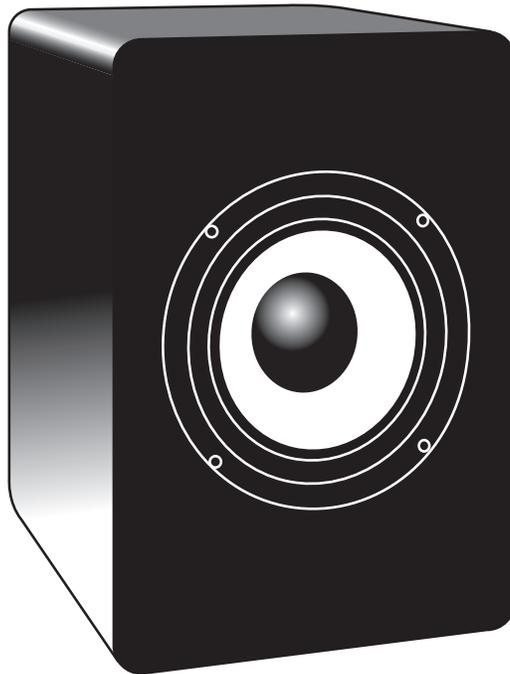




CCB-8 Bookshelf Owner's Manual



Features

Constant Directivity Coaxial

The CCB-8 utilizes the woofer cone and pole piece as the constant directivity horn for the tweeter which is mounted behind the woofer magnet. This gives an extremely high efficiency tweeter, over 100 dB sensitivity, with good directivity and excellent micro and macro dynamics. Unlike the HB-1, the CCB-8 is a point source, yielding imaging and balanced tonality that is second to none no matter where you sit.

The CCB-8 uses a 8-inch cast frame woofer with a 2" edge wound copper clad aluminum voice coil for the highest possible efficiency and speed. This is coupled to an acoustically inert polypropylene cone and a well damped cloth surround. The wide dynamic range capability of this woofer matches the tweeter perfectly.

The complete absence of lobbing in the CCB-8 thanks to the coaxial design means it's perfect as a center channel speaker. Just lay it on its side.

***High-Definition Audio Speakers by HSU Research.
Designed and engineered in the U.S.A.***

A. Unpacking

Open the top of the carton and lift up the top foam tray. Carefully lift up the speaker(s). Open the foam bag(s).

Save the carton, foam trays and foam bags – they are the best protection for your speakers should you need to move them or send them back for service.

B. Placement for Two Channel Stereo

Note: For optimum bass performance, use a system with bass management and crossover the CCB-8s to a subwoofer at 80 Hz.

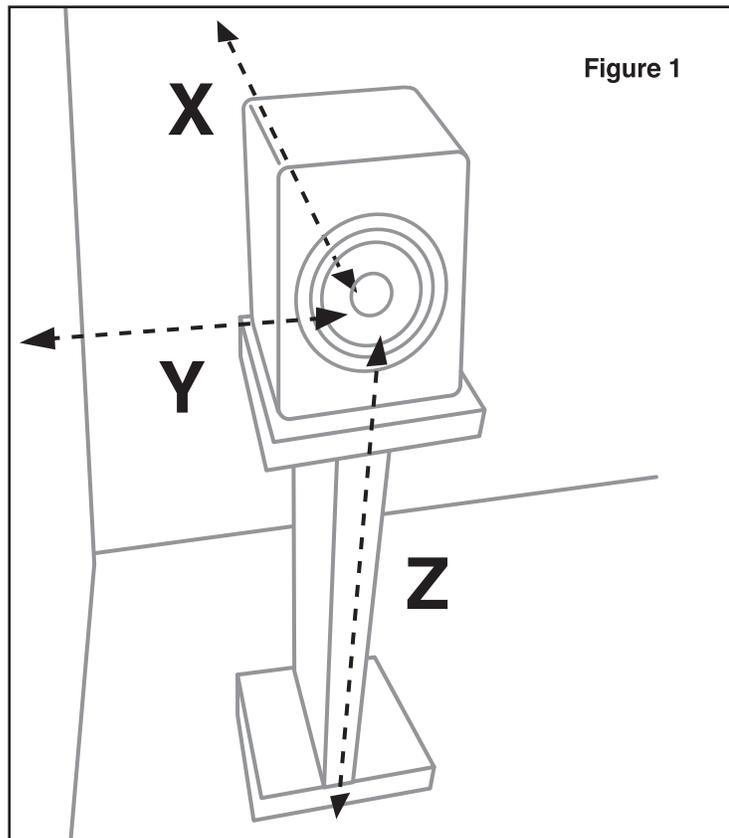
Positioning Your Subwoofer

See your subwoofer's owner's manual.

Positioning the CCB-8s

For smoothest response we recommend placing the CCB-8 such that the coaxial driver's distance to the closest surfaces are in 1:2:4 ratio (side wall Y, floor Z, and back wall X - see Fig. 1). On the recommended 36" stand, that would be 22" from the side wall and about 7 ft from the back wall. That way, the dip caused by the side wall bounce is canceled by the floor bounce and the dip caused by the floor bounce will be canceled by the bounce off the back wall. The dip caused by the back wall bounce will be below the recommended crossover frequency for the CCB-8.

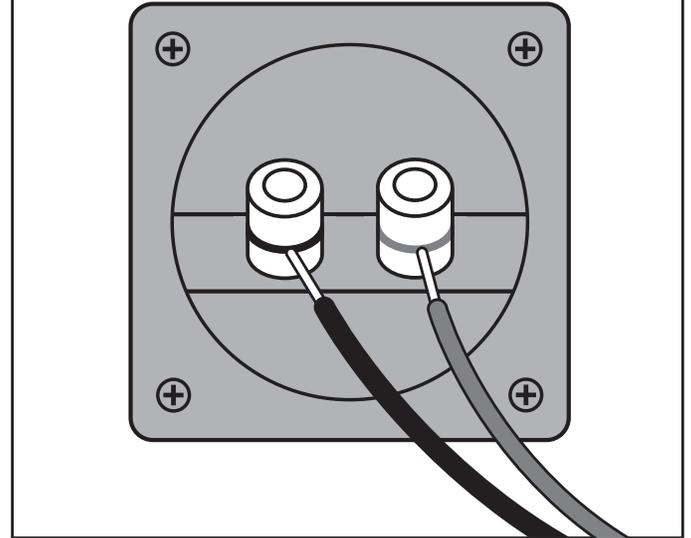
Note that the above recommendation will result in the smoothest response, but is not mandatory. It's fine if the WAF factor or other practical reasons make that impossible. Our speakers are no more sensitive to positioning than any other speakers. In fact, due to it's better controlled directivity, it's less sensitive than most.



Toe in the CCB-8s

The CCB-8s are designed to be toed in so you sit 15 degrees off axis. i.e., cross the axis of the coaxial drivers about a foot or two in front of you. This gives the most stable imaging and the widest sweet spot. The frequency response is also designed to be smoothest at 15 degrees off axis.

Figure 2



C. Wiring

The CCB-8s do not come with wires. We suggest getting 16 AWG for runs under 10 feet, 14 AWG for runs of 10 - 25 feet, and 12 AWG for runs of 26 - 50 feet.

Strip 1/2" of insulation from each end of the wire to expose the bare metal. Insert this into the 5-way gold plated binding posts on the back of the CCB-8 (Figure 2). Alternatively, you can use banana plugs. If you are connecting using bare wires, make sure the binding posts are tight, and no stray wires strands are causing a short.

D. Setting Up

Purchase as many CCB-8s as needed – seven for a 7.1 system, five for a 5.1 system, etc. Connect one CCB-8 to each speaker output. Make sure you observe the polarity.

Most speaker wire is polarity coded. This means that each conductor is labeled either (+) positive or (-) negative. The (+) positive side may be a different color or texture than the (-) negative side. On the back of your amplifier, each channel is probably labeled (+) and (-) as well as color coded red for (+) positive and black for (-) negative. HSU speaker terminals are color coded red for (+) positive and black for (-) negative. Be sure to hook (+) to (+), (red to red), and (-) to (-), (black to black).

The magnetically attached grille can be rotated as needed so the Hsu logo is upright whether the speaker is used on it's side or upright. You can also rotate the terminal cup as desired.

E. Troubleshooting and Service

We use components and designs of the highest caliber as a means of ensuring a long and trouble free life for your speaker. However, no amount of protection will prevent damage caused by defective associated equipment or extreme abuse.

If you have a problem, first try to determine if it is indeed a speaker problem. Determine whether the problem exists in more than one speaker. If it does, the problem likely originates in some other component in the system. If the problem is in one speaker only, reverse your speaker connections (left to right, right to left). If the problem moves to the other channel, your problem is not in the speakers. Once you have determined that you have a speaker problem, contact us at the location shown below for service. Please describe the problem in detail. We will decide on the most appropriate course of action.

F. Specifications

Woofers: Cast frame 8" polypropylene cone woofer with treated cloth surround, flat polycotton spider and high temperature 2" edge wound copper clad aluminum voice coil.

Tweeter: Concentrically mounted using the woofer pole piece and cone as constant directivity horn. Neodymium magnet, ferrofluid cooled. Aluminum diaphragm.

Crossover: Computer aided time aligned design, final voicing by Dr. Hsu.

Grille: Magnetically attached nicely shaped metal grille. Can be rotated as needed.

Frequency Response: 50 - 20 kHz +/- 2 dB, flattest at 15 degrees off axis (designed for listening at 15 degrees off axis, speaker axes to cross in front of listener)

Sensitivity: 94 dB/1m/2.83V rms, half space

Nominal Impedance: 6 ohms

Minimum Impedance: 4 ohms

Enclosure Type: Vented

Enclosure Material: 3/4" MDF

Dimensions: 15" H x 10.5" W x 12" D

Net Weight: 22 lbs

Recommended Amplifier Power: 10 - 400 W rms

G. Hsu Speaker System

Seven Year Limited Warranty

If the speaker system proves to be defective in materials or workmanship within seven years from the date of the original customer's purchase, we will, at our option, repair or replace the defective product. If for any reason, we are unable to repair or replace a defective product within a reasonable time, we will refund your purchase price.

***Disclaimer**

THE WARRANTY STATED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE AND ALL OTHER LIABILITIES AND OBLIGATIONS OF HSU, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. HSU HAS NOT MADE AND DOES NOT HEREBY MAKE ANY OTHER REPRESENTATION, WARRANTY OR COVENANT WITH RESPECT TO THE CONDITION, QUALITY, DURABILITY, DESIGN, OPERATION, CAPACITY, FITNESS FOR USE OR SUITABILITY OF THE SPEAKER SYSTEMS.

Exclusion of Certain Damages

HSU's liability for any defective product is limited to repair or replacement of the product at our option. HSU shall not be liable for incidental or consequential damages of any kind or character because of product defects. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply.

This Warranty Does Not Cover:

- Damage caused by abuse, accident, misuse, negligence, or improper operation.
- Products that have been altered or modified.
- Any product whose serial number has been altered, defaced, or removed.
- Normal wear and maintenance.
- Damages caused by shipping. (All claims for shipping damage must be made with the carrier.)

Warranty Service

Warranty repairs can only be performed by HSU Research. As soon as the problem is found, contact us for instructions and information.

All warranty repairs must be accompanied by the original bill of sales. No other document is acceptable or is required. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Due to our continual efforts to improve product quality as new technology and techniques become available, HSU reserves the right to revise its Speaker Systems specifications without notice.



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