

Skyline 3-Way Dual 6-1/2" Tower Kit

Thank you for purchasing the Skyline speaker kit. This speaker kit was precision cut using CNC machinery for the best possible fit and finish. With a little time and patience, your finished product will provide years of enjoyment. Please follow the following instructions for the best possible results.

Suggested tools and consumables:

| | |
|--|---------------------------|
| Drill | Rag or paper towels |
| 3/8" drill bit | Solder |
| Wood clamps (you can never have too many of these) | Soldering iron |
| Sanding block and/or electric finishing sander | Hot glue gun |
| Wood glue | Binding post/terminal cup |

Package contents:

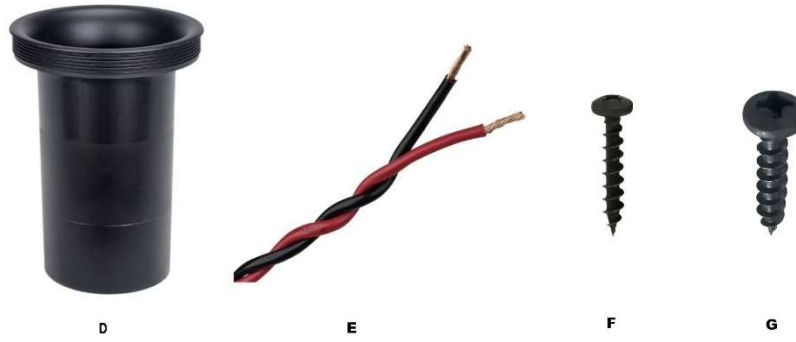
First, empty the contents of the package and review parts to ensure everything has been included and is in good condition. If any parts are missing or damaged please contact our customer service department at 1-800-338-0531.

Note: Crossover components may be substituted with parts of equal or higher quality depending on stock.

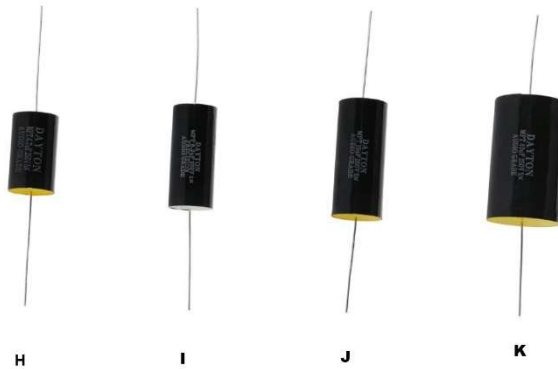
Components:



- A) 2 x Dayton Audio SIG180-4 6.5" Signature Series Woofer 80W Driver 4 Ohm
- B) 1 x Dayton Audio RS150P-8A 6" Reference Paper Woofer
- C) 1 x Epique High Resolution Ceramic Dome Tweeter 30mm 4 Ohm EC30-4



- D)** 1 x Port Tube 3-3/4" ID x 7-5/8" L Flared
- E)** 10 x Audtek 1 ft. 16 AWG Stranded OFC Twisted Pair Speaker Cabinet Hookup Wire Red/Black
- F)** 1 x 25-Pack #6 x 3/4" Pan Head Deep Thread Black Screws
- G)** 1 x 25-Pack #8 x 3/4" Pan Head Deep Thread Black Screws



- H)** 1 x Dayton Audio DMPC-4.7 4.7uF 250V Polypropylene Capacitor
- I)** 1 x Dayton Audio PMPC-8.2 8.2uF 250V Precision Audio Capacitor
- J)** 1 x Dayton Audio DMPC-15 15uF 250V Polypropylene Capacitor
- K)** 1 x Dayton Audio DMPC-40 40uF 250V Polypropylene Capacitor



L

M

N

- L) 1 x Dayton Audio DPR20-7 7 Ohm 20 Watt Precision 1% Audio Grade Resistor
- M) 1 x Dayton Audio DPR20-4.0 4 Ohm 20 Watt Precision 1% Audio Grade Resistor
- N) 1 x Dayton Audio DPR20-2.7 2.7 Ohm 20 Watt Precision 1% Audio Grade Resistor



O

P

Q

R

- O) 1 x Dayton Audio LW18-22 0.22mH 18 AWG Perfect Layer Inductor
- P) 1 x Dayton Audio LW141-2 1.2mH 14 AWG Perfect Layer Inductor
- Q) 1 x Jantzen 1070 3.3mH 18 AWG Air Core Inductor
- R) 1 x Dayton Audio LW185-5 5.5mH 18 AWG Perfect Layer Inductor



S

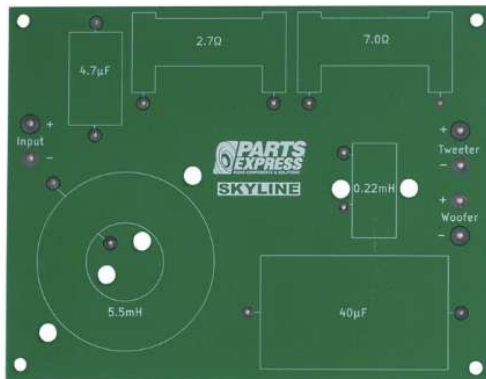


T



U

- S) 1 x Sonic Barrier 1" Acoustic Sound Damping Foam with PSA 18" x 24"
- T) 1 x Sonic Barrier 1/2" Acoustic Sound Damping Foam with PSA 18" x 24"
- U) 2 x Sonic Barrier Acousta-Fill Polyfill 1 lb. Bag



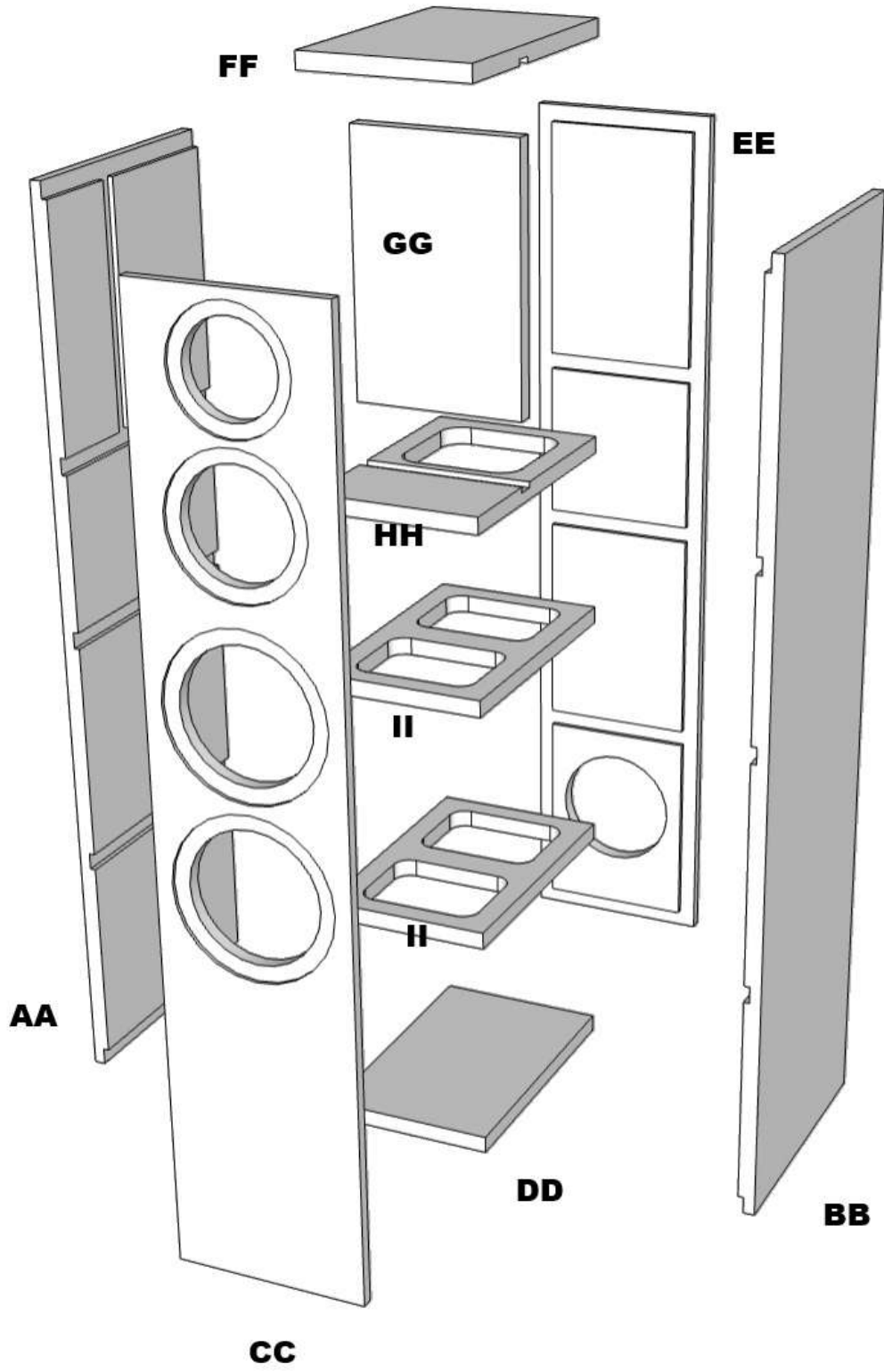
V



W

- V) 1 x Woofer & Tweeter Crossover Board
- W) 1 x Midrange Crossover Board

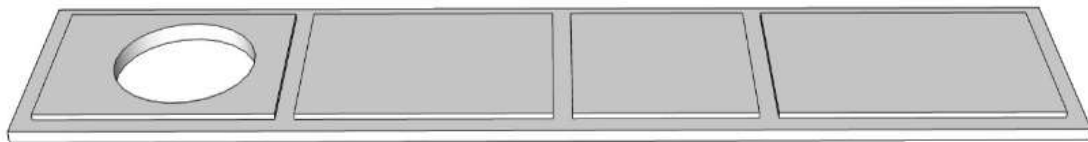
Enclosure

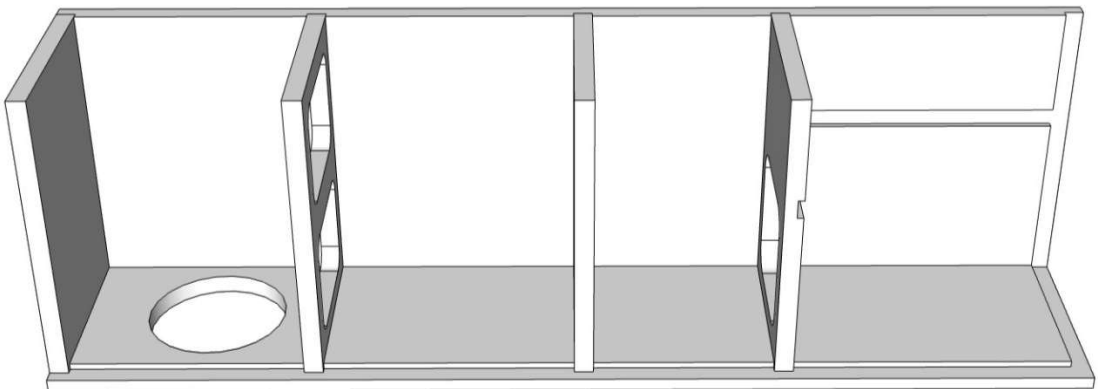
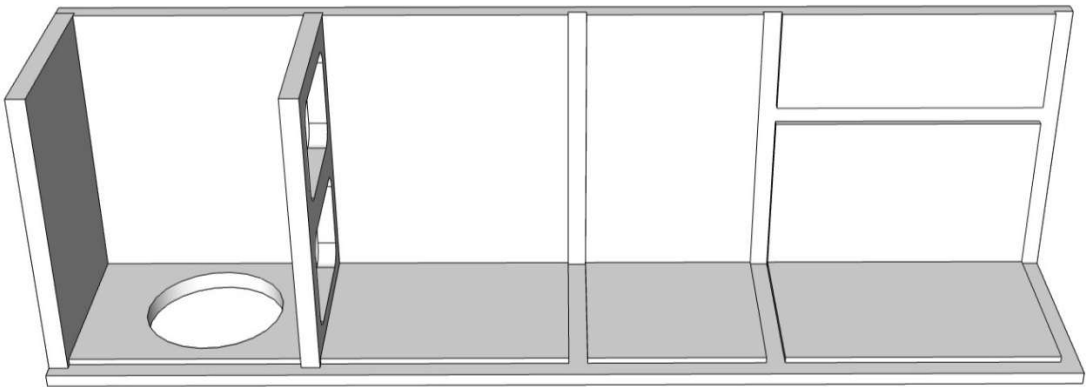
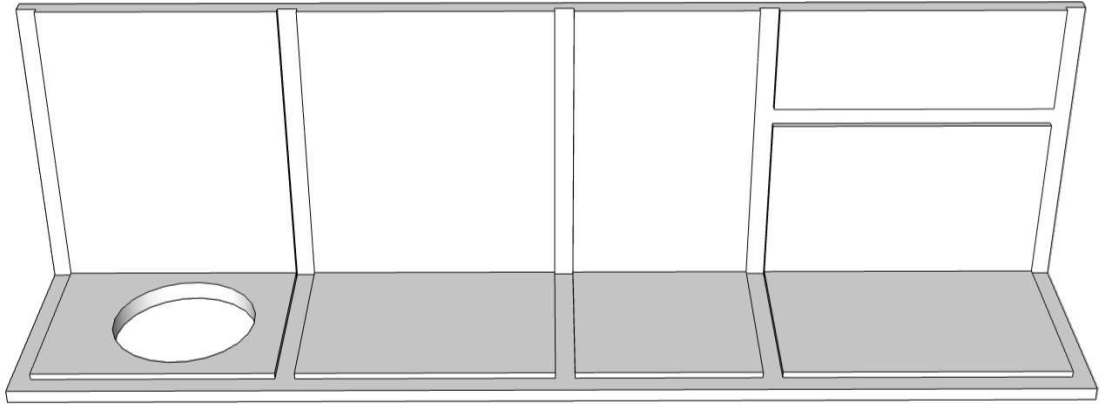


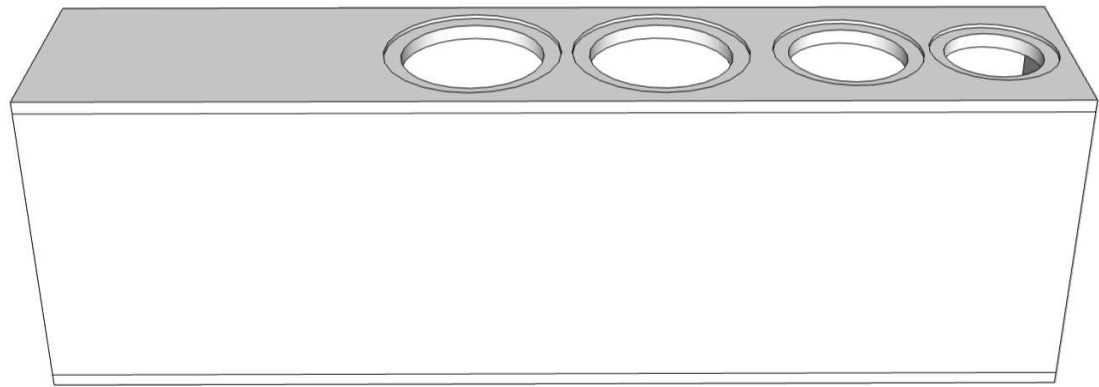
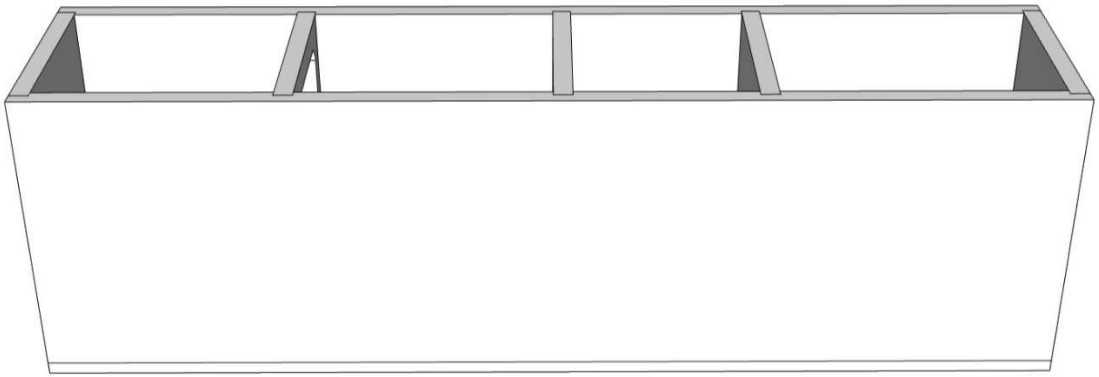
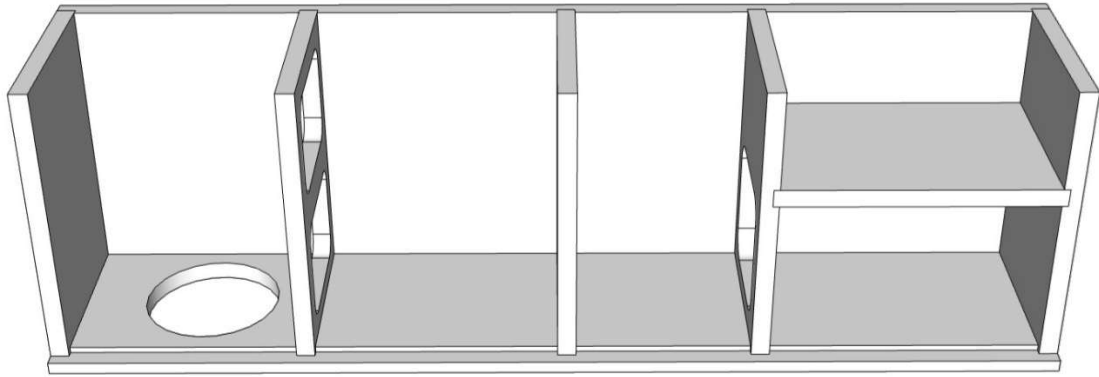
- AA) 1 x Left side
- BB) 1x Right side
- CC) 1 x Front baffle
- DD) 1 x Bottom
- EE) 1 x Back
- FF) 1 x Top
- GG) 1 x Midrange Chamber back panel
- HH) 1 x Top brace/Midrange chamber bottom
- II) 2 x Window brace

Enclosure Assembly:

1. First, take the back panel and cut or drill holes required for the speaker termination of your choice (binding posts, terminal cup, Speakon, etc...). **It is recommended that terminal location be just above the very bottom brace to allow room for mounting the woofer/tweeter crossover board above it on the inside back panel.**
2. Next, take panel HH and drill two 3/8" diameter holes in the solid end (the end closest to you in the photo above). These holes will be for the midrange and tweeter wires later.
3. Set the enclosure parts out on a flat level surface and ensure that all pieces are free of dust and debris.
4. With the back panel lying flat, glue all mating surfaces of each panel in the order shown below. Make sure all mating surfaces are flush with each other and clamp glued joints together. Using a damp rag or paper towel, wipe away any glue squeeze-out on the outside of the enclosure (excess glue on the inside is fine). Allow to dry according to the glue manufacturer's recommendations between each step.





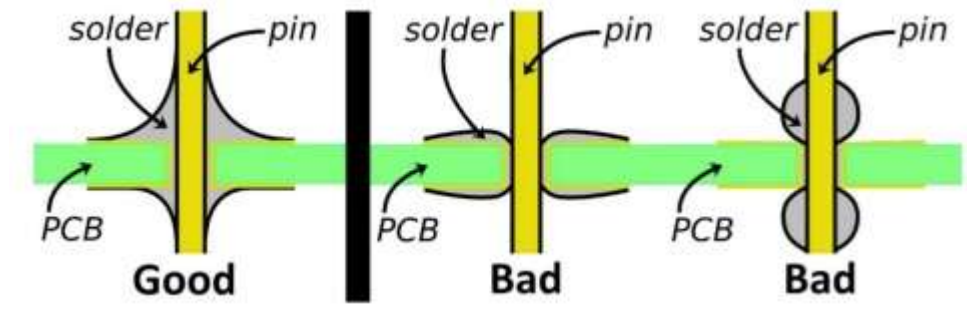


5. Sand and finish enclosure to your liking. See our web page for examples.

Crossover assembly:

The Skyline speaker kit includes custom printed circuit boards for simple crossover assembly. Each component location is labeled and made to fit perfectly into place. For this step, hot glue and zip-ties are recommended for holding components in place.

1. Unwrap and lay out all crossover components, including the printed circuit boards (PCB's).
2. Separate each board with its required components, matching the component value to the value on each PCB. One is for the midrange, one is for the woofer and tweeter.
3. Starting with capacitors, place them in their respective positions on the board, bending the leads to slide through the holes. Use a dab of hot glue to help hold the component to the board for soldering later. Once the component is mounted and glued, bend the leads on the backside so the board lays flat. Repeat with all capacitors, followed by resistors.
4. Inductors follow the same principle, but not all inductors lay flat. The 0.22 mH and 3.3 mH inductors will stand on one end, while the 5.5 mH and 1.2 mH will lay flat. Dry-fit the inductors before gluing, ensuring the lead wires match the hole traces in the PCB. Once these are established, glue the inductors down while feeding the lead wires through the holes. **Note: Only the tinned (silver) portion of the lead wires can be soldered, so do not pull them too far through the holes.** Once the inductors are glued down, bend the lead wires over on the back side.
5. Using the provided holes in the board, zip-tie each inductor to the board for added security. The inductors standing on their ends get one zip-tie, the inductors lying flat receive two.
6. Flip boards over and solder each lead wire carefully, filling the trace and ensuring no cold solder joints.



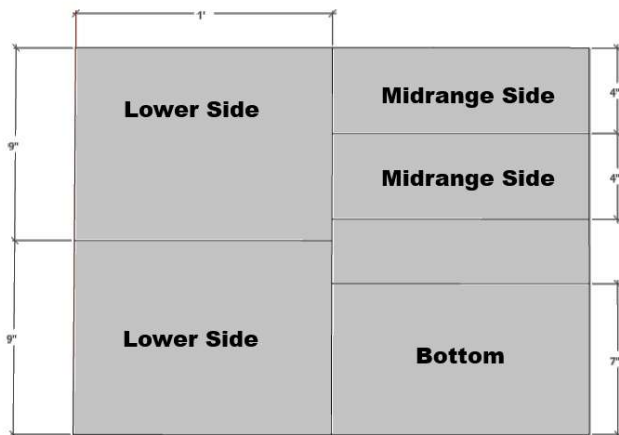
7. Once soldering is complete, trim all excess lead wires as close to the board as possible.
8. Next, cut included speaker wire to the following lengths:
 - a. Tweeter: 34"
 - b. Midrange: 24"
 - c. Woofer: 20"
 - d. Input 1: 12"
 - e. Input 2: 20"
 - f. Remaining wire will be split and used for the series connection between woofers.
9. Strip one end of the tweeter, midrange and woofer wires back roughly 3/8" and feed the stripped end through the corresponding holes on the boards from the top, following proper polarity, red to + and black to -. Pre-tinning these wires may not allow them to fit in the holes on the PCB.
10. Flip boards over and solder, following the same rules as step 6 above.
11. Strip one end of each input wire and follow the same instructions as step 9. Solder input 1 wire into the woofer/tweeter board, and input 2 wire into the midrange board.



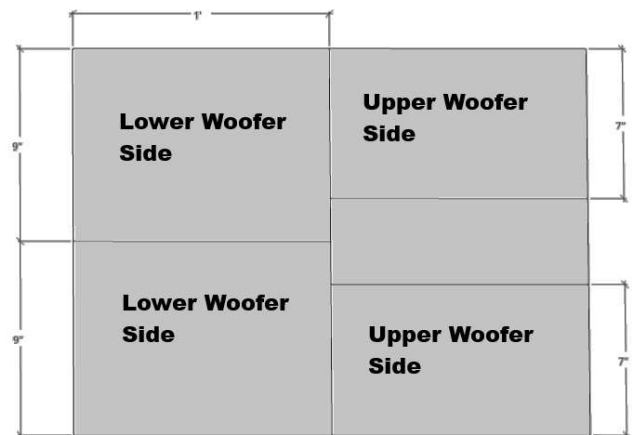
Your crossover boards are now ready for installation into the cabinet.

Final Assembly:

1. Insert the midrange crossover board through the top woofer opening, mounting it against the back of the cabinet with hot glue, polyurethane glue or four screws. Feed the midrange output wire from the crossover through one of the 3/8" holes you drilled before cabinet assembly, into the midrange/tweeter chamber.
2. Insert the woofer/tweeter crossover board through the lower woofer opening, mounting it to the back of the cabinet against the brace that is in between woofer holes using hot glue, polyurethane glue or four screws. Feed the tweeter output wires through the second 3/8" diameter hole into the midrange/tweeter chamber. Labeling the midrange and tweeter wires is recommended.
3. Strip and twist both crossover input wires together, red to red, black to black, and solder to your choice of binding post or terminal cup, and install.
4. Cut the Sonic Barrier foam sheets as shown below:

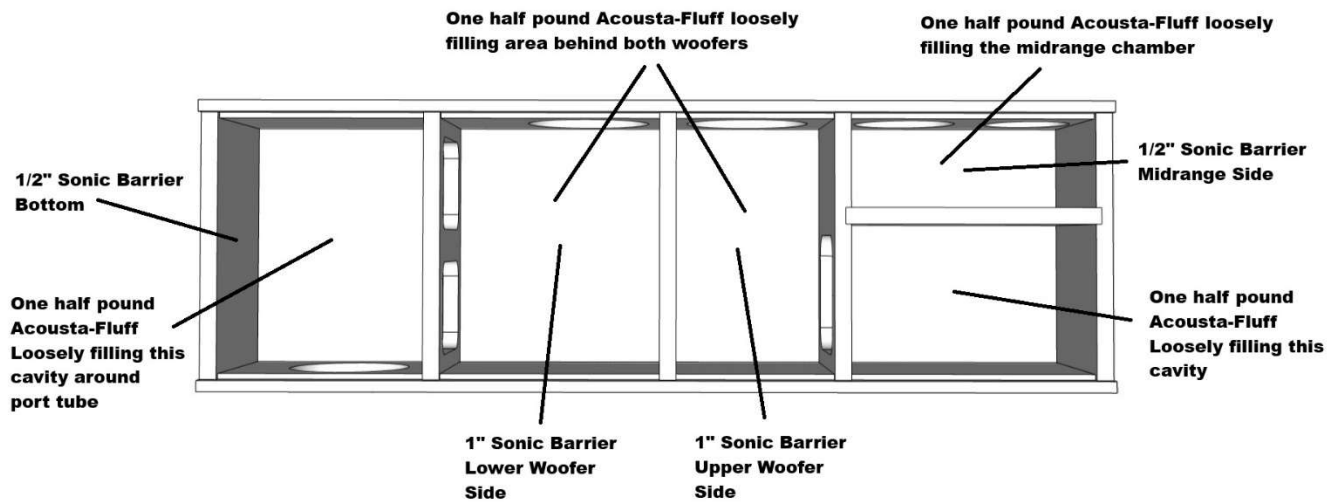


1/2" Sonic Barrier



1" Sonic Barrier

5. Install Sonic Barrier foam panels and Acousta-Fill damping materials in the areas shown below, using woofer and port openings for access.



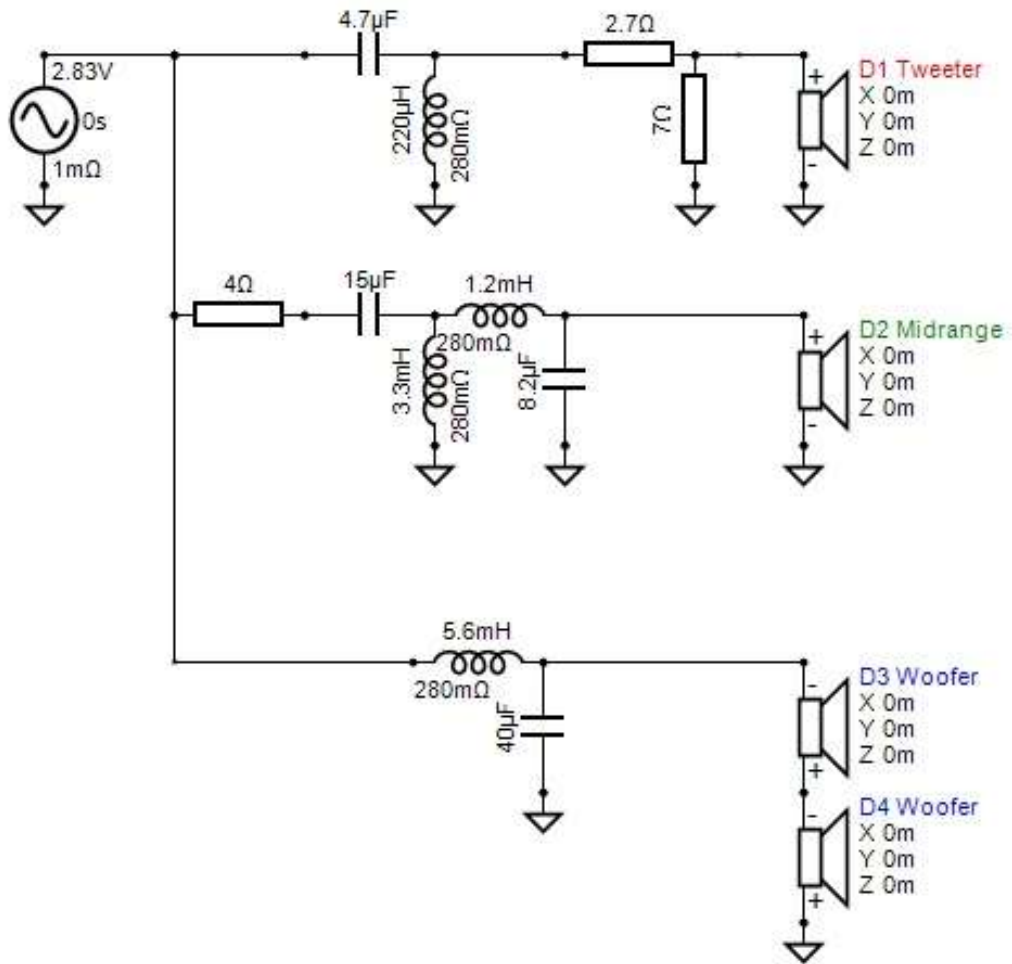
6. Once damping materials are installed, install the midrange and tweeter by stripping their corresponding wires about 3/8", tinning the wires and terminals with solder, and soldering wires to terminals, paying close attention to polarity. Install tweeter and midrange using the included #6 wood screws.
7. The woofers are wired in series, so unwind about a foot of the woofer wire since it will have to be soldered to both woofers. Solder the positive red lead to the top woofer positive (+) and the negative lead to the bottom woofer negative (-). Using the leftover wire, connect the remaining two woofer leads together, negative (-) from the top woofer to the positive (+) of the bottom woofer. Be sure the series wire is fed through the cabinet.
8. Install woofers using #8 wood screws.
9. Install the press-fit port tube on the rear of the cabinet.
10. You are now ready to listen to your speakers!



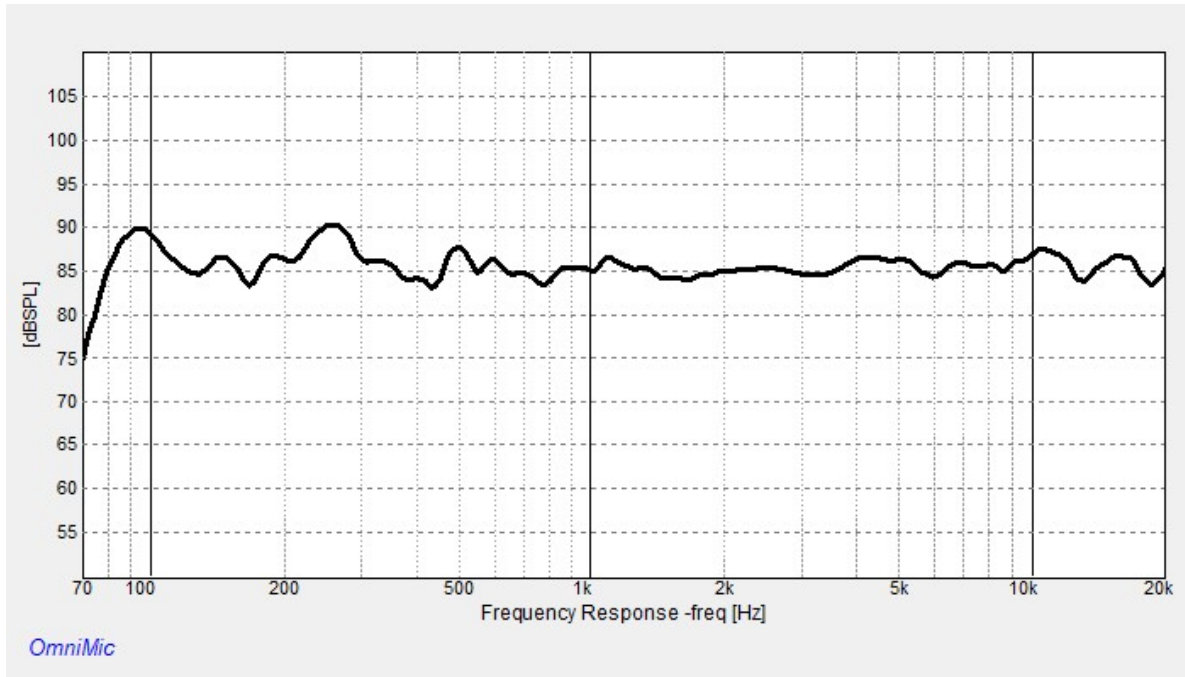
Additional parts used:

- | | |
|----------|---|
| 091-1245 | Dayton Audio BPA-38G HD Binding Post Banana Jack Pair Gold |
| 240-773 | Dayton Audio OS-2S Outrigger Speaker Spike Set 11-3/4" Wide with Black Steel Base 2 Pcs |
| 260-048 | Band-It Walnut Veneer 24" x 96" Paper-Backed |

Crossover Schematic:



Measured Frequency Response:



Note: Frequencies below 500 Hz are room dependent and not necessarily accurate

Impedance and Phase:

