

Passive Aggressive Mini-Speaker Kit

Thank you for purchasing the Passive Aggressive mini-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
5/64" 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
Speaker or hook-up wire	Polyurethane glue (Gorilla Glue)
0.11" female disconnect terminal	Cyanoacrylate Adhesive (super glue)
0.205" female disconnect terminal	#6 x 3/4" Pan head wood screws

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 ND20FB-4 Rear-Mount 3/4" Soft Dome Neodymium Tweeter
- B) 2 x Dayton Audio ND91-4 3-1/2" Aluminum Cone Full-Range Neo Driver 4 Ohm
- C) 4 x Dayton Audio ND90-PR 3-1/2" Aluminum Cone Passive Radiators



D



E



F



G



H



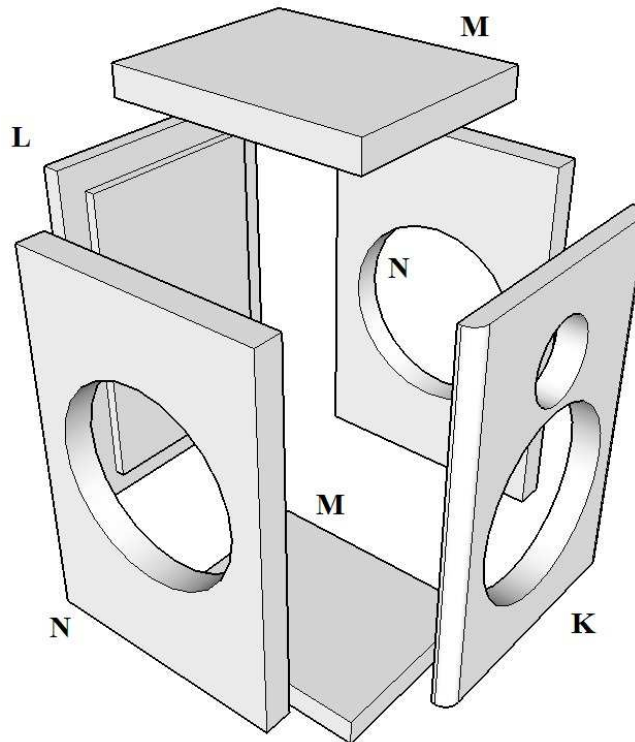
I



J

- D)** 2 x 0.15 mH air core inductor
- E)** 2 x 0.50 mH air core inductor
- F)** 2 x 3 ohm resistor
- G)** 2 x 9.1 ohm resistor
- H)** 2 x 50 μ F capacitor
- I)** 2 x 0.47 μ F capacitor
- J)** 2 x 3.3 μ F capacitor

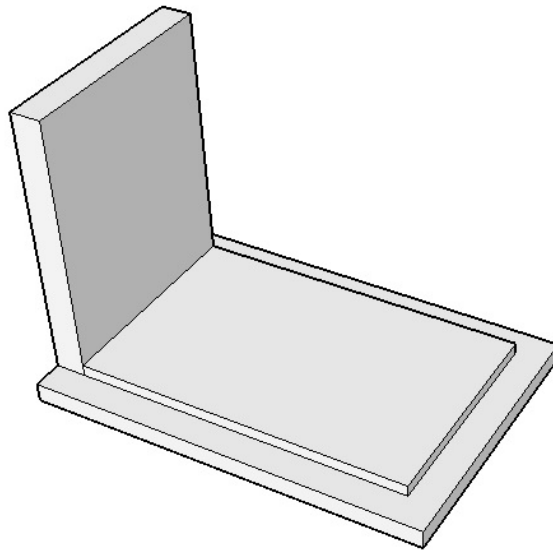
Enclosures:



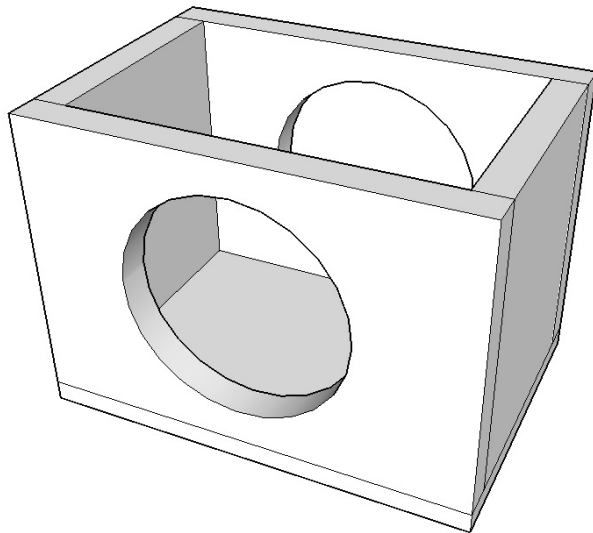
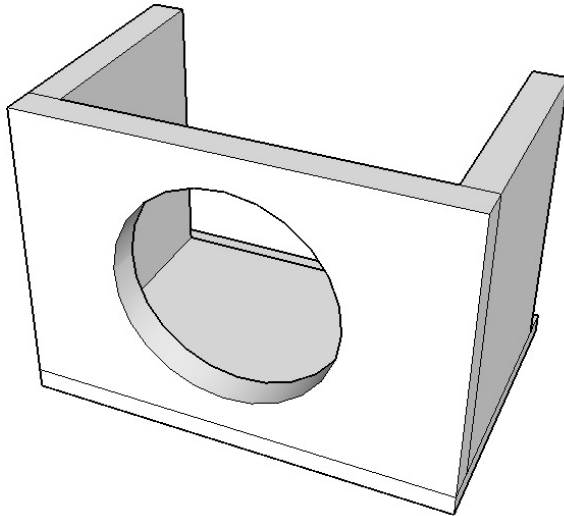
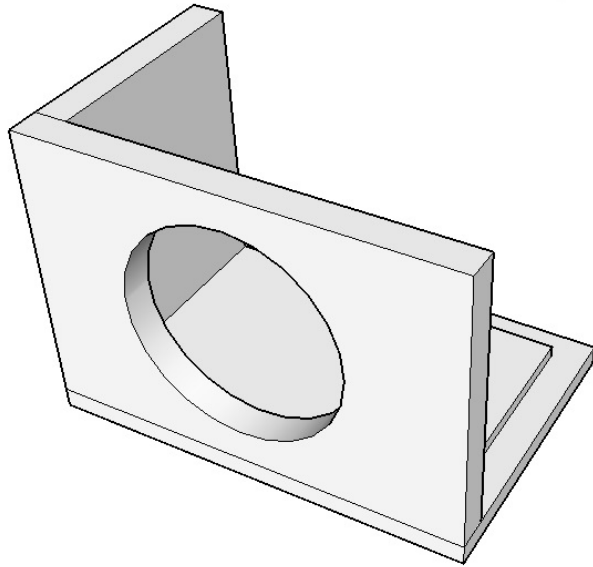
- K)** 2 x Front
- L)** 2 x Back
- M)** 4 x Top/Bottom
- N)** 4 x Sides (*See notes on next page)

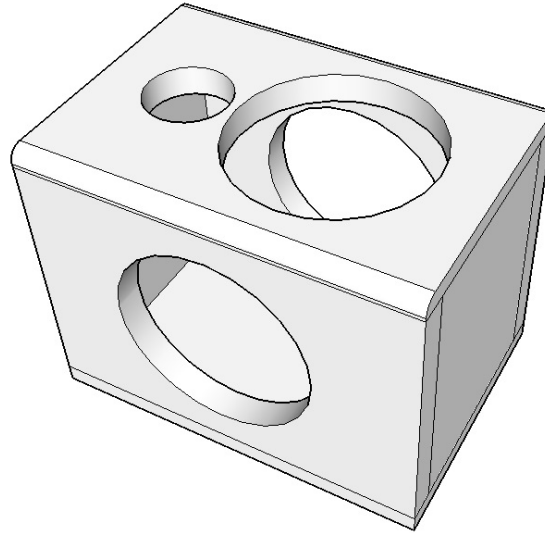
Enclosure Assembly:

- 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...). I would recommend drilling them a couple inches off of the bottom due to the small space allowed for the crossover at the bottom of the cabinet.
- 2) Next, set the enclosure parts out on a flat level surface and ensure that all pieces are free of dust and debris.
- 3) With the back panel lying flat, glue all mating surfaces of each panel in the order shown below. These cabinets are small enough that you should be able to clamp all six sides together at one time using only four or five clamps.

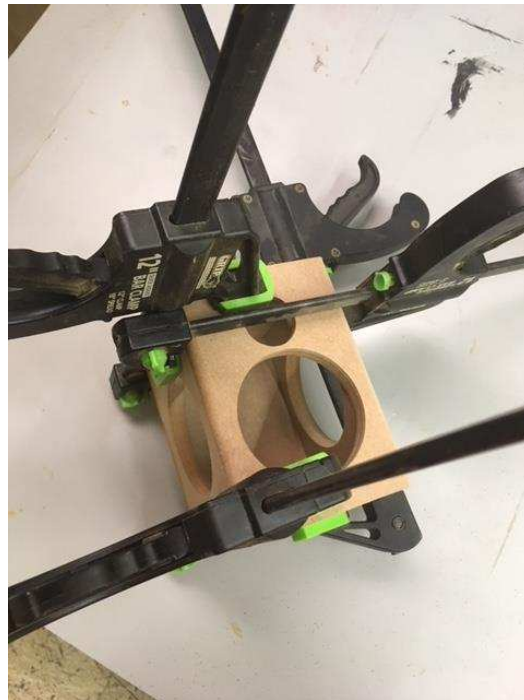


***NOTE: The side panels have slightly offset holes from top to bottom. This is intentional to help clear the threaded rods on the back of the passive radiators under high excursions. Make sure these holes are oriented in opposite up/down directions when gluing these panels. It does not matter which side is which.**



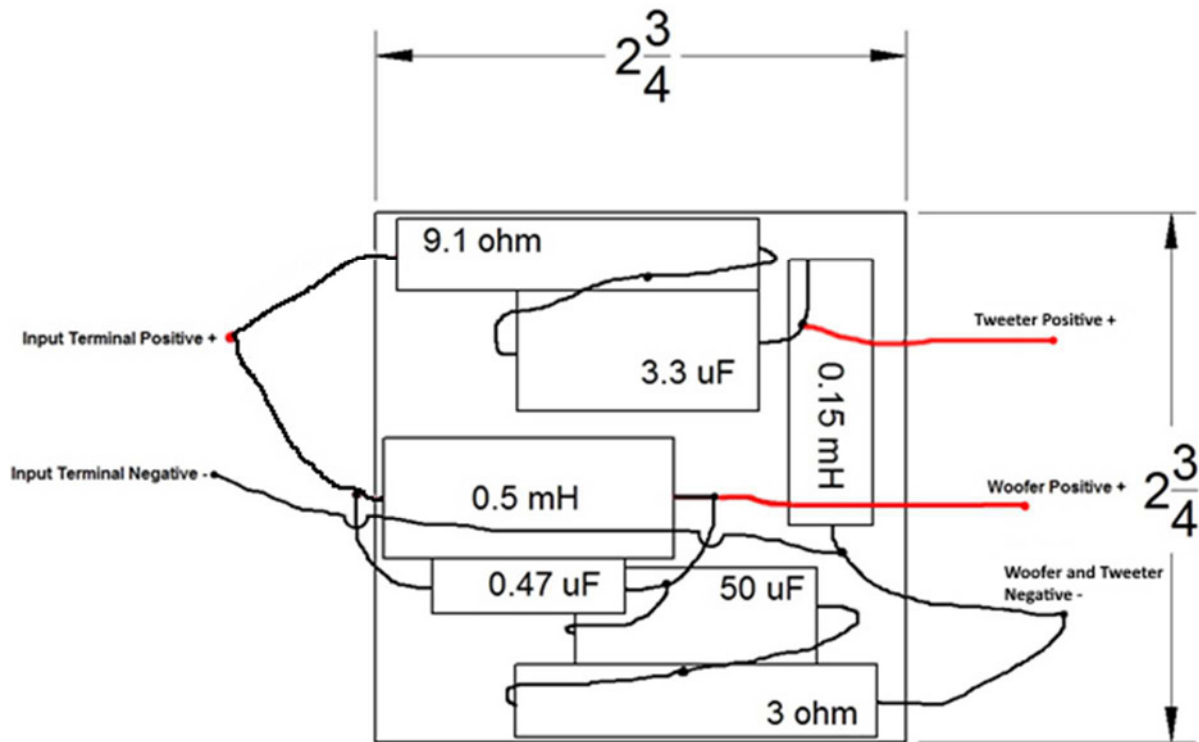


- 4) Make sure all mating surfaces are flush with each other. Apply two clamps from the front to the back panel, one clamp from top to bottom and one or two clamps from side to side.



- 5) 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 and remove clamps.
- 6) Sand and finish enclosure to your liking. See our web page for examples.

Crossover assembly:



Point-to-point wiring diagram

- 7) Arrange the components as illustrated in the point-to-point wiring diagram above so the leads can be connected together as shown. Take careful note of the component type and the value of the component. (The crossover schematic is provided at the end of this assembly guide.) If you would like, the crossover can be mounted to a 2.75" x 2.75" board using hot glue to make handling it a little easier.
- 8) Connect the leads of the components as shown in the diagram by twisting them together or creating interlocking "hooks" with the leads. Double check your layout to ensure all components are in the proper location and connections are correct.
- 9) With a hot soldering iron, apply solder to the connections between components. Heat the junction evenly and verify that the solder flows into the connection rather than forming a "blob" on the surface (cold joint).
- 10) Cut two lengths of 2-conductor speaker wire approximately 8"-12" in length, then solder them at the outputs of the crossover network as shown in the schematic so that the marked polarity of the wire matches the driver polarity shown in the schematic. Label each wire "woofer" or "tweeter" corresponding to the schematic.

- 11) Finally, cut one length of 2-conductor speaker wire approximately 6"-8" in length, and label the length of wire "Input".

Final Assembly:

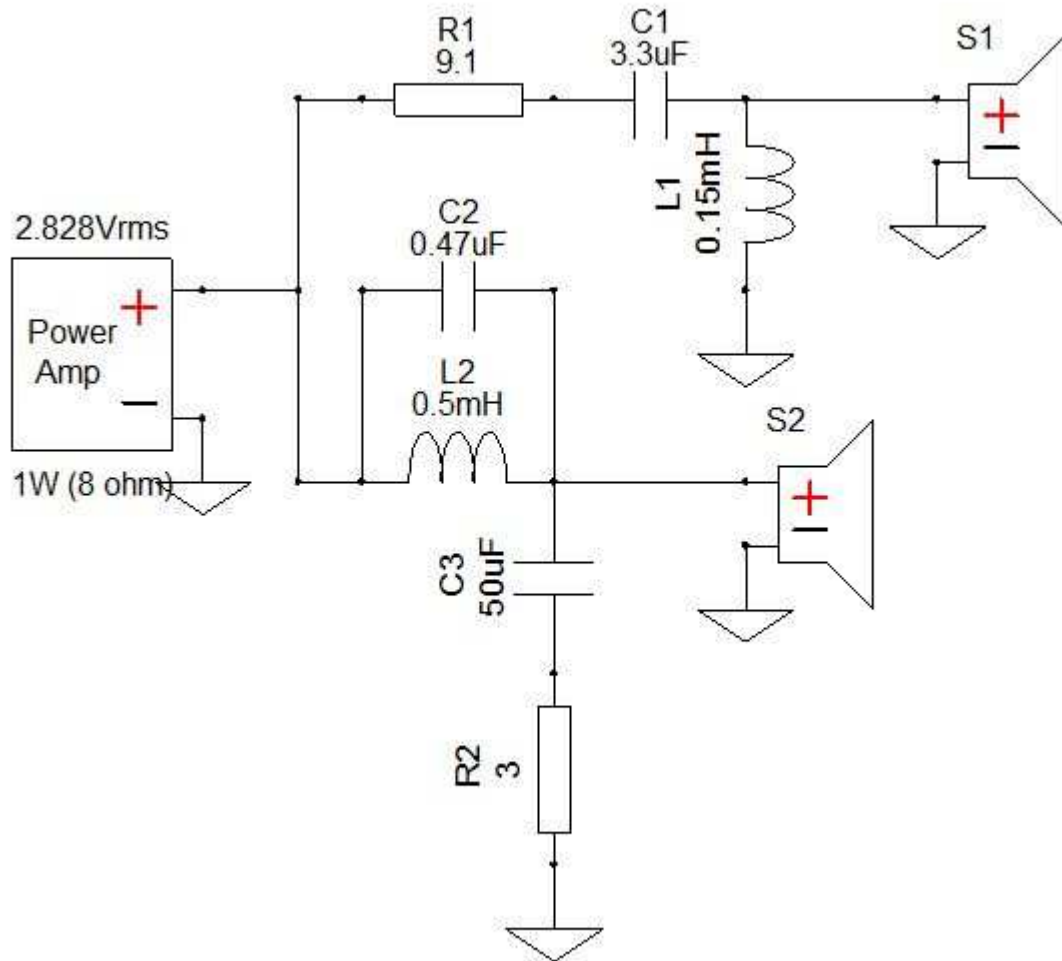
- 12) Insert crossover through woofer hole and glue crossover to the bottom of the enclosure (polyurethane glue, high temperature hot glue gun, or epoxy is recommended). Ensure all crossover components are securely held in place to prevent rattles.
- 13) Install passive radiators, one on each side of the cabinet. In order to achieve the recommended tuning frequency of the system, (about 55 Hz), use two weight discs on each passive but do not use the wing nuts. Make sure the discs are secure but **do not overtighten**. You will risk breaking the glue joints on the passive radiators. I would add a small dot of hot glue across the threaded rod and weight disc to help keep the discs from coming loose.
- 14) Install the rear binding posts and connect the input wires from the crossover while observing polarity (positive = red, negative = black)
- 15) Connect tweeter wires to tweeter terminals while observing polarity (the positive terminal is marked with red marker). The tweeter will have to be installed from the rear of the baffle through the woofer hole. It is a tight fit in the opening but we recommend adding hot glue around the periphery of the tweeter "flange" to help hold it in place.
- 16) Connect woofer wires to woofer terminals while observing polarity. Before installing the woofer, make sure the threaded rods on the passive radiators are clear of any objects or slack wire inside the cabinet. This can cause unwanted rattling during use. Set woofer in place. Using a screwdriver, secure woofer with screws just until tight being careful not to strip out the holes (a power drill is not recommended).
- 17) You are now ready to enjoy your finished Passive Aggressive speakers.



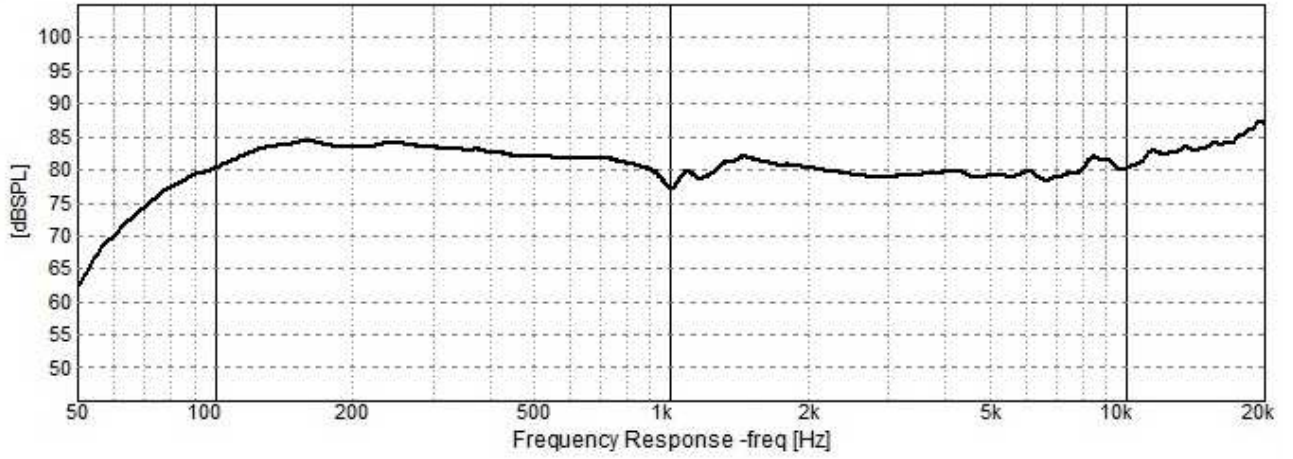
Additional parts used:

091-1245	Dayton Audio BPA-38G HD Binding Post Pair Gold
081-435	Parts Express #6 x 3/4" Deep Thread Pan Head Screws Black 100 Pcs
260-046	Band-It Red Oak Veneer 24" x 96" Paper-Backed

Passive Aggressive Crossover Schematic:



Measured Frequency Response:



Impedance and Phase:

