

ASSEMBLY INSTRUCTIONS

Speakerlab S.1, SX, S11, S15, S17, S7, and S9.

This manual describes the various steps required for assembly of the following Speakerlab kit models: S.1, SX, S11, S15, S17, S7, and S9.

While this manual is primarily intended to guide you through the assembly steps where all the drivers are pre-mounted to the front baffle board and the rest of the enclosure has been constructed from the enclosure plans included in the kit, it also is useful because it contains helpful information about loudspeaker construction in general.

The assembly steps are presented here in the proper sequence for the assembly of the models described.

Assembly parts check-off list.

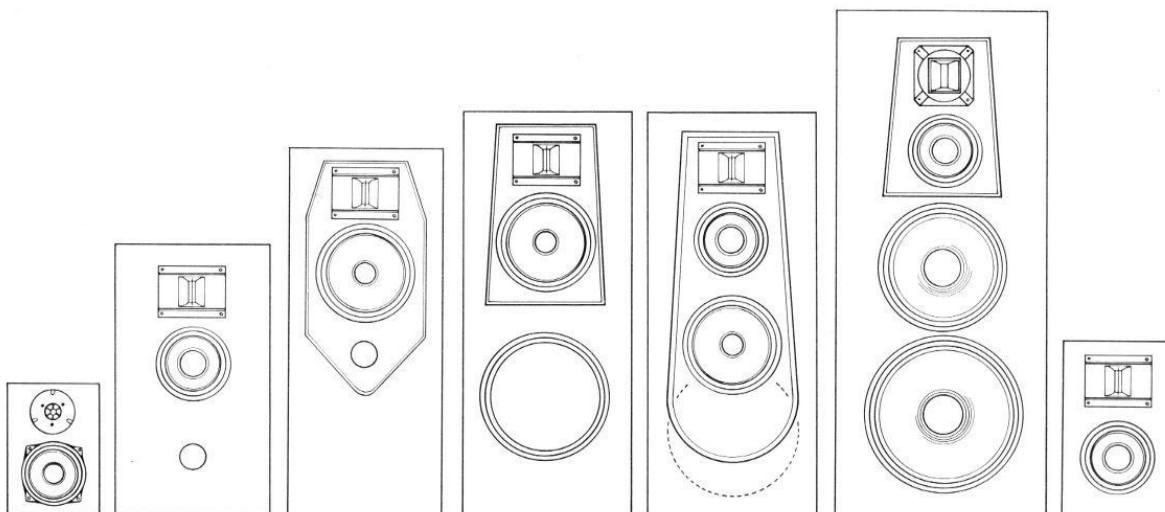
Before beginning these final assembly steps, use the following check-off list to make sure you have all the necessary items.

In your kit:

- Front board/driver/crossover/grille frame assemblies.
- 3-ounce tube of RTV.
- Dacron damping material.
- Guarantee.
- Name plate strip.
- Grille cloth.
- Enclosure plans.
- Owner's Manual.

You will also need to provide:

- Enclosures, assembled per plans included in the kit, including sub-enclosures for midranges (if appropriate), crossover holes cut out in back board and internally sealed seams to insure that there are no air leaks.
- Staple gun or tacks and hammer.
- Scissors.
- Pencil.
- White wood glue.
- Optional: Spray glue for grille cloth.



1. Check the front board fit.

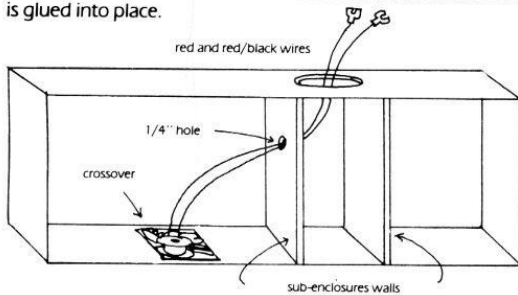
Place front board assembly into front of enclosure to check for proper fit BEFORE using glue. Make any necessary adjustments to edge of front board to improve fit at this point.

2. Remove the woofer.

The woofer will now need to be removed to allow completion of other assembly steps. In the cases of the S1, SX, S11, S15, and S9, remove the woofer, mounting clips, screws and gaskets. Disconnect the crossover wires from the woofer. In the case of the S7, remove the 10" woofer and the 6-1/2" midrange. In the case of the S17, remove the 8" woofer and 6-1/2" midrange.

3. Install midrange sub-enclosure.

In the case of the S7 or S17, the enclosure plans contain instructions for the construction of a sub-enclosure for the 6-1/2" midrange driver. This consists of a square wooden "tube" that is positioned directly behind the midrange driver and is connected to both the front board and back board. The red and red with black stripe midrange wires pass through a 1/4" hole in the side of this sub-enclosure for eventual connection to the 6-1/2" driver. This sub-enclosure "tube" should be connected to the inside of the back board before the front board is glued into place.

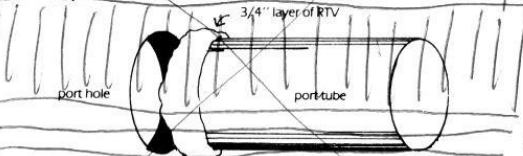


4. Install the bass reflex-port tube.

In the case of the SX and S11, the port tubes will now have to be glued into place. The steps are as follows:

A. Check for snug fit by inserting either end of the tube in the cut-out in the front board.

B. Once the fit is confirmed, spread a thin layer of silicone adhesive (RTV) around the outside of one end of the port tube, about 3/4" wide.



C. Push and rotate the tube into the front board cut-out from the back side of the front board until the port tube is flush with the front surface of the front board.

D. Wipe off any excess adhesive with a paper towel or rag. If tube fit is tight, further assembly can be done if care is taken not to disturb the tube. If fit is not as tight, allow 30 minutes for glue to cure partially before continuing.

5. Glue in the front board.

During this gluing process, simply allow the crossover to rest inside the enclosure. It will be attached after the front board.

A. With the enclosure on its back, squeeze a large, thick bead of white glue onto the front surface of the enclosure edges where the front board will attach. Leave no air-gaps in this ample glue bead, as air leaks may result. Do not forget to apply a similar large bead of white glue onto the end of the midrange sub-enclosure in the case of the S7 and S17.

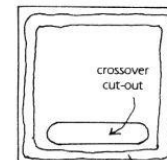
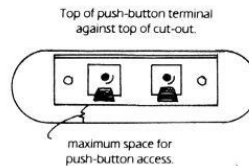
B. Press the front board firmly down against the entire glued enclosure surfaces. The front board may be held in place by clamps, nails, or screws or by placing heavy objects onto it, while the glue dries.

6. Install the crossover network.

The crossover can be installed using access through the cut-out for the removed woofer. The steps are as follows:

A. Put the crossover board in place, using no adhesive. Make sure contacting surfaces are free of dust and bits of wood or glue.

B. Index the crossover push-button terminal strip against the top of the back-board cut-out, so that maximum space is provided for access to the push-tabs from the rear of the enclosure. If the terminal push-tabs are right next to the cut-out edge, there will be no room for your finger to depress the push-tab when you connect your speaker wires.

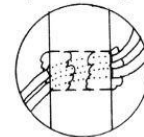


C. Using the pencil, draw a line on the back board around the outside edges of the crossover board. Then move the crossover from its marked position.

D. Squeeze a bead of RTV adhesive/sealant approximately 3/8" wide around the inside of the pencil line. The glue bead should be approximately 1/2" inside the pencil line.

E. Now press the crossover board firmly in place, making sure to use the pencil markings as a placement guide.

RTV sealing ends of 1/4" hole.



F. Models with midrange sub-enclosures (S7 and S17): Pass the red and red with black stripe midrange wires through the 1/4" hole in the sub-enclosure wall. Allow enough wire length inside the sub-enclosure for eventual connection to the midrange driver. Apply a liberal amount of RTV adhesive/sealant to the 1/4" hole in the sub-enclosure wall, both the inside and outside surfaces. It is very important that a complete air seal be attained here. Allow sufficient time for RTV to cure to insure a non-disturbed glue seal.

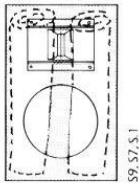
Speakerlab crossovers use a color-coded wiring system to determine which wire from the crossover attaches to which terminal of the raw speakers used in the system. The wires are terminated with aircraft-type push-on connectors that insure a positive mechanical and electrical connection. No soldering is necessary. Use this chart to re-connect any crossover wires that have been disconnected:

Plain blue wire	Woofers positive (terminal nearest red dot)
Blue w/black stripe	Woofers negative
Plain red wire	Midrange positive (terminal nearest red dot)
Red w/black stripe	Midrange negative
Plain yellow wire	Tweeter positive (terminal nearest red dot)
Yellow w/black stripe	Tweeter negative
Plain green wire	10" woofer positive in S7 (terminal nearest red dot)
Green w/black stripe	10" woofer negative in S7

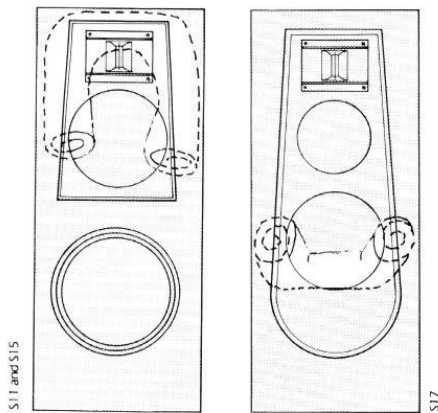
7. Installing damping material.

A. In the case of the S7 and S17, part of each dacron blanket will have to be cut for use in the midrange sub-enclosure. Sizes are as follows: S17, 6" x 24" and S7, 8" x 24"

B. Push each piece of dacron into the sub-enclosure so that it occupies its entire volume. Do not forget to thread the red wires to the outside of the sub-enclosure for eventual connection to the midrange driver.



C. Placement within the enclosure for acoustic suspension speakers S9, S7 and S1: Divide the amount of dacron supplied into two equal sections. Roll each section into a loose column and place it inside the enclosure vertically. The columns will unravel somewhat to fill the enclosure volume and will remain in their vertical position.



D. Placement within the enclosure for ported or passive radiator systems, S11 and S15: Roll the dacron supplied into a loose cylinder and, putting it inside the woofer opening, press it into place in the shape of a "U" toward the top of the enclosure. To ensure that the dacron will remain in place, staple the ends of the cylinder to the sides of the enclosure.

E. Dacron placement for S17: Roll the dacron into a loose cylinder and place it through the 8" woofer opening in a "U" shape with the bottom of the "U" against the crossover and the sides of the "U" running up along the sides of the enclosure toward the front board. Again, to insure that the dacron will remain in place, staple each end of the cylinder to the sides of the enclosure. Make sure the dacron cylinder does not come in contact with the passive radiator.

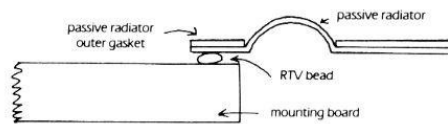
8. Re-Install the drivers.

After the dacron has been installed and the crossover wires have been re-connected to the woofer and (in some cases), the midranges, these drivers may now be re-mounted. For crossover wire re-connection, be sure to refer to the crossover wire color code chart in section 6.

A. Be sure to use the foam under gasket when re-mounting each driver.

B. When situating each driver into the front board cut-out, be sure to keep any crossover wires away from the back of the speaker cone, otherwise buzzing will result.

C. When tightening the screws against the mounting clips, rotate the tightening pattern to insure an even distribution of force on the speaker frame.



D. Passive radiator installation for S15 and S17: Put a 1/4" wide bead of RTV around edge of passive radiator cut-out and press passive radiator in place as shown.

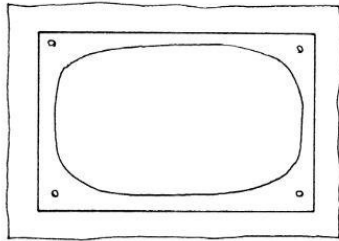
9. Test & troubleshoot the system.

After the glued components (crossover, passive radiator, port tube, front board) have cured, connect the speaker to your amplifier. Turn the volume up slightly and listen to each speaker in the system separately. If any speaker fails to produce sound, remove it and make sure the crossover wires are firmly attached and that the wires are the correct colors. If the wires are properly connected and the speakers still fail to produce any sound, disconnect the crossover wires from the speaker and connect it directly to your amplifier with the volume very low. If the speaker operates when connected this way, something is wrong with your crossover. If it still fails to operate when connected this way, the fault is with the speaker itself. In either case, call Speakerlab for technical assistance.

10. Mount the grille cloth.

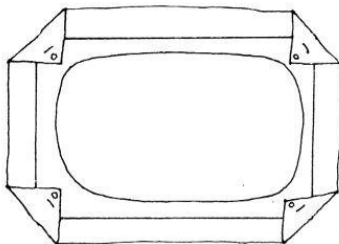
It is the grille cloth—not the woofer, midrange or tweeter—that will show off the looks of your finished speaker. Take special care to make your grille cloth look right. You can either staple, tack or spray-glue the grille cloth to the frame. To staple it, you need a staple gun. If you tack it, use 3/8" (No. 3) upholstery tacks. If you wish to spray-glue, we have found that Scotch "Multi-Purpose Spray Adhesive" and Weldwood "Spray 'n Glue" work very well.

If the grille cloth has creases in it, stretch it out to "relax" overnight, or steam-iron it at a synthetic setting before mounting. You can use either side of the cloth as the outside—notice the textures are different. Take your pick.

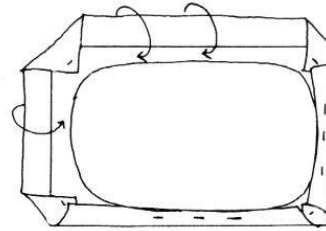


Stapling or tacking:

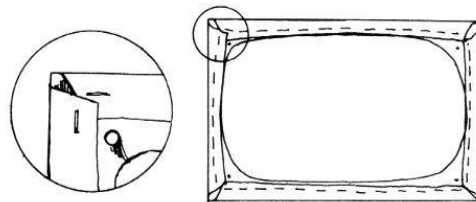
A. Lay the grille cloth face-down on a clean surface or towel. Center the grille frame over it, also face-down, lining its edge up parallel to the weave of the cloth.



B. Fold the cloth over one corner of the frame. Staple or tack the cloth, as illustrated, away from the thin beveled edge. Cut away the corner of the grille cloth so that all of the plastic fastener shows. Stretch the cloth gently—taut but not tight—to the other corner at the same end of the frame, lining up the weave with the frame edge. Fasten (staple or tack) and trim off this corner as you did the first.



C. Now stretch the cloth gently across the rest of the frame, making sure the tension is even and the weave is straight. Fasten each of the remaining two corners with one staple or tack, and trim the cloth. Check that the front looks tight and that the weave is straight (curves in the weave are due to uneven tension). Fasten down the edges of the cloth every 1" all the way around the frame, leaving the corners alone for now. Trim off the excess cloth.



D. Make two folds at each corner like the illustration shows, fastening down each fold.

Spray-gluing:

A. Start by laying the grille frame face-up on newspaper. Spray the entire face and beveled edges of the frame with glue. Be careful here; glue sprayed thick enough to puddle is too thick, as it will soak through the cloth and show up as a dark spot.

B. When the spray-glue is wet and aggressively tacky, lay the grille cloth over it lightly, lining up the weave parallel to the edges of the frame. Pull out the wrinkles and apply pressure for about thirty seconds. Dispose of the gluey newspaper and lay the grille frame face-down on fresh paper. Fold the cloth over one corner of the frame as in Fig. B and trim the cloth so it will not interfere with the plastic fastener. Spray-glue the corner of the frame and stick the cloth down when the glue becomes aggressively tacky. Again apply pressure for thirty seconds. Do the same for the other three corners. Fold the edges of the grille cloth over the frame and trim it so that it just covers the back side of the frame. Now spray-glue all the edges down. Finally, make two folds at each corner like in Fig. D, fastening down each fold with a 3/8" (No. 3) tack or staple.