

Arcade Collection Home Conversion Guide

IMPORTANT – PLEASE READ

The conversion process requires replacing: Hard Drive, Cabinet Identification Device (CID), Security Chip, Control Panel and Marquee. The Hard Drive must be physically changed to complete the update to version 1.05.00 Arcade Collection. System RAM may need to be upgraded if your current system does not have enough memory.

IT highly recommends having two people available when removing and attaching the control panel.

WARNING: AFTER CONVERSION, EXISTING IT CID WILL NO LONGER FUNCTION.

Conversion Contents

- Arcade Collection Hard Drive Assembly
- Security Chip labeled ACH-4
- Arcade Collection (AC) Cabinet Identification Device (CID)
- Fully Dressed Control Panel
- Cabinet Marquee
- 1 GB DDR2 System RAM Card (if necessary)
- Welcome Guide

Overview

Section 1: Upgrade Hard Drive

Section 2: Security Chip Replacement

Section 3: Cabinet Identification Device (CID) Replacement

Section 4: Control Panel Removal

Section 5: Control Panel Installation

Section 6: Attach and Connect Switches

Section 7: Final Connections

Reference Videos

All the videos referenced in the procedures can be found on the [IT Amusement – Instructions and Videos](http://amusement.itsgames.com/service/instructions) website (<http://amusement.itsgames.com/service/instructions>). Direct links to YouTube videos are provided in the procedures.

- How to Remove and Install a Nighthawk System Box
- Security Chip Replacement GT Golf Offline Update Installation Video (1:28 - 3:00)

WARNINGS AND NOTICES – PLEASE READ BEFORE STARTING PROCEDURE

IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions
- Keep these instructions
- Heed all warnings
- Follow all instructions
- Do not use this apparatus near water
- Clean only with dry cloth
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases on the apparatus.
- WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

CAUTION

The motherboard is provided with a replaceable lithium battery. There is a danger of explosion if a battery is incorrectly replaced. Replace the battery only with the same or equivalent type.

WARNING

The apparatus shall be connected to a mains socket outlet with a protective earthing connection. Substitute cords may not provide adequate fault protection. Only use the power cord supplied with this product or an Incredible Technologies, Inc. authorized replacement.

Section 1 – Upgrade Hard Drive

Tools/equipment required to remove and open System Box:

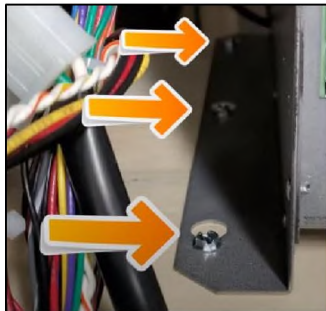
- ¼-inch Hex Nut Driver (no longer than 9 inches)
- Standard/Flat Head Screwdriver
- Good lighting

Note: Take a photo of the System Box wiring before removal. Be sure to have the System Box secured BEFORE removing the final screws holding the System Box in place.

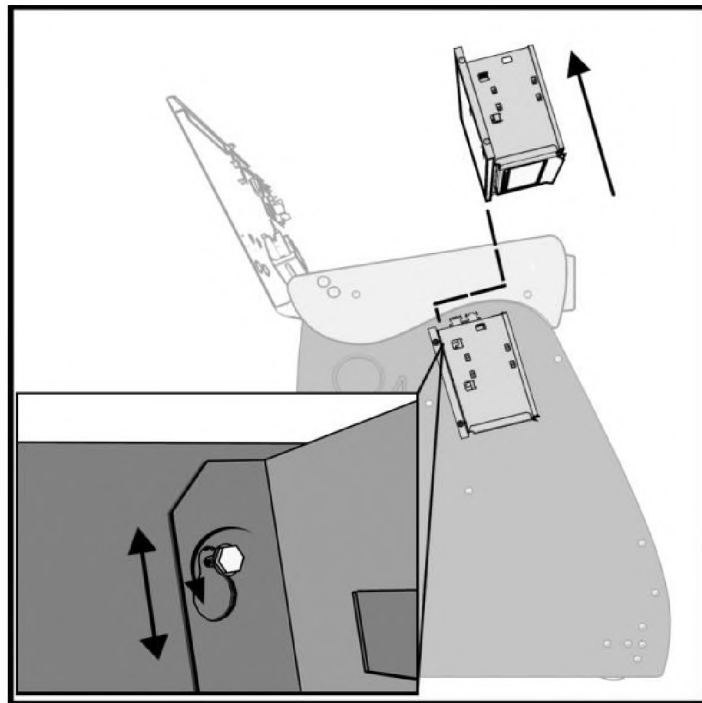
1. Turn OFF game using the switch at the base of the cabinet.
2. Loosen the six ¼” hex-head screws that secure the System Box.
3. Carefully lift the System Box off the screws and up out of the cabinet.

Helpful YouTube Video

For a YouTube video, see [How to Remove and Install Your Nighthawk System Box](https://www.youtube.com/watch?v=e0Ej1QS_Id0&feature=youtu.be) (https://www.youtube.com/watch?v=e0Ej1QS_Id0&feature=youtu.be)



Hex Screw Loosening



System Box Location

WARNING: Electrostatic discharge (ESD) can damage components. Discharge yourself by touching the metal system box while your feet are flat on the ground before touching any components.

4. With the hex nut driver, loosen but do not remove three screws on rear of System Box. Remove three screws on top of System Box and remove top.



5. Locate Hard Drive attached to the interior side wall of System Box.

6. Disconnect SATA and power cables.

7. On the outside of System Box, remove four screws. Set aside and save.

8. Remove Hard Drive. Place new Hard Drive in the same position on the interior side wall.

9. Reattach with same four screws. Connect SATA and power cables.

10. Return System Box back to the cabinet in the exact position it was in before removal. Make sure the peripheral outputs on the rear of System Box are facing upwards. The connections to System Box will be completed later in the procedure.



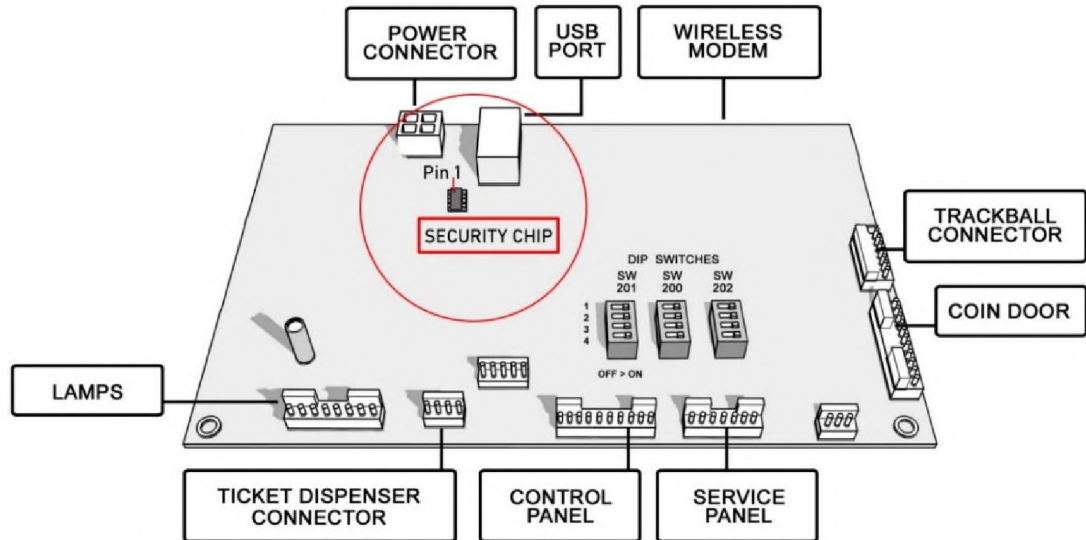
Helpful YouTube Video

For a YouTube video, see [Hard Drive Replacement](https://itsgames.s3.amazonaws.com/production/amusement/videos/Official+Hard+Drive+Replacement.mp4) (https://itsgames.s3.amazonaws.com/production/amusement/videos/Official+Hard+Drive+Replacement.mp4)

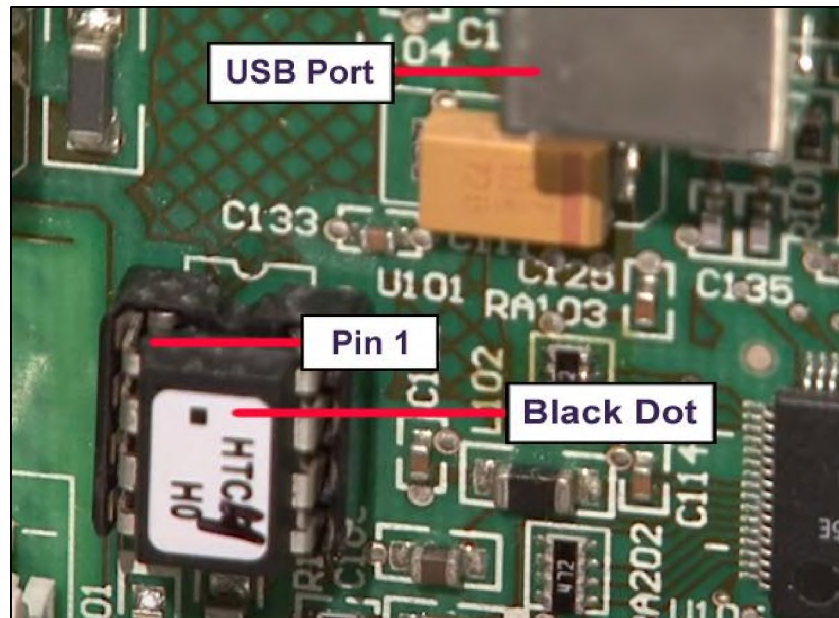
NOTE: If necessary, install 1 GB DDR2 System RAM Card.

Section 2 - Security Chip Replacement

- Carefully remove the socketed security chip found at U101 on the I/O Board. (A small flat blade screwdriver works best.) **It is extremely important to note the orientation of the Security Chip.**



- Look at the image below and note the location of **Black Dot** and **Pin 1** on the Security Chip in relation to **USB Port**. *Set the Security Chip exactly as it appears in the image.* Make sure the new Security Chip is oriented the same as the old Security Chip before inserting it into the U101 socket. Be sure the chip is seated properly with no bent pins.



Note: If the Security Chip is damaged, DO NOT THROW IT AWAY. It is required when purchasing a replacement.

Helpful YouTube Video

For a YouTube video covering Security Chip replacement, see

[GT Update Installation Video](#) (1:28 - 3:00 minute marker)

(<https://www.youtube.com/watch?app=desktop&v=8pOHvVDhegk&feature=youtu.be>)

3. If the I/O Board was removed during this procedure, reattach the I/O Board. New connections will be made with the new Control Panel.



Section 3 - Cabinet Identification Device (CID) Replacement

1. Disconnect the USB cable from the current game CID.
2. Loosen the 4 screws that attach the CID to the cabinet and remove CID.
3. Install the new CID to the cabinet using the 4 screws from the old CID.
4. Attach the USB cable to the new CID.



Section 4 – Disconnect and Remove Control Panel

Tools/equipment required to remove Control Panel:

- 1/4-inch Hex Nut Driver
- 11/32-inch Nut Driver

1. Release the micro switches from the push button assembly leaving the wires connected to the micro switch.

- Slightly pull the upper peg on the push button to rotate the micro switch away from the assembly
- Release the micro switch from the lower peg



- Disconnect the wires from the soft power micro switch. The normally open and common connector posts.
- Release the cables from the 3 cable clips

2. Disconnect the field ground wires at the trackball plate.
 - Remove two 11/32" nuts
 - Remove the first nut to remove the trackball ground giving access to the 11/32" nut securing the main field ground wire (the green/yellow wire).



3. Disconnect the 6-pin Trackball cable that connects to the main harness.
4. Remove one ¼” Hex Head Screw that attaches the open limit cable from the cabinet.



5. Disconnect the Control Panel from the bumper hinge by removing the four ¼” Head Screws that attach the Control Panel to the cabinet. See four red circles in the image below. Set the Head Screws in a safe area. You will need them to attach the new Control Panel. Extra screws are also included with the kit.

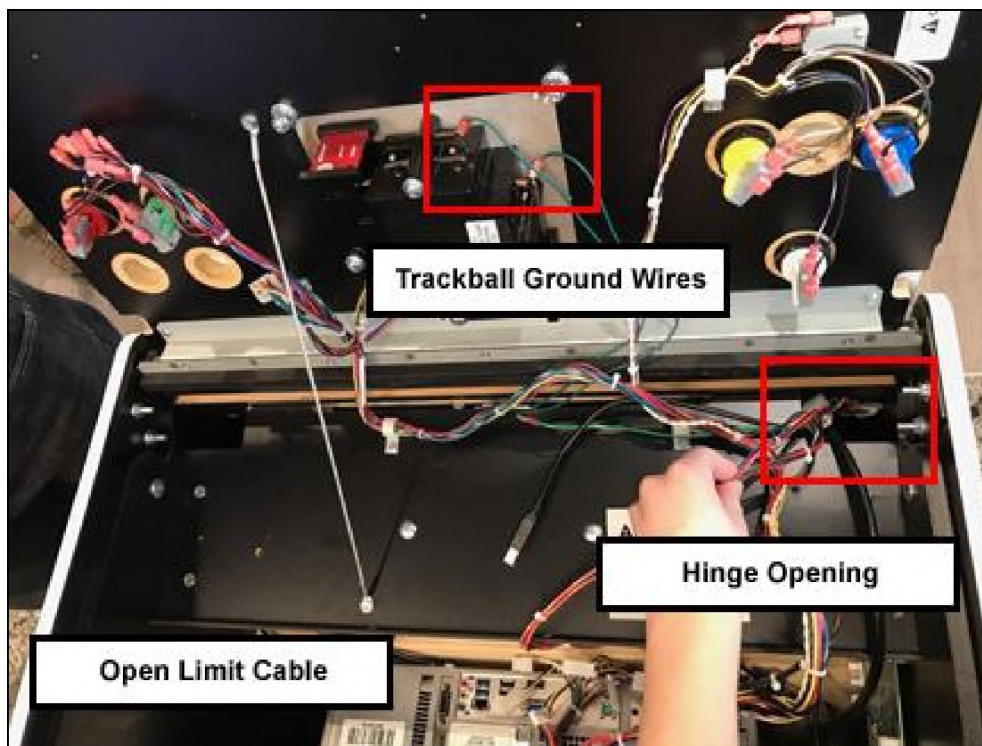


WARNING: Be aware that after the four screws are removed, the Control Panel will be **completely** released. To prevent injury, it is helpful to have two people for this step.

Section 5 – Attach and Connect Arcade Collection Control Panel

1. Attach new Control Panel to the rubber hinge using four ¼” Head Screws removed in the previous section.
2. Reattach one ¼” Hex Head Screw connecting the open limit cable to the cabinet.
3. Reconnect the green/yellow field ground wire to the trackball plate and secure with the 11/32” nut. Attach the solid green wire from the trackball to the stud on the trackball plate and secure with the 11/32” nut.

Note: It is very important that field ground is reconnected to the new Control Panel Trackball plate.



Section 6 – Attach and Connect Switches

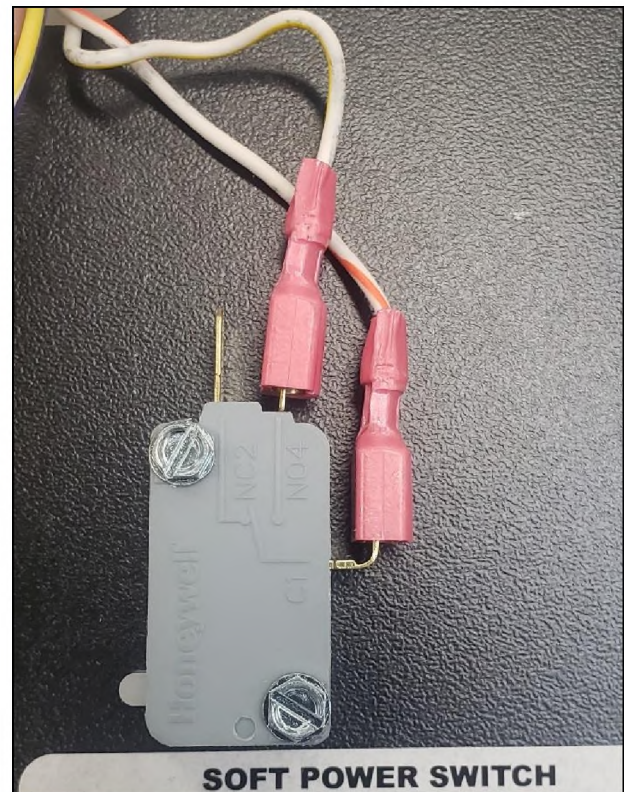
1. Connect the micro switches to the correct push buttons:

- **Red/White** wire connects to the **Red** button assembly
- **Black/White** wired switch connects to the **Green** button assembly
- **Yellow/White** wired switch connects to the **Yellow** button assembly
- **Brown/White** connects to the **Blue** button assembly (see images at right)



- **Purple/White** connects to other **White** button assembly

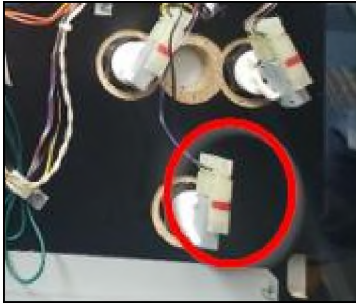
2. Connect the soft power switch wires to the soft power micro switch: White/Orange to the Common Post (right side in image at right), White/Yellow to the Normally Open post (left side in image at right).



Two Connector Types – White (legacy) or Pink (current)

The pink terminal connectors can be found on cabinets that have been built since 2014.

Depending on the build year of your cabinet, it will have either white or pink terminal connectors. See below.



White Terminal Connector



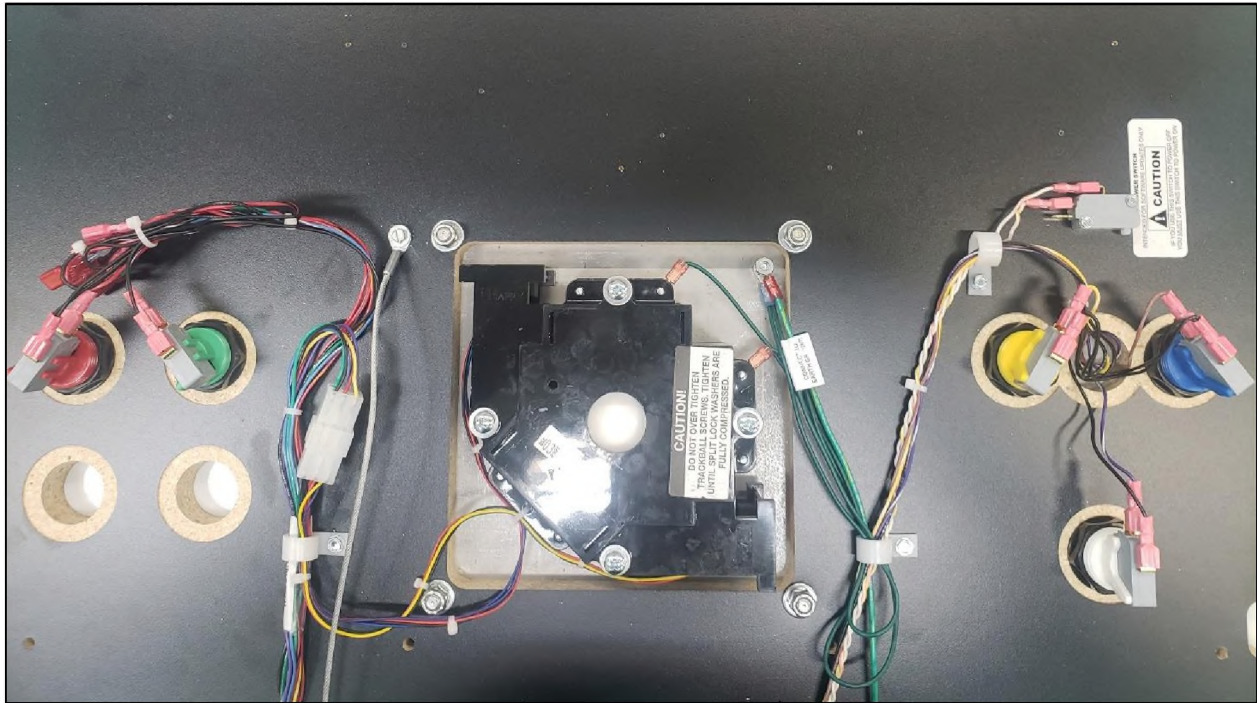
Pink Terminal Connector

3. Connect the 6-pin trackball connector.



4. Dress the Main Cable Harness using the two white cable clips.

- Once complete, the fully dressed underside of the Control Panel will look like the image below:

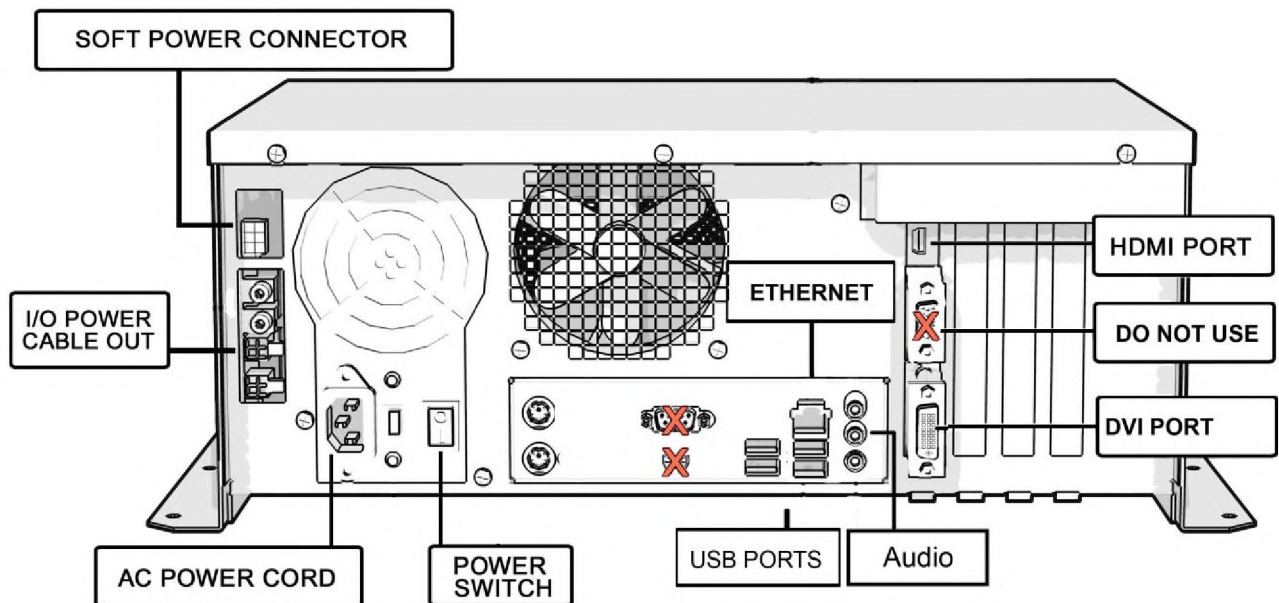


Section 7 - Final Connections to the System Box

Use the diagram below to make the following connections:

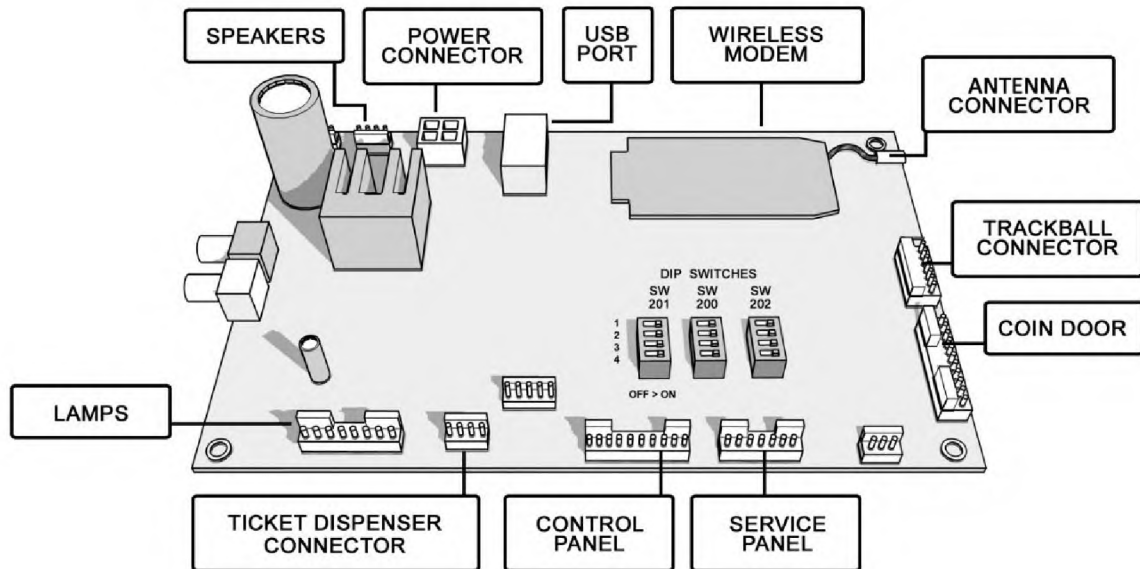
- Connect 4-pin I/O Power Cable connector from the cabinet to the System Box.
- Connect 6-pin Soft Power Cable connector from the cabinet to the System Box.
- Connect two USB Cables, one from I/O Board and one from CID to the System Box.
- Reconnect the HDMI cable from the video card in the cabinet to the System Box.

Note: Ignore any connections to card readers, keypads or antennas. These are not necessary for the Arcade Collection.



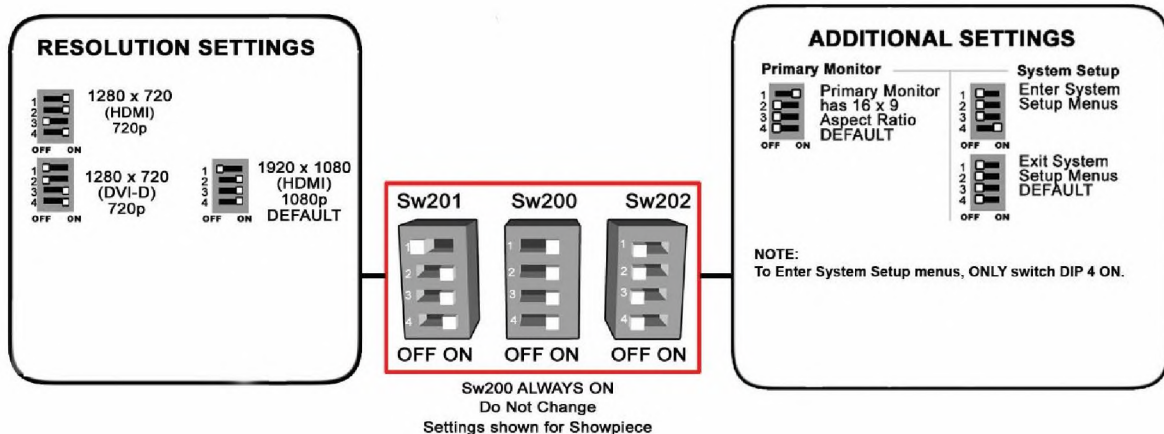
DIP Switch Location on I/O Board

The three DIP switch boxes are located above the Control Panel and Service Panel connections.



DIP Switch Settings for HDTVs

The DIP switch settings in your Showpiece cabinet have been factory set to accommodate a 1080p HDTV connected through HDMI cables. DIP switch bank Sw201 on the I/O Board controls the video resolution for the main monitor. If using a DVI-D connection, or for different resolutions such as 720p, use this chart: If the previous game was set for 720p, it can be bumped up to 1080p if a 1080p monitor is attached.



Check All Connections

Go over your entire cabinet again and double-check all the connections. Make sure that all connectors are tight and secure and in their proper place. Look for frayed, broken or exposed wiring and repair as needed. Bundle and cable-tie wiring and secure it to the inside of the cabinet. A thorough and neat job now will save you a lot of time and trouble in the future.

- Close Control Panel. Be careful not to pinch any fingers.
- Reattach power cable at the back of the cabinet and power ON the cabinet.



Input/Output Connections (I/O Power, Trackball, etc.)

For Standard Online Kit and Deluxe Retrofit Kit

The Original Cable Assembly is available for purchase:

Part Number	Part Name
915304115	CABLE ASSY, SHOWPIECE I/O CABLE

Trackball Harness Connector Pin Outs

I/O Board Connector	Trackball Connector
PIN WIRE #6 – Black	PIN WIRE #1 – Black
PIN WIRE #1 – Red	PIN WIRE #2 – Red
PIN WIRE #2 – Yellow	PIN WIRE #3 – Yellow
PIN WIRE #3 – Green	PIN WIRE #4 – Green
PIN WIRE #5 – Blue	PIN WIRE #5 – Blue
PIN WIRE #4 – Purple	PIN WIRE #6 – Purple

I/O Power Cable Pin Outs

Pin Number	Wire Color	Function
1	Yellow	+ 12 Volts DC
2	Black	Ground
3	Red	+ 5 Volts DC
4	Black	Ground

Control Panel J203 Connector Pin Outs

Pin	Color	Function
1	Green-White	Options (Not Used)
2	Brown-White	Left/High toss (Blue Button)
3		No Connection
4	Yellow-White	Right/Low Toss (Yellow Button)
5	Violet-White	Overhead View (White Button)
6	Black	Volume GND
7	Black-White	Arcade Menu (Green Button)
8	Blue-White	Help (Not Used)
9	Red-White	Options Start (Red Button)
10	Black	Ground

Service Panel J206

Color	Function
Red-Black	Meter Power
Red-Green	Coin Meter
Orange-White	Volume Up
Orange-Yellow	Volume Down
	No Connection
Blue	Test
Black	Test Ground

Input/Output Connections (I/O Power, Trackball, etc.)

Coin Door J205

Pin	Color	Function
1	Red-Black	Lamp Power (Not Used)
2	Black	Lamp Ground (Not Used)
3		No Connection
4	Black	Bill Ground
5	Grey-White	Bill
6		No Connection
7		No Connection
8	Green-Blue	Coin 2
9	Red-Blue	Coin 1
10		No Connection
11	Black	Coin Ground