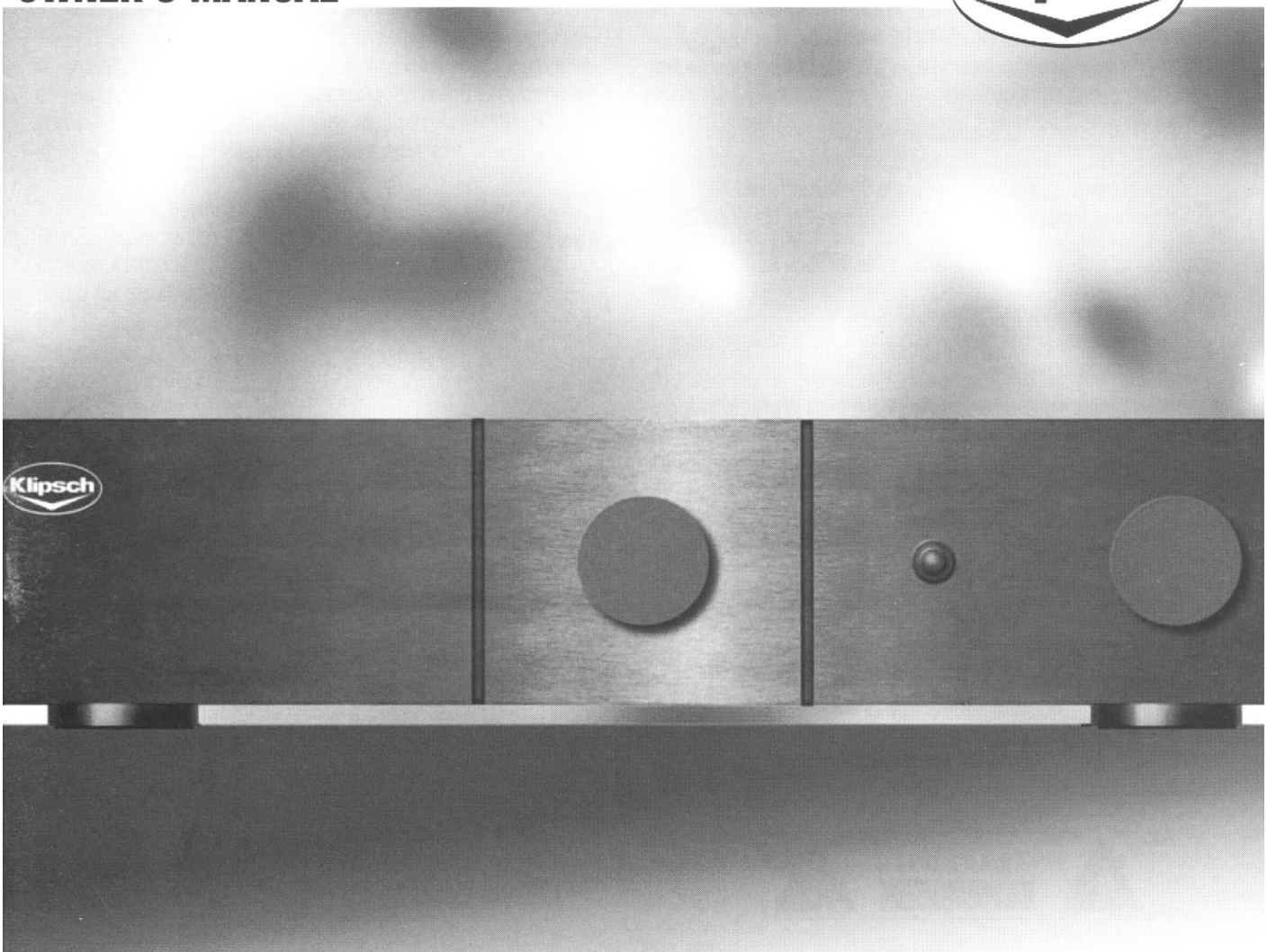
RSA-500

SUBWOOFER AMPLIFIER

OWNER'S MANUAL



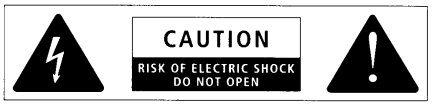
IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Do not expose this apparatus to dripping or splashing and ensure that no objects filled with liquides, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from teh AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. The mains plug of the power supply cord shall remain readily operable.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

WARNING: To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.



WARNING: Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.

CAUTION: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.

ABOUT YOUR KLIPSCH PURCHASE

Thank you for your purchase of a Klipsch subwoofer amplifier. After reading this manual and connecting your system, you will hear the results of over 60 years of stringent engineering and class-leading research and development. Again, thank you for choosing Klipsch and we hope that your subwoofer amplifier brings life to your music and movies for many years.

UNPACKING

The easiest way to remove the amplifier from its carton is to turn the open end of the box down so that it is resting on a table or the floor, with the flaps spread out and away. Then pull the box straight up and off. Remove any packing material from the amplifier, place it back in the carton, and store in case you ever need to ship the amplifier.

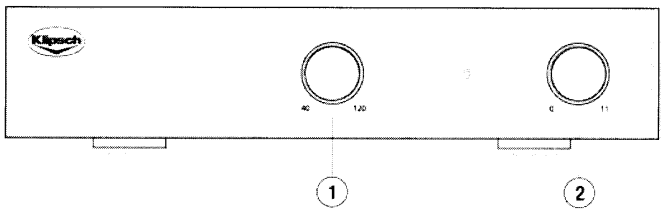


Figure 1

FRONT PANEL CONTROLS

1. Lowpass Crossover

The Lowpass Crossover control allows you to select the proper frequency at which your subwoofer system blends with your main speakers. It is adjustable from 40-120Hz. You should set this control to the approximate low-frequency limit of your main left and right speakers.

2. Level Control

The Level control is the volume setting for the amplifier. It is used in conjunction with the subwoofer output level control on your preamplifier or receiver. It is used to adjust the overall output level of your subwoofer system.

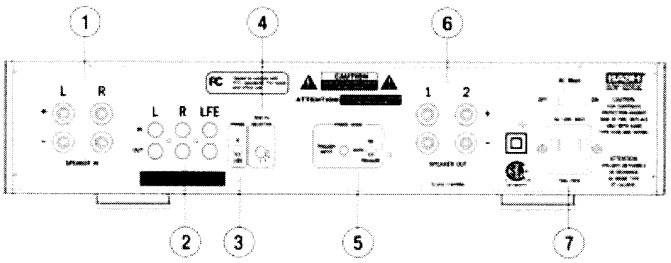


Figure 2

REAR PANEL INPUTS AND OUTPUTS /CONNECTIONS AND SETUP

Make all connections with the power turned "OFF" on both the subwoofer amplifier and your receiver or preamplifier!

1. Speaker Level Inputs

The Speaker Level inputs which allow this amplifier to be used in whole house distributed audio systems or with receivers that do not feature line or subwoofer outputs. You may connect either the inputs or outputs with Banana or pin connectors as well as stripped wire up to 12 gauge.

2. Line Level Inputs and Outputs

The Line Level inputs consists of a pair of stereo jacks and a single LFE RCA phono jack. Either one or both of the stereo jacks may be used. (Use a shielded, high quality subwoofer interconnect cable of appropriate length with RCA plugs on each end. Your dealer can help you select a suitable cable.) Use the LFE jack when you are using the crossover built into your receiver or processor. The stereo inputs should be used when you wish to utilize the crossover built into the RSA-500. The Line Level outputs consist of a pair of gold plated stereo RCA jacks and a single LFE RCA phono jack. This set of outputs are unfiltered pass through for both the Line Level and LFE input signals. They can be used to connect to a second RSA-500 amplifier or to connect back to your electronics if needed.

3. Phase Control

The Phase control on the RSA-500 is switchable between either 0˚ or 180˚. This control allows you to fine tune the performance of your subwoofer system by optimizing the blend with the main speakers. One of the positions may result in an audible increase in bass output depending upon room placement.

4. Equalizer Selection

The Equalizer switch has four settings which are labeled 1 through 4. In the "1" position, the EQ curve selected is optimized for the RW-5802 in-wall subwoofer. In the "2" position, the EQ curve selected is optimized for the AW-800-SW outdoor subwoofer. In the "3" position, the EQ curve selected is optomized for the RW-5101-C in-ceiling subwoofer. The position labeled "4" is for future use.

5. Power Mode Selection

The Power Mode switch has three settings – "Trigger", "Auto" and"On". In the "Trigger" position, leave the Master Power switch in the "On" position and set the Power Mode switch to the "Trigger" position, then the amplifier will automatically turn itself on and off when 5-30 volts DC is detected or removed from the rear panel 1/8" Trigger jack. Tip is positive, ring is negative. There is no delay when using the Trigger function. In the "Auto" position, leave the Master Power switch in the "On" position and set the Power Mode switch to the "Auto" position, then the amplifier will automatically turn itself on and off when an audio signal is detected or removed from the rear low or high level inputs. There is a 2 second On delay and a 15 minute Off delay when using the Auto Power function. In the "On" position, the Master Power switch turns the amplifier on or off. Set the Master Power switch to the "On" position and set the Power Mode switch to the "On" position, then the amplifier will turn itself on and off with the Master Power switch.

6. Speaker Level Outputs

The Speaker Level outputs may connected either with Banana or pin connectors as well as stripped wire up to 12 gauge.

7. AC Line Cord and Main Switch

The AC Line connection uses a detachable two-prong power cord. Insert the line cord into this jack, set the Master Power switch located above the cord to "Off", then insert the power cord into an appropriate AC receptacle. Leave the Master Power switch off until all connections are completed. (We recommend leaving the Master Power and Power Mode switches in the "On" position for normal operation in most systems.)

CONNECTIONS AND ADJUSTMENTS

The RSA-500 is a high-performance, power amplifier with a built-in subwoofer crossover. It is designed specifically to drive one or two subwoofer modules, such as the RW-5802, to maximum output without audible distortion or risk of damage. Although the amplifier's connections and controls are simple, their use varies somewhat according to the subwoofer system's application. Typical setup procedures are described in the following sections – one for digital systems and one for analog systems.

DIGITAL SURROUND RECEIVER OR PROCESSOR CONNECTIONS

Today's Dolby Digital® and DTS® digital surround receivers and processors, as well as all THX-certified models, have line-level subwoofer outputs and built-in subwoofer crossovers. If your system is built around one of these, it will almost always be best to use the RSA-500's LFE input. This will bypass the crossover and level controls (Figure 3). Use a shielded, high quality subwoofer interconnect cable of appropriate length with RCA plugs on each end. Your dealer can help you select a suitable cable. Be sure to go into your receiver or processor's speaker setup menu and set Subwoofer to "On" or "Yes" in the subwoofer menu. Your receiver or processor may have additional bass management abilities beyond simply activating the subwoofer output. Consult your receiver or processor's owner's manual or your dealer for more information on the proper bass management settings for your system.

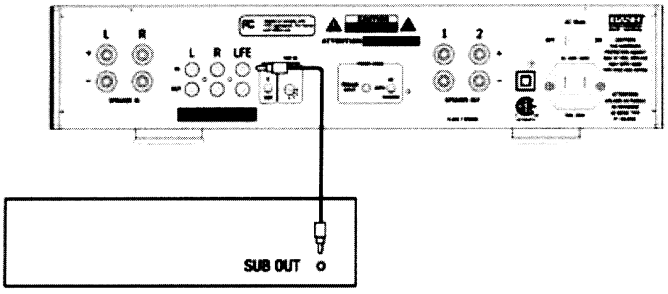


Figure 3

• **Crossover Adjustment** – When the RSA-500's LFE input is used, the crossover control will not function.

• **Level Control** – Play a variety of music recordings containing strong but not overpowering bass. Adjust the RSA-500 level control until the music sounds consistently warm and natural. If you have trouble getting enough low bass without the sound becoming boomy, it probably means the Crossover control is set too high. Try turning it down a bit at a time until the problem goes away. If the sound is thin until you turn the subwoofer Level up so much that lower bass is too prominent, start by changing the setting of the Phase control. If that does not entirely solve the problem, you probably need to raise the Crossover frequency.

• **Phase Control** – In some installations the setting of the Phase control may not make much difference, whereas in others it may be necessary to go back and forth between the Phase and Level controls for a while in order to get the very best blend with the main speakers. Since each control setting (including the one for crossover frequency in the receiver or processor) affects the optimum settings for the others, it often takes a while to get everything dialed in just right. Start with the Phase control at 0° and play a recording with a prominent, repeating bass line in your listening position. Repeat this process with the control in the 180° position. Use the setting that yields the greatest bass output.

General Comments About Adjustments: Since any change in the setting of one control tends to change the optimum settings for the others to some degree, the adjustment process is very interactive and involves a great deal of trial and error. If after a period of listening and calibration you are still not happy, it may mean that you need to experiment a little with the location of the subwoofer. That, of course, also interacts with everything else. Again, patience is a virtue. The end result will be well worth the effort.

ANALOG SURROUND RECEIVER / PROCESSOR OR TWO-CHANNEL STEREO SYSTEM CONNECTION

Some analog A/V receivers and processors (without Dolby Digital® or DTS® capability) have a line-level subwoofer output. Others have left- and right-channel line-level outputs, as do some stereo receivers and integrated amplifiers. All separate stereo preamps and surround processors have line-level outputs. If your system is built around one of these, it will almost always be best to use the RSA-500's stereo line level inputs. This will allow use of the crossover and level controls (Figure 4). You will need one or two shielded, high quality interconnect cables of appropriate length with RCA plugs on each end. Your dealer can help you select suitable cables.

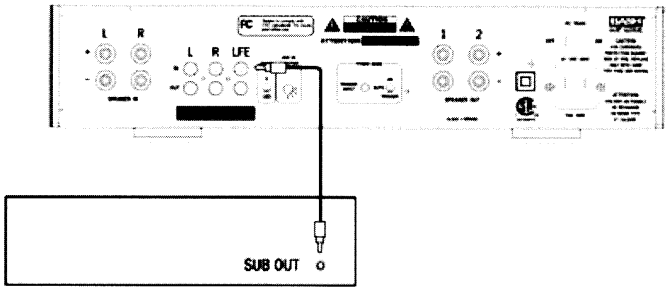


Figure 4

• **Subwoofer Output** – Connect the subwoofer output jack to one or both of the line-level input jacks on the RSA-500.

• **Preamp Outputs on Receiver or Integrated Amplifier** – If your receiver or integrated amplifier has spare preamplifier outputs for its front left and right channels and no subwoofer output, connect these to the stereo line-level inputs on the RSA-500.

• **Pre-out/Main-in Loops on Receiver or Integrated Amplifier** Some receivers and integrated amplifiers have their preamplifier and power amplifier stages connected externally via jumpers. If yours has its left and right front channels connected this way, you can connect the RSA-500 to those preamp outputs. You will need a pair of Y-adaptors, each with two male RCA plugs and one female RCA jack. Remove the jumpers for the two channels. For each, plug one leg of a Y-adaptor into the preamp output jack and another into the main amp input jack. Plug the cables leading to the RSA-500 into the female ends of the Y-adaptors.

• **Separate Preamplifier or Surround Processor** – You will need a pair of Y-adaptors, each with one male RCA plug and two female RCA jacks. Unplug the cables leading from the front left- and right-channel outputs on the preamp or processor and plug the Y-adaptors into them. For each channel, plug the cable leading to the power amplifier into one of the RCA jacks on the Y-adaptor and the cable leading to the RSA-500 into the other.

• **Crossover Adjustment** – Set the control to the approximate low-frequency limit of your main left and right front speakers. If you don't have their specifications, take an educated guess based on the size of the speakers. A large speaker will usually work down to lower frequencies than a small speaker. So for a large floorstanding loudspeaker, you might start with the Crossover frequency set all the way down to 40Hz, whereas for very small satellite speakers you might want to turn it all the way up to 120Hz. Typical bookshelf speakers would tend to be in the 50Hz to 80Hz range. If the crossover frequency is set higher than 100Hz, the subwoofer should be in the front of the room near the front main speakers.

• **Level Control** – Play a variety of music recordings containing strong but not overpowering bass. Adjust the RSA-500 level control until the music sounds consistently warm and natural. If you have trouble getting enough low bass without the sound becoming boomy, it probably means the Crossover control is set too high. Try turning it down a bit at a time until the problem goes away. If the sound is thin until you turn the subwoofer Level up so much that lower bass is too prominent, start by changing the setting of the Phase control. If that does not entirely solve the problem, you probably need to raise the Crossover frequency.

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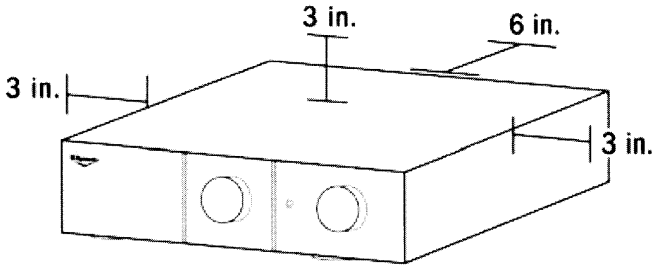

NOTE: Minimum clearence when rack mounted:
Height- 0" Width- 3" per side Depth (from rear panel)- 6"

CARE AND CLEANING
The only thing you should ever need to do to your subwoofer amplifier is to dust it occasionally. Never apply any abrasive or solvent-based cleaner or any harsh detergent.

WARRANTY—U.S. AND CANADA ONLY
The Warranty below is valid only for sales to consumers in the United States or Canada.

KLIPSCH, L.L.C. ("KLIPSCH") warrants this product to be free from defects in materials and workmanship (subject to the terms set forth below) for a period of five (5) years from the date of purchase. During the Warranty period, KLIPSCH will repair or replace (at KLIPSCH's option) this product or any defective parts (excluding electronics and amplifiers). For products that have electronics or amplifiers, the Warranty on those parts is for a period of two (2) years from the date of purchase.

To obtain Warranty service, please contact the KLIPSCH authorized dealer from which you purchased this product. If your dealer is not equipped to perform the repair of your KLIPSCH product, it can be returned, freight paid, to KLIPSCH for repair. Please call KLIPSCH at 1-800-KLIPSCH for instructions. You will need to ship this product in either its original packaging or packaging affording an equal degree of protection.

Proof of purchase in the form of a bill of sale or receipted invoice, which is evidence that this product is within the Warranty period, must be presented or included to obtain Warranty service.

This Warranty is invalid if (a) the factory-applied serial number has been altered or removed from this product or (b) this product was not purchased from a KLIPSCH authorized dealer. You may call 1-800-KLIPSCH to confirm that you have an unaltered serial number and/or you purchased from a KLIPSCH authorized dealer.

This Warranty is only valid for the original purchaser and will automatically terminate prior to expiration (if applicable) if this product is sold or otherwise transferred to another party.

This Warranty does not cover cosmetic damage or damage due to misuse, abuse, negligence, acts of God, accident, commercial use or modification of, or to any part of, the product. This Warranty does not cover damage due to improper operation, maintenance or installation, or attempted repair by anyone other than KLIPSCH or a KLIPSCH dealer which is authorized to do KLIPSCH warranty work. Any unauthorized repairs will void this Warranty. This Warranty does not cover product sold AS IS or WITH ALL FAULTS.

REPAIRS OR REPLACEMENTS AS PROVIDED UNDER THIS WARRANTY ARE THE EXCLUSIVE REMEDY OF THE CONSUMER. KLIPSCH SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY LAW, THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PRACTICAL PURPOSE. Some states do not allow the exclusion or limitation of incidental or consequential damages or implied warranties so the above exclusions may not apply to you. This Warranty gives you specific legal rights, and you may have other rights, which vary from state to state.

WARRANTY OUTSIDE THE UNITED STATES AND CANADA
The Warranty on this product if it is sold to a consumer outside of the United States or Canada shall comply with applicable law and shall be the sole responsibility of the distributor that supplied this product. To obtain any applicable warranty service, please contact the dealer from which you purchased this product, or the distributor that supplied this product.

FCC AND CANADA COMPLIANCE INFORMATION:
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not in-stalled and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class B Digital Device.

Caution: Changes or modifications not expressly approved by Klipsch Audio Technologies could void the user's authority to operate this device.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.