

# PINWOODFER

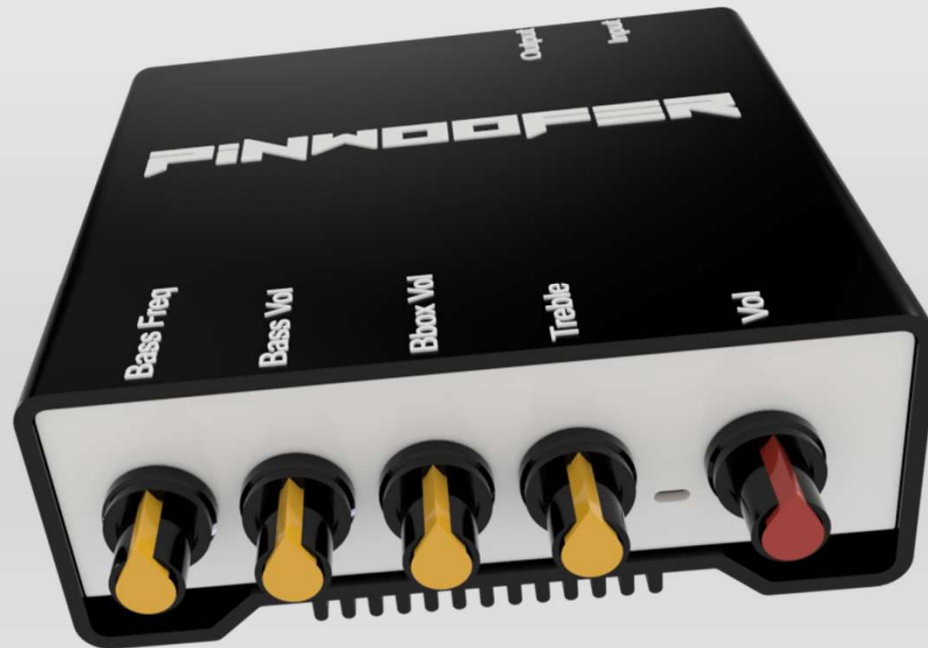
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**Take your time, follow the instructions, relax, and enjoy yourself!**

**WARNING: Perform installation with your pinball machine turned off and unplugged from AC power.**

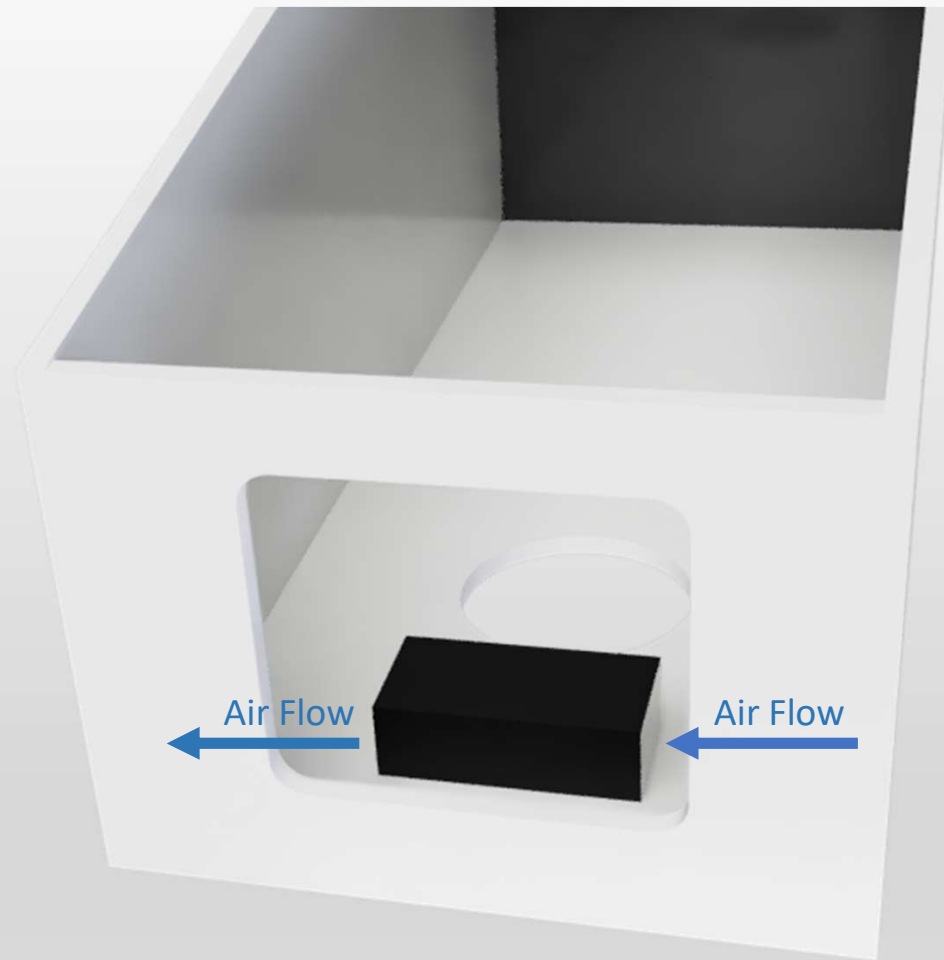
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## PinWoofers Spike KOP Amplifier Installation Instructions



## Amplifier Placement

- Remove the Coin Box and replace it with the amplifier resting as shown.
- Use only a PinWoofers supplied Amplifier Mounting Bracket. Aside from being more secure, it will allow you to transport your machine with the amplifier installed into the bracket.
- Alternatively, a high-bond double-sided tape can be used to secure the amplifier to the Cabinet Floor, or adhesive hook and loop pads. In this case, please remove amplifier before transport.
- Mount the amplifier only within the machine; DO NOT attempt to mount the amplifier external to the machine.
- The Aluminum Amplifier Enclosure is designed to have a small convective airflow underneath to promote cooling.
- The Amplifier should never run more than slightly warm to the touch.

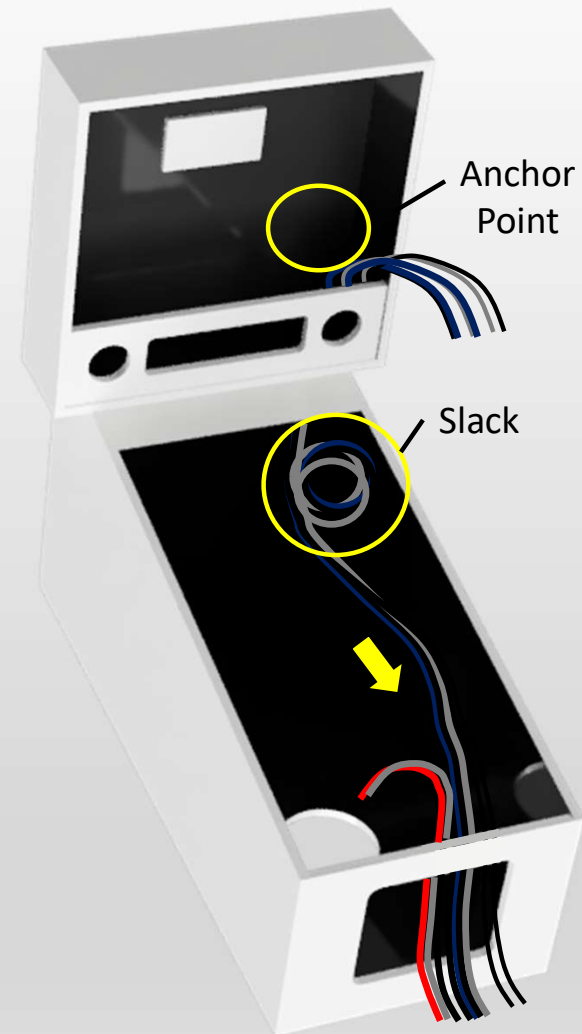


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# Harness Routing

- Unplug the machine from AC Power.
- Open the Coin Door.
- Remove the Playfield Glass.
- Lift the Playfield and prop it up.
- Remove the backglass and lower the Speaker Panel.
- Feed the Amplifier End of the PinWoofers Harness down and through the rectangular hole in the right side of the backbox, into the cabinet, then route the remainder down the interior of the cabinet and through the Coin Door opening as shown.
- Leave approximately 12in (about a 4in to 5in circular loop) of slack at the position shown. This will provide enough extra cabling to allow the backbox to be closed later without stressing the harness.
- Using a cable tie, anchor the wiring harness to a wire loom near the right-hand side of the backbox. Doing so “pins” the wire harness in the backbox so that the slack loop will be taken up if the backbox is lowered to its closed position.

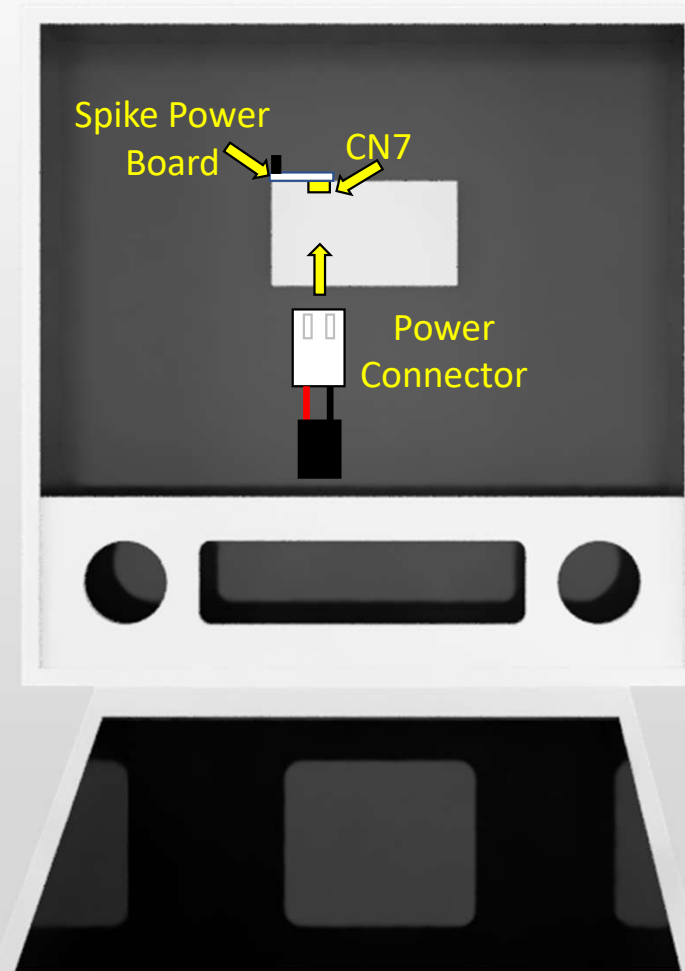


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## Power Connection

- Unplug the 5-Pin Factory Connector from CN7.
- Plug the 5-Pin Factory Connector into the PinWoofers Power Board.
- Plug the PinWoofers Harness 2-Pin Power Connector into the Power Board.
- Plug the Power Board into CN7.
- Secure Harness Power Cable Wiring to nearby Wire Looms and use Cable Ties to relieve any cable tension on the Power Board.

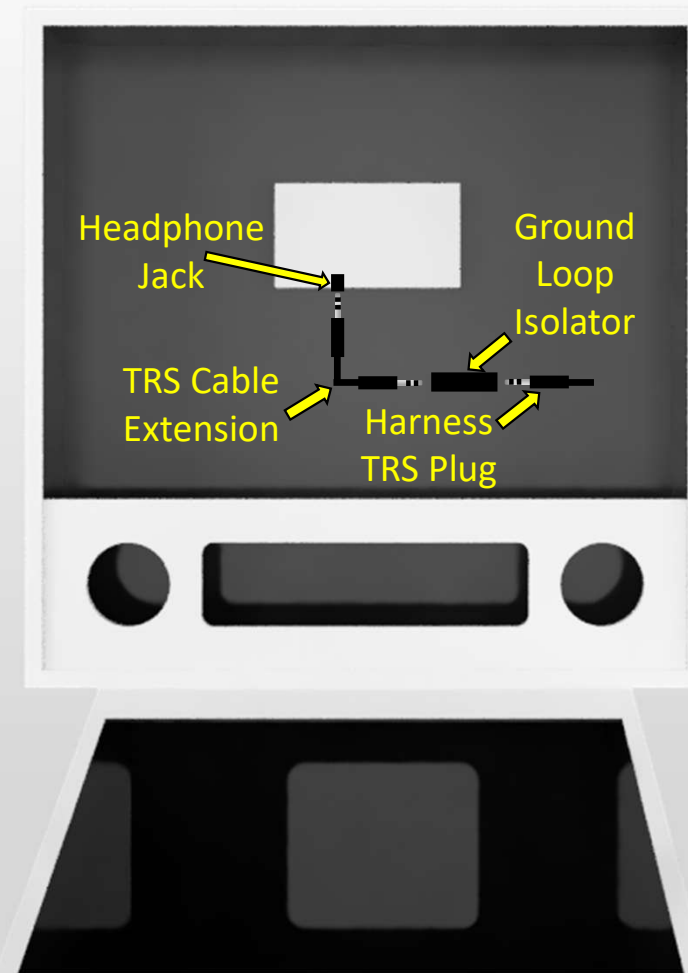


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# Spike Audio Connection

- The original Spike titles include:
  - Game of Thrones
  - Ghostbusters
  - Heavy Metal
  - KISS
  - Primus
  - Supreme
  - Wrestlemania
- If your title is not listed above, proceed to the Spike-2 instructions on the next slide.
- Plug one end of TRS Cable Extension into the CPU Node Board Headphone Jack.
- Plug the other end of the TRS Cable Extension into the Ground Loop Isolator.
- Plug the Harness TRS Plug (from the PinWoofers Harness) into the Ground Loop Isolator.
- You will need to increase the service menu headphone volume (to about 75% to 100% of maximum) when the installation is complete.
- Secure Harness Audio Cable Wiring to nearby Wire Looms and use Cable Ties to relieve any cable tension on the Spike CPU Node Board.



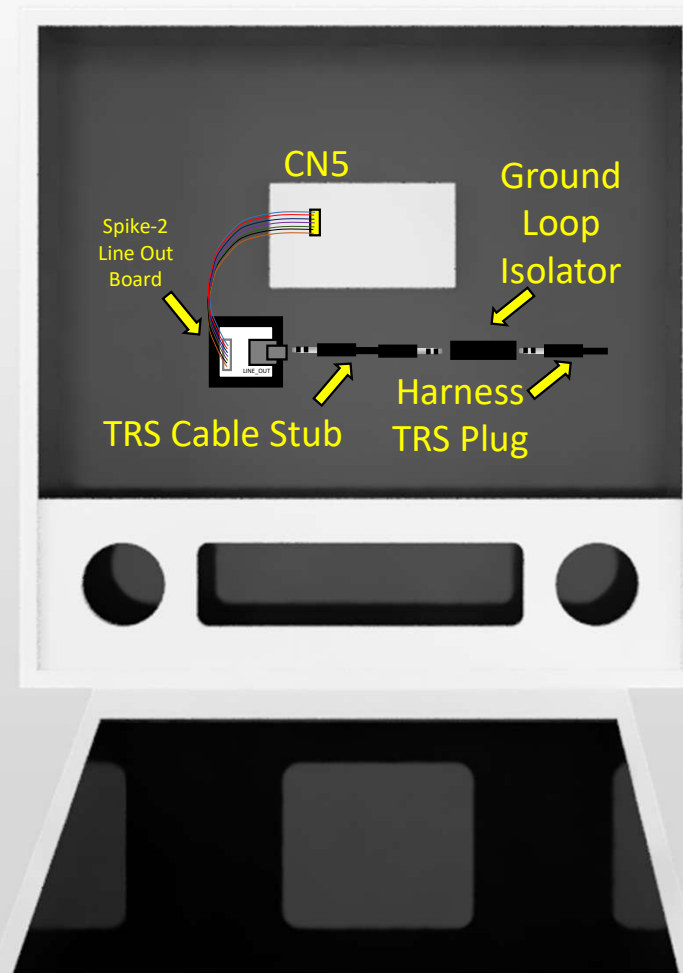
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## Spike-2 Audio Connection

- Plug one end of the 7-Wire Cable Harness into CN5.
- Plug the other end of the 7-Wire Cable Harness into the PinWoofers Spike-2 Line Out Board Header.
- Plug the TRS Cable Stub (from the Ground Loop Isolator) into the LINE\_OUT Jack on the Spike-2 Line Out Board.
- Install the ground loop isolator as shown.
- Secure the Spike-2 Line Out Board to the Backplane with Double Sticky Tape.
- Secure Harness Audio Cable Wiring to nearby Wire Looms and use Cable Ties to relieve any cable tension on the Spike-2 Line Out Board.
- Early Spike-2 Titles may have a 6-Pin Header at CN5. If this is the case, please review the below document:

<https://pinwoofer.com/content/PW-Spike-2-6-pin-Versus-7-pin-CN5-Header.pdf>



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## Connect Backbox Speakers

- Connect the BLU\_BLK Speaker Wire Pairs on the PinWoofers Harness to each of the left and right terminals of your Backbox Speaker Terminals:
  - Connect the BLU wire to “+” Terminal
  - Connect the BLK wire to “-” Terminal



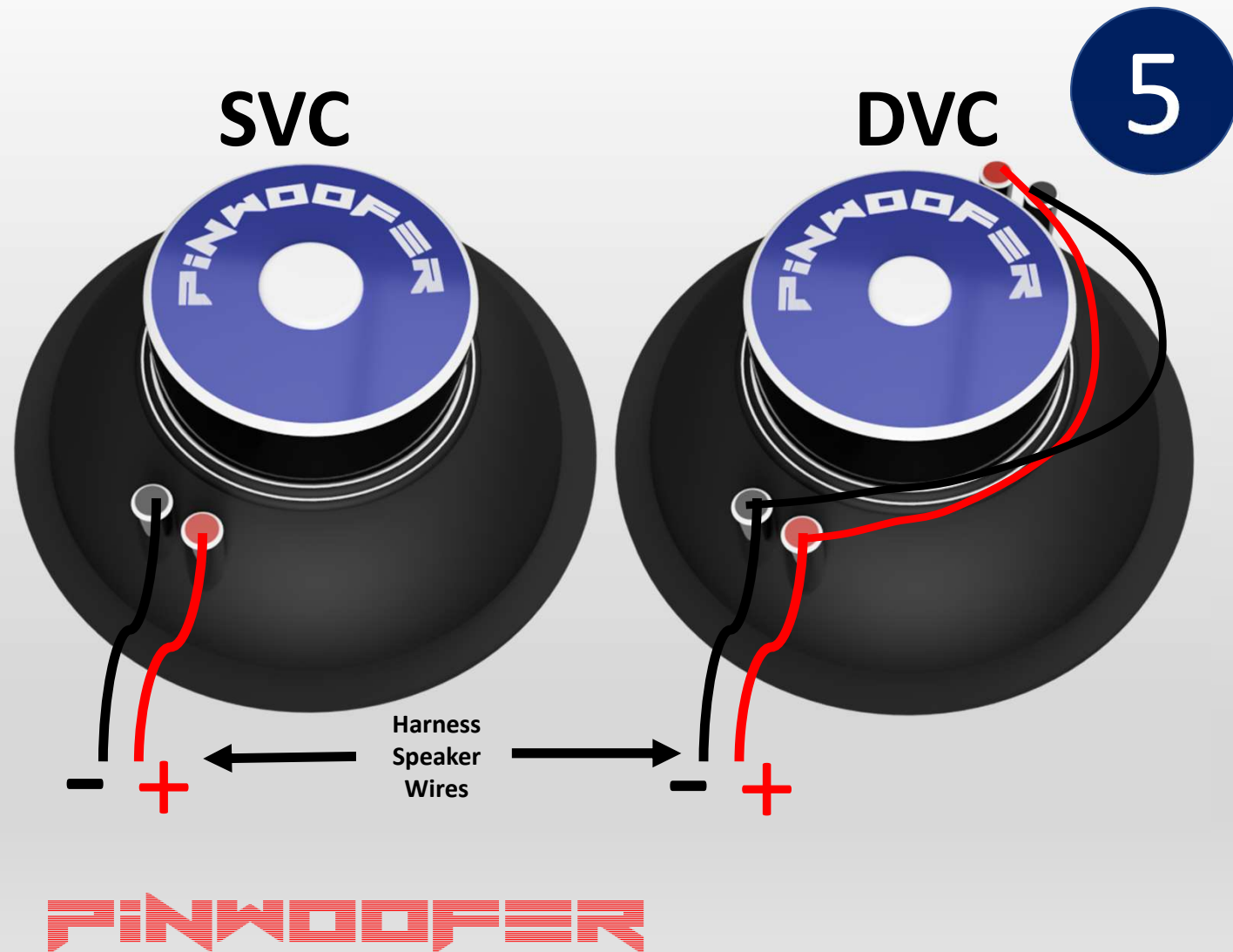
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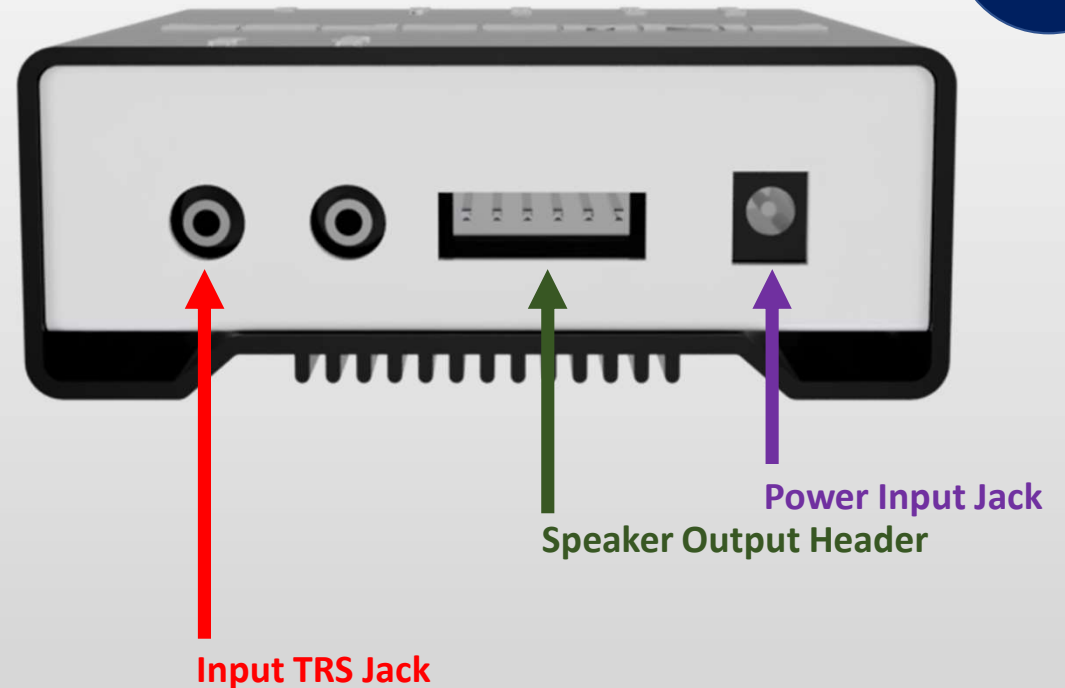
## Connect Cabinet Speaker

- Definitions:
  - SVC – Single Voice Coil
  - DVC – Dual Voice Coil
- For DVC, do not alter the factory wires present on your new Cabinet Speaker.
- Connect the RED\_BLK Speaker Wire Pair on the PinWoofers Harness to your Cabinet Speaker Terminals:
  - Connect the RED wire to “+” Terminal
  - Connect the BLK wire to “-” Terminal



## Amplifier to Harness Connections

- Insert the TRS Male Plug on the amplifier end of the PinWoofers Harness into **Input TRS Jack**.
- Plug the 6-Pin Molex Connector into the **Speaker Output Header**. The Connector tab locks should be facing upward.
- Insert the Power Plug into the **Power Input Jack**.

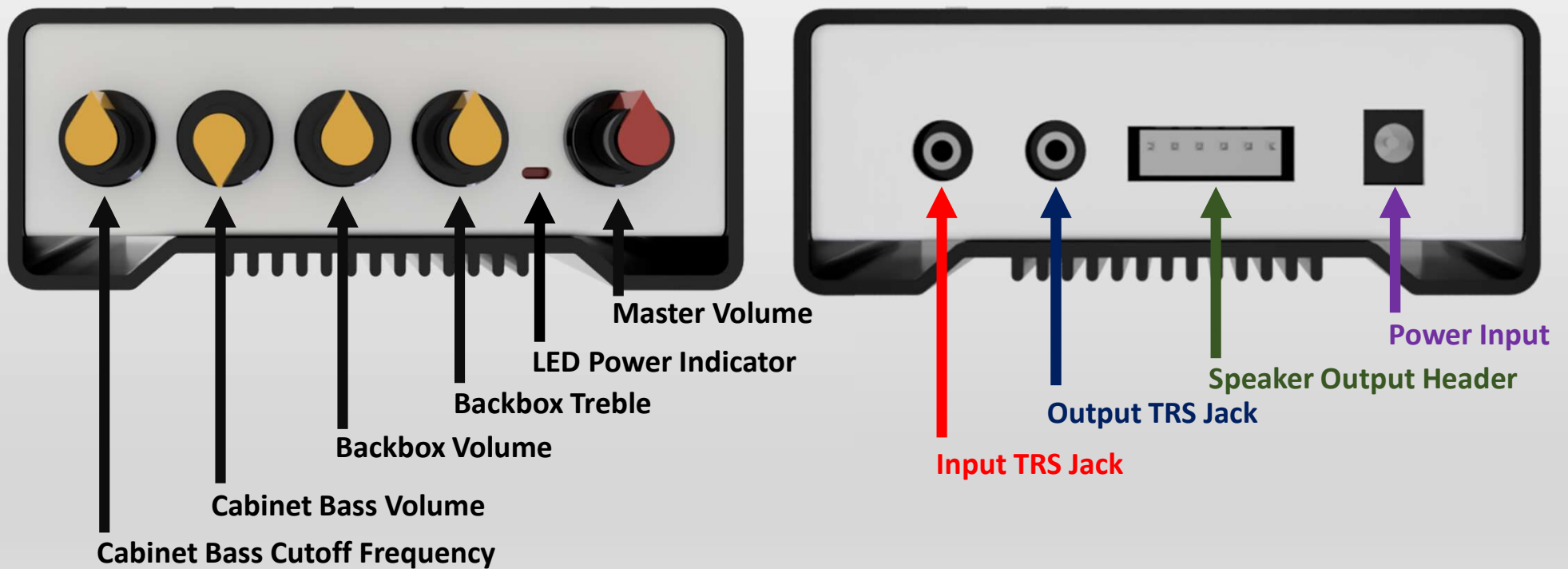


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# AMPLIFIER OVERVIEW

When first powering on your PinWoofers Amplifier, adjust the controls as shown:

- “Bass Vol” set to “6 o’clock”
- All other controls set to “12 o’clock”



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# ADJUSTMENTS

- **After installation, turn the machine on and follow the below startup procedure:**
  1. Set the service Menu Volume (using coin door volume buttons) to 25.
  2. In the machine's menu set all audio settings to default:
    - SERVICE MENU → VOL → FEAT ADJ → HIGH/LOW SHELF (DEF) = OFF
    - SERVICE MENU → ADJ → FEAT ADJ → SPEECH ATTENUATION = 0
    - SERVICE MENU → ADJ → FEAT ADJ → MUSIC ATTENUATION = 0
  3. "SERVICE MENU" values above can be revisited later, after making adjustments to the amplifier.
  4. Set the amplifier dials as shown on the previous page.
  5. It is likely that the starting amplifier settings from 4. above may not sound good. Be confident in rotating the dials to any position that sounds good to you!
  6. Further adjust the amplifier controls by starting a game or alternating the volume up/down buttons. Some titles continue playing (or start playing sounds when you enter the VOL menu during a game.
  7. Note that there may be a high voltage lock-out switch (a white pin) on the coin door that needs to be constantly depressed or pulled out to lock in the on position.
  8. Your final adjustments may leave the dials in radically different positions. This is perfectly fine as long as you have achieved your desired results.
  9. As needed, return to the menu to make adjustments to the audio settings. It is often helpful to change the MIX settings depending on results, and after you have had some experience with your new PinWoofersound system.
  10. Many titles have suggested initial settings at PinWoofersound.com in the blog. Visit our blog at <https://pinwoofersound.com/blog/> or search the game title in the upper right-hand corner of the web page.

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