



EA SPORTS™ PGA TOUR® GOLF PS/2 Trackball Upgrade Kit

Hardware Installation Instructions
040-0013-01 Rev A

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

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Safety

- The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be found throughout this manual where they apply. We recommend that you read this page before preparing your arcade cabinet for game play.
- Use the following safety guidelines to help protect the system from potential damage and to ensure your personal safety.
- To help avoid damage to the computer, the power supply on the computer automatically detects the voltage to match the AC power available at the 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 power cables into a properly grounded power sources. 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, transient 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.
- Do not spill food or liquid on you system.
- Do not push any objects into the openings of the system. Doing so can cause fire or electric shock by shorting out interior components.
- Keep your computer far away from radiator and heat sources.
- Do not block cooling vents.

Warnings

 CAUTION	<p>To avoid electrical shock, unplug the cabinet before performing the installation procedures.</p>
 STOP	<p>GLOBAL VR assumes no liability for any damages incurred while setting up the EA SPORTS™ PGA TOUR® Golf cabinet. As such, only qualified service personnel should perform this installation!</p>



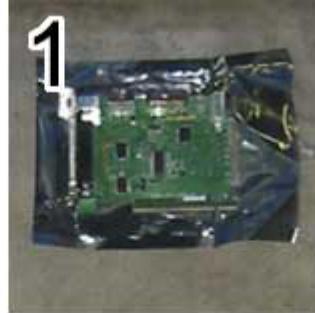
PS/2 Trackball Upgrade Kit

Please return the old hardware listed at the end of each hardware installation to receive a full credit back towards your account. Follow the instructions below to install the USB I/O Card, and TTL Trackball Sensors.

USB I/O Game Card Installation

USB I/O Game Card Components

Description	Qty
1 USB I/O Game Card	1
6/32 Silver screw	1
2 USB I/O Wire Harness	1
3 Coin Door Converter Cable	1
4 Zip Ties Wraps	3



1. Remove the two screws holding the computer cover on as shown by the circles. The cover is removed by pulling back $\frac{1}{4}$ of an inch (1) and then pivoting the lid out (2) as shown in the picture below.



2. Remove the 4th slot cover from the bottom of the computer. First push on the top edge of the slot cover with a screwdriver to pry it open. Then reach into the computer and move the metal flap back and forth with your fingers until it snaps off. You can discard the metal slot once it is removed.



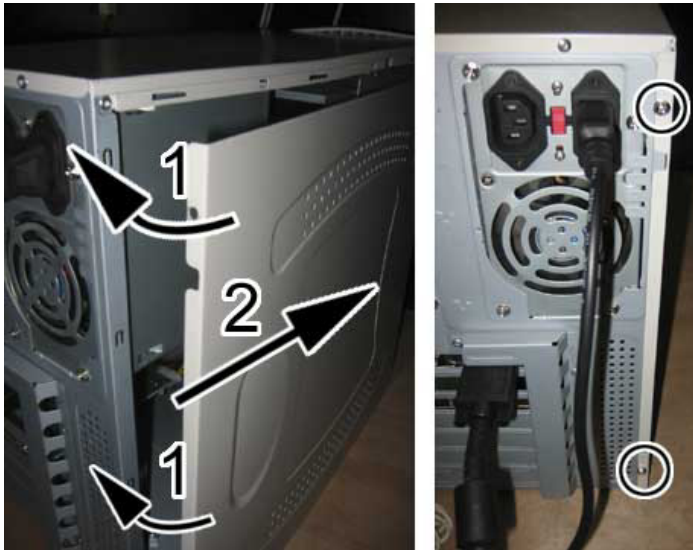
3. Install the USB I/O Game card on the last PCI slot as shown in the picture below. Secure the game card with the provided 6/32 screw shown by the arrow in the picture below.
Note: Some versions of the USB I/O Game card do not physically plug into the PCI slot, but they do mount into the expansion slot of the computer chassis.



4. On the inside of the computer you will need to plug in power on the back of the USB I/O Game card. You will have to loosen a tie wrap to get one of the unused power cables to reach the back of the USB I/O game card as shown by the arrows in the picture below.



5. Re-install the computer cover by reversing the removal process. You will need to align the teeth on the lid with the slots in the chassis to close the lid properly as shown in the picture below.

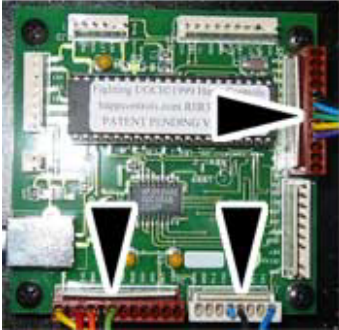


6. Disconnect the USB cable from the HAPP Controller card located under the control panel. Remove any zip ties that may hold the USB cable to the cabinet. Then plug the USB cable into the USB port on the USB I/O Game card as shown in the picture below. Zip tie the remaining loose cable together as shown by the circle in the picture below.

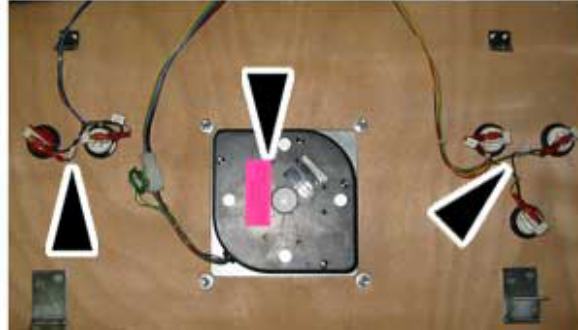


7. You will need to remove the HAPP Controller card and disconnect the HAPP wiring harness from the buttons, trackball and coin door as shown by the arrows in the picture below. The wiring harness for the trackball and coin door should be unplugged at the Molex connectors.

Happ Controller Card



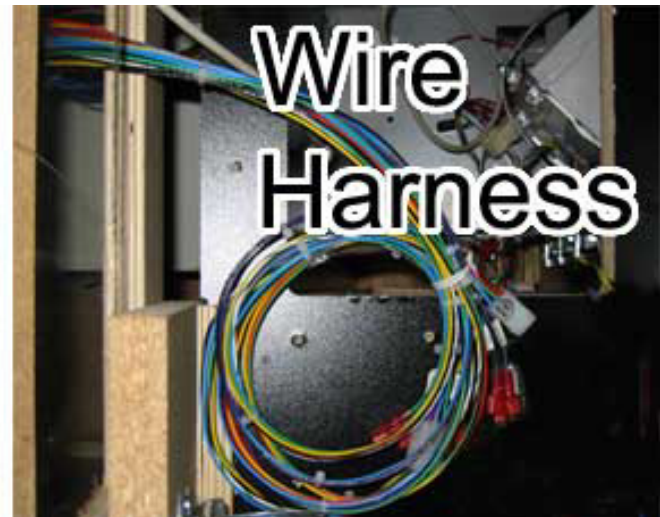
Control Panel



Coin Door



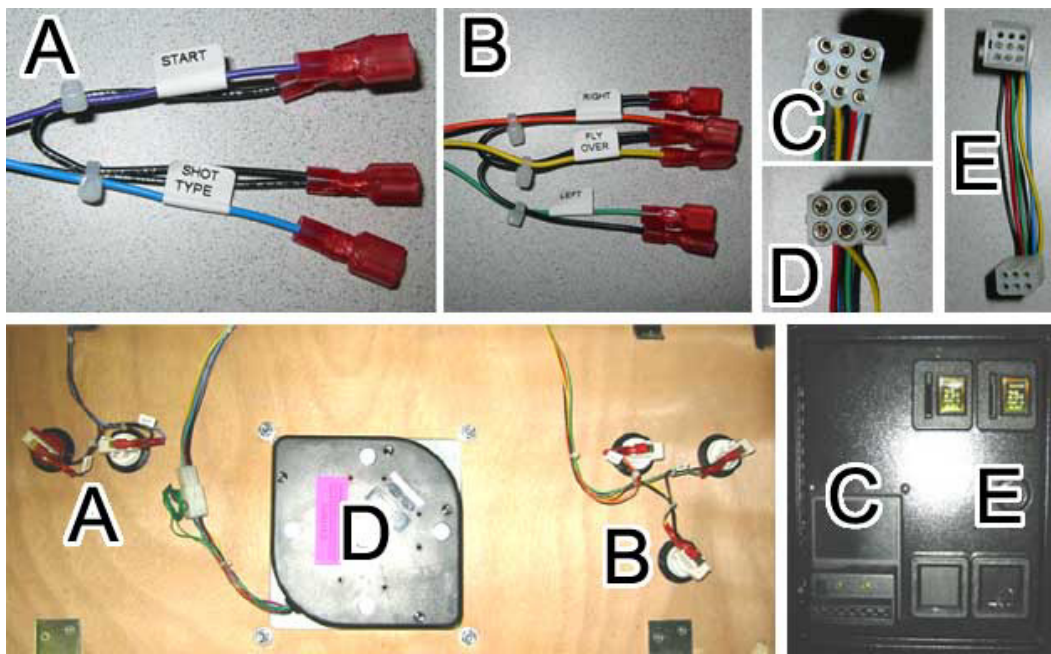
8. Connect the DB-37 end of the USB I/O wire harness to the USB I/O Game card; be sure to tighten the two screws on the DB-37 connector. Thread the other end of the cable through the cabinet to the control panel where the HAPP Controller card was located.



9. The wire harness is made up of 5 separate ends:

- **A - Start and Shot Type Button wires**
- **B - Right, Left, and Fly Over button wires**
- **C - Coin Door 9-pin Molex connector**
- **D - TTL Trackball 6-pin Molex connector**
- **E - Coin Door Adapter cable (9-pin Molex to 6-pin mini-Molex)**

Connect each end of the wire harness to its appropriate button or control outlined by the letters in the picture below. There are two types of Molex connectors used to connect the coin door. Depending on the type of coin door you have you may not need to use the Coin Door Adapter cable.



10. Place the HAPP Controller card from step 7 in the pre-paid postage envelope provided with the PS/2 Trackball Upgrade kit. The new USB I/O Game card has now been successfully installed.



HAPP TTL Trackball Sensor Conversion

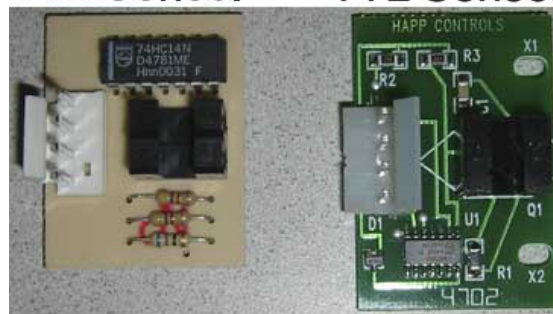
TTL Sensor Trackballs are required for PGA Tournament Golf

TTL Trackball Components

Description	Qty
1 TTL Trackball Sensors	1
Betson TTL Trackball Sensors Boards + Wiring Harness	2
HAPP TTL Trackball Sensor Boards + Wiring Harness	2

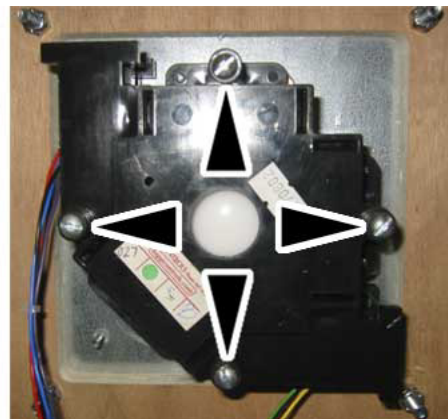


Betson
HAPP
TTL Sensor
TTL Sensor

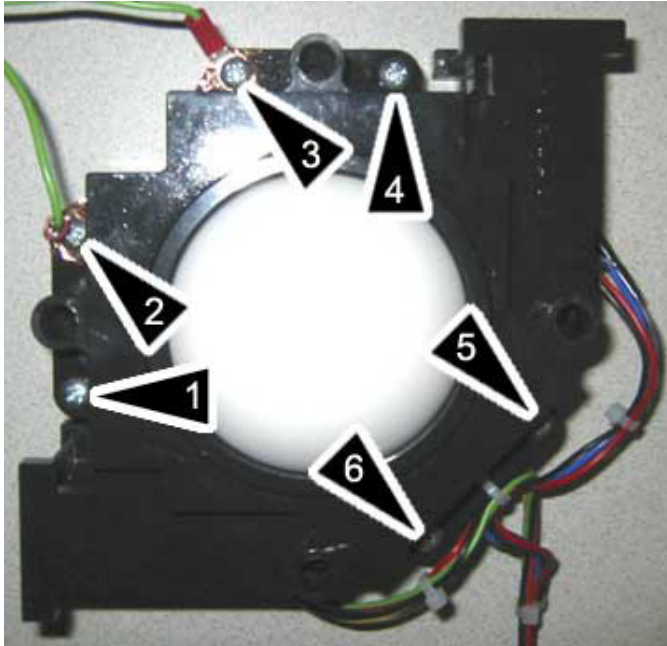


Shown are the TTL sensor boards for both HAPP and Betson Trackballs. You will notice that the Betson TTL sensor boards are slightly smaller than the HAPP TTL sensor boards. Be sure to use the HAPP TTL Trackball sensors for this conversion.

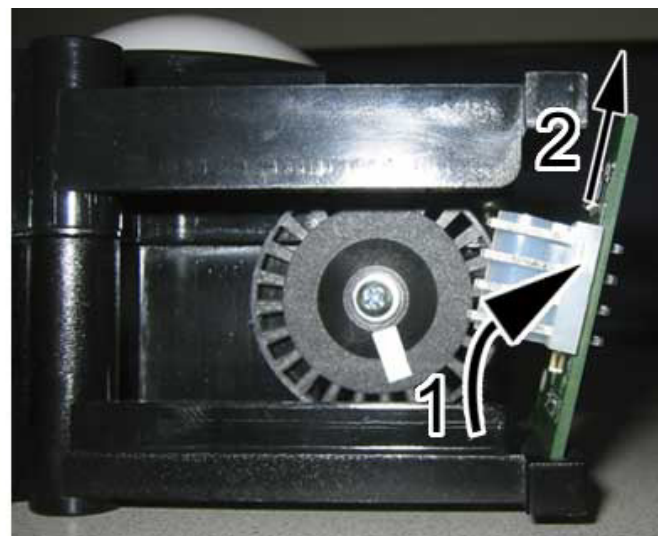
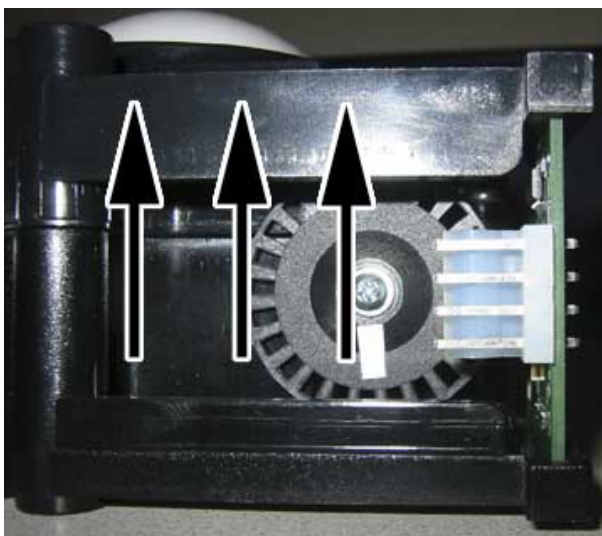
1. Unplug the PS/2 cable used for the trackball from the back of the computer. Now remove the trackball from the control panel by removing the 4 mounting screws as shown by the arrows in the picture below.



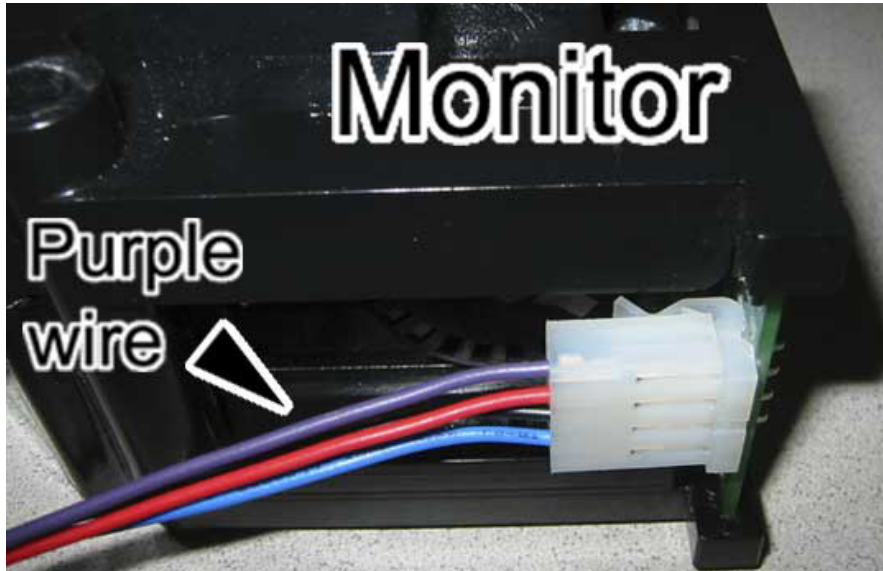
2. With the trackball on a bench loosen the 6 screws holding the trackball together as shown by the arrows in the picture below. Depending on your case about 2 screwdriver turns is just enough to loosen the lid to remove and replace the old sensor boards.



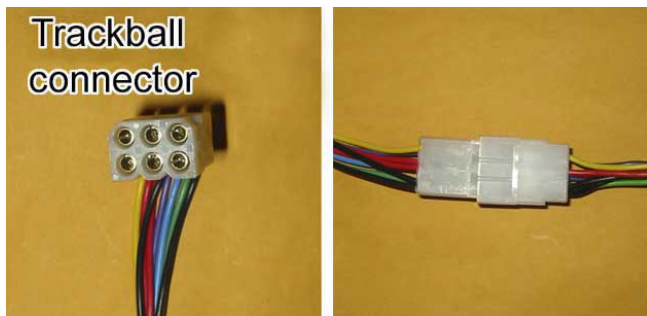
3. Gently lift the top of the trackball case to free the top edge of the sensor board. Then tilt and pull the sensor board out as shown in the picture below. Replace the PS/2 sensor boards with the HAPP TTL sensor boards in the same manor you removed them from the case. Repeat this step for both sides of the trackball. If you can not get the sensor boards out, you need to loosen the screws from step 2 a little more.



4. Install the new wiring harness on the TTL sensor boards. You will find the word MONITOR imprinted on the top of the trackball case. Be sure the blue and purple wires are connected to the TTL sensor board on the side of the trackball case that says monitor. If this is connected wrong your trackball will work backwards.



5. Reinstall the trackball into the control panel. Do not over tighten the 4 bolts that hold the trackball to the control panel. Tighten the bolts until the washers are not longer loose, and be sure that the monitor indicator is on the top edge of the control panel. So when the control panel is closed that monitor edge of the trackball is facing the monitor.
6. You will plug the new TTL wire harness from the trackball into the trackball connector on the USB I/O wire harness when you install the USB I/O Game card in the next section as shown in the picture below.



7. Add the PS2 cable, and old trackball sensors to the prepaid postage envelope that was included with the kit. The new TTL Trackball Sensors are now successfully installed.

Betson TTL Trackball Sensor Conversion

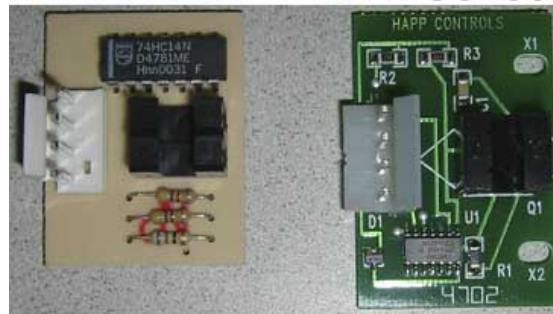
TTL Sensor Trackballs are required for PGA Tournament Golf

TTL Trackball Components

Description	Qty
1 TTL Trackball Sensors	1
Betson TTL Trackball Sensors Boards + Wiring Harness	2
HAPP TTL Trackball Sensor Boards + Wiring Harness	2



Betson
HAPP
TTL Sensor
TTL Sensor

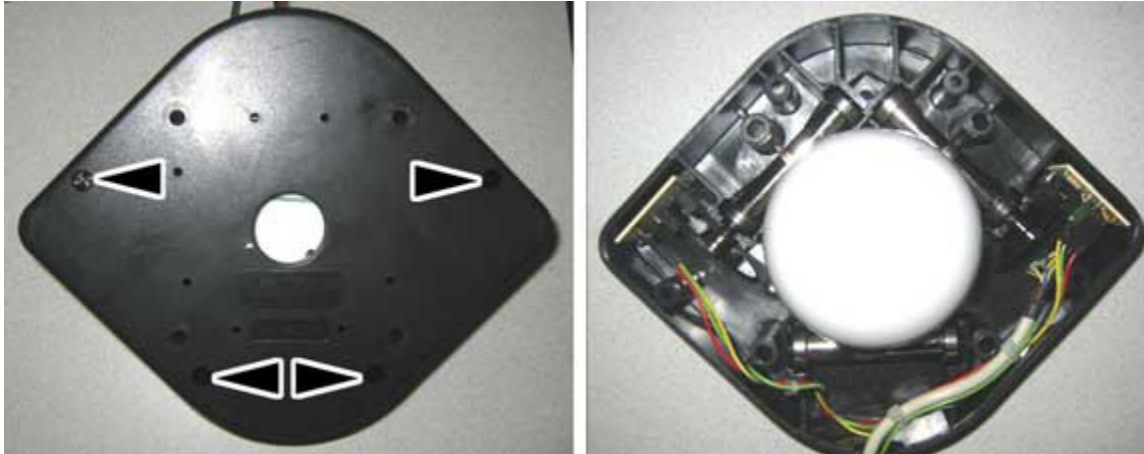


Shown are the TTL sensor boards for both HAPP and Betson Trackballs. You will notice that the Betson TTL sensor boards are slightly smaller than the HAPP TTL sensor boards. Be sure to use the Betson TTL Trackball sensors for this conversion.

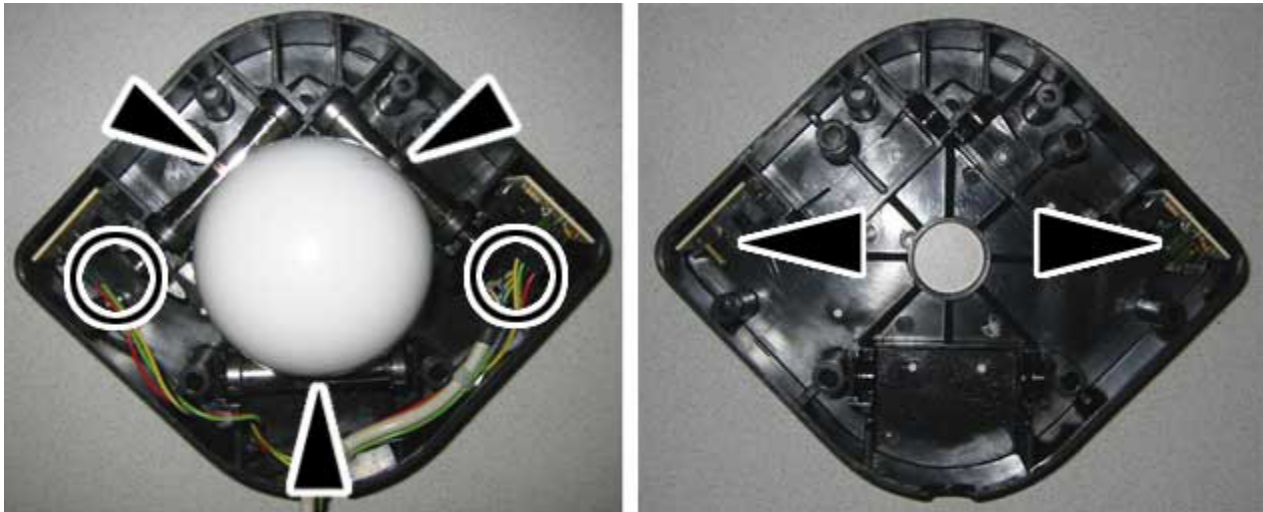
1. Unplug the PS/2 cable used for the trackball from the back of the computer. Now remove the trackball from the control panel by removing the 4 mounting screws as shown by the arrows in the picture below.



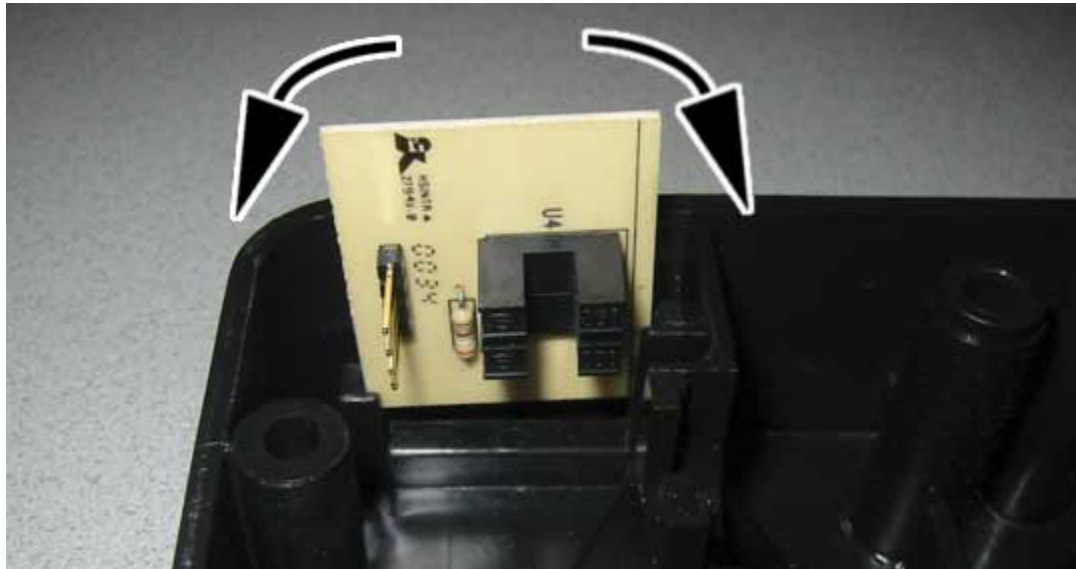
2. With the trackball on a bench remove the 4 screws on the bottom of the case holding the trackball together as shown by the arrows in the picture below. Holding the case together flip the trackball case over and remove the top.



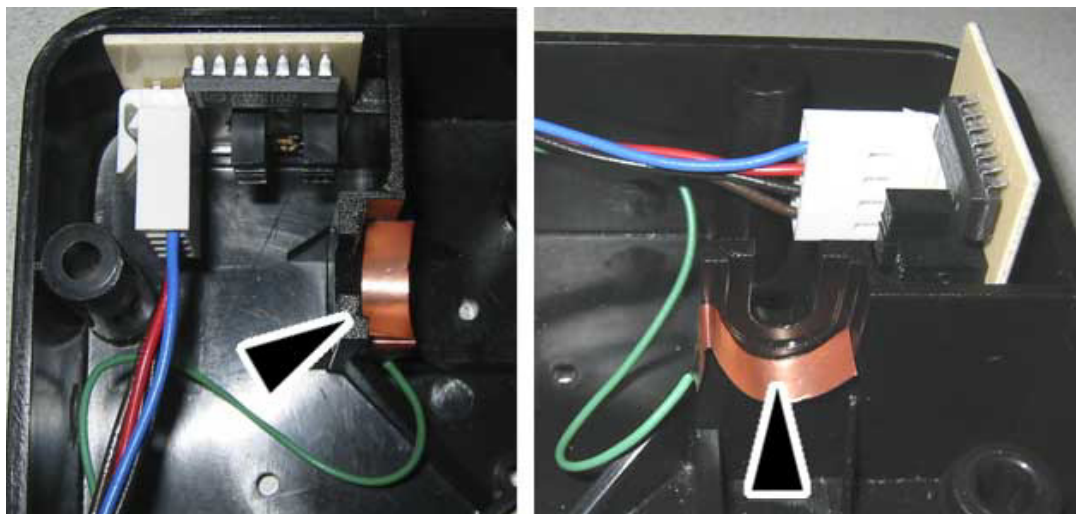
3. Once you have the trackball lid off you will need to remove the trackball, and the three metal bearings the trackball sits on shown by the arrows. Then remove the wire harness that connects to the sensors shown by the circles in the picture below. The only parts you want left in the trackball case are the old sensors.



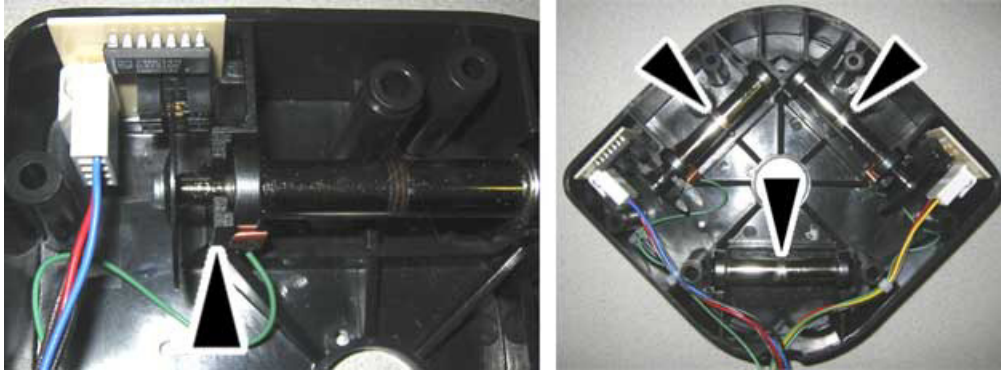
4. The Betson trackball sensors can be very hard to remove. The best method we have found is to rock the sensor board back and forth until it comes loose. It may be necessary to tap the bottom of the trackball case, underneath the sensor with a light hammer to loosen it from the case, be careful not to break the case.



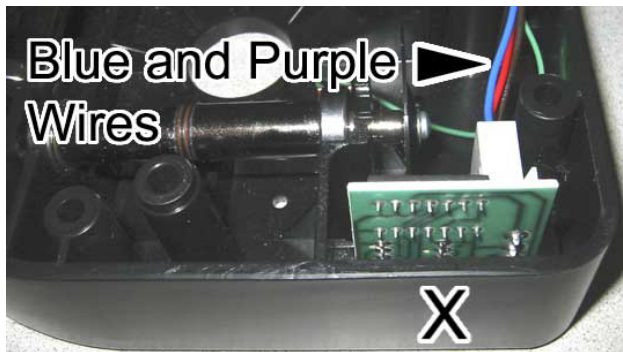
5. Install the Betson TTL trackball sensor boards with the wiring harness as shown in the picture below. The green wire with the copper tab on it is used to remove any static electricity from inside the trackball case. Place the copper tab in the trackball bearing holder inside the case as shown in the picture below. Repeat this step for both sides.



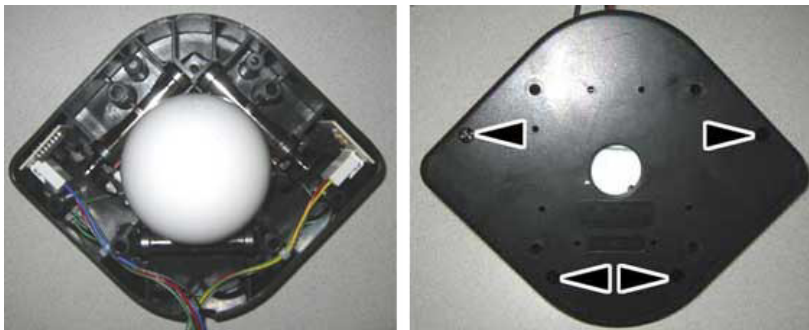
6. Place both metal bearings with trackball sensor wheels back in the case as shown by the arrow in the picture below. Be sure the copper tab is firmly set underneath the metal bearing; having these wires come loose inside the trackball case could hamper the trackballs performance. Place the third metal bearing in the only available slot in the case



7. You will need to mark the outside of the trackball case where the blue and purple wires are connected to the TTL sensor board shown by the **X** in the picture below. The blue and purple wires must face the monitor in order for the trackball to work correctly. If the blue and purple wires are not facing the monitor your trackball will work backwards.

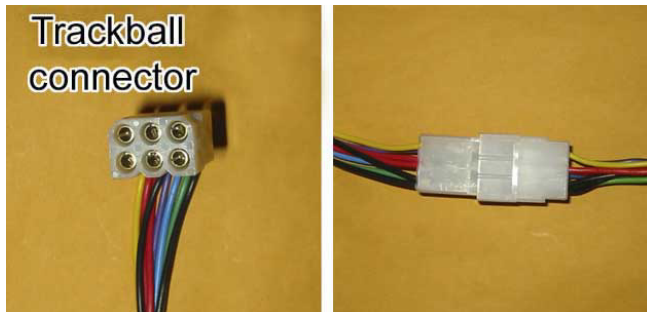


8. Place the trackball on top of the metal bearings and use the 4 screws from step 2 to reinstall the lid onto the trackball case.





9. Reinstall the trackball into the control panel. Do not over tighten the 4 bolts that hold the trackball to the control panel. Tighten the bolts until the washers are not longer loose, and be sure that the monitor indicator you placed on the outside of trackball case is on the top edge of the control panel. So when the control panel is closed the blue and purple wires inside the trackball are facing the monitor.
10. You will plug the new TTL wire harness from the trackball into the trackball connector on the USB I/O wire harness when you install the USB I/O Game card in the next section as shown in the picture below.



11. Add the PS2 cable, and old trackball sensors to the prepaid postage envelope that was included with the kit. The new TTL Trackball Sensors are now successfully installed.



Trouble Shooting

Problem	Possible Solution
No Response from Trackball or Buttons.	Confirm the USB I/O card is plugged into the USB port on the computer. Confirm the USB I/O card has power.
No Credit given when Coins are Inserted	Check coins per play setting. Check the signal wires to the coin mech.
Too many Credits for Number of Coins Inserted	Check coin per play setting.
Game Freezes up.	Restart EA SPORTS™ PGA TOUR® GOLF system. Confirm that the USB I/O wire harness is firmly connected.
Not all Control Panel functions are Working Properly	Check all cable connections on the computer and make sure they are firmly connected.
The buttons work, but there is no response from the Trackball	Check on the inside of the computer and make sure the USB I/O card has power connected to the card.



Warranty Info

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:

- 1) Purchaser believes that the Product is defective in material or workmanship and promptly notifies GLOBAL VR in writing with an explanation of the claim;
- 2) All claims for warranty service are made within the warranty period;
- 3) Products are returned adequately packed and freight prepaid to GLOBAL VR's designated service center;
- 4) 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.

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Technical Support

Free telephone, email and online support are provided for EA SPORTS™ PGA TOUR® GOLF systems during the warranty period. In addition to helping with trouble shooting and diagnosing defective parts technical support is prepared to help you with questions about the operation of your EA SPORTS™ PGA TOUR® GOLF game.

When you contact technical support at GLOBAL VR, please provide the following background information to aid our technical support process:

Cabinets Game Serial Number

Your mailing address and telephone number

A summary of the question or a detailed description of the problem with your EA SPORTS™ PGA TOUR® GOLF cabinet

Technical Support is available from 9:00-5:00PST, Monday through Friday.

Call +1-408-597-3400 to reach a technical support staff member.

Email support is available if you email support@globalvr.com

Tournament E-mail Support is available at tournament@globalvr.com

Warranty Service

If at some point you require warranty service, contact your distributor. If technical support staff determines that your EA SPORTS™ PGA TOUR® GOLF is defective, a Return Merchandize Authorization (RMA) number will be issued.



Legal Statements

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Return Items after PS/2 Trackball Upgrade Kit Installation

For your convenience we have enclosed a prepaid self-addressed envelope with the PS/2 Trackball Upgrade kit. Please use this envelope to return the old hardware listed below.

If you ordered the PS/2 Trackball Upgrade kit you will need to return the old hardware that was installed on your cabinet to GLOBAL VR. Please include all items from the list below to receive a full credit towards your account. GLOBAL VR will deduct the retail value for any hardware item that is not included in your return from your account.

Return Hardware from an Older Cabinet

Description	Qty
Happ Controller Card	1
Trackball PS/2 cable	1
Old Trackball Sensors Boards	2

Note: You have been invoiced for these parts. In order to receive full credit towards your account you must return these items to GLOBAL VR within 30 days of receipt of this kit.

Please fill out the bottom section of this sheet and include it with the parts you are returning to GLOBAL VR.

Name:	
Company Name:	
Street Address:	
City, State, Zip:	
Phone Number:	()
Distributor:	
Serial Number on Game:	

Serial Number is located on the upper back left corner of the cabinet

Thank You