

# polk audio

The Speaker Specialists®

TRUE STEREO

**Stereo/Dimensional Array Signature Reference System**

## ADDENDUM TO THE INSTRUCTION MANUAL



**Important: Please read the instructions thoroughly before attempting to use your SDA Loudspeakers.**

Recent improvements in the design and performance of some members of the SDA loudspeaker series necessitate some changes and additions to the instruction manuals for these products. These changes encompass (1) care and cleaning of your loudspeaker, (2) physical specifications, (3) trouble shooting, and in the case of the SDA-SRS 2, (4) instructions for connecting a bi-amplified or bi-wired system. Consult the manual for setup suggestions, system check-out, amplifier recommendations, and connection instructions.

**IT IS IMPERATIVE THAT THE REVISED VERSIONS OF THE SDA-1, SDA-2, AND SDA-SRS 2 NEVER BE CONNECTED TO PREVIOUS VERSIONS OF THE SAME MODEL. TO DO SO RISKS DAMAGE TO BOTH THE SPEAKERS AND TO THE AMPLIFIER.** For example, *never* pair an SDA-1C with an SDA-1, -1A, or -1B, and *never* pair an SDA-2B with an SDA-2 or -2A. These speakers are readily distinguished from each other by their appearance, so the rule of thumb is: never connect two speakers of dissimilar cosmetic styling. The SDA-SRS 2 styling has not changed, but the interconnect cable and receptacles have changed, and do not allow improper cross-connection.

It is possible to modify the *new versions only* of the SDA-1, SDA-2, and SDA SRS 2 to allow their use with non-common-ground amplifiers. This requires an internal modification to the crossover and the use of an external adaptor device which will be available near the end of 1987. Please contact the Customer Service department at the factory for additional information.

If you have any questions or comments please do not hesitate to call us directly or contact your nearest Polk Audio dealer.

### CARE AND CLEANING OF YOUR SDA LOUDSPEAKER

As with any piece of fine furniture, the finish of your SDA loudspeaker will maintain its appearance with reasonable care. Wood trim is finished with an oil sealer and a wax stain. If the finish begins to look dull after a period of time, it can be restored to its original luster by applying a light coating of furniture oil such as lemon oil, and buffing away the excess. If water is accidentally spilled on any finished wood surface, it should be wiped off immediately.

Vinyl surfaces can be cleaned by wiping with a sponge or cloth dampened with water. Organic cleaning solvents should not be used, as they may attack the vinyl.

The grilles may be cleaned by brushing gently or vacuuming.

### BI-AMPLIFICATION AND BI-WIRING:

The SDA-SRS and SDA-SRS 2 are equipped with two sets of inputs to facilitate bi-amplification or bi-wiring. Both sets of inputs are located on the round input plate at the rear of the cabinet (figure 1). The high frequency inputs are the red and black terminals on either side of the interconnect cable socket. The low frequency inputs are the red and black terminals next to each other at the bottom of the round input plate. In normal use jumpers are used to connect the black terminals together and the red terminals together (figure 2). The amplifier is then connected only to the lower set of red and black terminals.

When the system is bi-amplified, two amplifiers are used to power the system. One drives the high frequency section of the speaker only, the other drives only the low frequency section. This enables the system to achieve greater dynamic range with lower distortion. In addition, different amplifiers may be selected for the high and low frequency sections allowing you to optimize the choice of amplifier for either high or low frequency performance. The design of the SDA-SRS is such that *no electronic crossover is required*. See the section, "Connecting Your Bi-Amplified System", for instructions.

Bi-wiring is the use of two sets of speaker cables running from a single amplifier to the speaker. One set of cables is connected only to the high frequency section of the speaker and the other set only to the low frequency section. As with bi-amplification the choice of speaker cabling, in this case, may be optimized for high or low frequency performance. Also as with bi-amplification, the supplied jumpers must be removed from the input terminals. Figure 3 illustrates a typical setup using bi-wiring.



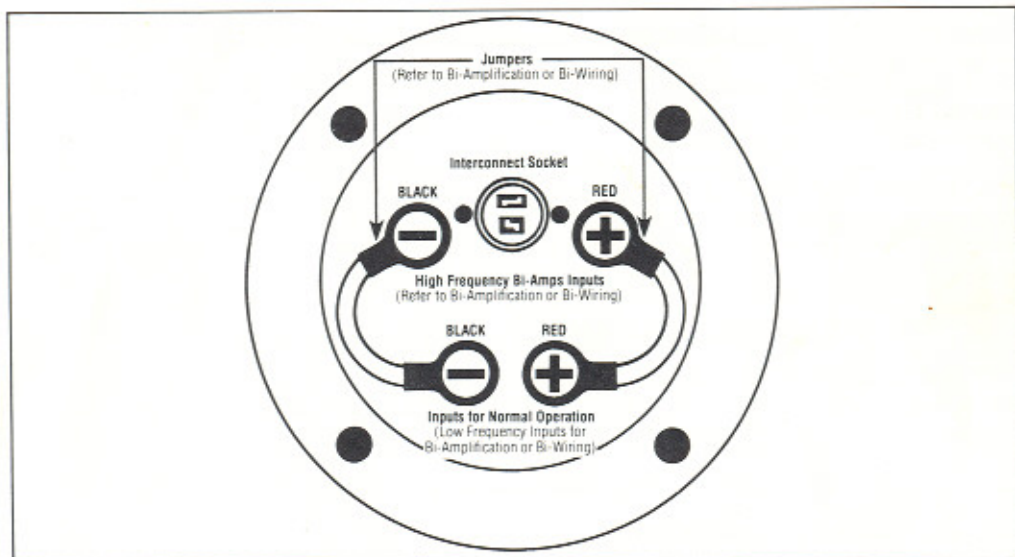


FIGURE 1. Terminal Plate, SDA-SRS and SDA-SRS 2

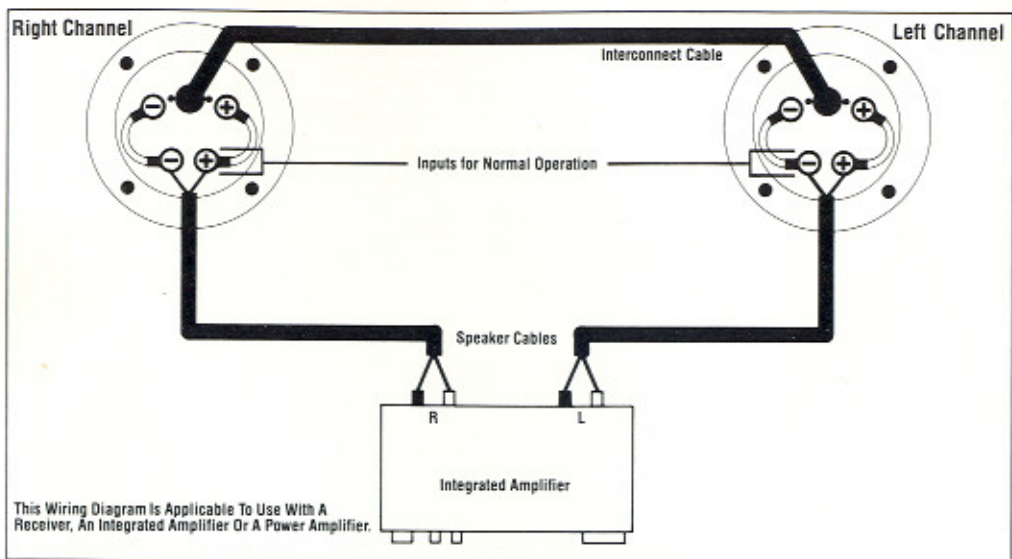
#### AMPLIFIERS SUITABLE FOR BI-AMPLIFICATION:

Any amplifier suitable for driving the SDA-SRS or SDA-SRS 2 in a conventional single amplifier setup can be used as one of the amplifiers needed for bi-amping. Although two different amplifiers may be used, use of two identical amplifiers is the best guarantee that the final bi-amp setup will be properly balanced. If two different amplifiers are used *they must have identical amounts of gain*. If they do not, a level adjustment must be provided on the input of one amplifier to reduce its gain to equal that of the other amplifier. In selecting an amplifier for the high frequency section, a smaller amplifier may be used as long as it has excellent headroom. In addition, *for the high frequency amplifier only*, it is not necessary that it be a common ground amplifier. **THIS IS THE ONLY INSTANCE IN WHICH A NON-COMMON GROUND AMPLIFIER MAY BE USED. THE AMPLIFIER USED ON THE LOW FREQUENCY SECTION MUST ALWAYS BE A COMMON GROUNDED AMPLIFIER.**

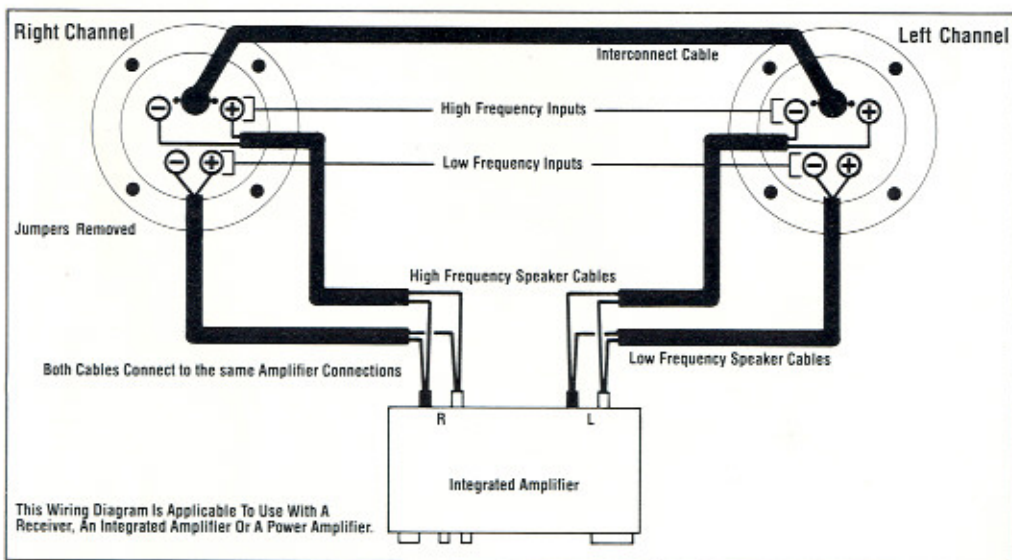
#### CONNECTING YOUR BI-AMPLIFIED SYSTEM:

The designs of the SDA-SRS and SDA-SRS 2 make the use of an electronic crossover unnecessary. The two sets of inputs are designated "high frequency bi-amp inputs" and "low frequency bi-amp inputs", and are supplied with factory-installed jumpers for use in conventional single-amplifier hi fi systems. **THESE JUMPERS MUST BE REMOVED BEFORE MAKING ANY OTHER CONNECTIONS TO THE INPUTS IN A BI-AMPLIFIED SYSTEM. SERIOUS DAMAGE TO THE AMPLIFIERS OR TO THE SPEAKERS MAY RESULT IF THIS IS NOT DONE.** The jumpers are removed by unscrewing the colored plastic caps from the binding posts and removing the ring terminals. Be certain to re-install the colored plastic caps on the correct binding posts so as not to mislabel the phasing of the inputs (refer to figure 1).

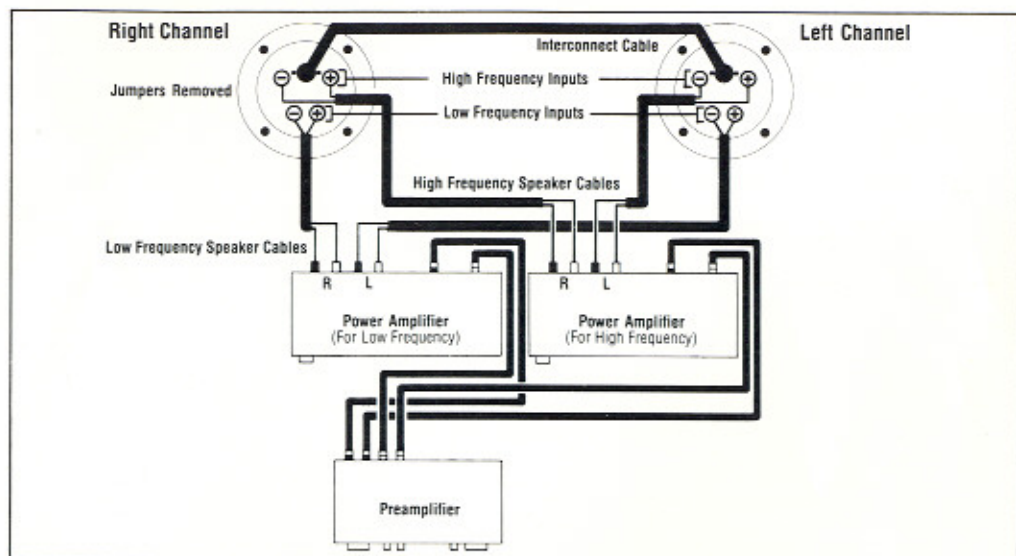
First, connect the speaker cables from the low frequency amplifier to the low frequency speaker inputs. Observe the correct absolute phasing of the connections — the conductor from the amplifier's black or - (minus) output terminal *must* be connected to the black binding post on the SDA-SRS, and the amplifier's red or + (plus) output terminal *must* be connected to the red binding post on the speaker. Then, connect the speaker cables from the other amplifier to the high frequency speaker inputs, again observing correct absolute phase. This completes the connections to the speaker system. See figure 4 to check your connections.



**FIGURE 2. Connections for Normal Operation**



**FIGURE 3. Connections for Bi-wiring the SDA-SRS and SDA-SRS 2**



**FIGURE 4. Connections for BI-amplifying the SDA-SRS and SDA-SRS 2**

#### **BI-AMPLIFYING WITH AN ELECTRONIC CROSSOVER:**

Although we recommend against the use of an electronic crossover, some small improvements in performance may be achieved by using one anyway, but only if setup correctly. If you decide you would like to try this PLEASE READ THE FOLLOWING PARAGRAPH CAREFULLY. Use of an improperly setup electronic crossover with your SDA-SRS or SDA-SRS 2 will result in *much worse performance*.

The high frequency and low frequency inputs to the SDA-SRS and SDA-SRS 2 cause the signal to pass through the high and low frequency sections, respectively, of their crossover systems. The SRS and SRS 2 crossover systems cannot be by-passed since to do so would be to remove an essential part of the overall system. To correctly use an electronic crossover with the SDA-SRS or SDA-SRS 2 it is necessary to choose the crossover frequency settings so that they will not interfere with the operation of the crossover system. The primary crossover of the SDA-SRS and SRS 2 operates in the range from 800Hz to 2.5kHz. Correct settings for the electronic crossover will allow the operation of both high and low frequency amplifiers to overlap comfortably over this entire range. Suggested settings for the electronic crossover are: High-pass — 300Hz, Low-pass — kHz. This means that the electronic crossover will be doing little more than keeping the extreme high frequencies out of the low frequency amplifier and the extreme low frequencies out of the high frequency amplifier.

Refer to figure 5 for proper setup of a bi-amplified system using an electronic crossover.

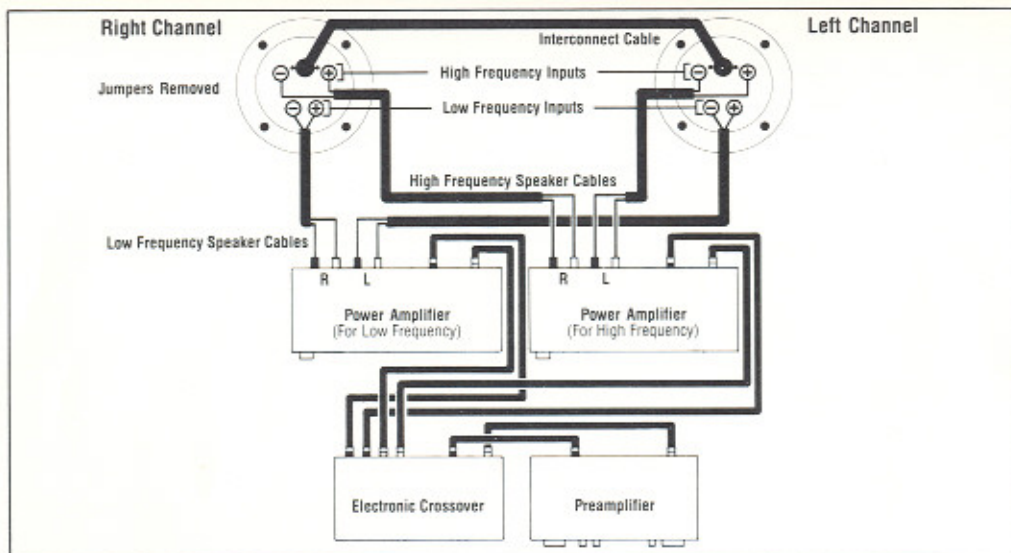


FIGURE 5. Connections for Bi-amplifying the SDA-SRS and SDA-SRS 2 using an Electronic Crossover.

#### TROUBLESHOOTING:

The following additional item should be added to Part I of the trouble shooting guide for all SDA systems:

#### Problem

(6 & 7) Breakup or distortion on forceful recordings (especially horns, female vocals, piano, etc.)

#### Solution

(6c & 7c) Make sure speakers are in correct *absolute* phase.

The following section, Trouble Shooting Chart Part III, pertains to possible difficulties arising from a bi-amplified setup, and applies to the SDA-SRS and SRS 2 only.

#### SDA-2B

#### PHYSICAL SPECIFICATIONS:

#### Dimensions

Standard Version  
Studio Version

11-1/2"D X 16-1/2"W X 39-1/2"H  
11-3/4"D X 15-7/8"W X 38-1/2"H

#### Shipping Weight per Cabinet

Standard Version  
Studio Version

80 lbs.  
65 lbs.

#### Driver Complement

1 X MW6510 Mid L.F. (Stereo)  
1 X MW6511 Mid L.F. (Dimensional)  
1 X SL2000 H.F.  
1 X D1200-A Passive Radiator

#### Impedance

Greater than 4 Ω

#### Tweeter Protection

Semiconductor, thermal, self-resetting



Enclosure Type	Passive Radiator, Left-Right Mirror-Imaged Cabinets
Crossover Type (each cabinet)	
High Pass (One per cabinet)	2nd order Gaussian; resonance and inductance compensated; 2 kHz
Low Pass — #1 (Two per cabinet)	2nd order Butterworth, impedance compensated; 2 kHz
Low Pass — #2 (One per cabinet)	Fully complementary sub-bass operation of both drivers below 150 Hz
Dimensional Matrix —	One per system

## SDA-1C

### PHYSICAL SPECIFICATIONS:

#### Dimensions

Standard Version

11-1/2"D X 16-1/2"W X 44"H

Studio Version

11-3/4"D X 15-7/8"W X 43"H

#### Shipping Weight per Cabinet

Standard Version

100 lbs.

Studio Version

85 lbs.

#### Driver Complement

2 X MW6511 Mid L.F. (Stereo)

2 X MW6510 Mid L.F. (Dimensional)

2 X SL2000 H.F.

1 X SW120 Passive Radiator

#### Impedance

Greater than 4  $\Omega$

#### Tweeter Protection

Semiconductor, thermal, self-resetting

#### Enclosure Type

Passive radiator, left-right mirror-imaged cabinets

#### Crossover Type (each cabinet)

High-pass (One per cabinet)

2nd order Gaussian, resonance and inductance compensated; 2kHz

Progressive Point Source (One per cabinet)

Sequential first-order low-pass and high-pass resistance coupled filters set at 2kHz and 4kHz

Low-Pass #1 (Two per cabinet)

2nd order Butterworth, impedance compensated; 2kHz

Low-Pass #2 (One per cabinet)

Fully complementary sub-bass operation of all four drivers below 150 Hz

#### Dimensional Matrix

One per system

**SDA-SRS 2A**  
**PHYSICAL SPECIFICATIONS:**

Dimensions	12-1/4"D X 21"W X 50"H
Shipping Weight per Cabinet	135 lbs.
Driver Complement	2 X MW6511 Mid L.F. (Stereo) 2 X MW6510 Mid L.F. (Dimensional) 2 X SL2000 H.F. 1 X SW120 Passive Radiator
Impedance	Greater than 4 $\Omega$
Tweeter Protection	Semiconductor, thermal, self-resetting
Enclosure Type	Passive radiator, left-right mirror-imaged cabinets
Crossover Type (each cabinet)	
High-pass (One per cabinet)	2nd order Gaussian, resonance and inductance compensated; 2kHz
Progressive Point Source (One per cabinet)	Sequential first-order low-pass and high-pass resistance coupled filters set at 2kHz and 4kHz
Low-Pass #1 (Two per cabinet)	2nd order Butterworth, impedance compensated; 2kHz
Low-Pass #2 (One per cabinet)	Fully complementary sub-bass operation of all four drivers below 150 Hz
Dimensional Matrix	One per system

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