



OWNER'S MANUAL
for your
Infinity
Kappa Series
Speakers

INTRODUCTION

You have invested in one of the finest speaker systems available. The Kappa Series utilizes drivers, crossover network design, and cabinetry which places these models at the forefront of speaker technology. However, as with any quality product, Kappa speakers take special care to install and operate. We urge you, therefore, to read this Owner's Manual carefully before installing your speakers.

UNPACKING

Upon opening the cartons, check both speakers carefully. If they have been damaged in transit, call your dealer, or the trucking firm that delivered them. **DO NOT DELAY.** The longer you wait to inform your dealer or trucker of the damage, the more difficult it will become to file a claim.

It is advisable you fold the cartons flat and store them for future use.

ASSOCIATED COMPONENTS

Your Infinity speakers are extraordinary musical systems. However, they will reproduce distortion as well as music. For this reason, the choice of associated audio components is critical, and should be made with great care. If you replace existing speakers with an Infinity Kappa System, there should be a noticeable improvement in sonic quality, providing the rest of your components are at least on a par with Kappa in terms of low-distortion, phase linearity, frequency response, and so on.

If no improvement is heard, or if the sound deteriorates, it is then possible that one or more of your existing components are of a lower standard than the Kappa speakers. When a speaker system becomes exceptionally revealing, musical balances, colorations, and various forms of distortion become more noticeable because these parameters are no longer masked by the speakers.

Although we cannot recommend which components you should buy, we can make suggestions which could prove useful in obtaining a well-balanced system.

Employ an amplifier with as much power (current capability into 4 ohms) as you can afford. Since quality speakers work best when driven by high current, the choice of an amplifier with a strong, adequate power supply generally results in cleaner, better-defined bass response. And while low distortion, excellent phase characteristics, and low noise are all extremely important performance parameters, sufficient power into low impedance (4 - 6 ohms) on a continuous basis is just as important.

Another significant consideration is that a low-power amplifier operating at its maximum power output could damage a speaker, perhaps even more quickly than a high-power amplifier playing at extremely loud sound levels. This can occur because many amplifiers clip their output very hard when overdriven, and this clipping creates high-frequency distortion products which can

cause the voice coil of a tweeter to heat, and eventually fail. Therefore, always opt for the highest power you can afford. This subject should be discussed with your dealer who is in a position to reply to your questions and make qualified recommendations.

SETTING THE CONTROLS OF YOUR SYSTEM

NEVER operate your audio system with the equalizer, tone, and loudness controls set to maximum boost. This will place undue strain on the amplifier and speakers, and could result in damage.

The volume control setting is of little consequence in judging the amount of power a system is generating. Loudness is a function of audio gain, which, in itself, is unimportant to the user. The only important consideration is the loudness level at which the system can be played, regardless of where the volume control is set.

ALWAYS turn down the volume of your system to zero when changing a record or switching inputs from phono to FM, etc. Excessively loud transients, which can result from a dropped stylus on a record, or from improperly designed switches can result in severe damage to your speakers.

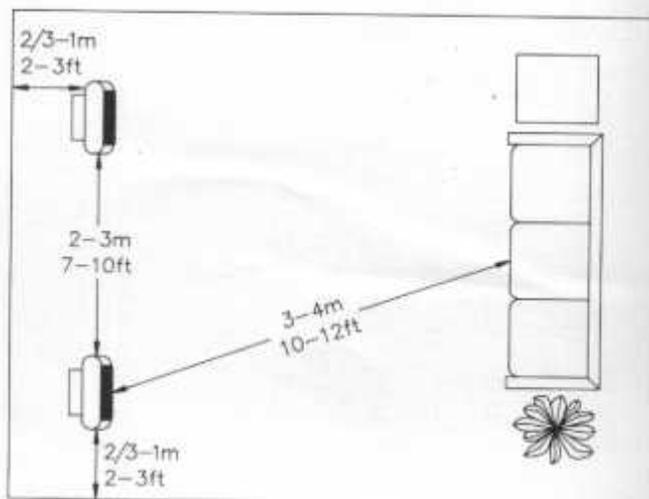
Furthermore, whenever changing wires, pulling plugs, etc., **ALWAYS** turn off all the equipment to prevent transients from entering the speakers. Use caution, and your speakers will repay you with many years of trouble-free service.

POSITIONING

Room acoustics vary widely, and even small changes in position will affect the sound. To obtain the best results, it is worthwhile to experiment with different room positions for your speakers, and listening to the results.

For the best stereo image, the speakers should be no less than two to three meters (7 to 10 feet) apart. This should be considered a basic starting point. From there, some experimentation is usually necessary to obtain optimum results (See Figure 1).

Figure 1:



If your room is larger than average, and your listening position is farther from the opposing wall, a wider placement of the speakers may be desirable: approximately 4 meters (12 to 15 feet). Angle the speakers in slightly toward your listening position.

The distance between the speakers and the primary listening area should be slightly greater than the distance between the speakers.

The proximity of your speakers to corners and walls can affect tonal balance in the bass and lower middle frequencies.

To obtain the lower coloration and excellent stereo imaging that your Infinity speakers are capable of, position them at least 2/3 to one meter (two to three feet) from walls and corners. If the sound is bass-light under these conditions, move the speaker slightly closer to one of these boundaries.

The rear and side walls near the speaker play an important role in how the speakers will ultimately sound in your listening room. Placement toward or further away from these walls "tune" the system to the room. Where you sit is also of critical importance, because if your chair or couch is in the wrong position, bass response can be diminished substantially. At times, moving the listener's position by as little as six to 12 inches forward or rearward can result in a tangible difference in bass energy.

Floor-mounted speakers should not rock on their bases. If your speaker is placed on a thick rug and it is not solidly linked to the floor, a set of "tiptoe standoffs" should be considered. Ask your dealer for information about this device which many feel help the speaker produce cleaner, more spacious bass, because there is a more solid link between the enclosure and the floor.

The 6 Kappa is a bookshelf speaker, but can be used as a floor-standing model if it is mounted on a solid base which decouples it from the floor. Permitting the woofer to operate too close to the floor or rug produces heavier bass; however, the sonic quality of bass fundamentals and harmonics usually lacks clarity, and can be exceptionally heavy or boomy. There should be at least 12 inches between the lower frame of the woofer and the floor or rug for effective decoupling.

Should you wish to mount the 6 Kappas higher than ear-level (definitely **not** recommended for best sonic balance), angle the front of the cabinet down at a slight tilt toward the listener. Mounting the 6 Kappas near the ceiling is not recommended because the ceiling and corresponding wall act as a horn, which changes the balance radically. It usually becomes impossible to equalize out all of the anomalies created by this effect.

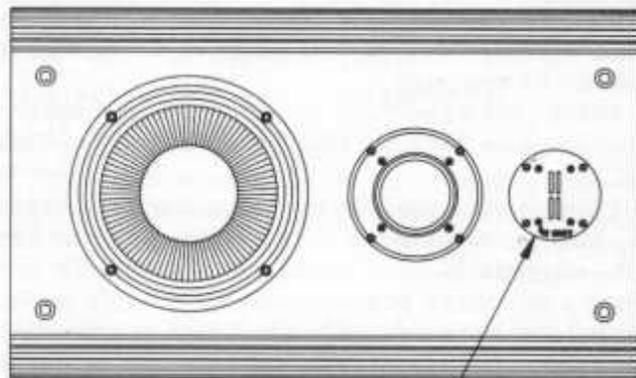
Where extremes exist: i.e., heavy drapes and carpets (dead sound), or wide expanse of glass in mirrored walls, picture windows, sliding glass doors, or metal table surfaces (hard, bright sound), you can compensate for the room's acoustics by using the speaker's tweeter and/or midrange controls, or your amplifier's tone controls. This will be covered in greater detail in the following sections.

HORIZONTAL MOUNTING

If you are installing the 6 Kappa on a bookshelf, and it is placed horizontally rather than vertically, it is recommended that you remove the Emit tweeter and rotate it 90 degrees so its slots line up vertically when the speaker is resting on its side (See Figure 2). This will provide the proper high-frequency dispersion during horizontal use.

Figure 2:

REFERENCE STANDARD 6 KAPPA (SHOWN WITH GRILLE REMOVED):



EMIT PROPERLY ORIENTED FOR HORIZONTAL INSTALLATION ON BOOKSHELVES.

This can be done by first removing the grille so you can unscrew the Emit from its mounting on the front of the cabinet. Remove the mounting screws using a 5/32 hex drive (be careful not to lose them), and turn so the screening of the word "Emit" reads properly. Re-insert the tweeter and replace the mounting screws.

INSTALLING THE PEDESTALS FOR THE 8 OR 9 KAPPA

CAREFULLY turn one of the RS 8 or 9 Kappa speaker cabinets upside-down. (The speakers are quite heavy, therefore it is best to have assistance for this). Rest the speaker on a clean, soft surface to avoid scratching it.

Remove the 3 plugs from the cabinet. You may easily pry them out with your fingernail, or you may wish to use a knife blade for this. (Since the sole purpose of these plugs is to prevent air leaks during the testing of the speaker at the Infinity factory, they may be discarded once the pedestal is installed.)

Place the pedestal upside-down on the cabinet with its wedge facing forward. Insert the 3 large screws and tighten them firmly and evenly, using a #8 flatblade screwdriver. Do not overtighten them. CAREFULLY turn the speaker right-side-up and repeat the procedure for the remaining cabinet.

NOTE: You may find it easier to install the pedestals with the speakers laying across a sturdy table. **A WORD OF CAUTION!** If the speaker is to be laid driver-side-down, first REMOVE THE GRILLE, then place a dictionary or similar object under the speaker at its top and bottom for support.

FAILURE TO DO SO WILL RESULT IN DAMAGE TO THE SOFT DOMES OF THE MIDRANGE AND MID-BASS WHICH IS **NOT** COVERED UNDER THE TERMS OF YOUR WARRANTY.

CONNECTING THE SYSTEM

6 Kappa

7 Kappa

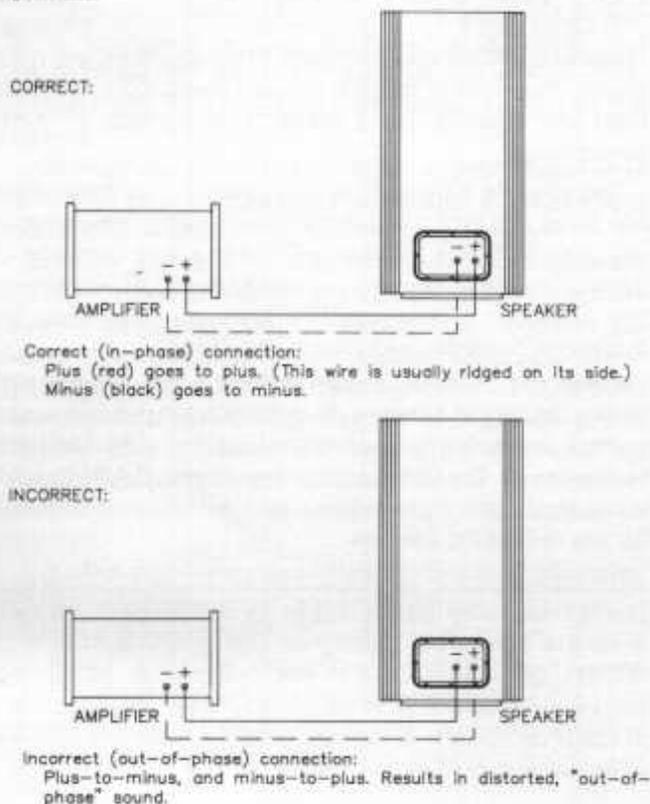
The 6 Kappa and 7 Kappa speakers use one set of input terminals to connect the speaker to the power amplifier. These terminals are five-way binding posts, and can be used with bare wire, banana plugs, or GR connectors (double banana plug).

NOTE: Before connecting your speakers, make sure your amplifier and associated components are switched off.

Connect your amplifier to the speaker using 2-conductor, number 16 gauge or heavier (no. 14 or 12) wire. The wire should be stranded, rather than solid, with coding to indicate positive and negative polarity. This coding may be by color, or by a thin ridge or stripe on the insulation of one conductor. Red insulation or copper-colored wire generally indicates positive (+). The ridge or stripe should also indicate (+). It is important that the speakers be connected in phase (all drivers of the left and right speakers moving in and out at the same time). Use the polarity coding to make sure that the plus (+) red terminal on the rear of each speaker is connected to the red, plus (+) terminal on the output of the amplifier.

Similarly, the black minus (-) terminal on the rear of the speaker should be connected to the amplifier's minus (-) output terminal (See Figure 3).

Figure 3:



Check all connections carefully prior to turning on your system. Check for stray or frayed strands of wire touching both the plus and minus terminals on the speaker and amplifier. (This will create a short-circuit, with possible damage to your amplifier.)

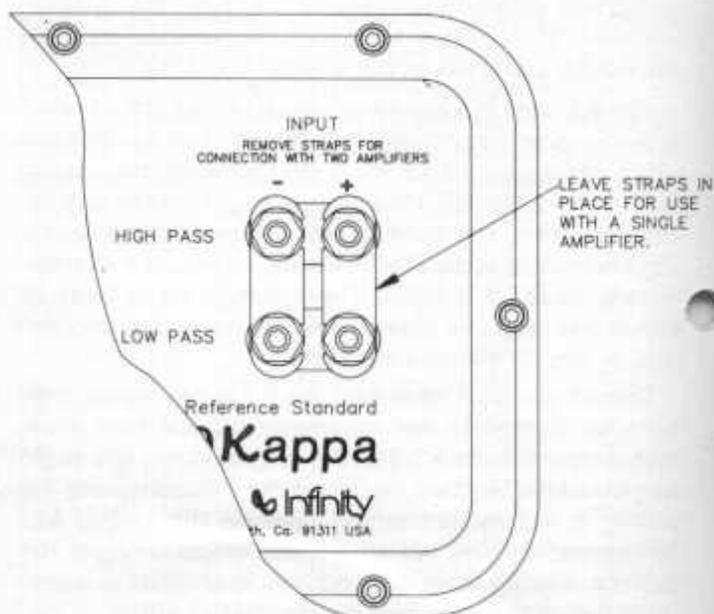
8 Kappa

9 Kappa

These speakers permit you to use two power amplifiers with one amplifier driving the woofers (the signal passes through the crossover network to feed the woofers), and the other amplifier driving the mid-bass coupler, midrange, and tweeters.

To connect your speakers using two separate amplifiers, merely remove the straps (which are used to tie the entire crossover network together for single amplifier use) and connect one amplifier to the Low Pass terminals to drive the woofers and the other amplifier to the High Pass terminals to drive the mid-bass coupler, midrange dome, and tweeters. Observe polarity, as mentioned previously in single amplifier use. Dress the speaker wire carefully so there are no loose ends. Wire from one amplifier must not touch the wire from the other amplifier. **DO NOT** attempt to use two separate amplifiers without first removing the shorting straps! When connecting a single amplifier to the 8 Kappa or 9 Kappa, you may use either the High Pass or Low Pass terminals, since they are strapped together and operate as a single set. **DO NOT** remove the straps for single amplifier operation (See Figure 4).

Figure 4:



SETTING THE CROSSOVER CONTROLS

Kappa Series crossovers employ special controls to adjust the level of the drivers to match room acoustics and speaker placement in the room. These controls are located on the rear of the speaker cabinet. Start with the controls at their "flat" positions and make adjustments from there.

The type and amount of furnishings in the listening room affects total balance, ambiance, hardness or softness of the sound, and many additional acoustic and musical parameters. When you have found the best position for your speakers, the tweeter (it is often best to begin with the adjustment of high frequencies) level controls should be rotated until the balance seems proper.

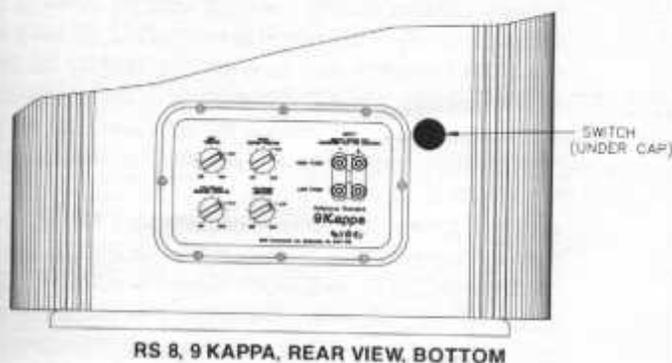
The midrange control varies the energy output of the midrange driver. This control will affect how "forward" or "distant" the sound image will appear to be. Adjust this control in small increments until you have reached a setting which seems proper for your room and personal taste.

The mid-bass coupler control varies the energy from this driver, and must be critically adjusted so the energy transferred from the woofers and midrange Polydome have a single, smooth seam throughout their entire operating range. This could be a critical adjustment, since approximately 50% of the musical energy appears in the spectrum covered by the mid-bass coupler. Proper setting of this control will allow for a smooth transition from the lowest bass through the mid-bass frequencies.

Crossover controls should always be adjusted slowly and deliberately, rotating one control at a time until the proper balance is achieved. It may be required to adjust each control several times, because overall balances may change after each individual adjustment. A varied choice of program material should be used when making these adjustments, using records, CD's and cassettes, if available.

IMPORTANT NOTICE

Should your amplifier or stereo receiver go into current limiting during heavy bass passages, or if the protection fuses should blow during similar conditions, or if you desire to cut back slightly on bass response due to room acoustics or speaker placement, this speaker has an adjustment (located on the rear of the cabinet to the right of the crossover network) which reduces the current required by the woofers. This adjustment affects only the very lowest frequencies without changing the voice or balance of the system.



Locate the black plastic cap near the crossover and pry it loose with a small screwdriver. The switch located underneath the cap is marked EXTENDED (up) and

NORMAL (down). It is placed in the EXTENDED position at the factory (see diagram below).



Throw the switch **down** to the NORMAL position if you wish to reduce the current requirement of the woofers. Replace the black cap after setting the switch.

Repeat for the remaining speaker.

ADDITIONAL ADJUSTMENTS AND RECOMMENDATIONS

At times, it is advisable to tilt floor-standing speakers slightly rearward. This helps decouple the woofers from the rug or floor, and often results in better dispersion. If your listening chair or couch is extremely low to the floor, tilting the speaker slightly forward may improve their directivity, which will add to midrange and high frequency clarity.

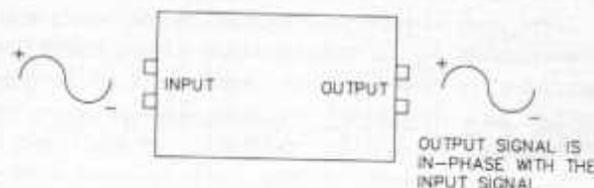
The Kappa Series does not employ external fuses. Fast-acting protective electronics are included as part of the crossover network, and will prevent the tweeters from overheating due to excessive power output or clipping of the amplifier.

Maintaining absolute phase is an essential factor in the proper performance of your Kappa speakers.

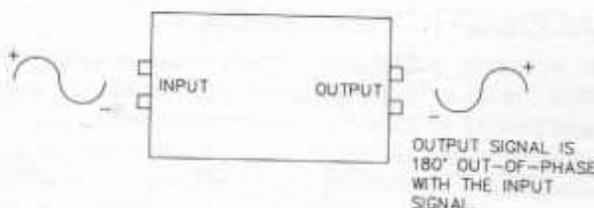
If all amplifiers (as well as the other components in the audio chain) were non-inverting (that is, if their outputs were in-phase with their inputs), then maintaining absolute phase would simply involve observation of the polarities of the speaker connecting wires. However, since some amplifiers (and preamplifiers) are inverting types (their outputs are 180 degrees out-of-phase with their inputs), some changes in the speaker's hookup may be required in order to bring the entire system back into phase (See Figure 5).

Figure 5:

A NON-INVERTING POWER AMPLIFIER:



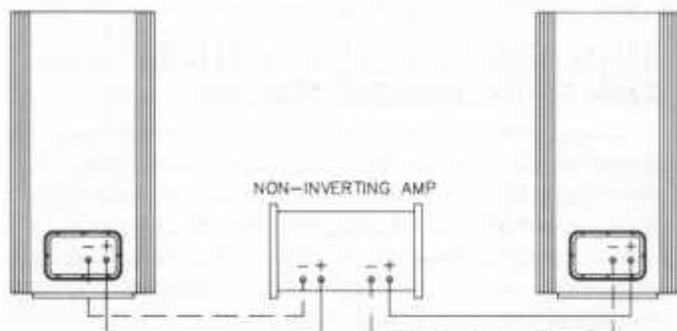
AN INVERTING POWER AMPLIFIER:



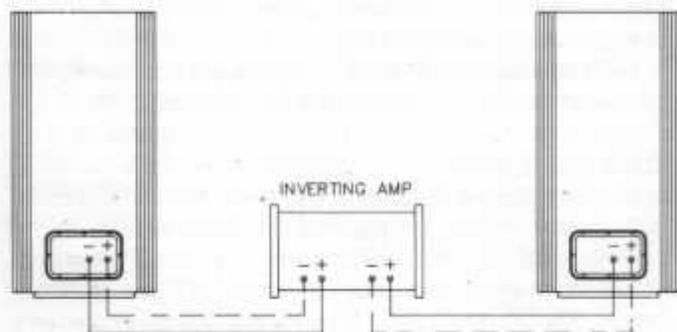
If your amplifier and preamplifier manuals do not specifically state whether they are inverting or non-inverting designs, you may wish to contact your dealer or the manufacturer for this information. However, should you wish to connect your system immediately, assume they are non-inverting (95% of audio components are non-inverting).

If you know for certain that your system is inverting the output to the Kappa speakers, you must reverse both the left and right speaker inputs (See Figure 6).

Figure 6:



With Non-inverting power amplifiers, connections to the speakers are as usual: left speaker output "+" to left speaker input "+", left speaker output "-" to left speaker input "-", etc.



With inverting power amplifiers, the polarity of both channels must be reversed at either the outputs of the amplifier or the inputs of the speakers: left speaker output "+" to left speaker input "-", left speaker output "-" to left speaker input "+", etc.

If you are using two amplifiers to drive the 8 Kappa and 9 Kappa, this modification must be made with both amplifiers if they are both inverting types.

If the only inverting component in your system is your preamplifier, all the speaker leads (when using a single amplifier, or two separate ones) must be reversed at either the amplifier outputs or speaker inputs.

Precaution: Be sure not to reverse Left and Right channels. Left and Right stereo integrity must always be retained.

ACOUSTIC FEEDBACK

If, after connecting your system and checking it out, you find the bass response boomy, or lacking in tightness and solidity, or if the bass driver cones produce excessive movement, the cause can usually be attributed to acoustic feedback — vibrations from the speakers reaching the

turntable and tone arm creating a resonance, which, in turn, is fed back to the electronics and speakers. Since Infinity speakers extend in response to extremely low frequencies, isolating the turntable from vibrations is an important consideration.

The turntable should be placed on a heavy, solid support, as far from the speakers as possible. At times, use of a shock-mounted base will help dampen the feedback. If, after experimenting with various ways to eliminate acoustic feedback, the phenomenon still exists, consult your dealer for assistance.

CARE OF YOUR KAPPA SPEAKERS

Use a soft cloth and any fine furniture oil to clean the wood finish every few months. If using a spray cleaner/polish, be careful not to get any of the spray on the drivers, as this may affect the diaphragms.

The grille material may be vacuumed (set to low suction) to prevent dust from building up.

IN THE EVENT OF TROUBLE

Note that you can use your stereo's two channels of information for simple trouble-shooting. If the sound quality is distorted, listen to each speaker separately to check if the fault is present in both. If it is, then the trouble is likely to be elsewhere in your system. If the fault is one channel only, reverse the outputs from your amplifier to the speakers (right-to-left and left-to-right). If the distortion moves to the other channel, the fault is not in the speaker. (This technique may also be used to locate a fault between signal source and preamp/receiver, and between preamp and power amp(s).)

If, however, the distortion does not shift to the other speaker, you may be able to find the source of the problem and correct it. Try, following closely, the trouble-shooting procedures.

Then, if you have been unsuccessful in locating the specific sources of trouble, or if you have located it, but have been unable to correct it, make these inquiries in the following order:

- Consult the Infinity dealer from whom you purchased the system. Infinity dealers are audio specialists and can help...
- Get the name and address of the authorized Infinity service facility nearest you by writing or calling Infinity. You may be instructed to take or send the problem part to a service facility for the factory for service under the terms of the warranty.

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

- Write or phone the service department at:
Infinity Systems, Inc. CUSTOMER SERVICE, 9409 OWENSMOUTH AVENUE, CHATSWORTH, CA 91311, (818) 709-9400. Describe the difficulty as specifically as possible. The service department will advise you whether to send a part or a speaker to them, prepaid, or what other action you should take.

TROUBLE-SHOOTING YOUR SPEAKERS

Before consulting your dealer, Infinity service facility or factory service department, there are tests you can make to locate and solve possible problems in your Infinity speakers.

If a tweeter is apparently not working:

STEP 1. Remove the grille (pull it straight out by grasping the two corners of the grille frame at the top), then visually check the four slots of the EMIT, looking through the four slots to check the etched voice-coil (the thin silver lines on the plastic film diaphragm). Look for punctures, broken lines, or lines coming loose. If you find this damage, call your dealer for instructions. If you find no damage:

STEP 2. Remove the tweeter, and check to see that the wires are connected. If they are loose, simply resolder them, and put the tweeter back in place. If the connections are tight, and the unit is still not operating, go on to Step 3.

STEP 3. With tape, mark (or "flag") the wire that is hooked to the "+" terminal, then disconnect both wires. Interchange the non-operating tweeter with the one from the other cabinet. If the problem follows the tweeter, then that tweeter is defective; call your dealer for instructions. If the problem stays in the same location, call your dealer and describe the problem.

If a midrange or mid-bass coupler is apparently not working:

STEP 1. Remove the driver from the enclosure. Check to see if both wires are firmly attached. If not, resolder them, and re-install the unit back into the enclosure. If the connections are tight, go on to:

STEP 2. With tape, "flag" or mark the wire that goes to the terminal on the midrange (or mid-bass coupler) unit marked with a red dot or a "+". Disconnect the unit, and interchange it with the same unit from the other speaker. If the problem follows the unit, then the unit is defective. Call your dealer for instructions. If, however, the problem stays in the same location, call your dealer and describe the problem.

If the mid-bass coupler or woofer(s) is not working:

STEP 1. With tape, "flag" or mark the wire that is attached to the terminal that has a red mark (positive).

STEP 2. Disable your other speaker by disconnecting it from your amplifier (unless it is a tube amp, in which case leave it hooked up), making sure that the loose ends do not touch, or "short" together. Disconnect the amplifier wires from the rear of the affected speaker, and connect those wires to the voice coil terminals on the suspect driver.

With amplifier level (volume) control low, listen to a record with pronounced deep bass. If you hear sound reproduced (not necessarily bass), and that sound is undistorted (without scraping, rattling, or rubbing noises) that voice coil is operating. If there is no sound, or if that sound is distorted, that voice coil may have been damaged.

Report your findings to your Infinity dealer, and follow his instructions.

If the sound from your speaker system still seems to be distorted, but all the drivers seem to be operating properly, and you have ascertained that the problem is not in your stereo amplifier, preamp, or turntable, the problem may lie in the passive crossover inside the affected speaker. Call your dealer for advice.

SEE BACK PAGE FOR REFERENCE STANDARD KAPPA SERIES SPECIFICATIONS

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.