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Instruction Manual
for your new
Reference Standard IIa
Speaker System

UNPACKING

Check your speakers and LOW FREQUENCY EQUALIZER unit carefully. If they have been damaged in transit, call your Infinity dealer and/or whoever delivered the cartons immediately.

RS IIa speakers are quite heavy, so it is recommended that you obtain the help of a sturdy friend before unpacking. When unpacking, take care to avoid scratching or otherwise damaging the units.

Keep the original cartons and packing materials in case of future need. (The cartons fold flat for easy storage.) Protect the packing materials from exposure to moisture.

ASSOCIATED COMPONENTS

Your Reference Standard IIa speaker system will reproduce distortion just as accurately as fine music. Choice of associated components and program material is therefore critical.

The system may be used with either one or two stereo amplifiers. The modes of operation are described later, along with recommended minimum power ratings per channel. In all cases each amplifier should be able to deliver its full rated output into a 4-ohm load at all audio frequencies. The RS IIa is a low-impedance speaker and damage could result to either the drivers or the amplifiers if the amps used are unable to deliver the necessary power. Recommendations for suitable amplifiers are available from your Infinity dealer.

With high-powered amplifiers, it is essential to take care to avoid acoustic feedback (discussed later) or non-musical input signals. Make sure that the amplifier is off before connecting any cables, and turn the amplifier (or preamp) volume controls to "minimum" whenever a cartridge is being lowered onto or raised from a record, or whenever program input changes are being made.

POSITIONING

Room acoustics vary widely, and even small changes in position will affect the sound. For this reason, it is worthwhile experimenting with different room position for your speakers, listening for the best results.

Each RS IIa speaker system has a right and a left speaker. When properly set up, the EMIT tweeters will be towards the center of the room. **IT IS ESSENTIAL THAT THE RIGHT AND LEFT SPEAKERS ARE PROPERLY LOCATED ON THEIR RESPECTIVE SIDES OF THE ROOM.**

For the best stereo image, the tweeters should be two to three meters (seven to ten feet) apart, and not less than the same distance from the normal listening area.

To obtain the low coloration and superb stereo imaging of which your RS IIa speakers are capable, it is essential to position them at least $2/3$ to one meter (two to three feet) from walls and corners. If the sound seems bass-heavy, move the speakers farther from the walls. If the sound seems bass-light, use the controls of the RS IIa LOW FREQ EQUALIZER to alter the balance, rather than moving the speakers closer than $2/3$ to one meter (two to three feet) from the corners and walls.

Because of the arrangement of the drivers in the RS IIa, the speakers tend to be front-heavy. As a result they may lean forward a bit when placed on a soft surface such as plush carpet. If this should occur, place a shim under the front of each speaker to level it.

CONNECTING THE SYSTEM

RS IIa speakers may be used in a single-amp mode (one stereo amp driving the full range of the speaker) or in a bi-amp mode (one stereo amp driving the woofers, and a separate stereo amp driving the midranges and tweeters). In either mode, the RS IIa LOW FREQ EQUALIZER unit **MUST** be connected between your preamp and power amp (low-frequency amp, if in the bi-amp mode). (Refer to figures 2 and 3.) If a receiver or integrated amplifier is to be used, it must have a "tape monitor" or "preamp out/amp in" circuit. If in doubt as to the compatibility of your audio components, consult your Infinity dealer.

All connections must be made using only high-quality audio connector cables. Connections from your amplifier(s) to the speakers should be made with heavy-gauge (14 or better) two-conductor stranded wire with polarity coding (a color, or a thin ridge or stripe along one conductor). It is vital that the speakers are connected "in phase". Use the polarity coding to make certain that the "+" (red) terminal of each speaker is connected to its amplifier's "+" output (sometimes coded "+", or colored red). Refer to the section entitled "A Word About Absolute Phase for further information.

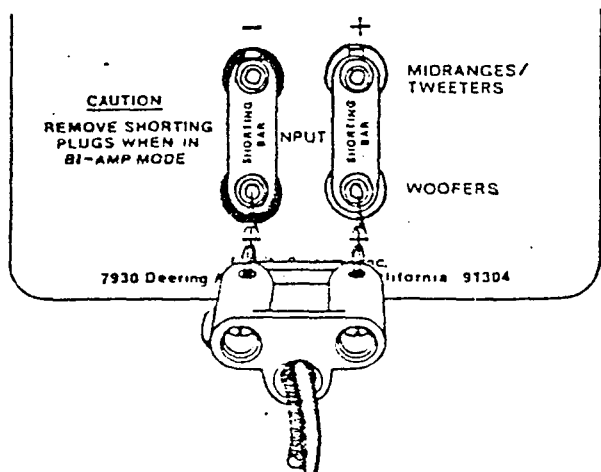
Before turning your audio components on, check carefully to make sure that no stray or frayed strands of wire are shorting between the "+" and "-" terminals at either the amplifier(s) or speakers.

Supplied with your RS IIa speaker system you will find eight double banana-type connecting plugs: four black, and four either red or white. The black plugs are to be connected to the ends of your speaker cable and inserted into the input terminals of the speakers. (To connect your speaker cables, you will need to loosen the small set screws from inside the plugs with a very small flatblade screwdriver, and insert the stripped and tinned ends of the "+" and "-" speaker leads into the appropriate holes in the plugs. Tighten the set screws firmly to secure the wires.) The remaining plugs (either red or white) are "shorting bars". These are only used if operating the RS IIa speaker system in the single-amp mode, as described in the following paragraphs.

Single-Amp Mode

In this mode of operation, two "shorting bars" (the red or white plugs supplied with the system) are inserted "vertically" into the input terminals of each speaker, thus tying the "+" input terminal of the woofers with the "+" input terminals of the midranges/tweeters, and the "-" input terminal of the woofers with the "-" input terminal of the midranges/tweeters. (See figure 1.)

Figure 1:

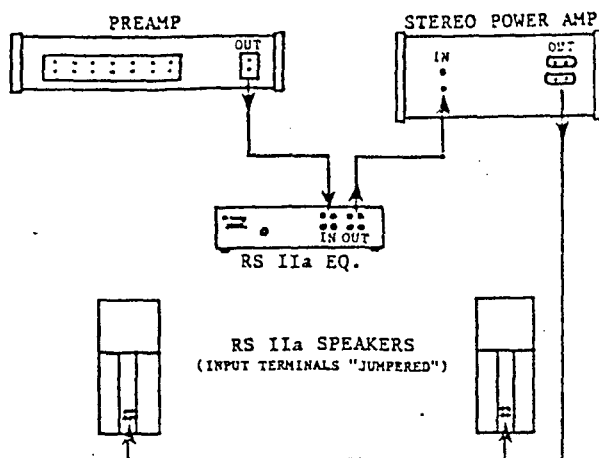


CAUTION: DO NOT ATTEMPT TO CONNECT THE OUTPUTS OF YOUR AMPLIFIER "VERTICALLY" INTO THE INPUT TERMINALS, AS THIS WILL SHORT-CIRCUIT THE AMP OUTPUTS AND MAY CAUSE SERIOUS DAMAGE.

Your amplifier should be rated between 75 and 400 watts-per-channel into 4 ohms.

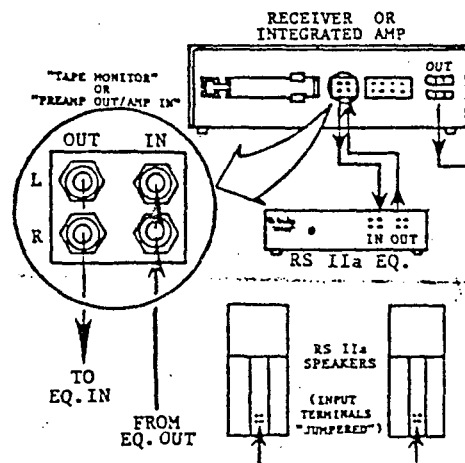
If your preamp is a separate component from your power amp, connect the RS IIa LOW FREQ EQUALIZER as shown in figure 2.

Figure 2:



If you are using an integrated amp or receiver, connect the RS IIa LOW FREQ EQUALIZER into the "tape monitor" (preamp out/amp in) circuit as shown in figure 3.

Figure 3:



Bi-Amp Mode

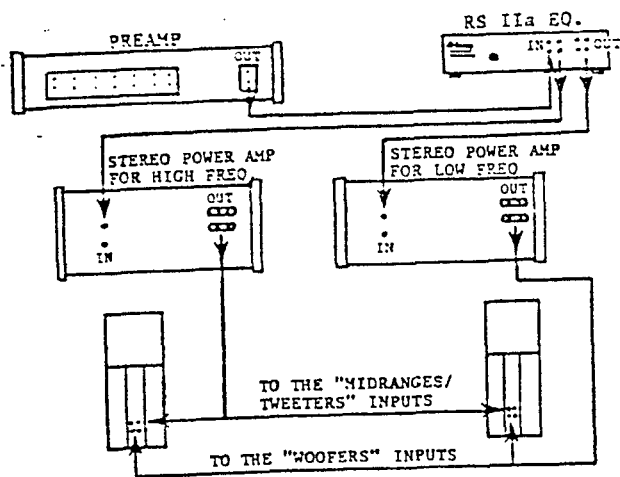
In the bi-amp mode, the speaker input terminals are not jumpered: the upper set of inputs are for connecting the midranges and tweeters, while the lower set of inputs are for connecting the woofers.

Two separate stereo power amps are needed in order to operate the RS IIa speaker system in the bi-amp mode: one for the low frequencies, and the other for the midranges and tweeters.

The low frequency power amp should be rated between 75 and 400 watts-per-channel into 4 ohms, and the mid-range/high frequency power amp should be rated between 75 and 300 watts-per-channel into 4 ohms.

Connect the RS IIa LOW FREQ EQUALIZER as shown in figure 4:

Figure 4:

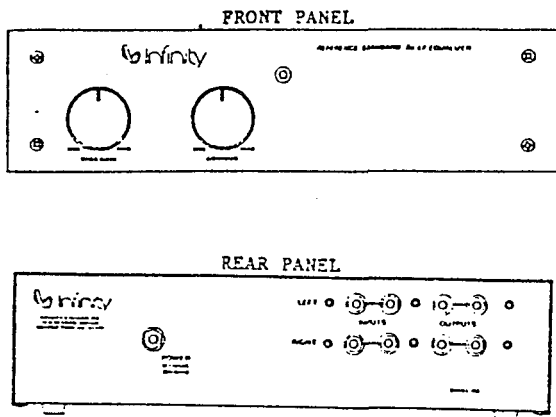


The two left-channel input jacks of the equalizer unit are wired in parallel, as are the two right-channel jacks, so in this set-up the output of the preamp is being fed to both the equalizer unit and the high-frequency power amp. The output of the equalizer feeds a modified signal to the low-frequency power amp. Do not connect the output of the equalizer unit to the high-frequency power amp.

THE LOW FREQUENCY EQUALIZER UNIT

The RS IIa LOW FREQ EQUALIZER unit connects into the signal path between the preamp output and the power amp input (refer to the section entitled "Connecting The System"), and is used whether in the single-amp or the bi-amp mode. Figure 5 illustrates the equalizer unit.

Figure 5:



The "BASS GAIN" control of the RS IIa LOW FREQ EQUALIZER unit controls the amount of bass equalization (or gain) below 100 Hz.

The "CONTOUR" control adjusts the overall level below 1 kHz.

The nominal or starting position of the controls of the unit is at the 12 o'clock (straight-up) position.

After connecting the equalizer into the signal path, insert the small plug of the A.C. power adapter into the "POWER" jack on the rear panel of the equalizer. (Push in firmly to be sure the plug is fully seated into the jack.) Plug the adapter's two-prong A.C. plug into a suitable source of A.C. line voltage.

NOTE: THE ADAPTER MUST BE THE PROPER VOLTAGE FOR THE SOURCE IT IS CONNECTED TO OR IT MAY CAUSE DAMAGE TO THE EQUALIZER UNIT.

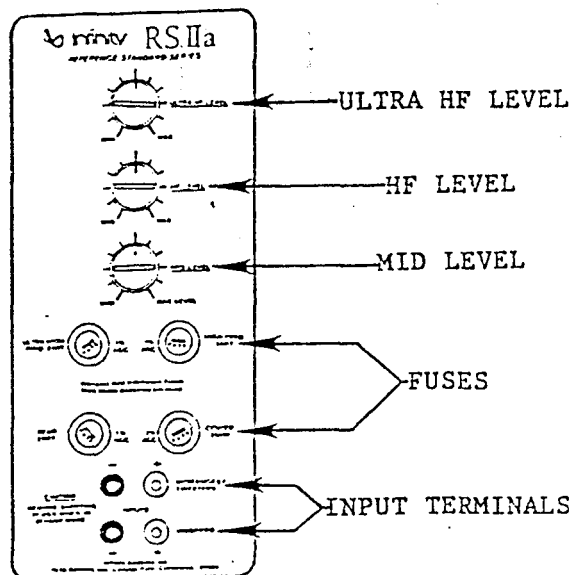
Since the RS IIa LOW FREQ EQUALIZER unit has no "on/off" switch, it is not harmful to leave the unit "on" (plugged-in) while the rest of your equipment is off. (The unit draws less than 4 watts.)

NOTE: The equalizer unit should not be turned on or off when the power amp is on, as this will produce an unpleasant, "thumping" noise.

THE PASSIVE CROSSOVER

The passive crossover controls are located on the rear baffle of the speakers. Figure 6 illustrates these controls.

Figure 6:



The ULTRA HF LEVEL control adjusts the output of the uppermost front tweeter, in the frequency range of 8.5 kHz and higher. The HF LEVEL control adjusts the output of the lower front tweeter, in the frequency range of 4.5 kHz to 10 kHz. The MID LEVEL control adjusts the output of the center mid-range driver, in the frequency range of 1.1 kHz to 4.5 kHz.

The four fuses protect the 3 EMIT tweeters and the high/mid-frequency EMIM midrange driver from overload conditions. Should any of the fuses blow, replace them with ONLY the same size and type fuse, as indicated beside each fuseholder. USING LARGER OR SLOWER FUSES THAN THOSE SPECIFIED WILL VOID YOUR WARRANTY.

The type and amount of furnishings in your listening room will have an effect on the tonal balance perceived by the ear, especially in the middle and upper frequency ranges. After determining the most suitable location for your speakers, use the tweeter level controls to compensate for sound which seems "dull" or "bright". Adjusting the midrange control will affect how "near" or "distant" the music appears.

The adjustment controls should initially be set at in the middle position, and then adjusted to suit your listening environment. In general, rooms with heavily upholstered furniture and thick draperies will require more output from the tweeters than lightly furnished, "reflective" rooms.

Adjust the crossover controls in small increments, listening to a variety of material, until you establish the settings that are most suitable for you. As a general rule, once the controls on the passive crossovers are set, they are usually left alone.

A WORD ABOUT ABSOLUTE PHASE

Maintaining absolute phase is an essential factor in the proper performance of your RS IIa speaker system.

If all amplifiers were "non-inverting" (that is, if their outputs were in-phase with their inputs), then maintaining absolute phase would simply involve observing the polarities of the speaker connecting cables. However, since some amplifiers are "inverting" (that is, their outputs are 180° out-of-phase with their inputs), some changes in the speaker's hookup may be required in order to accommodate inverting amplifiers.

Consult the manufacturer(s) of your audio components to determine if they are inverting or non-inverting. If in the bi-amp mode, and your low-frequency power amp is inverting, reverse the "+" and "-" leads at either the low-frequency power amp outputs or the woofer inputs. If your mid/high-frequency power amp is inverting, reverse the "+" and "-" leads at either the mid/high-frequency amp outputs or the midrange/tweeter inputs.

If your only inverting component is your preamp, all of the speaker leads would have to be reversed at either the amp outputs or the speaker inputs.

BE SURE NOT TO REVERSE LEFT AND RIGHT CHANNELS.

FEEDBACK

If, after taking care in positioning your RS IIa speaker system, you find the bass response is "boomy" and lacking "tightness", or you hear a rumble when playing records, or you notice excessive movement of the woofer cones, the cause may be acoustic feedback. This means that the vibrations from your speakers are being picked-up by the cartridge of your turntable. Because of the extended low frequency response of the RS IIa, isolating the turntable from these vibrations calls for considerable care.

In general, make sure that the turntable is placed on a heavy, solid support, as far away from the speakers as possible. Some combinations of turntable, tonearm, and cartridge are more apt to encounter difficulties with feedback than others. If you continue to experience difficulties after some experimenting, ask your Infinity dealer for assistance.

HUM

If you should experience an audible 50/60 cycle hum in your speakers, first check all cables and connections (especially your turntable's ground wire), and exchange the cables one at a time with ones that are known to be functioning properly. If all cables and connections are proven to be okay, use a two-prong adapter (commonly called a cheater or a floater) on the A.C. power cords of your components that have three-prong plugs, one at a time, until the hum is eliminated. If necessary, float all of your components except one (to keep the system grounded). Also, try inverting the two-prong plugs in their receptacles.

If the hum persists, consult your Infinity dealer or Infinity's customer service department.

-TROUBLESHOOTING

If the sound quality from your RS IIa speaker system seems distorted, or if part of the system seems to be damaged or inoperative, you may be able to find the source of the problem and correct it. Try, following closely the numbered steps that follow.

Then, if you have been unsuccessful in locating the specific source of trouble, or if you have been unable to correct it, start making these inquiries in a-b-c order:

A: Consult the Infinity dealer from whom you purchased the system. Infinity dealers are audio specialists and can help solve most problems. But, if the dealer can not help...

B: Get the name and address of the authorized Infinity service facility nearest you by calling 213-883-4800 or (if outside of the United States) by writing or calling the national distributor of Infinity products. You may be instructed to take or send the unsatisfactory part or speaker to a service facility, or the Infinity factory, for service under terms of the warranty. (A copy of the warranty statement is included with the speaker system, or may be obtained upon request from Infinity Systems Inc.)

NOTE: UNDER NO CONDITIONS ARE YOU TO SHIP ANY PRODUCTS FOR SERVICE WITHOUT PRIOR APPROVAL (A "RETURN AUTHORIZATION"), AND DO NOT MAKE ANY SHIPMENTS WITHOUT ENCLOSING A COPY OF YOUR ORIGINAL BILL OF SALE.

If there is no authorized service facility near you, or in the highly unlikely case that the service facility cannot solve the problem...

C: Contact the customer service department at Infinity Systems (7930 Deering Avenue, Canoga Park, California, 91304, U.S.A.; phone 213-883-4800). Describe the difficulty as specifically as possible. The service department will then advise you as to what action you should take.

If the dealer, service facility, or factory service department instructs you to remove a driver for service or replacement, before you disconnect any wires from the terminals, use a piece of tape to "flag" each wire from the terminals labeled "+". If necessary, note also which wires connected to each driver, to avoid incorrect connections when you replace the drivers.

Before you consult the Infinity dealer, service facility, or factory service department, these are the tests that you can perform to help locate and solve a problem in your RS IIa speaker system.

NOTE BEFORE REMOVING DRIVERS:

Each tweeter is held in place with two black hexagonal-head screws, each midrange driver with four, and each woofer with six. Do not loosen or remove any screws of any other type.

If the tweeters appear inoperative...

Step 1: Check the appropriate fuse(s) and replace if necessary using only the same type of fuse. If the problem is not with the fuses, be sure that the system is connected properly (refer to the section entitled "Connecting The System") and go on to...

Step 2: Look through the slots of the drivers at the etched voice-coils (thin silver lines) and diaphragms (thin plastic films). Look for punctures, broken lines, lines coming loose from the film, or any other apparent damage. If you find any damage at all, call your Infinity dealer for instructions. If you find no damage, carefully remove the tweeter screws and check to see that the wires are properly connected. Tighten and/or reconent the wires if necessary, and if the problem persists go on to...

Step 3: Remove the suspected tweeter(s) and connect it to a low-volume source of music (preferably one that is very light in the bass region). If the tweeter does not play properly, it is defective. If the tweeter plays, the problem may be in the passive crossover; call your Infinity dealer and describe the problem.

If the center midrange driver appears inoperative...

(Same as steps 1, 2, and 3 for the tweeters, except that the midrange need not be removed from the speaker to connect the source of music, or to examine the wires.)

If the top and bottom midrange drivers appear inoperative...

(Same as for the center midrange with the exception of the fuse.)

If the woofers appear inoperative...

Step 1: Check all of the connections and cables in the low frequency equalization circuit. Replace defective cables, and repair connections if necessary. If the problem persists, go on to...

Step 2: Remove the woofers and check to see that the wires are properly and securely connected. Tighten and/or reconnect the wires if necessary, and if the problem persists, go on to...

Step 3: Disconnect the wires from the woofer terminals, and connect each woofer to a source of low-volume music (preferably one that is very heavy in bass notes) and listen to the woofer. If there is no output, or if the output is low and distorted, or if the woofer makes a rubbing, scratching, or buzzing noise, it is defective. If both of the woofers operate properly, the problem may be in the passive crossover; consult your Infinity dealer for instructions.

If one entire speaker appears inoperative...

Reverse the left and right speaker leads at the output terminals of the amplifier(s), and determine if the problem has moved to the other speaker or remains in the same one. If the problem remains in the same speaker, that speaker may have a defective passive crossover; consult your Infinity dealer for instructions. If the problem moves to the other speaker, the problem is in your audio equipment and/or connections.

If the LOW FREQ EQUALIZER unit appears inoperative...

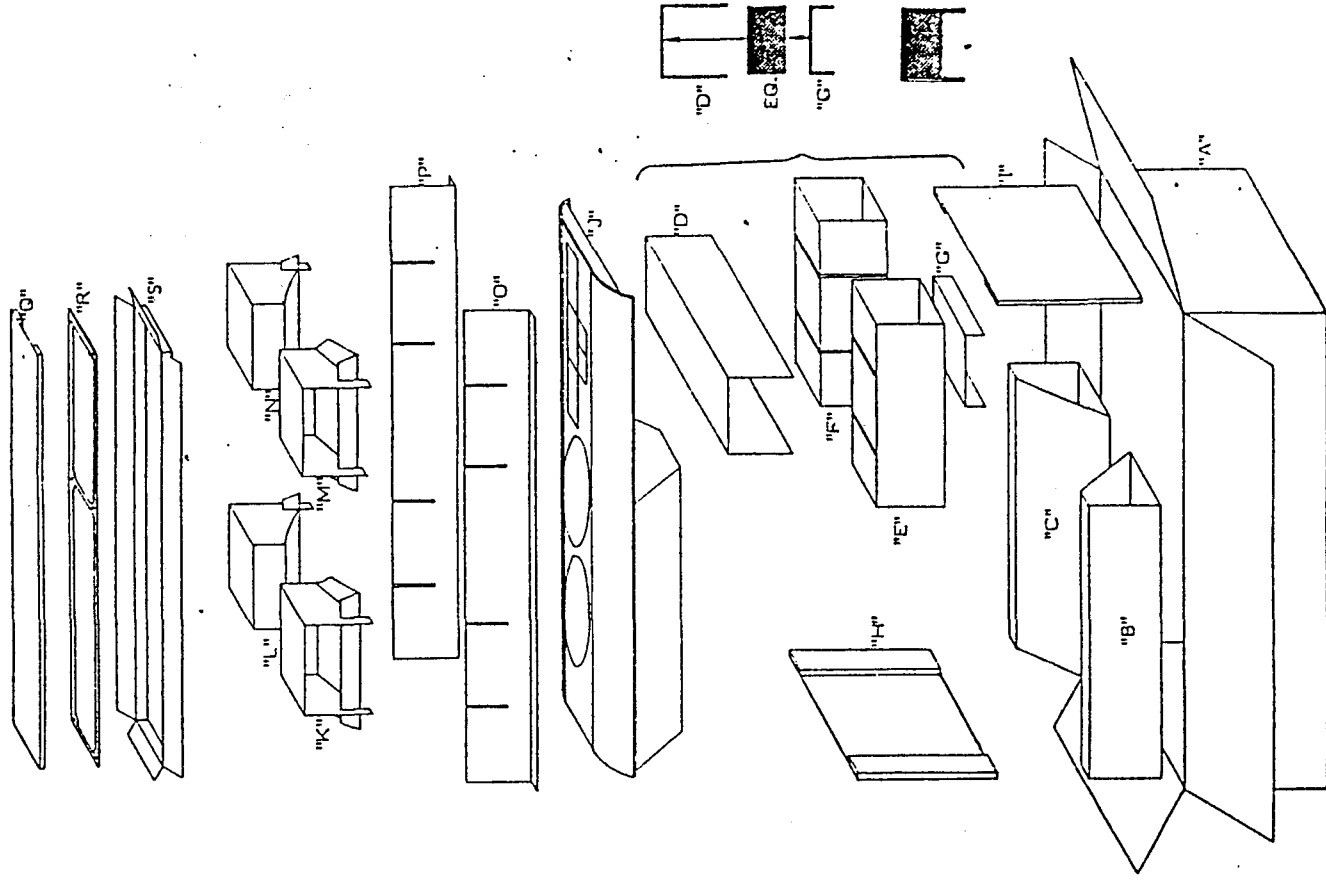
DO NOT ATTEMPT ANY REPAIRS.
If the LED on the front panel does not illuminate when the unit is "on", or if there is no output from the unit when it is plugged in, use a voltmeter to verify that the A.C. adapter is producing an output of 13 to 14 volts A.C. If the adapter is defective, consult your Infinity dealer for instructions. If the A.C. adapter is functioning properly, the LF EQUALIZER unit may be defective; consult your Infinity dealer for instructions.

Infinity strives always to update and improve existing products, as well as create new ones. So the specifications and construction details in this Infinity publication and others are subject to change without notice.

REPACKING THE RS IIa SPEAKER SYSTEM

REFER TO ILLUSTRATION.

1. LAY CARTON "A" RIGHT-SIDE-UP WITH BOTTOM SECURELY SEALED SHUT.
2. PLACE SUPPORTS "B" AND "C" INTO LOWER END OF CARTON.
3. FIT CROSSBRACE "D" INTO SLOTS IN RAILS "E" AND "F"; PUSH CROSSBRACE DOWN UNTIL FLUSH WITH RAILS.
4. **ONLY APPLIES TO RIGHT SPEAKER: PLACE "LF EQUALIZER" UNIT INTO RECESS OF CROSSBRACE "D"; INSERT RETAINER "G" (SEE ASSEMBLY DETAIL).
5. PLACE CROSSBRACE ASSEMBLY ("D" - "G") INTO UPPER END OF CARTON.
6. FIT END PADS "H" AND "I" INTO CARTONS.
7. GENTLY LAY SPEAKER "J" INTO CARTON UNTIL IT RESTS ON SUPPORTS "B" AND "C" AND CROSSBRACE ASSEMBLY "D" - "G".
8. FOLD LIP OF BRACE "O" AND "P" TOWARDS WALL OF CARTON; PLACE BRACE IN CARTON ON SPEAKER.
9. MATE TABS OF PADS "K" - "N" WITH SLOTS IN BRACE "O" AND "P".
10. PLACE PAD "Q" OVER GRILLE "R"; PLACE GRILLE AND PAD INTO SMALL BOX "S"; FOLD FLAPS OF SMALL BOX AND SEAL WITH TAPE.
11. PLACE SMALL BOX "S" IN SPACE ON TOP OF SPEAKER "J".
12. FOLD FLAPS OF OUTER CARTON "A" AND SEAL SECURELY.



LIMITED WARRANTY

Who is protected by the warranty?

Your Infinity Warranty protects the original retail purchaser and all subsequent owners, during the stated warranty period, from any failure as a result of an original manufacturing defect so long as: (1) your Infinity product was purchased within the fifty United States, or purchased by military personnel from an authorized military outlet and (2) the original dated bill of sale is presented whenever service is required during the warranty period. This warranty does not apply to products purchased elsewhere; other purchasers should contact their local Infinity distributor for warranty information.

How long is the warranty period?

Product Type	Warranty Period	
	Labor	Parts
Electronic Products	2 years	2 years
Speaker Systems	5 years	5 years
Personal Stereos and accessories	90 days	1 year

What does the Infinity Warranty cover?

Except as specified below, the Infinity Warranty covers all defects in original materials and workmanship. The following are not covered: Damage caused by accident, misuse, abuse, neglect, product modification, damage occurring during shipment; damage caused by failure to follow instructions in your owner's manual, including failure to perform recommended periodic or routine maintenance, damage resulting from repairs by someone not authorized by Infinity; claims based upon any misrepresentations by the seller; any Infinity product on which the serial number has been altered, defaced or removed.

Who pays for what?

During the period that both parts and labor are covered by this warranty, Infinity will pay all the labor and material expenses to repair a warrantable defect; during the period that parts ONLY are covered by this warranty, Infinity will pay for all materials to correct a warranted defect, but you must pay for the labor charges.

How can warranty service be obtained?

In the event that your Infinity product requires service, you should first contact the Infinity dealer from whom the product was purchased or if this is not practical, contact us at Infinity (Attn: Customer Service) ~~3000~~ ~~3000~~. We may direct you to an authorized service center for Infinity products or ask you to send your unit to us for repair. In either case you will have to present your original dated bill of sale to establish warranty coverage. Do not send your product to us without prior authorization.

You are responsible for transporting your product for repair and for payment of shipping charges. However, Infinity will pay the return shipping charges if the repairs are covered by the warranty. If you experience difficulty in transporting your product, please advise us and we may suggest alternative procedures.

LIMITATION OF IMPLIED WARRANTIES: All implied warranties, including fitness for a particular purpose and merchantability are limited in duration to the length of the warranty period for your product.

LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES: Infinity is not responsible for any incidental or consequential damage of any kind. Our liability is limited to the repair or replacement, at our option, of a defective product.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion of incidental or consequential damage, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Note: In the event that there is a difference between this warranty and the provisions in your owner's manual, the terms of this warranty will prevail.

Infinity Systems, Inc. • 7930 Deering Avenue, Canoga Park, CA 91304

Please record the serial numbers
of your RS IIa Speaker System here:

Speakers _____

L.F. Eq. Unit _____

Date _____

(Remove this page and retain for your records)