter 2 — Installing a New Cabinet.....	8	Opening the Control Panel.....	38
Basic Setup.....	8	Trackball Service	38
Fill the SmartCard Dispenser	9	Player Control Panel Button Service	39
Chapter 3 — Playing a Game	10	Wells-Gardner® Monitor Replacement	40
Screen Layout.....	10	Wells-Gardner® Monitor Chassis PCB	
Using the Controls.....	10	Removal	41
Shot Shaping	12	Audio Amp and Speakers Service	43
Putting.....	12	Audio Amp PCB Replacement.....	43
Pausing the Game	12	Speaker Replacement	43
Mulligans	12	Computer Replacement	43
Plus Points™.....	13	Coin Mech Replacement	44
Game Face	13	Coin Meter Replacement	44
Modes of Play	13	Dollar Bill Validator Replacement.....	44
Tournament Modes	13	SmartCard Reader Replacement.....	45
Chapter 4 — Setting up Tournament Play	14	SmartCard Dispenser Service	46
Getting Started.....	14	SmartCard Dispenser Replacement	46
Cabinet Registration.....	14	Power Distribution Service.....	47
Navigating the Registration Screens	15	AC Power Plate	47
Web Registration for Existing Operators	15	AC Power Strip Replacement.....	47
Registration for Existing Operators without		Marquee Florescent Light Service.....	48
Web Access.....	15	Cold-Cathode Florescent Light Service.....	48
Registration for New Operators	15	Setting the Computer BIOS (CMOS)	49
Register With Your 4-Digit Registration Key	16	Chapter 8 — Replacement Parts	51
Register With Your Operator Card.....	19	Chapter 9 — Troubleshooting.....	54
Manually Entering your Location		Video Troubleshooting	54
Information	22	Audio Troubleshooting.....	55
Chapter 5 — Operator Menu and Game		Control Troubleshooting.....	56
Setup	23	Miscellaneous Troubleshooting.....	57
Using the Trackball to Navigate the Menus	23	Connection Troubleshooting	58
Machine Menu	25	Chapter 10 — Diagrams and Schematics	59
Game Mode Menu.....	26	Warranty Service	62
Game Resets Menu	27	Warranty Information	62
Coin Collection	28	Technical Support	64
Stats Summary Screen.....	29		
Registration Options.....	30		

List of Figures

Figure 1. Cabinet Dimensions	7	Figure 24. Monitor Control Panel	34
Figure 2. Coin Door with Key Locations	8	Figure 25. System Test Screen	35
Figure 3. Releasing the Latches Under the Control Panel	8	Figure 26. Releasing the Latches Under the Control Panel	38
Figure 4. Filling the SmartCard Dispenser	9	Figure 27. Player Button and Micro Switch.....	39
Figure 5. Basic Game-Play Screen Layout	10	Figure 28. Monitor Mounting Nut Locations	40
Figure 6. Using the Trackball to Choose a Club	11	Figure 29. Removing the Monitor PCB Mounting Hardware.....	41
Figure 7. Rotating the Position of the Player..	11	Figure 30. Disconnecting the Chassis Neck PCB and Second Anode Lead.....	42
Figure 8. Swinging the Club	11	Figure 31. Monitor PCB Cables.....	42
Figure 9. Shot-Shaping Techniques	12	Figure 32. Servicing the Coin Mech and Coin Meter.....	44
Figure 10. Putting Screen Layout	12	Figure 33. Dollar Bill Validator DIP Switch Settings	45
Figure 11. Creating a Golfer with Game Face..	13	Figure 34. SmartCard Reader Assembly	45
Figure 12. Registration Process Flowchart	14	Figure 35. Filling the SmartCard Dispenser.....	46
Figure 13. Setting Sound Volume	23	Figure 36. AC Power Plate.....	47
Figure 14. Operator Menu Screens	24	Figure 37. Cold-Cathode Light Wiring	48
Figure 15. Machine Information Menu.....	25	Figure 38. Trackball Exploded-View Drawing .	52
Figure 16. Game Mode Menu.....	26	Figure 39. Cabinet Artwork and Formed Components.....	53
Figure 17. Viewing Coin Collection Data	28	Figure 40. Wiring Diagram	59
Figure 18. Viewing Cabinet Stats	29	Figure 41. Power Distribution Diagram	60
Figure 19. Registration Options Screen for Registered and Unregistered Cabinet.....	30	Figure 42. Computer Rear Panel Diagram	61
Figure 20. Operator Settings Screen	31		
Figure 21. Location Split Screen	32		
Figure 22. Testing the Game Play Controls	33		
Figure 23. Monitor Calibration Test Screens	34		

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. These 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

- To avoid injury and accidents, people who fall under the following categories should not play the game:
 - Those who need assistance when walking.
 - Those who have high blood pressure or a heart problem.
 - Those who have experienced muscle convulsions or loss of consciousness when playing a video game or similar activities.
 - Those who have trouble in the neck or spinal cord.
 - Intoxicated persons.
 - Pregnant women.
 - Persons susceptible to motion sickness.
 - Persons who do not abide by the warning labels on the game.
- A player who has never been adversely affected by light stimulus might experience dizziness or headache when playing the game. Small children can be especially susceptible to these conditions. Caution guardians of small children to keep watch over their children during play.
- Instruct those who feel sick during play to see a doctor.
- To avoid injury from falling objects, and electric shock due to spilled drinks, instruct players not to place heavy items, food, or drinks on the product.
- To avoid electric shock or short circuit, do not allow customers to put hands and fingers or extraneous matter in the openings of the product.
- To avoid risk of injury from falling, immediately stop customers from leaning against or climbing on the product.

Warnings

 CAUTION	<p>To avoid electrical shock, unplug the cabinet before performing installation or service procedures.</p>
 STOP	<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 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 a Regulatory EMC representative of GLOBAL VR[®] or 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 Challenge Edition

THE FUTURE OF VIDEO GOLF IS HERE!

Challenge Edition takes the game to a whole new level with superior graphics, over 20 courses, new play modes, new Players' Card, and the same gameplay and tournament system players love.

Step Up to the Challenge!

Game Face: Customize every aspect of your golfer like never before, and save to a Players' Card for use in any **Challenge Edition** game mode!

Stroke Play: Play a standard round of golf for amusement.

Skins: Match-style format played hole-to-hole, where the winner gets the Skins.

Shootout: This popular elimination mode is now even more exciting – with Shootout Match!

SmartCard format Players' Cards: Stores player data directly on the card to unlock World Tour, Game Face, Tournament Play and other registered play modes.

Challenge Edition delivers more ways to win:

- **Challenge Match:** Players can set up their own Tournaments and compete for Plus Points™! Challenge players from around the world at www.globalvr.com.
- **World Tour:** Complete the World Tour to qualify for the annual GLOBAL VR® World Championship! Unlock Course Memberships for amusement play, establish an official handicap, and win Game Face golfer customization items and Plus Points™!
- **Tournaments:** Big Cash Prize Tournaments, plus access to Local Operator Tournaments! Play Monday Golf and compete for Plus Points™!

Challenge Edition is available 3 ways:

- **New dedicated cabinet** with SmartCard Players' Card reader, card dispenser, and attractive, 2nd marquee.
- **Software update** for existing EA SPORTS™ PGA TOUR® Golf games.
- **Affordable conversion kit** for older video golf games.

Note: Features, Tournaments and Play Modes will vary according to geographical region.

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
- SmartCard reader
- SmartCard dispenser
- Dollar bill validator

Chapter 2 — Installing a New Cabinet

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).

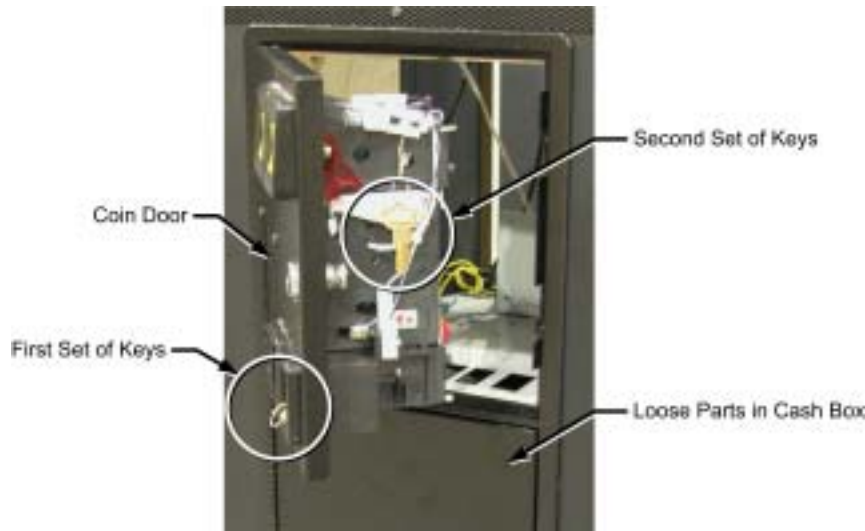


Figure 2. Coin Door with Key Locations

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 42, Computer Rear Panel Diagram, on page 61 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. Verify the game starts and runs properly.
7. Refer to Chapter 5, on page 10, to set up your game in the Operator menu.
8. Refer to Chapter 4, on page 14, to register your cabinet.

Fill the SmartCard Dispenser

The SmartCard dispenser sells Players' SmartCards. Perform the following steps to open the dispenser and fill it with Players' SmartCards.

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

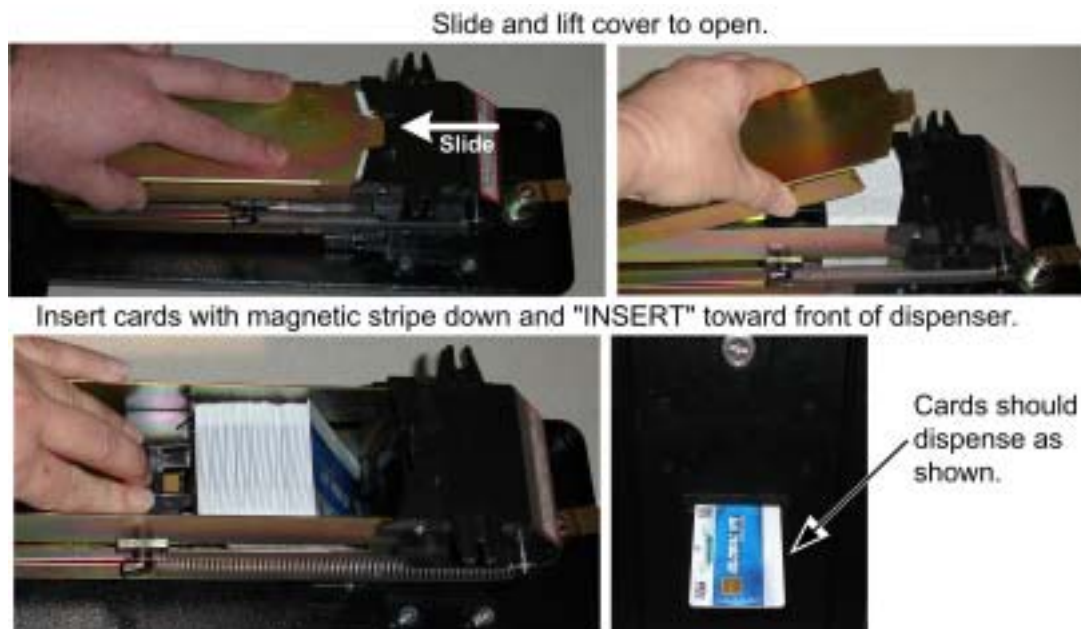


Figure 4. Filling the SmartCard Dispenser

Chapter 3 — Playing a Game

This chapter describes how to play a game. Refer to Modes of Play on page 13 for details on the different types of games. Visit our website, 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 options of Game Face and (if the cabinet is registered) Tournament and World Tour play. 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.



* **Shot Types:** (Press **SHOT TYPE** Button to Change)

- **Full** – A normal golf swing
- **Top-spin** – Adds top-spin to the ball. At the end of the shot, the ball will roll forward on the green.
- **Back-spin** – Adds back-spin to the ball. At the end of the shot, the ball will roll backward on the green.

Different Shot Types become available when you get close to the green.

Figure 5. 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.



Figure 6. Using the Trackball to Choose a Club

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



Figure 7. Rotating the Position of 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. 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 picture 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.

Plus Points™

Tournament Modes (World Tour, Tournament, and Challenge Match) award Plus Points™. The better you play, the more for Plus Points™ you win. Plus Points are stored in an online account and can be redeemed for prizes through the GLOBAL VR® online store.

Game Face

Game Face is a new feature in EA SPORTS™ PGA TOUR® Golf **Challenge Edition**. It allows a player, using a Players' SmartCard, to create a custom golfer. The golfer is saved on the SmartCard. Players can earn premium items for their custom golfer by playing World Tour.



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.

Skins: 2—4 players can compete for Skins.

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

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.

Tournament Modes

Tournament Play: Check our website for details on current GLOBAL VR® Tournaments, with big cash prizes awarded to top players. All competitors win Plus Points™.

World Tour: Players who complete all 22 courses in the World Tour receive an official handicap and skill ranking. The top World Tour players qualify to compete for cash and ultimate bragging rights in the **World Championship** competition. Players also earn Plus Points™ for each World Tour game. (Players in states that prohibit tournaments can still play World Tour, but do not qualify for the World Championship or earn Plus Points™.)

Challenge Match: Players can create their own tournaments through our website. The player sets the course, conditions, schedule, and can challenge up to 31 players to compete for Plus Points™.

Local Tournaments: Operators can set up their own local tournaments through our website, using one cabinet, or across multiple cabinets and locations.

Chapter 4 — Setting up Tournament Play

Go Online With GLOBAL VR® and Get More From Your Equipment Investment

More Players – Top players find your games through our online Game Locator.

More Free Time – Online equipment management lets you adjust and account without leaving your desk.

More Play Modes – Players at all levels have more ways to enjoy their favorite games.

More Cash – Increased earnings with Tournament Play and other online-only features.

Getting Started

Register with the GLOBAL VR® Tournament System to connect your game cabinets to our online servers. Being online opens Tournament Play and other new play modes for your players, and time-saving services for you. Getting started is easy:

1. If you do not have an account with GLOBAL VR®, fax in the Operator Agreement form located in the Registration Pack of the Welcome Kit included with your cabinet or upgrade kit.
2. Connect your cabinet to a phone line or broadband network.
3. Register your cabinet as described below.

Cabinet Registration

You have four options for registering your cabinet:

- **New Operators:** Go to page 15.
- **Existing Operators:**
 - Register through our website: Go to page 15.
 - Obtain a 4-digit registration key if you do not have web access: Go to page 15.
 - Register with your Active **Operator Plus™ SmartCard:** Go to page 19.

Note: For existing operators setting up a cabinet in a new location, it is probably easiest to register through the website.

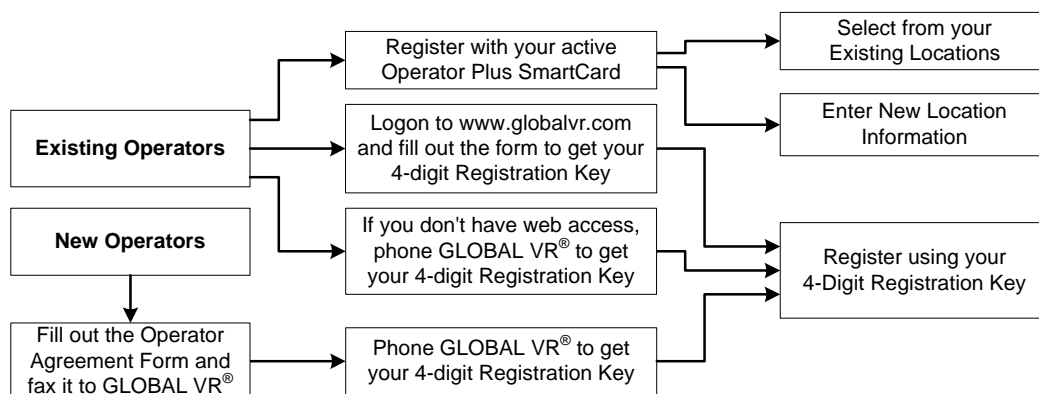


Figure 12. Registration Process Flowchart

Navigating the Registration Screens

To Navigate: Use the trackball and **START** button to navigate the registration screens. The **FLY OVER** button will take you back to the previous screen.

On certain screens, the **ROTATE GOLFER** buttons will move you left and right, the **FLY OVER** button will move you down, and the **SHOT TYPE** button will select the next field.

Note: Look for hints near the bottom of each screen to help you navigate.

Web Registration for Existing Operators

Perform the following steps to register online if you have an account with GLOBAL VR[®].

Note: You will need to provide the cabinet serial number, found on a label on the back of the cabinet, for each cabinet that you wish to register.

1. Go to the GLOBAL VR[®] website, www.globalvr.com.
2. Click the **Operator** tab and login using your Operator ID and password.
3. Click the **MY CABINETS** tab near the top of the page.
4. From the menu on the left side of the Cabinets screen, under **Golf**, select **Registration**.
5. Fill out the Registration Form. In the **Select Existing Location** field, you can select **New Location**, or one of your existing locations. When you finish the form, click the **Create** button.
6. A Cabinet Registration Confirmation screen will appear. Find your 4-digit **Registration Key** near the top of the page, and write it down. Use this number at the cabinet to complete the registration process and activate your Operator card. (The Registration Key expires after one week.)
7. Repeat the steps above for each cabinet that you wish to register.
8. Proceed to the section titled Register With Your 4-Digit Registration Key, on page 16.

Registration for Existing Operators without Web Access

Perform the following steps if you have an account with GLOBAL VR[®] but no web access.

Note: You will need to provide the cabinet serial number, found on a label on the back of the cabinet, for each cabinet that you wish to register.

1. Phone GLOBAL VR[®] Tournament Support, at 408.597.3400, to receive a 4-digit cabinet registration key for each cabinet that you wish to register.
2. Proceed to the section titled Register With Your 4-Digit Registration Key, on page 16.

Registration for New Operators

If you are a new operator and do not have a GLOBAL VR[®] Operator Account, perform the following steps to get your cabinet registered and online:

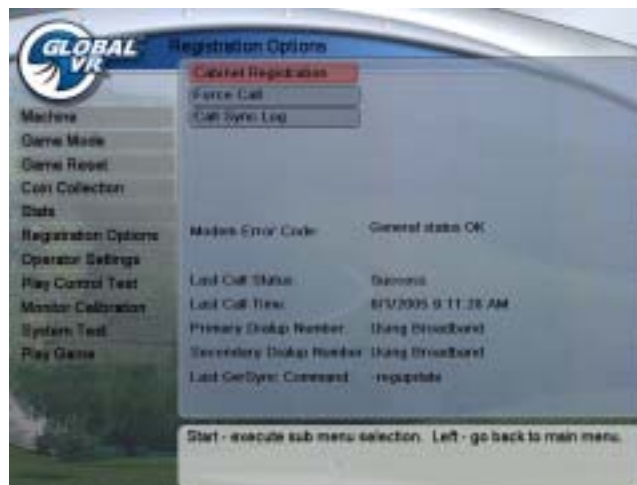
1. Fill out the Operator Agreement form, located in the Registration Pack of the Welcome Kit included with your cabinet or upgrade kit. Fax the form to GLOBAL VR[®], at 408.597.3439.

Note: When you phone Tournament Support, you will need to provide the cabinet serial number, found on a label on the back of the cabinet, for each cabinet that you wish to register.

2. Phone GLOBAL VR® Tournament Support, at 408.597.3400, to complete the registration process and create your Operator Account. You will receive the following:
 - A 4-digit registration key for each cabinet you are registering. You will use the registration key at the cabinet to complete the registration process and activate your Operator card. (The 4-digit registration key expires after one week.)
 - An Operator ID and password. Use these in the future to logon to our website to get your 4-digit registration key for cabinet registration. Your ID also gives you access to the **Global Impact Operator's Online Store**.
3. Proceed to the next section to register with your 4-digit registration key.

Register With Your 4-Digit Registration Key

1. Press the Operator button inside the coin door and select **Registration Options** from the Game Operator Menu. Press the **START** button to enter the Registration screen.
2. Select **Cabinet Registration** and press the **START** button again to begin the registration process.



**Note
Onscreen
Instructions**

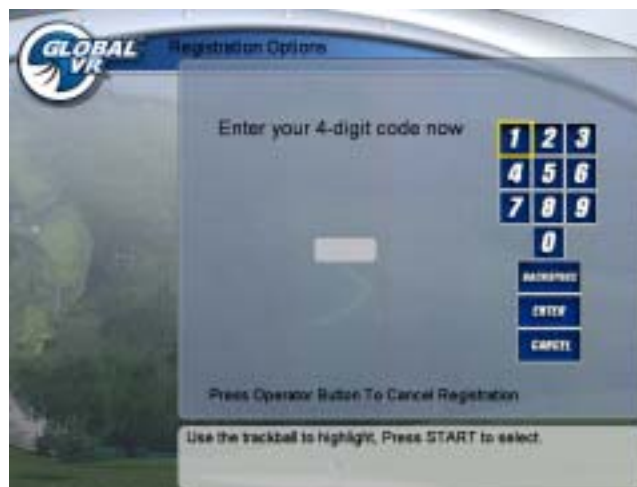
3. Read the Acknowledgement screen, select **Agree**, and then press the **START** button to continue. You must select **Agree** to continue with registration.

4. The Dial-up Phone settings screen will appear next. **Phone Option** is set to **Dial-up** as default. To use a broadband connection, press **START** with **Phone Option** selected, and then use the trackball to toggle between **Broadband** and **Dial-up**. Press **START** to select. If using Broadband, skip to step 6.



5. To use a dial-up phone line, keep **Dial-up** as the Phone Option, and use the buttons to set the dial-up properties as described below:
- Use the trackball to select **State**, and press **START**. Use the trackball to scroll through the list of states. Press **START** to select your state from the list.
Hint: Spinning the trackball quickly will scroll to the next starting letter. Spinning slowly will search through each item in the list.
 - Use the trackball to select **Primary City**, and press **START**. Use the trackball to scroll through the list of cities. Press **START** to select your city, or the city closest to the cabinet location.
 - Use the trackball to select **Primary Number**, and press **START**. Use the trackball to scroll through the list of phone numbers for your city. Press **START** to select a local phone number.
 - Select **Yes** for **Skip Area Code**, unless the area code for the selected number is different from that of the phone line the cabinet will be using. (If the cabinet needs to dial an area code, you will also need to enter a “1” as a dialing prefix in the next step.)
 - If you need to dial a number (such as “9”) to call outside of your location, or if your modem will be dialing an area code and needs to dial a “1” first, select **Dialing Prefix** and press **START**. This will activate the onscreen keypad.
Use the trackball to select each number from the onscreen keypad, and press **START** to enter it. Select the comma (,) to insert a pause in the dialing. To make a correction, select **DELETE** on the onscreen keypad and press **START**. When you are finished, select **ENTER** on the keypad and press **START**.
 - Repeat Steps b—e for the **Secondary City**. (If your Primary City has more than one dial-up number, you can select the same city and a different number. Otherwise select a nearby city with a local phone number.) The computer will use this dial-up number as a backup if it cannot reach the primary number.

- g. When you finish, the Primary and Secondary numbers will be displayed onscreen, with the dialing prefix and area code, if entered. Check the entries, and use the trackball to return to any entry that you wish to change.
6. Use the trackball to select **Continue**, and press **START**.
7. The Time Zone screen will appear next. Use the trackball to select your time zone and press **START**.
Note: Not all time zones show on the screen at the same time. Use the trackball to scroll.
8. The Select Registration Method screen will appear next. Select **Register with a 4-Digit Code** and press **START**.
9. On the **Enter your 4-digit code now** screen, use the trackball to select each number from the onscreen keypad, and press **START** to enter it. If you make a mistake, select **BACKSPACE** and press **START**.



10. When you are finished, select **Enter** and press **START**.

You will see "Connecting..." followed by "In progress...".

When the process finishes, you will see "Registration Successful." Your cabinet is now registered.

Important: If you never see the Registration Successful screen, this can indicate a problem with registration, possibly an interrupted modem connection. Select **Force Call** from the Registration Options screen to make sure that your cabinet is able to sync with GLOBAL VR[®], and to finalize registration. If you have repeated connect failures, select a different dial-up number. Refer to Connection Troubleshooting on page 58 for more information on error messages and correcting connection problems.

11. After registration, you will be prompted to insert your Operator card to activate it. Insert an inactive Operator card. When the **Card Activation Successful** screen appears, your SmartCard will be active and can be used to register other cabinets. You can skip this step if you do not wish to activate a card at this time. You can also activate an Operator Card at any time from the Registration Options screen.

Your cabinet is now registered. It is a good idea to set the sync time on the Registration Options screen so that your cabinets call in to GLOBAL VR[®] at different times. Also make sure the cabinet will be powered on at the selected sync time.

Register With Your Operator Card

If you already have an account with GLOBAL VR[®], you can use your Operator Card to register immediately.

1. Press the Operator button inside the coin door and select **Registration Options** from the Game Operator Menu. Press the **START** button to enter the Registration screen.
2. Select **Cabinet Registration** and press the **START** button again to begin the registration process.



3. Read the Acknowledgement screen, select **Agree**, and then press the **START** button to continue. You must select **Agree** to continue with registration.
4. The Dial-up Phone settings screen will appear next. **Phone Option** is set to **Dial-up** as default. To use a broadband connection, press **START** with **Phone Option** selected, and then use the trackball to toggle between **Broadband** and **Dial-up**. Press **START** to select. If using Broadband, skip to step 6.



5. To use a dial-up phone line, keep **Dial-up** as the Phone Option, and use the buttons to set the dial-up properties as described below:
 - a. Use the trackball to select **State**, and press **START**. Use the trackball to scroll through the list of states. Press **START** to select your state from the list.

Hint: Spinning the trackball quickly will scroll to the next starting letter. Spinning slowly will search through each item in the list.

- b. Use the trackball to select **Primary City**, and press **START**. Use the trackball to scroll through the list of cities. Press **START** to select your city, or the city closest to the cabinet location.
- c. Use the trackball to select **Primary Number**, and press **START**. Use the trackball to scroll through the list of phone numbers for your city. Press **START** to select a local phone number.
- d. Select **Yes** for **Skip Area Code**, unless the area code for the selected number is different from that of the phone line the cabinet will be using. (If the cabinet needs to dial an area code, you will also need to enter a "1" as a dialing prefix in the next step.)
- e. If you need to dial a number (such as "9") to call outside of your location, or if your modem will be dialing an area code and needs to dial a "1" first, select **Dialing Prefix** and press **START**. This will activate the onscreen keypad.

Use the trackball to select each number from the onscreen keypad, and press **START** to enter it. Select the comma (,) to insert a pause in the dialing. To make a correction, select **DELETE** on the onscreen keypad and press **START**. When you are finished, select **ENTER** on the keypad and press **START**.

- f. Repeat Steps b—e for the **Secondary City**. (If your Primary City has more than one dial-up number, you can select the same city and a different number. Otherwise select a nearby city with a local phone number.) The computer will use this dial-up number as a backup if it cannot reach the primary number.
 - g. When you finish, the Primary and Secondary numbers will be displayed onscreen, with the dialing prefix and area code, if entered. Check the entries, and use the trackball to return to any entry that you wish to change.
6. Use the trackball to select **Continue**, and press **START**.
 7. The Time Zone screen will appear next. Use the trackball to select your time zone and press **START**.

Note: Not all time zones show on screen at the same time. Use the trackball to scroll.

8. The Select Registration Method screen will appear next. Select **Register with Operator Card** and press **START**.
9. When you are prompted, insert your OperatorPlus™ SmartCard. The SmartCard reader will read the card automatically. You will see "Connecting..." onscreen for a about a minute, followed by "Disconnecting... 100% Complete" when the process has finished.

If the call fails to connect, you will see an error message (such as "General RAS Failure"). Press any button to start over from the initial screen. (You will **not** have to re-enter your settings, and you can leave your Operator Card in the SmartCard reader.) If you have repeated connect failures, select a different dial-up number. Refer to Connection Troubleshooting on page 58 for more information on error messages and correcting connection problems.

10. The Select Cabinet Location screen will appear next. Your existing locations should be in the list.
- If your location is in the list, proceed to step 11.
 - If your location **is not** in the list, proceed to Manually Entering your Location Information, on page 22.



11. Use the trackball to scroll through the list, and press **START** to select your location.
12. The next screen will prompt you to enter your cabinet serial number (find this number, starting with "GVR" on a sticker on the back of the cabinet). Use the trackball to navigate the numeric keypad to enter the serial number. Press **START** to select each character. Select **DONE** and press **START** when finished.

You will see "Connecting..." onscreen, followed by "In Progress...". When the process finishes, you will see "Registration Successful." Press any button to return to the Operator Menu. Your cabinet is now registered.

Important: If you never see the Registration Successful screen, this can indicate a problem with registration, possibly an interrupted modem connection. Select **Force Call** from the Registration Options screen to make sure that your cabinet is able to sync with GLOBAL VR®.

Manually Entering your Location Information

1. If your location is not in the list, select **New Location** and press **START**. The next screen will show a list of fields requesting information about your location. When you enter this screen, the first field will be pre-selected.



Hint: On this screen, the **ROTATE GOLFER** buttons will move you left and right, the **FLY OVER** button will move you down, and the **SHOT TYPE** button will select the next field.

2. Use the trackball to navigate the onscreen keyboard, and press **START** to enter each selected character. To make a correction, select the **BACKSPACE** key on the onscreen keyboard and press **START**. When you are finished, select **ENTER** on the onscreen keyboard and press **START**.
3. For Location Type and State, use the trackball to scroll through a list of options and press **START** to select.
4. When you have filled in all of the fields, select **DONE** from the onscreen keyboard and press **START**. (If you press **DONE** before filling out all required fields, the next field that needs information will become selected.)

You will see "Connecting..." onscreen, followed by "In Progress...". When the process finishes, you will see "Registration Successful". Press any key to return to the Operator Menu. Your cabinet is now registered.

Important: If you never see the Registration Successful screen, this can indicate a problem with registration, possibly an interrupted modem connection. Select **Force Call** from the Registration Options screen to make sure that your cabinet is able to sync with GLOBAL VR®.

Chapter 5 — Operator Menu and Game Setup

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

Press the operator button behind the coin door to enter the Game Operator menu. The Game Operator Menu displays a list of selections on the left side of the screen. Each selection will bring up a screen with information and settings for your game. Use the trackball and **START** button to navigate the menus, as described below.

Using the Trackball to Navigate the Menus

The Game Operator menu does not use a mouse pointer. Instead, when an item is selected, it will change color. For example, buttons turn red and options turn yellow when selected. Use the trackball to navigate and scroll, and the **START** button to select and confirm.

On certain screens, the **ROTATE GOLFER** buttons will move you left and right, the **FLY OVER** button will move you down, and the **SHOT TYPE** button will select the next field. Look for hints near the bottom of each screen to help you navigate.

The following figure shows how to use the trackball and **START** button to select and change the Cabinet Sound Volume:

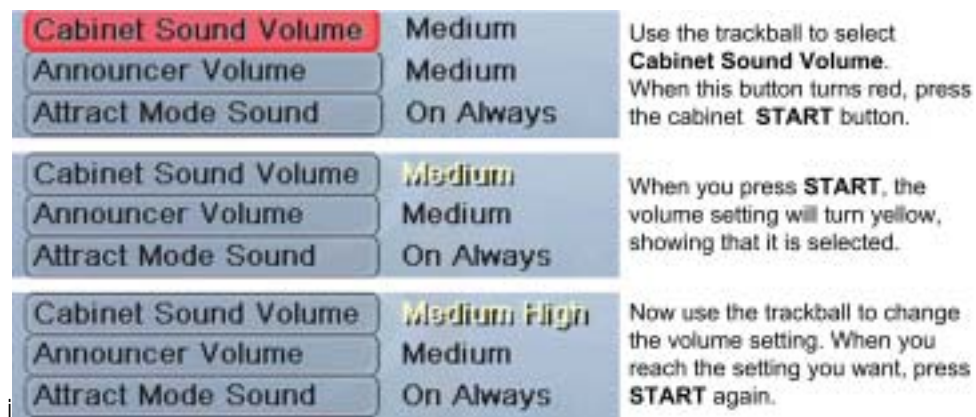


Figure 13. Setting Sound Volume

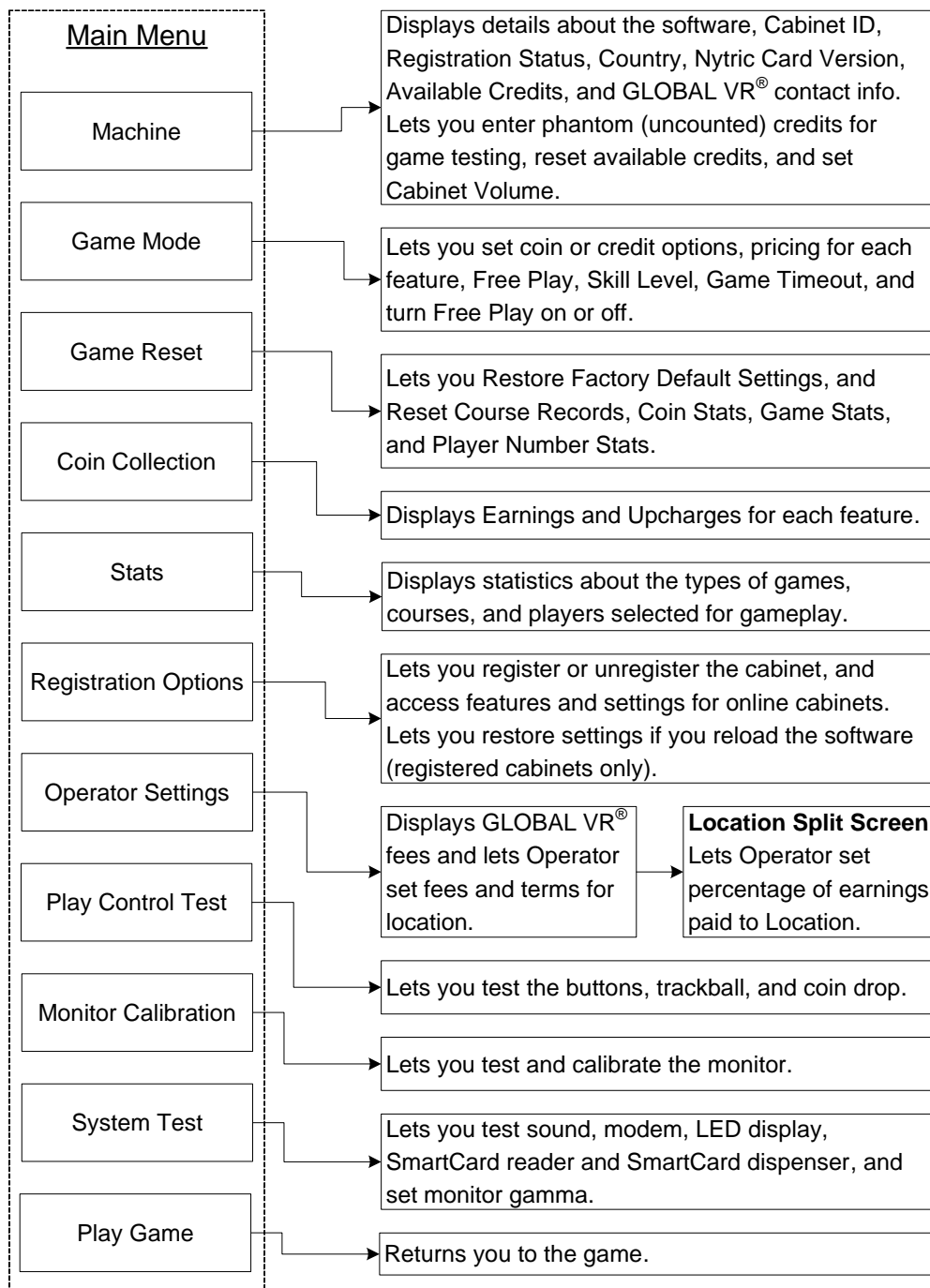


Figure 14. Operator Menu Screens

Machine Menu

The Machine information menu is the first screen displayed when you press the Operator Button. It displays important information about the cabinet, and allows you to set the volume and reset credits. Near the bottom of the screen you will find contact information for GLOBAL VR®.



Figure 15. Machine Information Menu

Menu Item	Description
Cabinet ID	Software ID number used for Tournament Play on this cabinet. This number is generated during cabinet registration.
Cabinet Status	Indicates whether the cabinet is registered for Tournament Play.
Dongle Version	Displays the localized version of the software, as read from the game dongle.
Game Version	Displays the current game software version.
Serial Number	Displays the cabinet serial number as entered when the cabinet was registered. The serial number can be found on a label on the back of the cabinet.
OS Version	Displays the operating system version.
Country	Displays the country of operation.
Shell Version	Displays the software shell version.
Plus Version	Displays the Plus data engine version.
Nytrix Version	Displays the version of the Nytrix USB I/O card installed in the computer.
Inserted Credits	Displays the current number of credits/coins inserted.
Reset Credits	Resets the Inserted Credits to 0.
Phantom Credits	Lets you enter credits to play and test your cabinet without affecting the coin count on the Coin Stats menu. Phantom Credits can be used for Amusement Play only.
Cabinet Sound 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.
Attract Mode Sound	Sets the Attract Mode sound to On Always, On Occasionally, or Off.
Contact Information	Displays contact information for GLOBAL VR®.

Game Mode Menu

The Game Mode menu lets you set pricing, game difficulty, and game timeout delays. Items displayed will vary depending on whether the cabinet is online and tournament play is enabled.

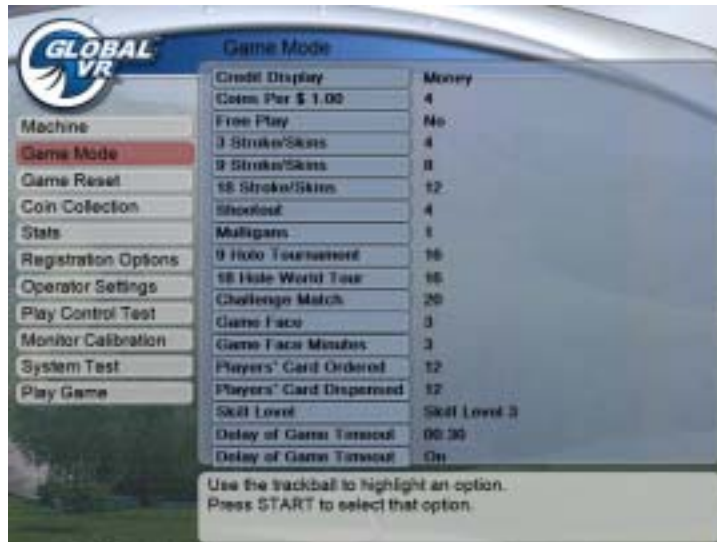
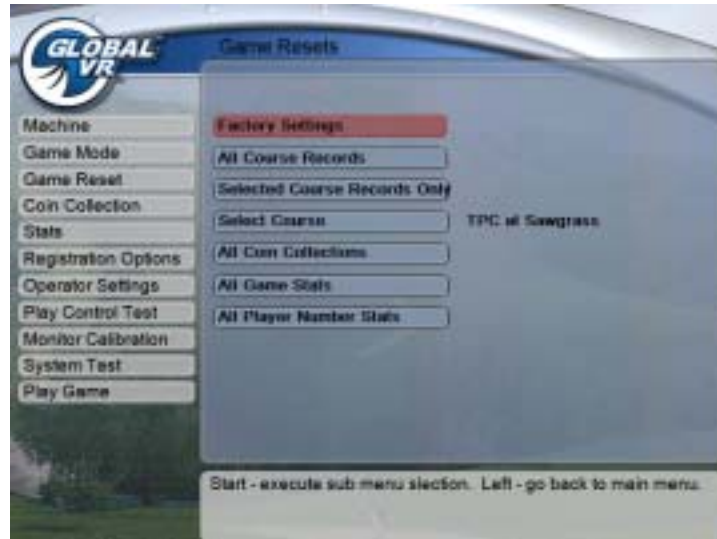


Figure 16. Game Mode Menu

Menu Item	Description
Credit Display	Sets whether <i>Money</i> or <i>Credits</i> are used to play the cabinet.
Coins Per \$ 1.00	Sets how many coin drops it takes to reach a unit of money, typically 4 in the USA and Canada (4 quarters per \$). Options are 1–50. (This setting affects the display of other items.)
Free Play	Turns free play ON or OFF.
3 Stroke/Skins	Sets number of credits for a 3-hole Stroke or Skins game.
9 Stroke/Skins	Sets number of credits for a 9-hole Stroke or Skins game.
18 Stroke/Skins	Sets number of credits for an 18-hole Stroke or Skins game.
Shootout	Sets number of credits for a Shootout Game.
Mulligans	Sets number of credits for a Mulligan (allows a replay of the last shot).
9 Hole Tournament	Sets number of credits for a 9-Hole Tournament Game.
18 Hole World Tour	Sets number of credits for an 18-Hole World Tour Game.
Challenge Match	Sets number of credits for a Challenge Match Game.
Game Face	Sets number of credits for Game Face.
Game Face Minutes	Sets minutes allowed per Game Face purchase.
Players' Card Ordered	Sets number of credits to order a Players' Card by mail.
Players' Card Dispensed	Sets number of credits to purchase a Players' Card from the installed dispenser.
Skill Level	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 has the largest hole and the lightest wind, and level 5 has the smallest hole and the strongest potential wind.
Delay of Game Timeout	Sets time before a “delay of game” if a player does not touch the controls. To continue, the player must press a button or use the trackball within 10 to 15 seconds; otherwise, the game is forfeited and the cabinet returns to attract mode. Options are 15 seconds to 1 minute in 5-second intervals.
Delay of Game Timeout	Sets Delay of Game Timeout On or Off. When Off, players have an indefinite amount of time to play each shot. When On, the game times out as set above.

Game Resets Menu

This menu lets you restore factory settings to the cabinet, and reset course, coin collection, game, and player statistics.



Menu Item	Description
Factory Settings	Returns all the Game settings to the default factory settings. Does not affect records and stats.
All Course Records	Resets the eagles, birdies, longest drive and putt, Great Shot Points, and best score records for all of the golf courses listed, including the tournament records. This reset does not affect the lifetime records stored by the game software.
Selected Course Records Only	Resets the eagles, birdies, longest drive and putt, Great Shot Points, and best score records for the course selected using the <i>Select Course</i> button. This reset does not affect the lifetime records stored by the game software.
Select Course	Use the START button and trackball to select a golf course. Once a golf course is selected, use the <i>Selected Course Records Only</i> button to reset the stats for the selected golf course.
All Coin Collections	This resets all Coin Stats and coin collection information. This reset does not affect the lifetime records stored by the game software.
All Game Stats	This resets the Game Stats. This reset does not affect the lifetime records stored by the game software.
All Player Number Stats	This resets the Player Stats. This reset does not affect the lifetime records stored by the game software.

Coin Collection

The Coin Collection screen displays the total amount of money collected by the cabinet. The screen also allows the operator to view details of the location split and do a collection.



Figure 17. Viewing Coin Collection Data

- **Current Coin Collection:** This page shows the total amount of money collected since the last time **Do Collection** was activated, and the total debits and fees for each category. The **Net** column shows the collection totals with the GLOBAL VR[®] upcharge fees deducted.
- **View Last Collection:** This button displays the **Last Collection** screen. The **Last Collection** screen shows the data recorded from the previous collection. For online cabinets, operators can view all previous collection screens on the GLOBAL VR[®] website.
- **View Location Split:** This button displays the **Location Split Income** screen. The **Location Split Income** screen does the math for cabinets with income split between the operator and the location. This screen displays the coin collection totals divided between the operator and location, using the percentage the operator sets in the Operator Settings Location Split screen (see page 31).

The **Location Split Income** screen uses the income data from the **Last Collection**. It is reset whenever the **Do Collection** button is activated.

- **Do Collection:** This button will reset the coin collection data. The cleared data can be viewed on the Last Collection page until **Do Collection** is activated again. For online cabinets, when **Do Collection** is activated, the collection information is transmitted to the GLOBAL VR[®] server and saved. The operator can view these pages any time by logging into the website (www.globalvr.com). Selecting this button also updates the **Location Split Income** screen with data from the collection.

Stats Summary Screen

The Stats Summary screen allows 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. The pages are described in detail below.

The screenshot displays the 'Stats Summary' screen with a sidebar menu on the left and several data tables. The sidebar menu includes: Machine, Game Mode, Game Reset, Coin Collection, Stats, Registration Options, Operator Settings, Play Control Test, Monitor Calibration, System Test, and Play Game. The main area shows a 'Stats Summary' table with columns for 'Stats', 'Total', and 'Lifetime Total'. Below this are buttons for 'Game Stats', 'Course Stats', and 'Player Stats'. Three callout boxes provide detailed views of these categories:

Game Stats	Total	Lifetime Total
Stroke Play Games	9	9
Skins Play Games	0	0
Shootout Match Play Golf	0	0
Shootout Play Games	0	0
Tournament Play Games	3	3
World Tour Play Games	7	7
Mulligan Purchases	0	0
Extra Hole Purchases	0	0
Player Registrations	0	0

Course Stats	Stroke	Back 9	Front 9	Match	Shootout	Tournament
Stroke Play	9	0	0	0	0	0
Front 9 Only	0	0	0	0	0	0
Back 9 Only	0	0	0	0	0	0
All 18	1	1	0	0	0	0
Skins	0	0	0	0	0	0
Front 9 Only	0	0	0	0	0	0
Back 9 Only	0	0	0	0	0	0
All 18	0	0	0	0	0	0
Shootout Match	0	0	0	0	0	0
Front 9 Only	0	0	0	0	0	0
Back 9 Only	0	0	0	0	0	0
Shootout	0	0	0	0	0	0
Front 9	0	0	0	0	0	0
Back 9	0	0	0	0	0	0
Tournament	0	0	0	0	0	0
Front 9 Only	0	0	0	0	0	0
Back 9 Only	0	0	0	0	0	0
All 18	0	0	0	0	0	0
World Tour	0	2	0	0	0	0
Mulligans	0	0	0	0	0	0

Player Stats	Total	Lifetime Total
1 Player Games	19	19
2 Player Games	3	3
3 Player Games	0	0
4 Player Games	1	1
5 Player Games	0	0
6 Player Games	0	0
7 Player Games	0	0
8 Player Games	0	0

Golfer Stats	Total	Lifetime Total
Shawn Appleby	5	5
Rich Baum	0	0
Robert Coonan	0	0
Charles Howell III	3	3
Justin Leonard	0	0
Colin Montgomerie	0	0
Jesper Parnevik	0	0
Vijay Singh	0	0
Adriano Panico	0	0
Johnny The Hunter	0	0
Nicklas MCFadden	0	0
Tiffany Williamson	0	0
Custom Player	11	11

Navigation buttons at the bottom include 'Page Forward', 'Page Back', and 'Back to Stats'.

Figure 18. Viewing Cabinet Stats

- **Stats Summary:** Displays the total number of Amusement and Tournament golf games played, the number of one and two player games, and the two top selected golfers.
- **Game Stats:** Displays the total number of coins played on each type of game, as well as Mulligans, Extra Hole purchases, and Player Registrations.
- **Course Stats:** Displays the total number of plays for each golf course broken down by the type of golf game played, and Tournament Play. Use the **Page Forward** and **Page Back** buttons to move through the Course Stats pages and view all courses.
- **Player Stats:** Displays the number of games played by number of players, and the number of times each golfer (including Game Face Custom Player) has been played.

Registration Options

The Registration Options screen allows you to register or unregister a cabinet, or restore a registered cabinet if you reload the software. Refer to Chapter 4, starting on page 14, for registration instructions.

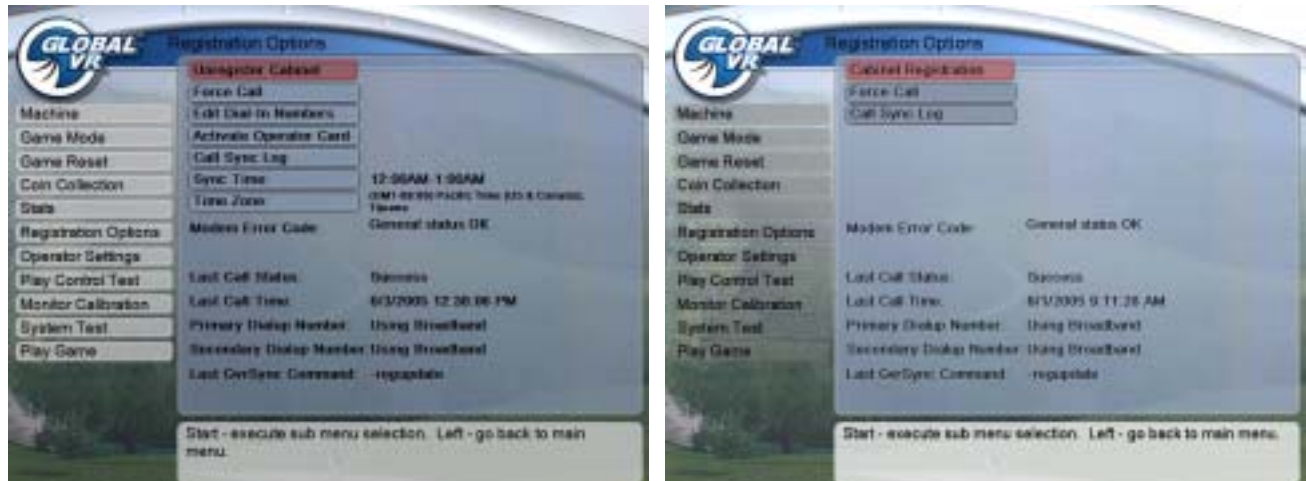


Figure 19. Registration Options Screen for Registered and Unregistered Cabinet

Menu Item	Description
Unregister Cabinet* Cabinet Registration	This button will change depending on the registration status of the cabinet. Click and follow onscreen prompts to register or unregister a cabinet. For detailed registration instructions, see Chapter 4, starting on page 14.
Force Call	Click this button to force a sync call to GLOBAL VR®.
Edit Dial-In Numbers*	Click this button and follow onscreen prompts to change the dial-in numbers displayed further down the screen.
Activate Operator Card*	Click this button and follow the onscreen prompts to activate an Operator card.
Call Sync Log	Click this button to display the log of sync calls.
Sync Time*	Displays the hour during which the cabinet will sync with GLOBAL VR®. Click the button to change it.
Time Zone*	Displays the selected time zone. Click the button to change it.
Modem Error Code	Displays a modem error code if a problem occurred. Otherwise displays "General Status OK". See page 58 for the most common modem error codes.
Last Call Status	Indicates whether the last call was successful or not.
Last Call Time	Displays time of last call.
Primary Dialup Number	Displays primary phone number used for syncing, or says Using Broadband.
Secondary Dialup Number	Displays backup phone number used if the first does not work.
Last GvrSync Command	Displays the last request sent to the GLOBAL VR® server.
Cabinet Restore	Appears only when the operating system and game software is restored using the CDs, and the cabinet is registered. Allows you to restore all cabinet settings using the ID stored in the game dongle. (Stats are not restored.)

*This item appears on registered cabinets only.

Operator Settings

The upper part of this screen displays Tournament Fees charged by GLOBAL VR®.

The lower part of this screen allows an operator to set up fees charged to the location. This feature, used with the Location Split screen, described on the next page, simplifies billing for an operator who sets up games at locations owned by other parties.

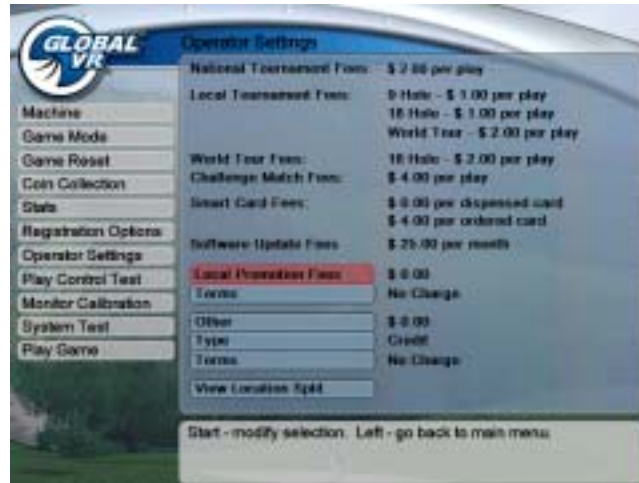


Figure 20. Operator Settings Screen

Menu Item	Description
National Tournament Fees	Fees charged by GLOBAL VR® for National Tournaments
Local Tournament Fees	Fees charged by GLOBAL VR® for Local Tournaments
World Tour Fees	Fees charged by GLOBAL VR® for World Tour.
Software Update Fees	Fees charged by the operator to the location for software updates.
Terms	How often the Software Update Fees are paid (Monthly, Yearly, or No Charge).
Local Promotion Fees	Fees charged by the operator to the location for promoting local tournaments.
Terms	How often the Local Promotion Fees are paid (Monthly, Yearly, or No Charge).
Other	Other fees charge by the operator to the location.
Type	How fees are paid to the operator (Credit or Debit).
Terms	How often the Other fees are paid (Monthly, Yearly, or No Charge).
View Location Split	Opens the Location Split screen where the operator can set the percentage of earnings paid to the location.

Location Split

This screen is accessed through the Operator Settings screen.

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 Coin Collection Location Split screen (see page 28). The operator can define the split percentage separately for each category, and set whether the coin collection split percentage should be shown on the Coin Collection Location Split screen.

If you change the split percentage in any category, perform a Do Collection from the Coin Collection screen (see page 28) to reset the coin collection data and start using the newly defined location split percentage.



Figure 21. Location Split Screen

Menu Item	Description
Non Tournament	Percentage of earnings from Non Tournament play paid to the location.
National Tournament	Percentage of earnings from National Tournament play paid to the location.
World Tour	Percentage of earnings from World Tour play paid to the location.
Challenge Match	Percentage of earnings from Challenge Match play paid to the location.
Smart Cards	Percentage of earnings from Players' SmartCard sales paid to the location.
Software Update Fees	Percentage of Software Update fees paid by the location.
Unspent Monies	Percentage of Unspent Monies paid to the location.
Others	Percentage of Other fees paid to the location.
Show Splits	Sets whether to display Location Split amounts on the Coin Collection Location Split screen.
Back to Operator Settings	Returns to the Operator Settings screen.

Play Control Test

The Play Control Test allows the operator to test the cabinet controls.



Figure 22. Testing the Game Play Controls

- When you press a button, an arrow appears on the screen by 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 38 for trackball cleaning, repair, and replacement information.
- **Coin Drop Test:** When you insert a coin, the counter changes. This verifies that the coin mech 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 Game Operator Menu.

Monitor Calibration Test

When you start the Monitor Calibration Test, use the trackball or **START** Button to scroll through a series of monitor 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.

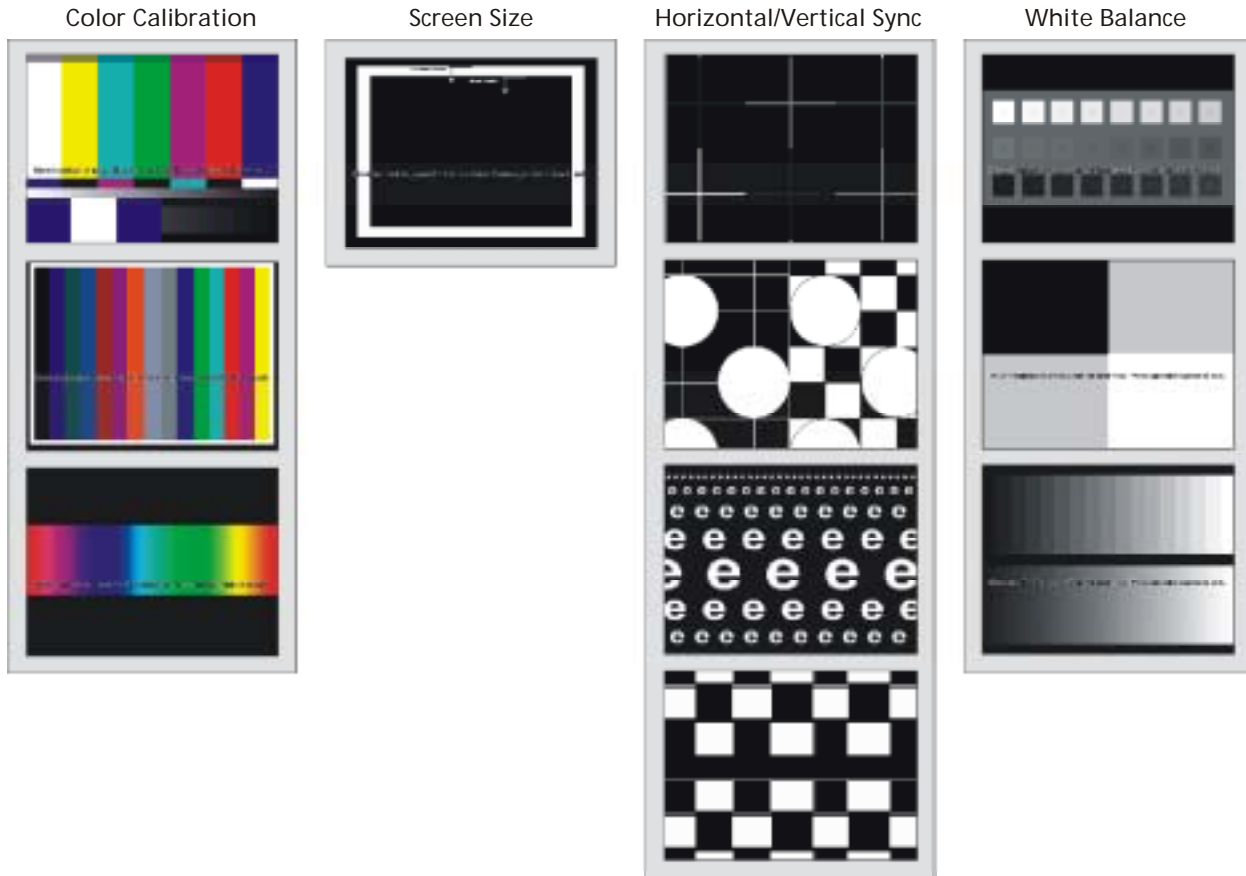


Figure 23. Monitor Calibration Test Screens

Use the monitor control panel, 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.

To exit the Monitor Calibration Test, press the Operator button.

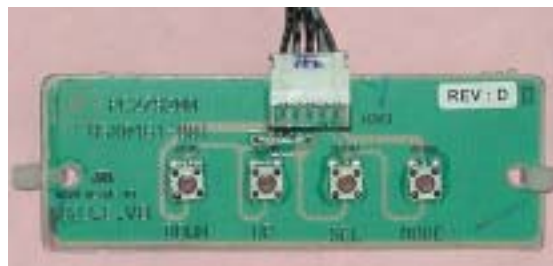


Figure 24. Monitor Control Panel

System Test Screen

The System Test screen allows you to verify that certain hardware components on the cabinet are set up and working correctly. Use the trackball to highlight a hardware test, and press the **START** button to activate the test.



Figure 25. System Test Screen

Menu Item	Description
Perform Sound Test	When you select this option, you will hear the left speaker first, then the right speaker, followed by both speakers working together in stereo. Listen to verify that audio is working properly.
Perform Modem Test	Tests the connection for modem or broadband. For modem, performs a force call to verify that the modem can dial out and reach the Tournament Servers. A status message is displayed when finished.
Perform LED Display Test	Tests the LED Tournament Headers on upgrade cabinets (if installed). When you start the test, all of the LEDs should turn red, orange, and then green. Visually verify that all LEDs are working correctly. The LEDs will return to normal operation after 10 seconds.
Perform Card Reader Test	Select this option and insert a SmartCard when prompted. If the SmartCard reader is working properly, the screen will indicate whether a Players' Card or Operator Card was detected.
Perform Card Dispenser Test	If a card dispenser is installed, select this option to dispense a card and confirm the dispenser is working.
Set 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. The default setting is 1.00. This setting does not affect the hardware brightness or contrast settings on the monitor.

Chapter 6 — System Recovery and Game Install CDs



Follow the instructions below if you need to re-install software on your cabinet. Please be aware that installation will erase all tournament data and cabinet settings. **Total installation time is about 25 minutes.**

1. With the cabinet powered ON and the game running, 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 below:

Machine Menu: Sound Effects Volume _____
 Announcer Volume _____
 Attract Mode Sound _____

Game Mode Menu: Credit Display _____
 Coins per \$ _____
 3-Stroke/Skins _____
 9-Stroke/Skins _____
 18-Stroke/Skins _____
 Shootout _____
 Mulligans _____
 9-Hole National Tournament _____
 18-Hole National Tournament _____
 Skill Level _____
 Delay of Game Timeout _____
 Game Timeout Delay On _____

3. To preserve your tournament data for the cabinet, perform the following steps:
 - From the Coin Collection menu, perform a Do Collection.
 - From the Registration Options menu, perform a Force Call.
4. Open the CD drive and insert the CD labeled **System Recovery Disk**. Reboot the computer.
5. After reboot, the CD will automatically begin the installation process. After about 30 seconds, the monitor will display a status window labeled "Image Center 5.0 - Scripting Progress".
6. 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.

7. After the second reboot, you will see a large GLOBAL VR[®] logo with the Windows Start menu and taskbar. Insert the disk labeled **Game Install Disk 1 of 2**. The disk will run automatically and you will see a progress bar onscreen.
8. When prompted, remove the CD and insert **Game Install Disk 2 of 2**. The CD will run automatically.
9. When Disk 2 finishes, the computer will reboot and the Attract movie will start. Remove the CD.
10. Press the Operator button to launch the Operator Menu and set up your game.
11. If the cabinet was previously registered, select **Restore Cabinet** from the Registration Options screen of the Operator menu to restore settings.
12. Play a game to verify that everything is working properly.

Chapter 7 — 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.

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

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.

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 26. 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[®], 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 after service.

Player Control Panel Button Service

The player buttons activate micro switches. 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:

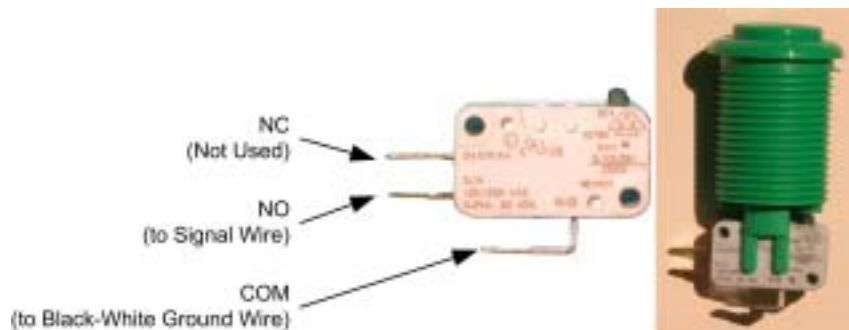


Figure 27. Player Button and Micro Switch

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 38).
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 28.



Figure 28. 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 34).

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.

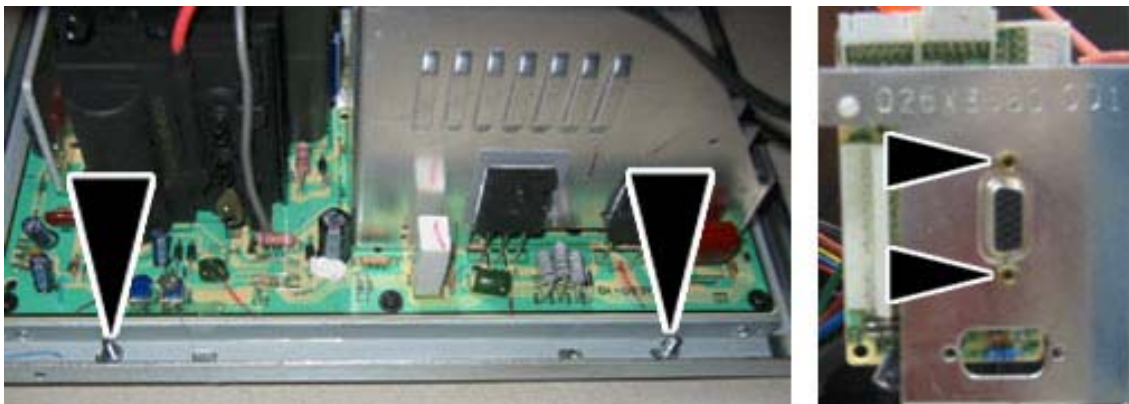


Figure 29. Removing the Monitor PCB Mounting Hardware

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 30.

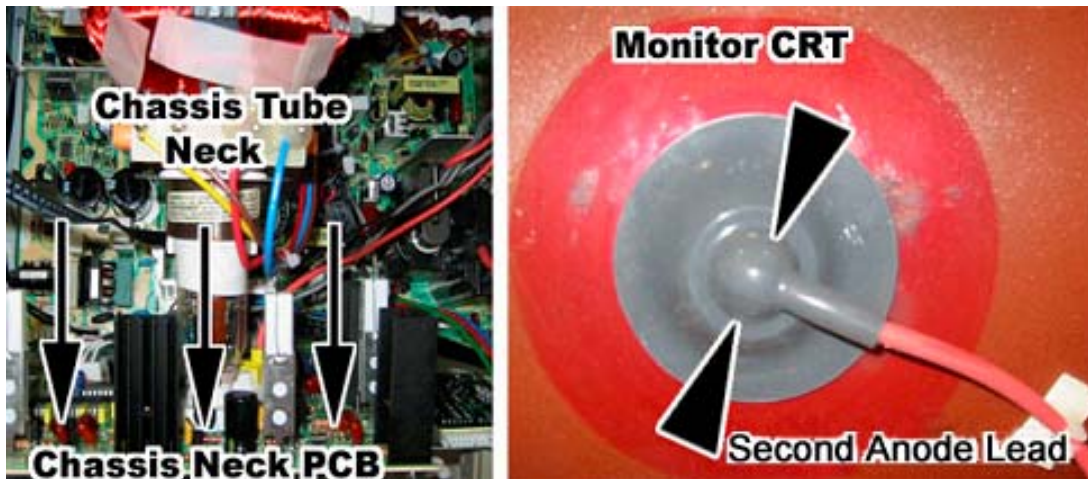


Figure 30. Disconnecting the Chassis Neck PCB and Second Anode Lead

6. Refer to Figure 31 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 31. 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[®] 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[®] 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[®] 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.

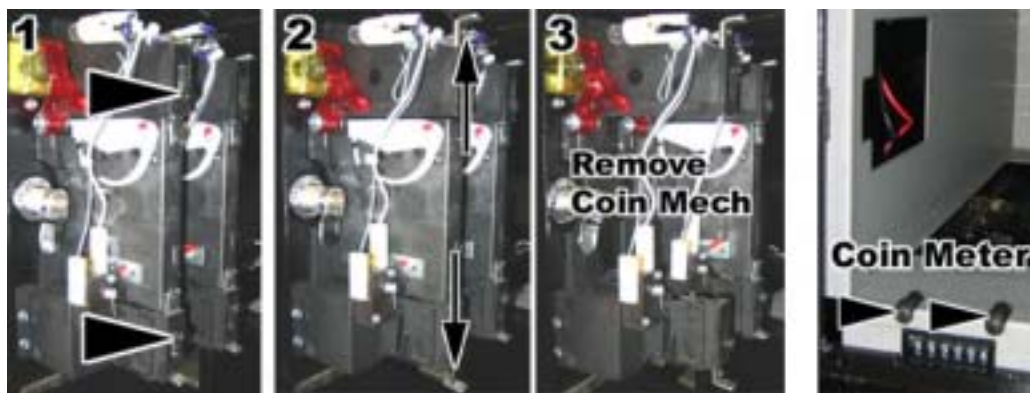


Figure 32. Servicing the Coin Mech and Coin Meter

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.

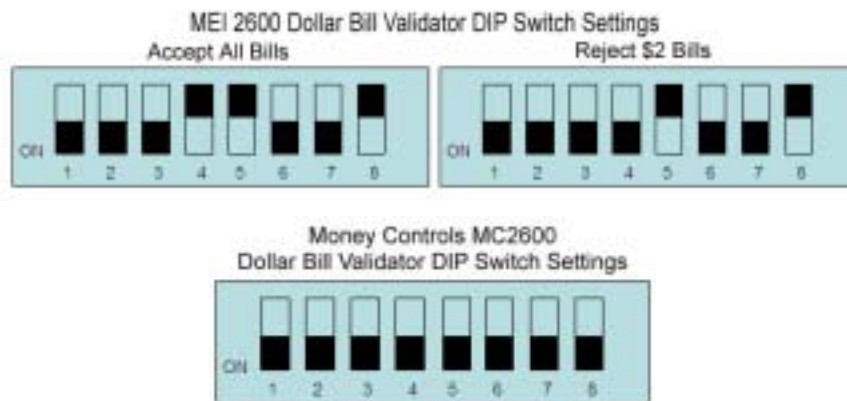


Figure 33. Dollar Bill Validator DIP Switch Settings

SmartCard Reader Replacement

The SmartCard reader is located below the control panel near the coin mechs. It is mounted to an assembly that is designed to minimize ESD interference. Two styles exist, as shown in the picture below. Perform the following steps to replace the SmartCard reader:

1. Disconnect the SmartCard reader cable from the computer.
2. Open the control panel as described on page 38.
3. Reach down through the control panel opening and remove the four nuts and bolts that secure the SmartCard reader to the cabinet, and remove the SmartCard reader assembly.
4. Refer to the figure below and remove the four (4) screws that secure the SmartCard reader to the mounting assembly. Slide the SmartCard reader out of the mounting assembly.
5. Reverse these steps to install the new SmartCard reader.
6. After servicing the SmartCard reader, always test it from System Test in the Operator Menu.



Figure 34. SmartCard Reader Assembly

SmartCard Dispenser Service

The SmartCard dispenser sells Players' SmartCards. Perform the following steps to open the dispenser to refill or count the SmartCards.

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 SmartCard dispenser door with the key; it will rotate downward on a hinge.
2. Slide and lift the back panel as shown below.
3. Insert SmartCards as shown, with the magnetic stripe down. The dispenser will hold up to 185 SmartCards. 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 SmartCard dispenser must be closed, and in a fully vertical position, or it will not dispense cards.

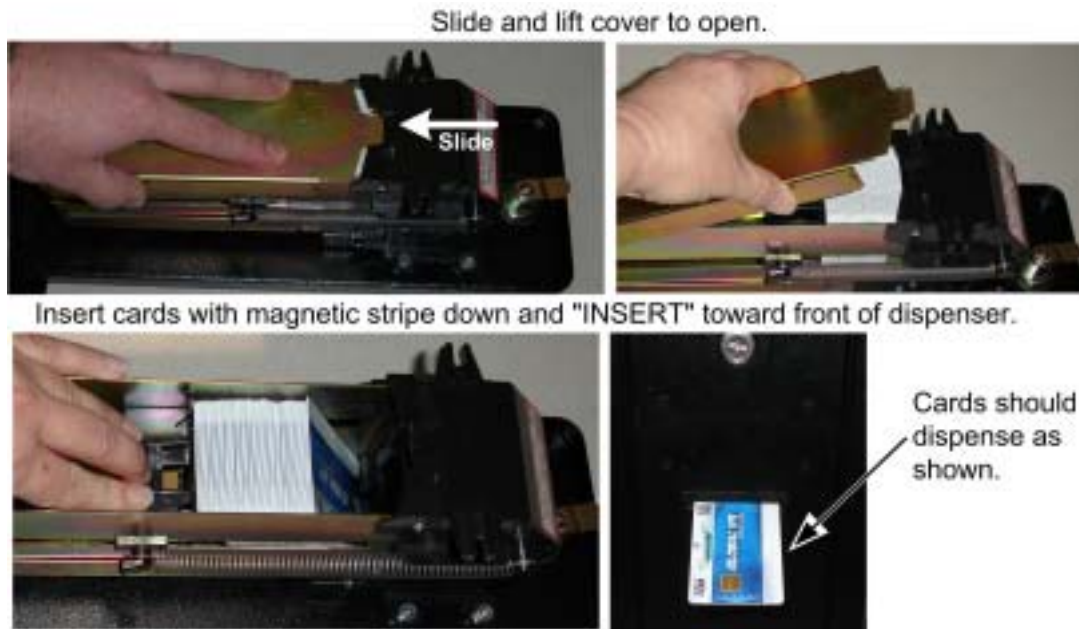


Figure 35. Filling the SmartCard Dispenser

SmartCard Dispenser Replacement

Note: The SmartCard 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 SmartCard 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, phone (modem), and Ethernet connections.

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 should be connected to the appropriate ports on the system computer (see Figure 42 on page 6).



Figure 36. 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 60.)

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.

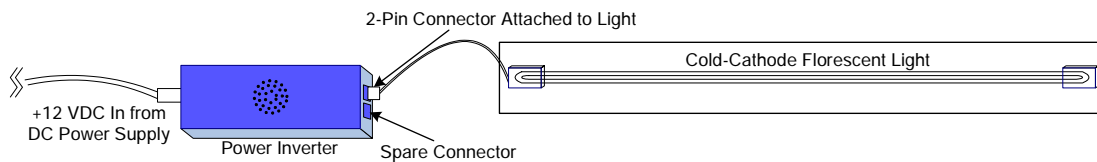


Figure 37. Cold-Cathode Light Wiring

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.**

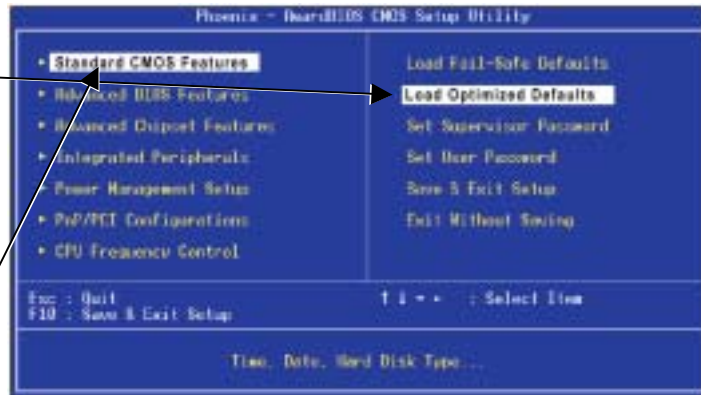
1. Press the **DEL** key during boot. The CMOS Setup Utility Main Menu will appear:

2. Use the Arrow keys (↑↓→←) to select **Load Optimized Defaults**, and press **Enter**.

Press **Y** and **Enter** when prompted to confirm the change.

Note: Step 2 ensures that most settings are correct. The others are described in this document.

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**. 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:

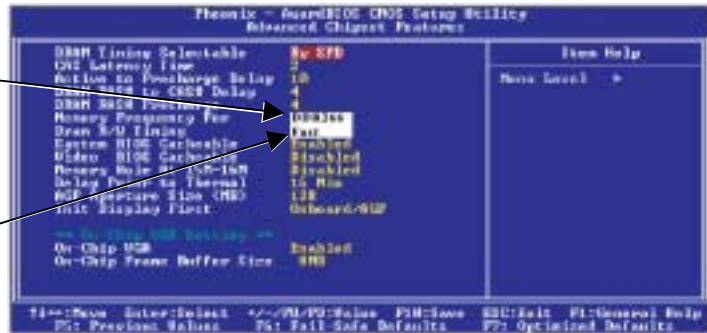
6. Use the Arrow keys to highlight the setting for **First Boot Device**. Use the **Page Up** and **Page Down** keys to change the setting to **CDROM**.



7. Set **Second Boot Device** to **HDD-0** 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**. 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**. Use the **Page Up** and **Page Down** keys to change the setting to **Fast**.

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 Loss Resume State**. 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 (if "N" shows, the settings will not be saved), and press **Enter** to save the settings and exit.

Chapter 8 — Replacement Parts

If you need replacement parts, please reference these part numbers when contacting GLOBAL VR[®] technical support or your distributor.

Documents, Software, and Cards

Part Number	Qty	Item Description
040-0062-01	1	System Manual
040-0063-01	1	Software Restore Guide
050-0072-01	1	System Recovery Disk
050-0073-01	1	Game Install Disks (2 CDs)
90524-00	1	Players' SmartCards, Pack of 100

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	SmartCard 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	SmartCard Reader Assembly
26068-00	2	ESD Isolation Block for SmartCard Reader
SCR28I-S033U	1	SmartCard 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	95-0560-00	3" TRACKBALL BOTTOM BRK
2	1	95-1604-00	3" TRACKBALL TOP BRK (1/8" SHORT)
3	1	55-0200-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

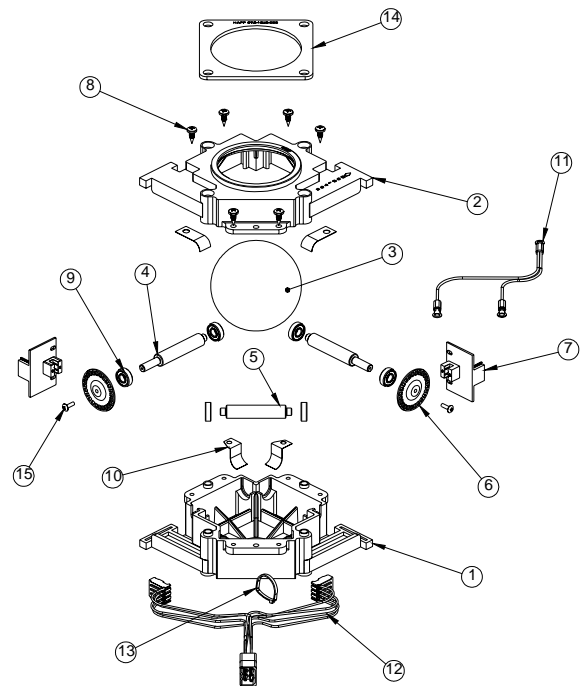


Figure 38. Trackball Exploded-View Drawing

Artwork and Exterior Formed Components

Part Number	Qty	Item Description
45033-00	1	Marquee Assembly
26000-00	1	Formed Marquee Housing
26004-00	1	Marquee Clear Plastic
PGA05-AW-03	1	Marquee Artwork
AW-FB01-10	1	GLOBAL VR® Nameplate
PGA-AW-14	1	Control Panel Artwork, Polycarbonate
PGA05-AW-04	1	Sub-Marquee
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



Figure 39. Cabinet Artwork and Formed Components

Chapter 9 — Troubleshooting

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 34.)
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 34.)
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 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, not 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 42 on page 61).

Problem	Cause	Possible Solution
External (S-Video) monitor does not work	S-Video not supported by software	The initial release of EA SPORTS™ PGA TOUR® Golf Challenge Edition does not support external monitor use. This feature is planned for a future software revision.

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 38.
	Dirty trackball shafts and bearings	Disassemble and clean the trackball shafts and bearings. (See Trackball Service on page 38.)
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 44).
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 44).
	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.

Connection Troubleshooting

If the cabinet fails to connect with the Tournament Server due to a connection problem, the software will display an error message on the Registration Options screen of the Operator Menu. The table below lists the more common errors and solutions.

If you cannot resolve a connection problem, contact Technical Support. Please have the modem error code, dial-up phone number the computer is using, and the game serial number ready for the GLOBAL VR[®] technical support representative.

Modem Error Message	Cause	Possible Solution
General RAS Failure	Modem failed to connect	Make sure you have a working analog phone line connected to the LINE port on the modem. If the problem continues, select a different phone number in the dial-up settings.
No Dial Tone – Please try again	Phone line connected to wrong modem port	If you can hear the phone go off the hook, make sure the phone line is connected to the correct port on the modem (see Figure 42 on page 61).
	Phone line not working	Connect a telephone to the line to make sure it is working.
The line is busy – Please check phone line and try again	Phone number being called is busy	Try again later. If the problem persists, select a different dial-up number.
Failed to deserialize – Please contact GlobalVR Support	Problem syncing with server	Contact GLOBAL VR [®] Technical Support
Broadband Error Messages		
Error Communicating with Server. Please try again later (4001)	Broadband connection problem	Check all connections and make sure your network is functioning properly.

Chapter 10 — Diagrams and Schematics

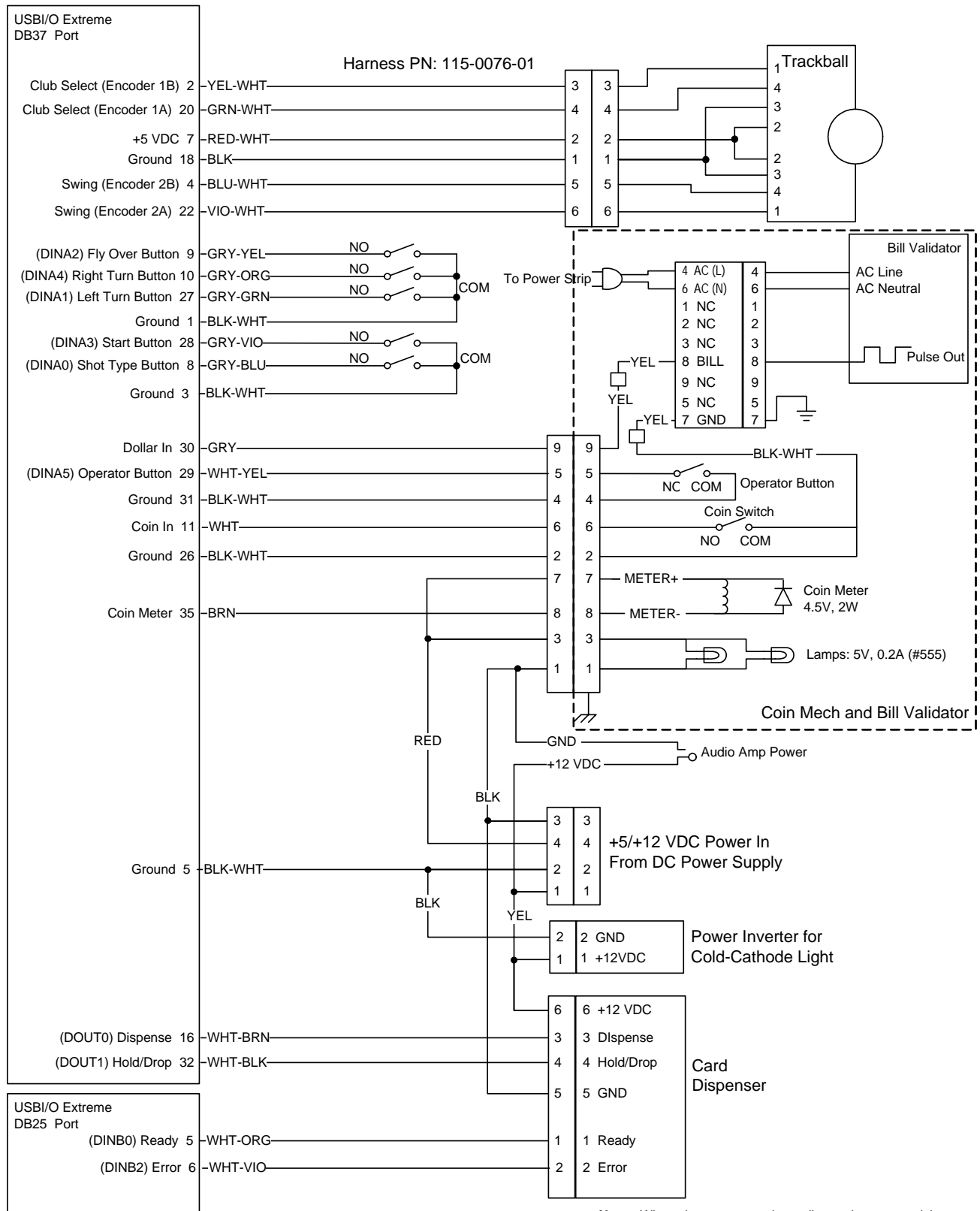


Figure 40. Wiring Diagram

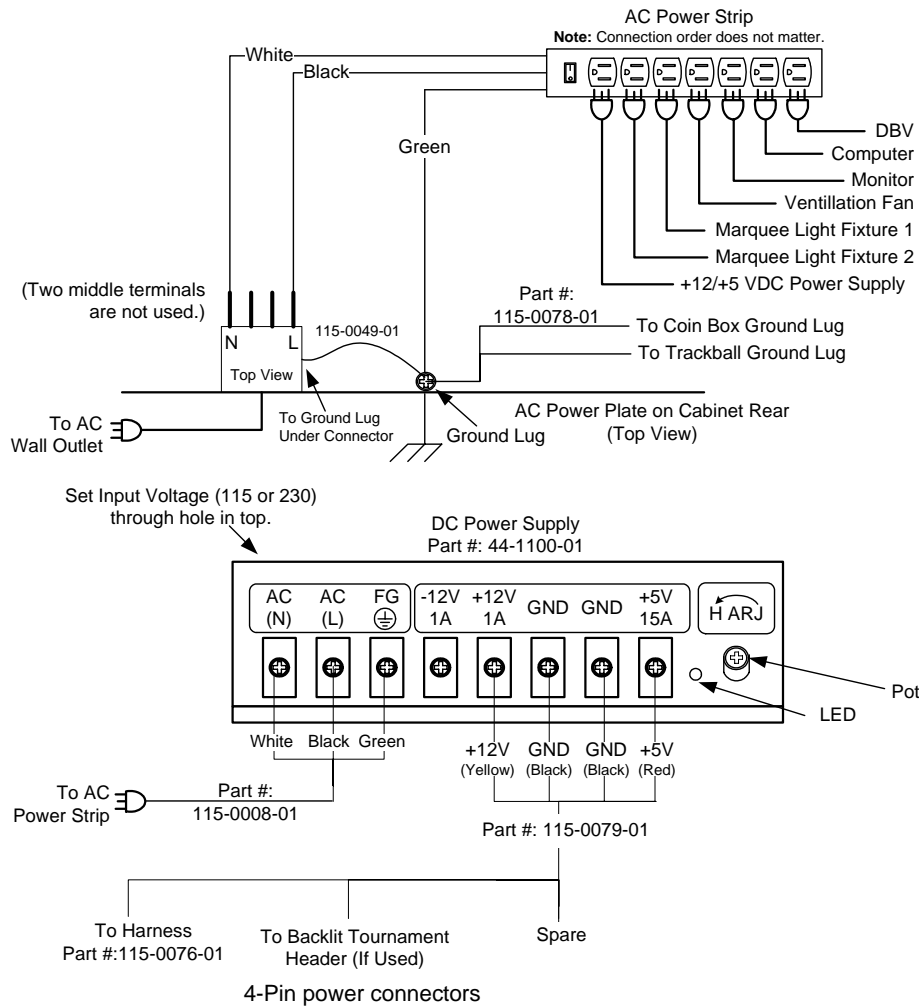


Figure 41. Power Distribution Diagram

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.

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

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®'S PART, EXCEPT FOR ANY EXPRESS WARRANTY SET FORTH IN A WRITTEN CONTRACT BETWEEN GLOBAL VR® 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®.



BUILD & RACE THE ULTIMATE URBAN EXOTIC



GAME FEATURES:

- > Multiple race types, including circuit, drag & drift.
- > Customize appearance & performance to create your own unique ride.
- > Career Mode allows players to choose their car and compete in a series of 81 races.
- > Over 25 unique tracks with over 35 variations.
- > More than 15 top licensed tuner cars.
- > Tournament Play* with Big Cash Prizes!

**OWN THE
STREETS!**



GLOBAL VR IS AN AUTHORIZED ELECTRONIC ARTS DISTRIBUTOR
*Tournaments are not sponsored or administered by Electronic Arts or their licensors.

1 877 GVR GAME + FX 1 408 501 0001 + SALES@GLOBALVR.COM + WWW.GLOBALVR.COM

© 2005 Electronic Arts Inc. Electronic Arts, Need for Speed, EA GAMES and the EA GAMES logo are trademarks of registered trademarks of Electronic Arts Inc. in the U.S. and/or other countries. All rights reserved. EA GAMES™ is an Electronic Arts™ brand. Mazda MX-5 Miata and Mazda RX-7 are used under the approval of Mazda Motor Corporation. Mitsubishi, Eclipse, and Lancer names, emblems and body designs are trademarks and/or intellectual property rights of Mitsubishi Motors Corporation and used under license to Electronic Arts Inc. NISSAN, SKYLINE, 240Z, SENTRA and 240SX are trademarks and/or intellectual property rights of NISSAN MOTOR CO., LTD. and are used under license to Electronic Arts Inc. SUBARU, IMPREZA and WRX names, emblems and body designs are properties of Fuji Heavy Industries Ltd. Toyota, Supra, and Celica are trademarks of Toyota Motor Corporation, and used with permission. The names and logos of all other market car part companies are trademarks of their respective owners and are used by permission. All rights reserved. EA GAMES™ is an Electronic Arts brand.

GLOBAL VR and the GLOBAL VR logo are registered trademarks of GLOBAL VR, Inc. All other trademarks are the property of their respective owners.
U.S. Patent Nos. 5,269,887; 5,254,252; and 5,571,911 used under license from Midway Games West Inc.

Technical Support

GLOBAL VR[®] provides free telephone, e-mail, and online support for systems during the warranty period. In addition to helping with troubleshooting and diagnosing defective parts, GLOBAL VR[®] technical support is prepared to help you with 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.

- Cabinet ID
- Software version number
- Specific error message
- Any changes made to the system
- Date of latest install or upgrade
- For game-play issues, the game mode and number of players

Technical support is available from 6:00 AM to 6:00 PM, Pacific Time, Monday–Friday.

Call 408.597.3400 to reach a Technical Support staff member.

E-mail support is available at this address: techsupport@globalvr.com

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

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