

C-Sharp Bookshelf Speaker Kit

Thank you for purchasing the C-Sharp powered bookshelf 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:

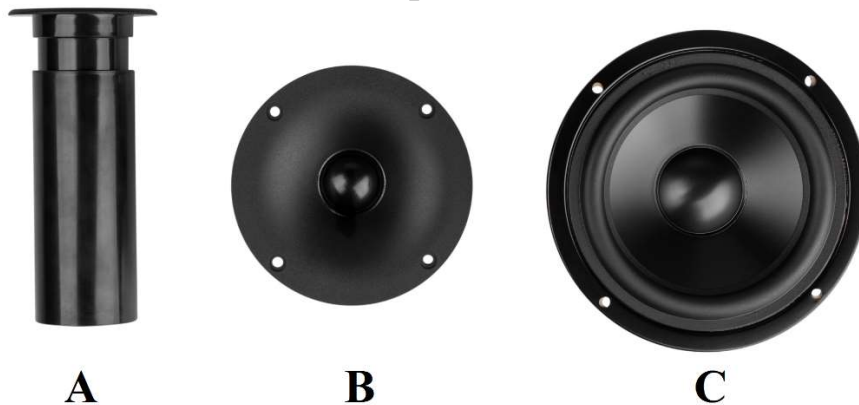
Drill	Rag or paper towels
5/64" drill bit	Solder
Wood clamps (you can never have too many of these)	Soldering iron
Sanding block and/or electric finishing sander	Hot glue gun
Wood glue	Polyurethane glue (Gorilla Glue)
0.11" female disconnect terminal	Cyanoacrylate Adhesive (super glue)
0.205" female disconnect terminal	

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) 1-3/8" ID adjustable port tube
- B) Dayton Audio ND25FW-4 1" Soft Dome Neodymium Tweeter with Waveguide
- C) Dayton Audio DSA135-8 5" Designer Series Aluminum Cone Woofer



D



E



F



G



H



I

- D) 2 x 0.25 mH air core inductor
- E) 2 x 1.40 mH air core inductor
- F) 2 x 6 ohm resistor
- G) 4 x 2.0 μ F capacitor
- H) 2 x 5.1 μ F capacitor
- I) 2 x 6.8 μ F capacitor



J



K

- J) Gold Insulated 5-Way Binding Post Terminal Cup
- K) Lepai LP40PA 40W Mini Plate Amplifier and Control Panel

Not Shown:

- 25-Pack #6 x 3/4" Pan Head Deep Thread Black Screws
- 10' Consolidated 16 AWG 2-conductor Power Speaker Wire 1 ft. (Red/Black)

Enclosures:

- L) Front x 2
- M) Mater Back (R etched onto the inside surface) x 1
- N) Master Top (R etched onto the inside surface) x 1
- O) Slave Back x 1
- P) Slave Top x 1
- Q) Bottom x 2
- R) Sides x 4

Enclosure Assembly:

- 1) First, set the enclosure parts out on a flat level surface and ensure that all pieces are free of dust and debris. Separate the master speaker (with amplifier, right) panels and the slave speaker (no amplifier, left) panels into two separate piles. **Note:** the back and top panels of the master have the letter "R" etched into the inside surface for easy identification. The cutouts on the back panel of the master and slave enclosures are different, but very similar, make sure these do not get mixed up.
- 2) With the back panel of one enclosure lying flat, glue all mating surfaces of the bottom panel and one side panel and secure them to the back panel with clamps so that even pressure is applied to all glued surfaces. Using a damp rag or paper towel wipe away any glue squeeze-out on the outside of the enclosure and inside the rabbeted edge (excess glue on the inside is fine). Allow to dry according to the glue manufacturer's recommendations and remove clamps.



- 3) Next, glue all mating surfaces of the top panel and the other side panel and secure them in place with clamps so that even pressure is applied to all glued surfaces. 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.

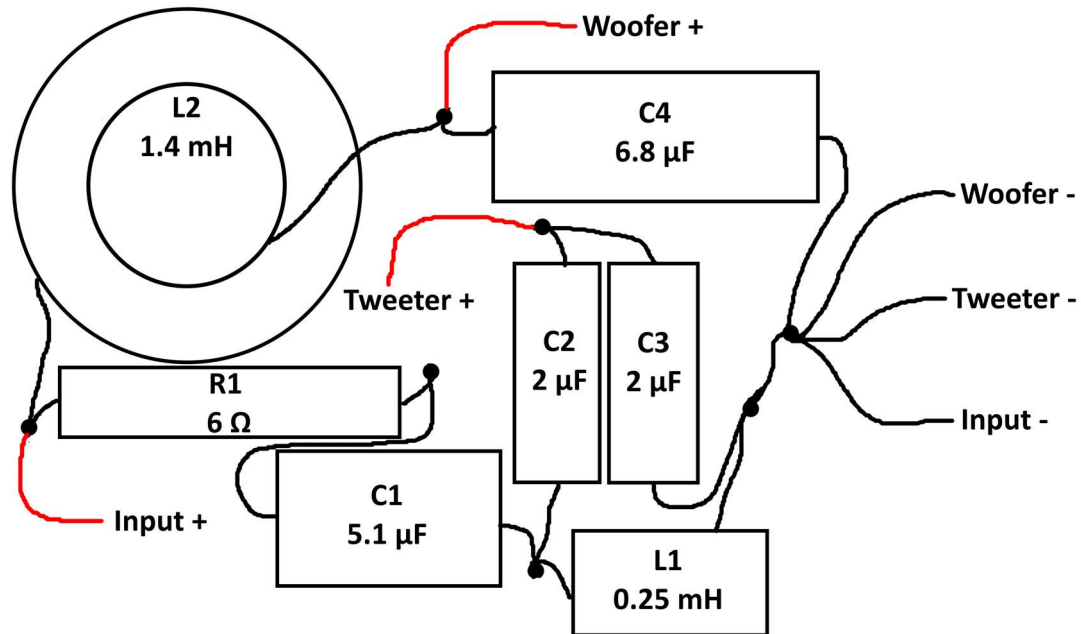


- 4) Finally, apply a thin layer of glue to the front edge of the enclosure. Set the front baffle in place on the glued edge. While ensuring all edges are even and square, position clamps to apply even pressure to all glued surfaces. Wipe away any glue squeeze-out on the outside of the enclosure. At this time double check that all edges are even and square (this cannot be adjusted once the glue is dry). Allow to dry according to the glue manufacturer's recommendations and remove clamps.



- 5) Repeat steps 2-4 for the other enclosure.
- 6) Sand and finish the enclosures to your liking. See our web page for examples.

Crossover assembly:



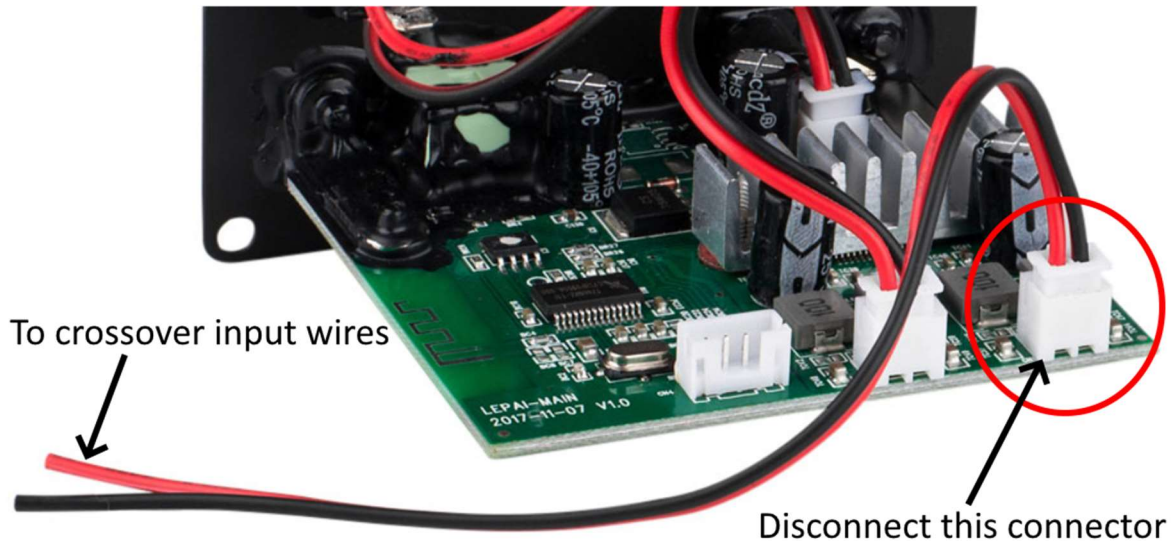
Point-to-point wiring diagram

- 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 3" x 5" board 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 10"-16" in length, then solder them at the outputs of the crossover network as labeled "woofer" and "tweeter" 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"-10" in length. Solder this wire to the "input" connections of the crossover network as shown in the schematic so that the marked polarity of the wire matches the input polarity in the schematic. Label the length of wire "Input".

Note: You may find it easier to solder all the negative (-) connections at once. This connection may require a lot of heat, so take your time and be patient when making this connection.

- 12) Select either crossover for use in the master (right) speaker. Disconnect the 2-pin speaker wire connection from the LP40PA amplifier and connect the tinned ends to the input wires of the crossover. This connection can be made using solder, solderless disconnects, crimp on butt connectors, closed end crimp connectors, or Dolphin connectors. Just make sure this connection is secure and well insulated.



Final Assembly:

- 13)** Insert crossover through woofer hole of both enclosures and glue crossover to the bottom of the enclosure (polyurethane glue, high temperature hot glue gun, or epoxy is recommended). Make sure the crossover with the amplifier output connection is installed in the master (right) speaker enclosure. Ensure all crossover components are securely held in place to prevent rattles.

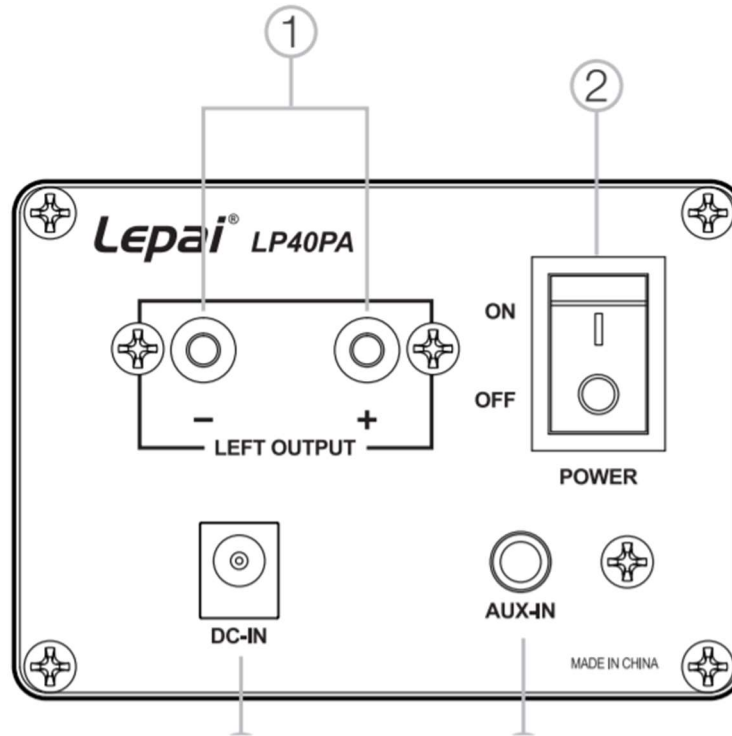


- 14)** Port installation is simple. Slide the adjustable end of the port onto the flanged end and glue in place at the desired length using any glue that is acceptable for use on plastic (super glue, plastic cement, hot glue, etc...). Insert the assembled port into the enclosure and screw into place using the included #6 wood screws. The recommended port length is 7". The length can be adjusted to your taste, a shorter port will result in slightly less bottom end with a tighter punch.
- 15)** Install the Gold Insulated 5-Way Binding Post Terminal Cup in the slave speaker enclosure using the included #6 wood screws, and connect the input wires from the crossover while observing polarity (positive = red, negative = black)
- 16)** Plug one end of the 4-pin control panel data cable into the connector on the back of the control panel (this connector is keyed and will only go in one way, do not try to force the connector into place). Double check that the data cable is long enough to reach from the opening on the top of the master (right) enclosure to the amp cutout in the back (these wires may need to be extended, be careful and extend the wires one at a time to keep from getting them mixed up, if necessary). Press the control panel into the opening in the top of the master (right) speaker enclosure. This should be a tight press fit. This can be glued into place to ensure there are no leaks, but it should not be necessary.

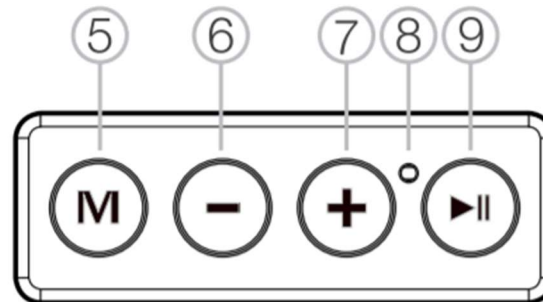
- 17) Set the included gasket in place on the back of the LP40PA plate amplifier. Position the LP40PA amplifier module near the simplifier cutout in the back of the master (right) speaker. Plug the 2-pin speaker wire connection and the 4-pin control panel data cable into the appropriate connectors on the LP40PA amplifier board (these connectors are keyed and will only go in one way, do not try to force the connector into place).
- 18) Insert the LP40PA plate amplifier into the cutout in the back of the master (right) speaker keeping the screw holes in the gasket lined up with the screw holes in the amplifier plate. Using 4 of the included #6 wood screws, screw the amplifier securely into place just until tight, being careful not to strip out the holes (a power drill is not recommended).
- 19) In both enclosures, connect tweeter wires to tweeter terminals while observing polarity and set tweeters in place. Using a screwdriver, secure the tweeters with using the included #6 wood screws, just until tight, being careful not to strip out the holes (a power drill is not recommended).
- 20) In both enclosures, connect woofer wires to woofer terminals while observing polarity and set woofer in place. Using a screwdriver, secure woofer with using the included #6 wood screws, just until tight, being careful not to strip out the holes (a power drill is not recommended).
- 21) You are now ready to enjoy your finished C-Sharp powered speaker system.



LP40PA Plate Amplifier Operating Manual:



Front View of Amplifier



Control Panel

AMP PANEL

1. Output for left speaker
2. Power switch
3. Power input
4. Auxiliary input

REAR PANEL

5. Mode
6. Press - Volume Down / Hold - Skip Back
7. Press - Volume Up / Hold - Skip Forward
8. LED status indicator
9. Play/Pause

AMPLIFIER AND CONTROL PANEL INSTALLATION

The plate amp panel requires a cutout 2.75" x 1.75" (70 x 45 mm) with at least 2.625" (67 mm) depth. Mount the plate to your right speaker cabinet, and connect the included output leads to the terminals of your speaker or crossover network, observing correct polarity.

The control panel requires a cutout approximately 2.6" x 0.79" with at least 1" depth. The control panel is press-fit, and uses no mounting hardware. Different materials will have various degrees of "give" or resistance to the pressure fit of the panel. Therefore, you may wish to cut a test hole(s) in a piece of scrap material to ensure a proper fit, and only cut the hole in your finished cabinet once this has been determined.

Connect the control panel to the amp panel using the included leads, then press the control panel into place.

CONNECTING YOUR SPEAKERS

With the power turned OFF, use high quality wire for the connection between the right and left speakers. For distances up to 10 feet, conventional 18AWG wire is acceptable. For longer runs, heavier wire should be used. For proper performance please observe correct polarity.

BLUETOOTH CONNECTION

Turn the power switch ON. The speaker will enter pairing mode, and the LED indicator will flash blue quickly. Open the Bluetooth menu on your device and select "LP40PA". You will hear two beeps when pairing is complete, and the LED will remain solid blue.

AUX CONNECTION

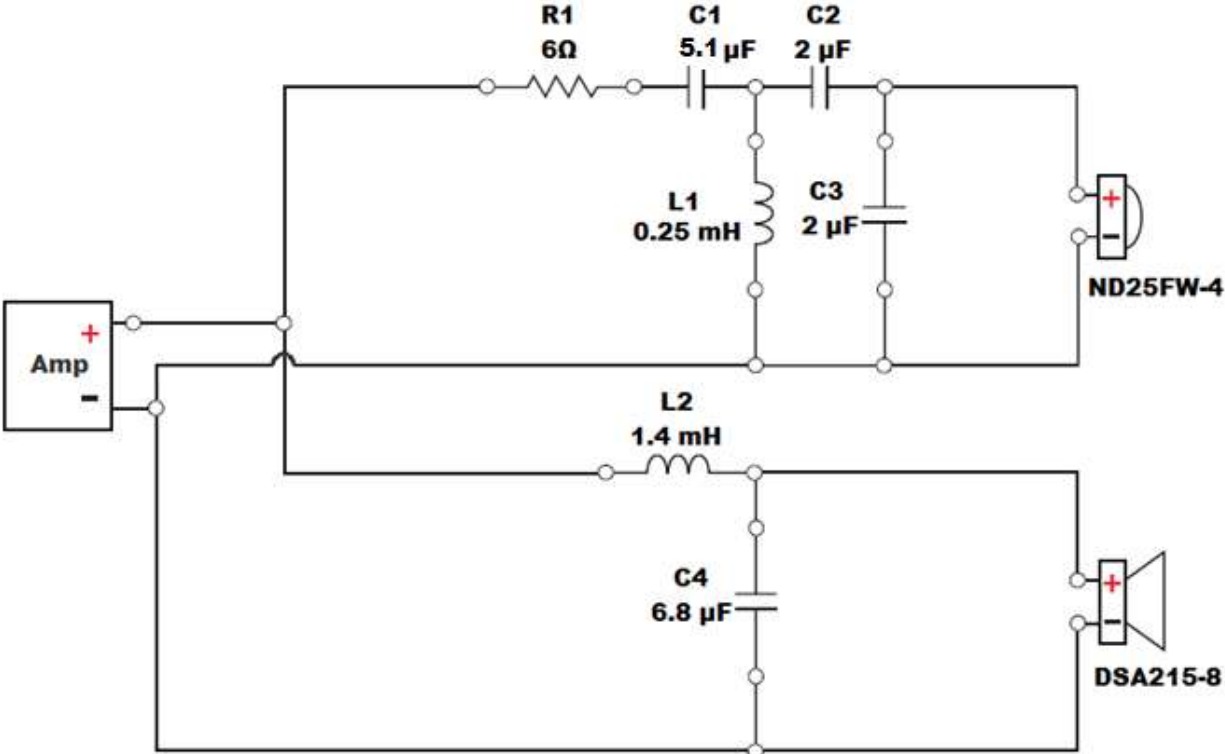
Plug your device into the AUX jack on the right speaker using a 3.5 mm stereo cable (not included). The LED indicator will light solid red to indicate AUX connection.

PLEASE NOTE: for the best sound quality in Bluetooth or AUX mode, we recommend that your device's volume level be set no higher than 90%.

SPECIFICATIONS

Power Output:	20W x 2 RMS; 40W x 2 peak
Minimum impedance:	4 ohms
Power input:	18VDC, 2A (AC adapter included)
Frequency response:	20 - 20,000 Hz
THD + N:	<0.7%
Bluetooth version:	4.2
Bluetooth range:	Up to 30 meters

C-Note Crossover Schematic



Measured Frequency Response with Impedance:

