#### INSTRUCTIONS FOR UPDATING POLK SDA-1 TO SDA-1A

Introduction - Following are the instructions for updating the cabinet, crossover, and cabinet stuffing of the Polk SDA-1 to the current SDA-1A specifications. The modifications need to be completed on both the left and right speaker systems. Each step should be completed in the order presented for the smoothest possible work flow.

Tools needed - Phillips-head screw driver, power drill with 3/4" or larger diameter bit, hand-held saber saw or keyhole saw, wire cutters, soldering iron and solder, and a vacuum cleaner.

### CROSSOVER MODIFICATIONS

STEP ONE - Removing the drivers

Make certain that the amplifier is turned off and unhook all connections from the speaker. Lay the speaker on its back on a carpeted area of the floor and remove the grille, setting it aside. Each 6.5" driver and each tweeter is secured to the baffle with four 86 or 88 Phillips—head sheet metal screws, and the 12" passive radiator with eight 88 screws. Be certain to retain these after removing the components, as they will be used to re—install the components later.

Remove the four mounting screws from each of the four 4.5" drivers and from the two tweeters (total of 24 screws). CAUTION—Be very careful, as the metal faceplates on the tweeters are easily scratched, and the rubber surround consuspensions on the drivers are easily punctured by a slipped screwdriver.

Carefully lift each tweeter from the cabinet and disconnect the wire leads by pulling the wire connectors off the two terminals on the rear side of the tweeter faceplate. Set the tweeters aside in a safe place, magnet side down, along with their sealing gaskets. The wires will be labeled later.

Similarly, lift each driver in turn from the cabinet and disconnect the two leads from its terminals.

Remove the eight 08 Phillips-head sheet metal screws from the 12" passive radiator and remove it from the cabinet. There are no electrical connections to the passive radiator. Set it aside in a safe place, back side down.

Remove all stuffing material (dacron fiber and Sonex "blocks") from the cabinet interior. The dacron stuffing will be reused, but the blocks of Sonex foam may be discarded.

# STEP TWO - Removing the Crossover

Before removing the crossover, it will be necessary to label the wire leads in order to facilitate proper reassembly. The leads connecting to tweeters are distinguished from driver leads by the size of the "faston" connector crimped to the wire; tweeter leads have the smaller size connector. In addition, the wires are color-coded in the following manner:

Blue - "dimensional" driver or tweeter (+)

Black - "stereo" driver or tweeter (+) or low frequency driver (+)

White - ground connection (-)

The wires to the tweeters and the two drivers immediately next to them pass through a hole in a horizontal cabinet partition sealed with a pliable foam plug. Full one set of wires at a time through the holes and wrap each set together with a piece of tape so that you end up with two groups of four wires each. At this time, note that all the wires in the two groups lead to two crossover "modules". Each of these modules consists of a printed circuit board mounted on a large coil. The module to which the BLUE driver and tweeter leads are connected is the "dimensional" module; the other module, to which the BLACK wires are connected, is the "stereo" module.

The third module, which does not have a printed circuit board mounted on it, is the "low frequency" module. The remaining two sets of driver leads are connected to this module, and can be taped together for convenience.

CAUTION--The ground connections for "stereo" components are different from the ground connections for "dimensional" components. The white ground wire for each component goes to the same crossover module as its companion hot wire (see figure 2). It is imperative that these ground leads not be interchanged, as damage to the speakers or the amplifier could result.

After all the wires have been looked after, lift the cabinet to its upright position. Remove the twelve Phillips-head machine screws from the edges of the crossover assembly, supporting the panel so that it does not fall suddenly out of position. Then, carefully remove the crossover assembly, pulling all the wires through the mounting hole. Set the crossover panel on a sushioned work surface with the components facing up in preparation for modification.

# STEP THREE - Removing Capacitors

This step pertains to the two circuit boards mounted on two of the large coils on the crossover panel. Each of these circuit boards has attached to it a very large capacitor, one lead of which is soldered to one of the copper leads from the large coil on which the circuit board is mounted. The other lead is connected to the circuit board. Note that this capacitor consists of either a single large (about 1" dia. I 3" long) black cylinder with the leads coming from the ends, or three blue cans soldered together as a group (see fig. 3). This capacitor or capacitor assembly will be replaced by a 2.5 ohm 25 watt resistor, connected exactly as the capacitor is now connected.

The circuit board can be partially removed by unsnapping it from the four plastic stand-offs securing it to the coil. This will allow freer access to the foil side of the board for soldering. Mark the non-foil side of the circuit board to identify the location where the capacitor lead connects, so you will be sure to reconnect the resistor in the correct location. Disconnect the capacitor by unsoldering the circuit board connection and clipping the capacitor lead soldered to the coil wire. If the capacitor is held to the circuit board with glue, it can be cut away with a knife or the glue can be melted with a soldering iron (don't breathe the fumes).

Place the 2.5 ohm 25 watt resistor in the location previously occupied by the capacitor and connect its leads exactly as the capacitor had been connected; solder both connections.

Position the circuit board on the stand-offs and snap it into place.

# STEP FOUR - Removing the "Z-balance" Network

On the "low frequency" module (the one without a circuit board), there are a blue 55uF capacitor, two resistors, and a 3-lug terminal strip connected to each other in various ways. One lead of the capacitor is soldered to the center lug of the terminal strip; clip this lead, bending it away from any other connections.

Step four completes the modifications to the crossover network. Remember that BOTH crossovers from the pair of speakers must be modified by steps one through four

# CABINET MODIFICATIONS

There are two changes in the cabinet of the SDA-1 to modify it to SDA-1A specs: D removing the internal horizontal partition, and 2) plugging the 1" dia. port holes on the upper part of the baffle. Note that the terms "horizontal" and "vertical" refer to the orientations of the respective partitions when the speaker is in its normal upright position.

# STEP FIVE - Removing the Internal Horizontal Partition

This is the most difficult and time-consuming step in the entire modification, though fortunately the degree of precision required is not high. The horizontal partition is the piece of board with the two holes through which you recently gulled two sets of crossover wires. This partition must now be removed.

This operation is best performed with the cabinet orientedupside-down, resting on its top; this affords much better access to the partition through the mounting hole for the 12" passive radiator. The easiest way to start is to drill holes around the perimeter of each section of the partition, as close to the perimeter as possible. A saw can then be used to cut between the holes and the center piece of wood can be removed. As much of the partition as possible should be removed, but our experience indicates that up to a 1" border can be left with no adverse effect.

The vertical partition remains intact and requires no modification.

Vacuum the inside of the cabinet as thoroughly as possible after this operation so that no wood chips remain to break loose and interfere with the operation of the drivers.

#### STEP SIX - Plugging the Ports

The ports are plugged with 1" diameter 3/4" long dowels. White glue or carpenter's glue should be applied to the dowel and the inside edges of the port before inserting the dowel. Drive the dowel into the port using a block of wood and a hammer; wipe off any excess glue from the baffle. The dowel should be driven in flush with the baffle surface, and may be painted black after the glue dries, for better appearance.

# STEP SEVEN - Installing the Crossover Network

Carefully lay the cabinet on its face; if the cabinet is marked with a "LEFT CHANNEL" or "RIGHT CHANNEL" sticker, select the appropriate crossover network (channel designation appears above the red and black binding posts on the crossover panel). Feed all the wire leads through the mounting hole in the back and carefully place the crossover panel in place so that the writing will be eriented correctly when the cabinet is stood upright. Secure the crossover in place using the twelve Phillips-head machine screws saved from step two.

# STEP EIGHT - Stuffing the Cabinet (see figure4)

Roll the cabinet over onto its back. The dacron which was removed from the cabinet during step one is now installed as shown in figure 4. These pieces should lie flat against the cabinet back. Now the two 18" X 14" pieces of dacron which were supplied with the modification kit should be folded in half so that they are now 9" X 14" and placed in front of the other pieces of dacron, directly behind the 6.5" driver openings, as shown.

# STEP NINE - Wiring and Installing the Speakers

As you look at the crossover through the baffle opening for the passive radiator, observe that the two modules with circuit boards are oriented toward the top of the cabinet, one on the left and one on the right. Select either of the groups of four wires taped together in step two and untangle it from any other wires, noting to which module the wires are connected. Then, route all four wires in the group to the tweeter and adjacent driver mounting locations on the same side of the cabinet as the module to which they are connected (see figure 2).

Select one of the tweeters and a sealing gasket. Lay the gasket over the mounting hole and pull the tweeter leads (small connectors) through the hole. Connect the wires to the tweeter terminals with the BLACK wire attaching to the terminal marked with a RED washer. Carefully set the tweeter into position on the gasket so that the holes in both the tweeter faceplate and the gasket line up

with the mounting holes on the baffle, and with the "Polk Audio" logo correctly oriented.

Full the driver leads through the mounting hole adjacent to the tweeter you just installed, select a 6.5" driver, and connect the leads to the driver terminals, attaching the black or blue wire to the terminal lug marked with a dab of red paint. Set the driver into the baffle, aligning its mounting holes with the holes in the baffle.

Repeat these operations with the other group of four wires attached to the other module.

The remaining set of leads (one black wire, one white wire, each with two driver connectors) is routed to the last two driver mounting positions. Connect the last two drivers to these leads, with the wires connected as described above.

Set the 12" passive radiator into its mounting location, aligning all mounting holes.

Using the Phillips-head sheet metal screws previously removed, secure all components to the baffle.

# STEP TEN - Checking out Operation

Connect the speakers to the amplifier, but leave the interconnect cable unconnected. Using music or interstation noise from an FM tuner, listen at a moderate level and check to see that all "stereo" drivers are working. No sound should be coming from the dimensional tweeter or driver, although the driver will be moving slightly in sympathetic motion with the other 6.5" drivers. If the "stereo" tweeters are silent, check the fuses (1-amp fast-blow fuses should always be used)

Turn the volume down and hook up the interconnect cable to each speaker. Turn up the volume control to a moderate level. Rotate the balance control all the way to the left. All drivers and tweeters on the left channel speaker should be operating, as well as the dimensional driver and tweeter on the right channel speaker.

Now rotate the balance control fully right. All drivers and tweeters on the right channel speaker should be operating, as well as the dimensional driver and tweeter on the left channel speaker.

Congratulations! You have now modified your SDA-1's to SDA-1A specifications. If you have any questions or comments regarding these instructions, don't hesitate to call.

Good Listening!!

# polkandio

Figure 1 Labeling of the drivers.

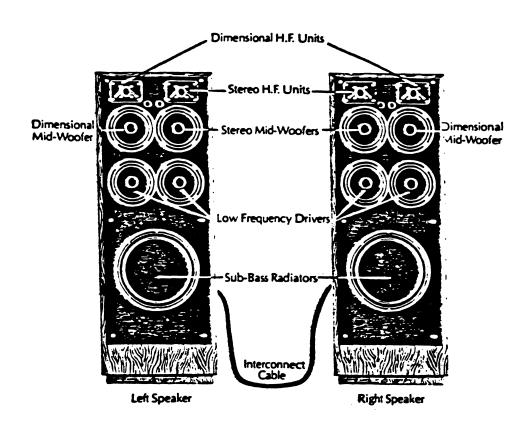
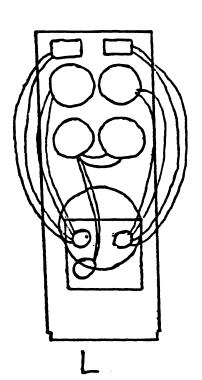


Figure 2 Wiring diagram. Then rewiring the Eakers remember at each crossover odule supplies wires the drivers located the same side the cabinet that is on.



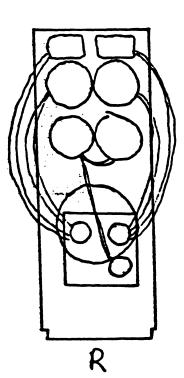
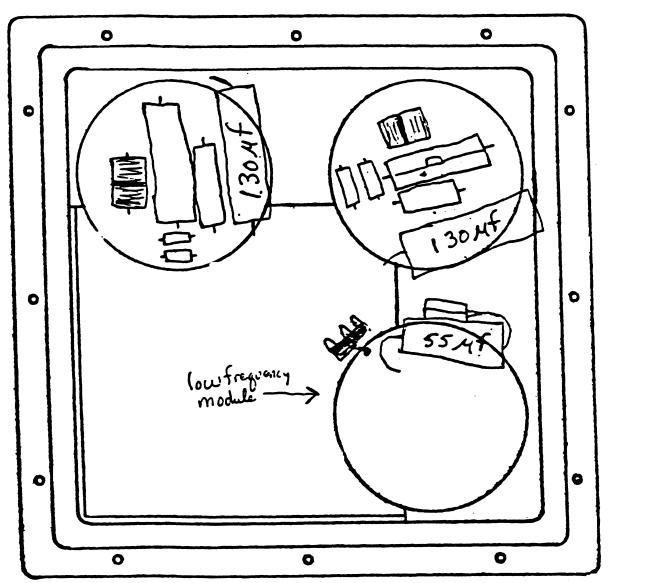


figure 3 - crossover board of the SDA I (right channel). with the 130 4f capacitors which must be replace with the 2.5 ohm, 25 wath resistors.



Note - there will be either I large black capacitor or three smaller blue ones soldered together.

Figure 4
First step in
Stuffing cabinet.

