

Veritas Center Assembly Instructions

What You'll Need

At a minimum:

1. Screw Driver
2. Soldering Iron
3. Wire Cutters/Strippers
4. Wood Glue
5. Tape or Glue for the Port

You might also find it beneficial:

1. Clamps
2. Electric Drill



Flat Pack Enclosure Assembly

1. Verify all cabinet parts were received. (*figure 1*)

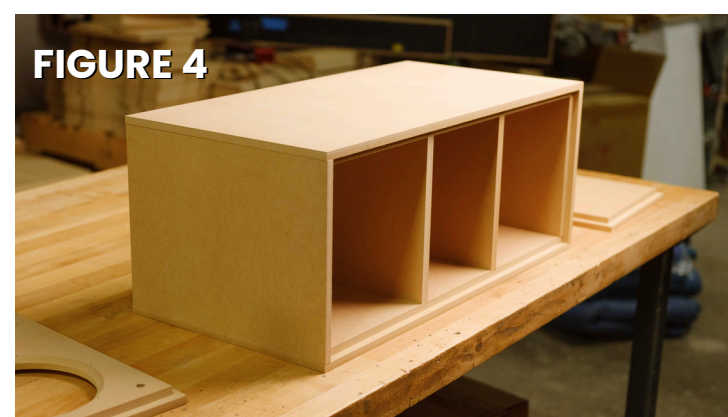
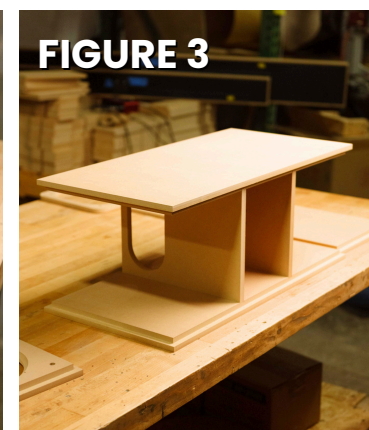
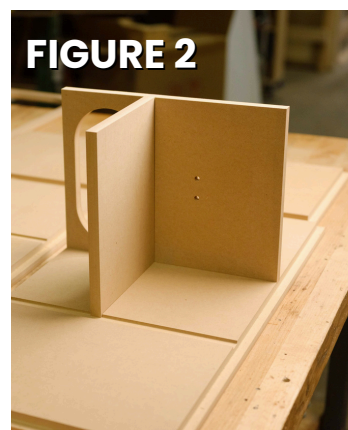
2. Clear dust from the corners of all panels. Any debris in the joints will prevent a tight, flush surface when gluing up the cabinet.

3. Assemble the cabinet **WITHOUT** glue to ensure all panels fit together.

We recommend placing the larger side panel on the work surface, then the center brace (*figure 2*), front and rear panels, top and bottom panels (*figures 3 & 4*), and finally the opposing side panel. No large gaps should be visible, and joints should be square (*figure 5*). If gaps are visible, ensure panels are in the correct position and joints are tight, even without glue.

NOTE: Due to regional and seasonal humidity differences, some sanding of the joint surfaces may be required to insert braces into appropriate slots. Remember to clean any sanding debris after confirming that the adjustments are sufficient.

4. Disassemble the cabinet and place the panels on a clean surface, arranged for easy assembly.



5. (OPTIONAL) Before assembly, drill pilot holes for mounting the crossover board using the board as a template. (figure 6)

Use caution not to drill through the panel. The board should be mounted on the bottom panel and pushed as far back as possible. This will make installation of the board easier once your cabinet is fully assembled. Screws can be secured into the MDF cabinets without drilling if desired. Now is the best time to install magnets into the baffle if using the grill kit. This YouTube video can be used as a guide:
<https://youtu.be/QD4HvV4hPFM>

6. Apply wood glue to mating seams one at a time and assemble using the steps above as a guide (figure 7).

7. After the cabinet is assembled and the glue fully cured, fill any gaps with wood filler or Bondo and sand all surfaces flat.

8. Finish as desired using veneer, vinyl, paint, etc. (see CSS blog post for ideas). (figure 8)



FIGURE 6



FIGURE 7



FIGURE 8

Crossover Assembly

1. Verify all crossover parts were received (*figure 9*).

Tweeter:

- 3Ω Resistor (x2)
- 8Ω Resistor (x2)
- 0.5mH Inductor (x1)
- 0.2mH Inductor (x1)
- 3.3μF Capacitor (x1)
- 8.2μF Capacitor (x1)

Mid:

- 1Ω Resistor (x1)
- 3Ω Resistor (x1)
- 0.75mH Inductor (x1)
- 3mH Inductor (x1)
- 0.47μF Capacitor (x1)
- 8.2μF Capacitor (x1)

Woofer:

- 1Ω Resistor (x1)
- 125μF Capacitor (x1)
- 3mH Inductor (x1)



FIGURE 9



FIGURE 10

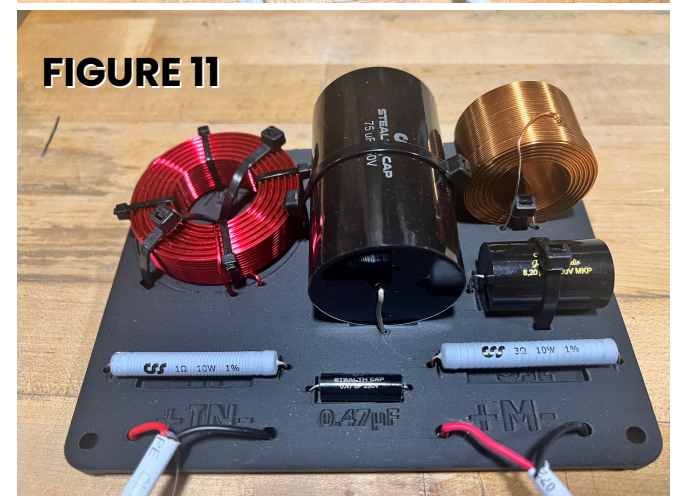


FIGURE 11

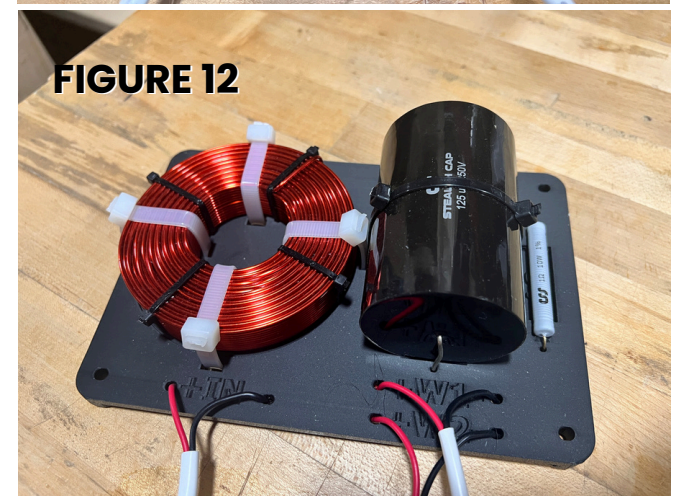


FIGURE 12

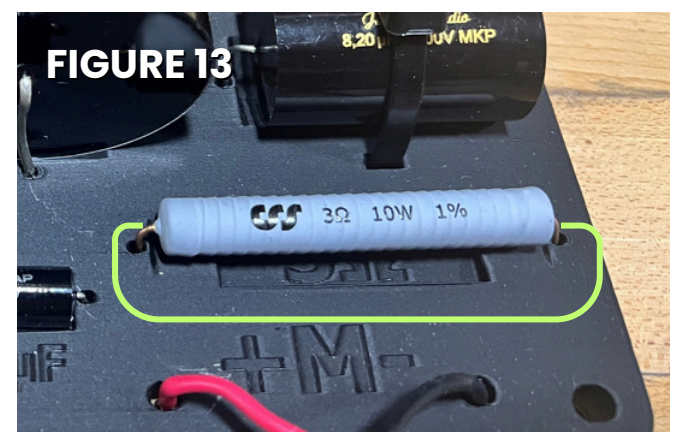


FIGURE 13

2. Place each component in its labeled location on the SmartNode board by putting the lead wires through the holes for the associated board location.

Orientation does not matter as long as leads can reach the through-holes.

3. Secure the components to the board with the supplied zip ties (*figures 10 – 12*).

4. On the backside of the board, solder the leads together that share common letters (e.g., A to A, or B to B to B, etc.) using the supplied red hookup wire as necessary. Ensure that no bare wires are touching unintentionally (*figures 13 – 16*).

OPTIONAL: After testing the speaker, you may solder a jumper wire across the 3Ω resistor on the midrange crossover board (*figure 13*) if you prefer greater vocal definition or presence. This is a personal preference and may not be desirable for all listeners. Compare the speaker with and without the jumper, before soldering, to determine which sounds best to you.

5. Cut the following lengths of white wire for the pair of speakers:

1. 17" - Tweeter board to the binding posts
2. 26" - Tweeter board to the tweeter
3. 16" - Mid board to the binding posts
4. 26" - Mid board to the mid
5. 20" - Woofer board to the binding posts
6. 30" - Woofer board to the left woofer
7. 16" - Woofer board to the right woofer

Remove 4" of the outer white insulation from each end of each wire.

NOTE: Crossing bare wires from non-matching letters can degrade sound quality and damage the drivers or amplifier. To make a connection across another wire, prevent issues, and ensure you use the red insulated hookup wire supplied in your kit.

NOTE: Inductors have an insulating coating. You cannot solder directly to the red- or orange-colored portions of the inductor wire, or you will cause an open circuit. Solder to the pre-tinned leads (silver portion) to ensure proper connection.

6. Insert the red wire through the IN+ hole on the front of the SmartNode board and solder to the appropriate letter on the rear (*figure 17*).

Insert the black wire through the IN- hole on the front of the SmartNode board and solder it to the appropriate letter on the rear.

7. Insert the red wire through the T+ hole on the front Smart Node board and solder to the appropriate letter on the rear. Insert the black wire through the T- hole on the Smart Node board and solder to the appropriate letter.

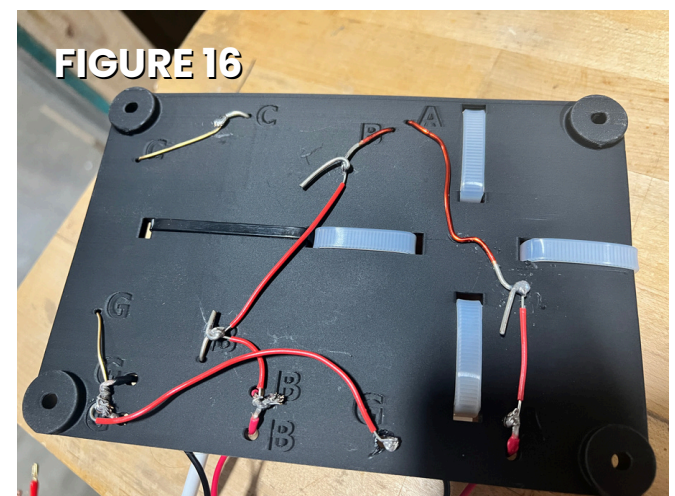
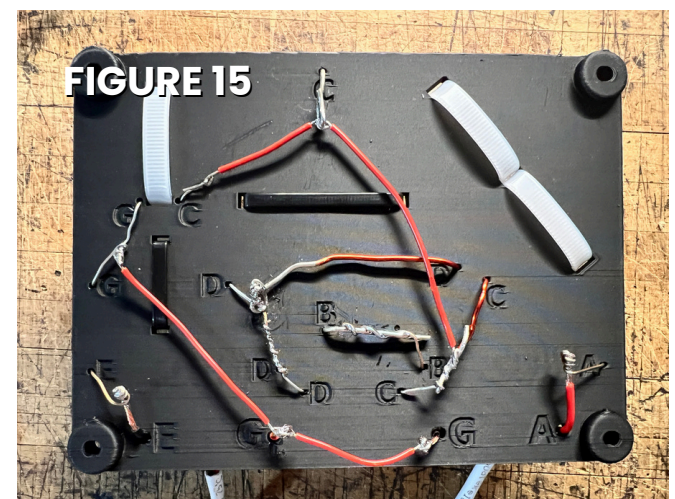
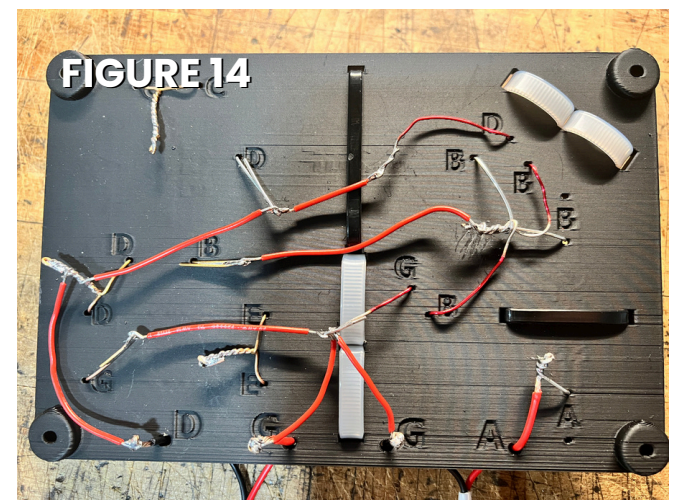
8. Insert the red wire through the W+ hole on the front of the Smart Node board and solder to the appropriate letter on the rear. Insert the black wire through the W- hole on the front of the Smart Node board, then solder it to the appropriate letter on the rear.

9. Identify the red quick-disconnect and black quick-disconnect that match the designated wires. Each will receive a quick connect. Strip small amounts of insulation from the matching colored wire. Insert the insulated connection cover. Trim exposed copper wire as needed. Crimp the connector to the exposed portion of the wire. Solder can be used on the crimped portion of the wire to provide a more secure connection.

NOTE: Do **NOT** crimp the quick-connect terminals onto the midrange and tweeter wires yet. These connectors must be installed after the crossover boards are mounted and the wires have been routed through the holes in the center brace. Return to this step after completing the Crossover Board Installation section.

Your kit includes four quick-connect terminals: small red, small black, large red, and large black. The small red and black terminals are used for all driver connections. The large red and black terminals are used to join the three input wires and connect them to the binding posts. Verify the quick-connects fit securely on their terminals before crimping (*figure 18*).

NOTE: If quick-connects do not fit snugly on a terminal, use pliers to squeeze a little at a time until the fit is tight.



10. Pull the tweeter wire through the tweeter hole and slide the quick connects onto the tweeter terminals – large to large and small to small (*figure 19*). Give the wires a light tug to check the grip. If they slide off easily, close the opening a little on the quick connects with a pair of pliers and repeat until a snug fit is achieved. Then install the tweeter in the proper place using the included screws.

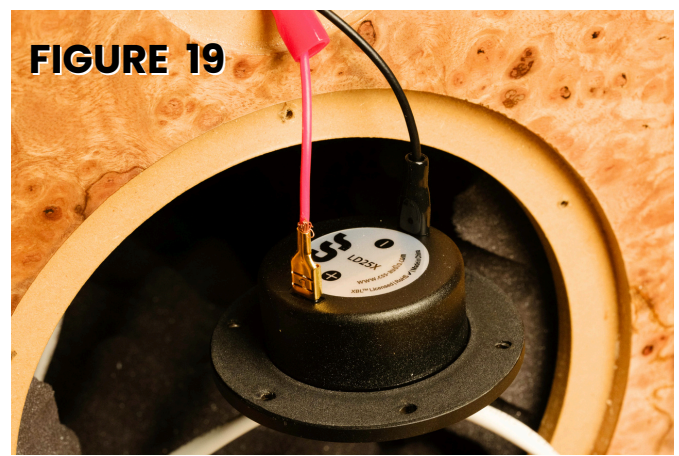


FIGURE 19

11. Repeat step 8 for the woofer (*figure 20*).



FIGURE 20

Final Assembly

CAUTION: It is recommended to test your speaker after final assembly by starting at a very low volume and listening to each driver by placing your ear close to it. You should hear highs coming from the tweeter and lows from the woofer. You should hear no crackling or static. If everything sounds normal, proceed to turn up the volume and enjoy.

1. Connect the binding post to the input wires. Keep in mind that the quick connects may need to be compressed a little for a tight slide-on fit with a pair of pliers (*figure 21*). Insert the binding post plate into the opening and screw it in place using the supplied #6 x 1" screws (*figure 22*).

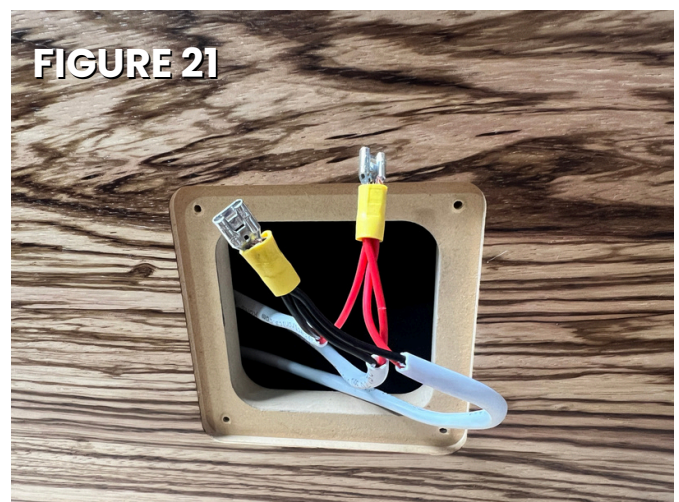


FIGURE 21



FIGURE 22

2. Crossover Boards

Mount the crossover boards inside the cabinet as follows (*figure 23*):

- Midrange crossover board: Mount against the back panel behind the left woofer.
- Tweeter crossover board: Mount to the bottom panel behind the left woofer, in the same opening as the midrange crossover board.
- Woofer crossover board: Mount to the bottom panel behind the right woofer, pushed as far back as possible.

Ensure all boards are securely mounted and do not interfere with the drivers or internal wiring.

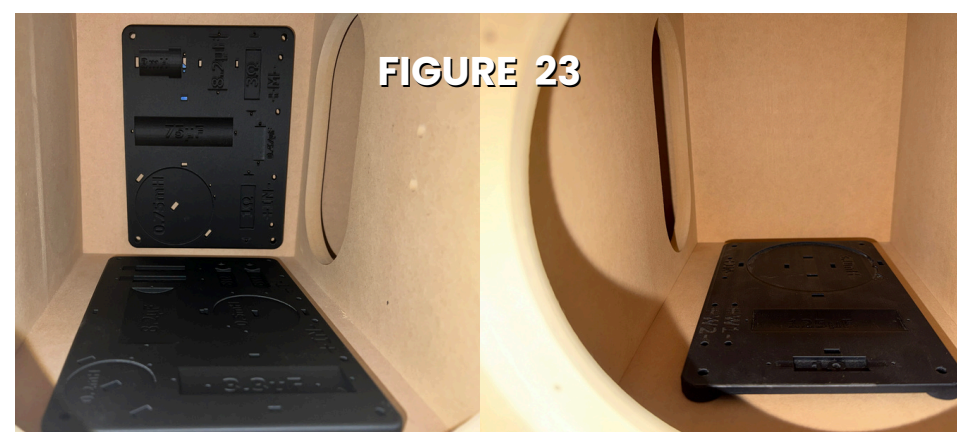


FIGURE 23

Route the wire pair from the +M– terminals through one of the holes in the bottom of the midrange enclosure and mark the hole “M” for future reference (*figure 24*).

Route the wire pair from the +T– terminals through the remaining hole in the bottom of the midrange enclosure and mark the hole “T” for future reference (*figure 24*).

Allow slight slack near the crossover boards while keeping most of the wire inside the midrange enclosure.

3. Foam

Cut the foam panels as shown in (*figures 25 & 26*).

- Cut one 24" × 10.5" panel into three equal sections (approximately 8" × 10.5").
- Set aside two sections for the cabinet side walls.
- Cut the remaining 8" × 10.5" section in half to create two pieces (approximately 5" × 6") for the rear panel.
- Cut the second 24" × 10.5" panel into four equal sections (approximately 6" × 10.5") for the upper and lower side panels behind the woofers.
- From the remaining half panel, cut two pieces approximately 6" × 6" for the short cabinet wall adjacent to the tweeter and midrange.

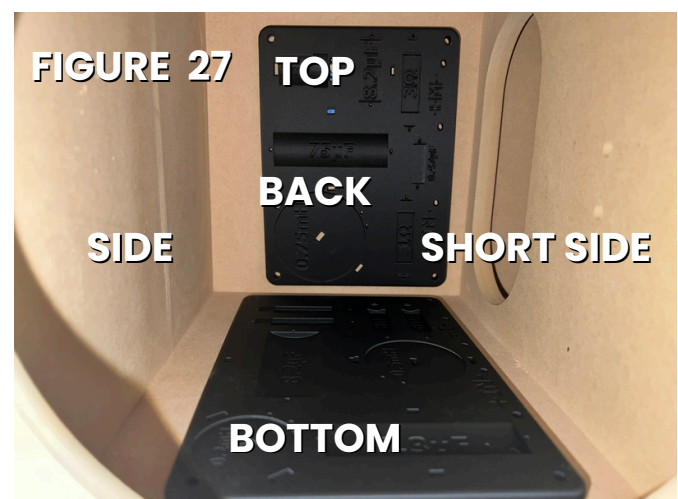
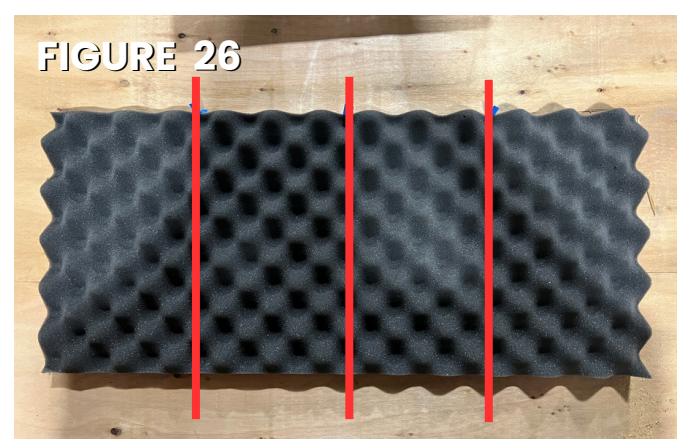
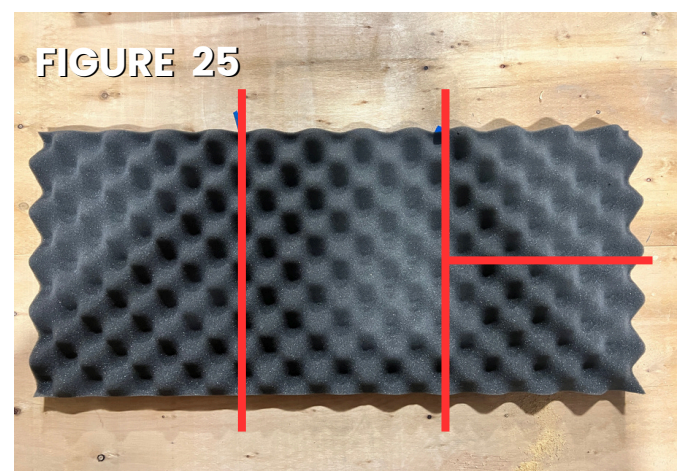
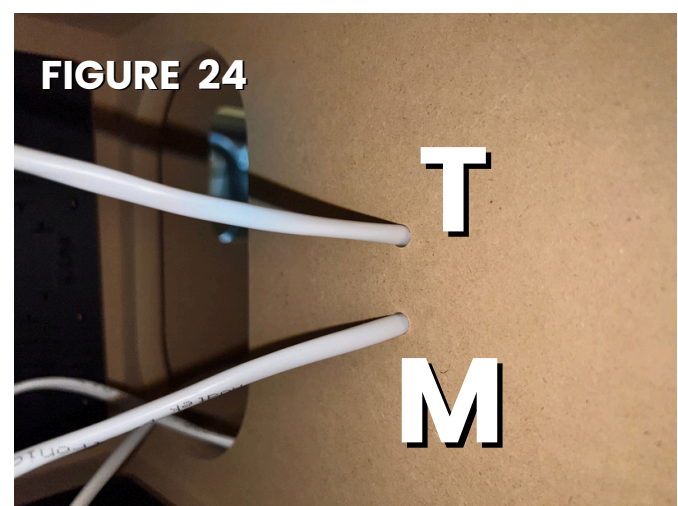
NOTE: Pieces may need to be trimmed to ensure the best fit.

Place the piece of denim in the chamber behind the tweeter and midrange.

4. Drivers

- a. Pull the tweeter and woofer wires from the crossover board through the appropriate driver holes in the front of the cabinet. Connect the wires to the appropriate driver, then install the drivers in the cabinet using the provided screws (*figure 28*).

CAUTION: It is recommended to test your speaker after final assembly by starting at a very low volume and listening to each driver by placing your ear close to it. You should hear highs coming from the tweeter and lows from the woofer. You should hear no crackling or static. If everything sounds normal, proceed to turn up the volume and enjoy.



Troubleshooting

1. **No Sound From the Whole Speaker** - No sound from one or both speakers typically means you have a problem on the amp input side of the crossover. Check that your input wires are properly connected to the crossover (including the ground wires returning to the negative connection) and to the binding post side. Ensure the input wires and binding posts are not shorted by stray wires or other metal, which could create a conductive path between the negative and positive.
2. **No Sound From One Driver** - No sound from a single driver most typically results from a bad connection in the crossover. Review all connections to make sure only similar letters are on the same connection points. Ensure inductors are properly connected to tinned/bare wire, not over the insulation. Ensure there are no loose connections anywhere.
3. **Crackling Sound** – Crackling sounds are usually the result of a loose connection. Check to make sure you have secure connections on all driver and binding post wiring. Ensure crossover wiring has a solid connection, and solder welds are tight. You should see no movement in the joint itself. Check crossover wiring for any bare wires that are inadvertently touching where they shouldn't. If the source cannot be identified, contact us.
4. **Amp Shuts Down** – An amp shutting down is likely caused by a straight short to ground, meaning your amp is seeing minimal or no resistive load. The most likely cause is wiring touching where it shouldn't be. Check crossover wiring for any bare wires that are inadvertently touching where they shouldn't. Ensure that binding post terminals are not inadvertently touching. An amp shutting down is likely a straight short to ground, meaning it's seeing no resistive load. If the source cannot be identified, contact us.
5. **Lack of Bass** – There are a few things that can cause a lack of bass. Check to make sure all your connections have the same polarity on both the inside and the outside of the binding post. Inverting the polarity of one speaker will cause bass cancellation. Ensure there is free airflow around the port openings and that they are not blocked by stuffing material. Ensure the woofer is connected to the woofer W +/- section of the SmartNode board and not the tweeter T +/- section. Ensure the port is adjusted to the correct length. If the source cannot be identified, contact us.