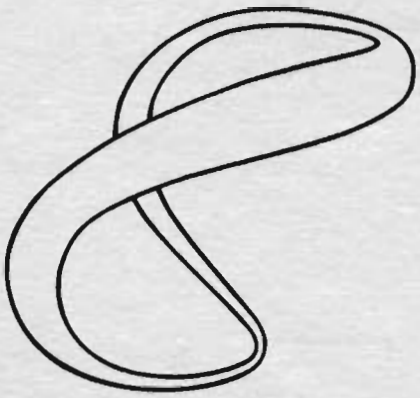
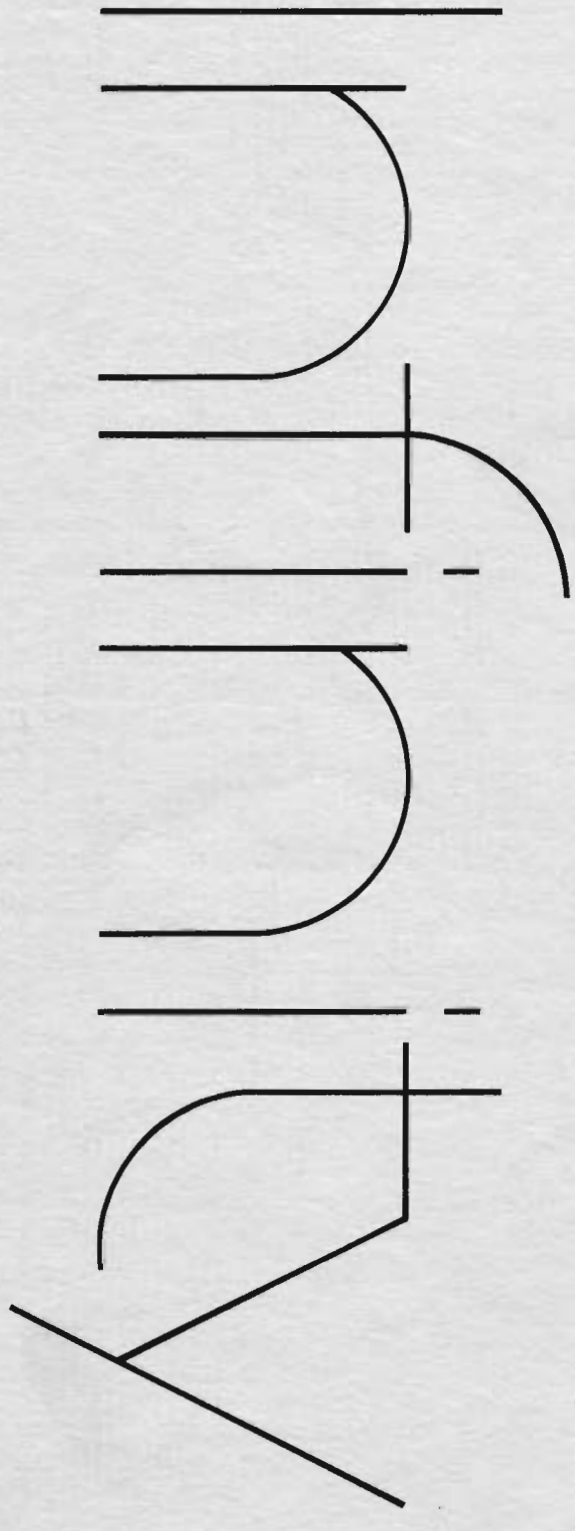
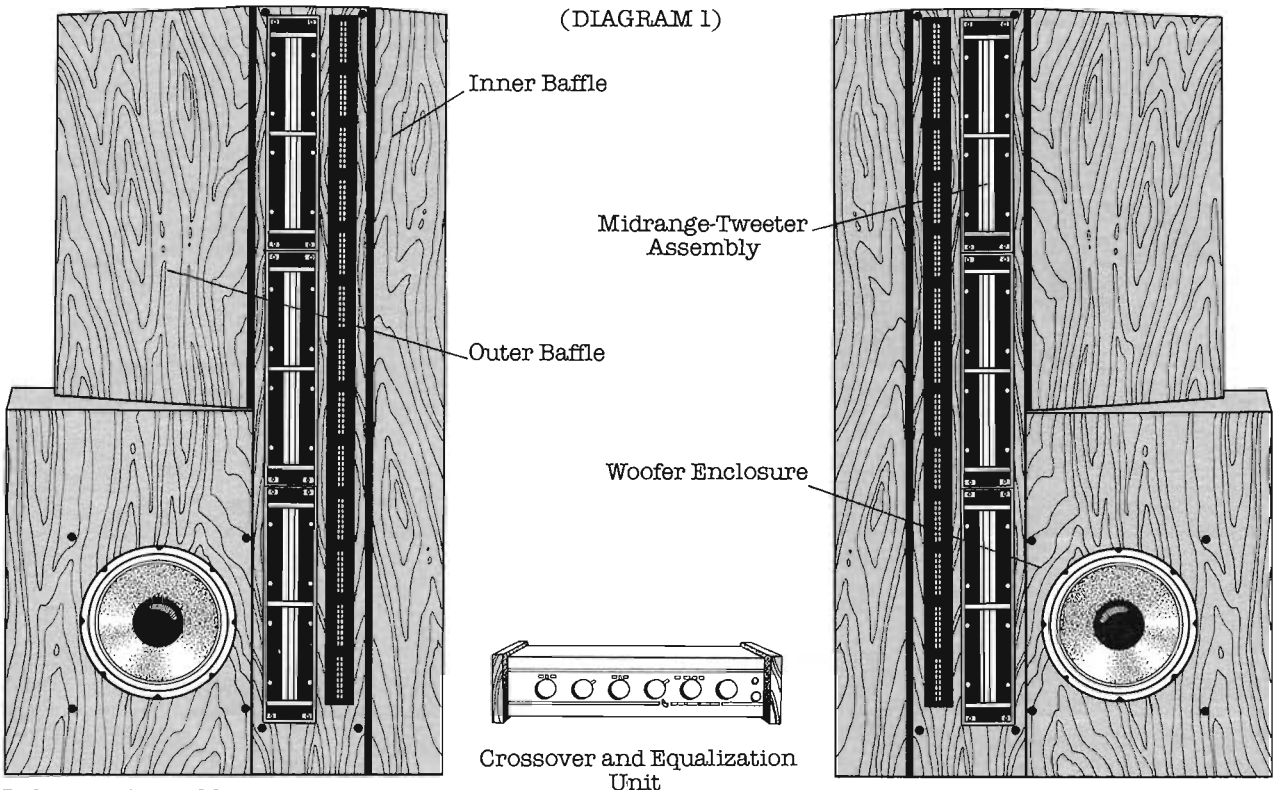




Quantum Reference Standard

Instruction Manual

(DIAGRAM 1)



Unpacking & Assembling

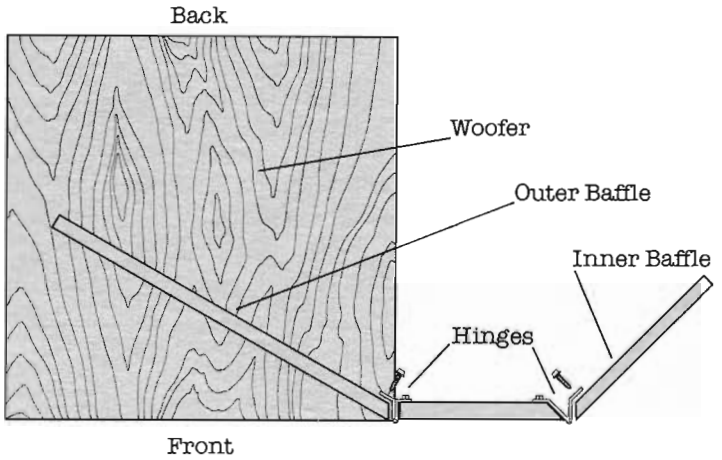
Check your speakers carefully. If there is transit damage, contact your dealer immediately. Keep the original cartons in case you need them in the future. (They fold flat and you can place them against a wall, taking very little space). QRS speaker systems are extremely heavy; it is suggested that you obtain the help of a friend before starting to unpack.

First, unpack the woofer enclosures. Set them up in your listening room about where you expect the complete speakers to stand. (See "Positioning.") The woofers should face forward into the listening area. Note that there is a right-hand woofer enclosure and a left-hand woofer enclosure; when they are correctly positioned, the lines of five black bolts on the side of the right and left enclosures should face each other.

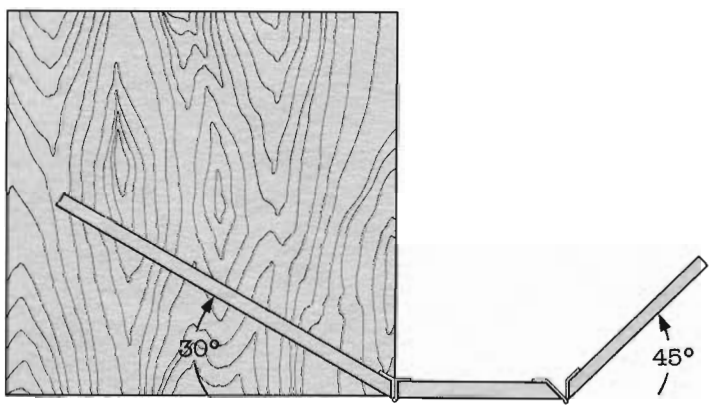
Remove the five black bolts from each enclosure, using the Allen wrench provided.

Unpack the midrange-tweeter assemblies, and the 12" x 72"/30 cm x 183 cm "inner" and 36" x 40"/91 cm x 102 cm "outer" baffles.

(DIAGRAM 1)



(DIAGRAM 2)



Identify the right-hand and left-hand assemblies and baffles. (See Diagram No. 1)

Assemble each speaker as follows:

Align the screw holes on the midrange-tweeter baffle flange with the holes on the woofer enclosure. Using the wrench provided, fasten the five black bolts.

Attach the inner baffle to the hinges on the midrange-tweeter assembly, using eleven of the screws provided.

Place the outer baffle on top of the woofer enclosure (felted edge downward). Attach it to the hinges on the midrange-tweeter assembly, using six of the screws provided.

Connect the midrange and tweeter cords to the binding posts labeled "mid out" and "tweeter out" on the side of the woofer enclosure. Use the color coding to make sure the midrange and tweeters are connected in phase.

The exact angle of the two hinged baffles on each speaker system for the best stereo imaging will vary according to room acoustics and room placement. A suggested starting point is shown in Diagram No. 2.

Associated Components

The Quantum Reference Standard will reproduce distortion just as accurately as music. Choice of associated components and program material is therefore critical.

Two stereo power amplifiers are required, one to power the woofers, and the other to power the midrange-tweeter assemblies. (Alternatively, four mono amplifiers may be used). The minimum suggested power for the woofer amplifier is 150 watts per channel "rms." The minimum suggested power for the midrange-tweeter amplifer is 100 watts per channel "rms." Each amplifer should be able to give its full power into a 4-ohm

load at all audio frequencies. Recommendations for suitable amplifiers are available from the Infinity factory.

With high-powered amplifiers, due care to avoid acoustic feedback or non-musical input signals is essential. The speakers should not be connected when the system is being wired up, and the amplifier volume control should be at zero when a pick-up is being lowered onto or raised from a record.

Connecting up

MAKE SURE THE AMPLIFIERS ARE SWITCHED OFF. One stereo amplifier is used for left and right woofer, and one stereo amplifier is used for left and right midrange-tweeter assemblies.

Connect the outputs from your preamplifier to the inputs of the electronic crossover. The right and left "low" outputs from the crossover connect to the right and left inputs of the woofers' power amplifier. The right and left "high" outputs on the crossover connect to the right and left inputs of the midrange-tweeter power amplifier. The amplifier outputs should be connected using banana plugs, to the binding posts on the rear of the woofer enclosures, marked respectively "high input" and "low input."

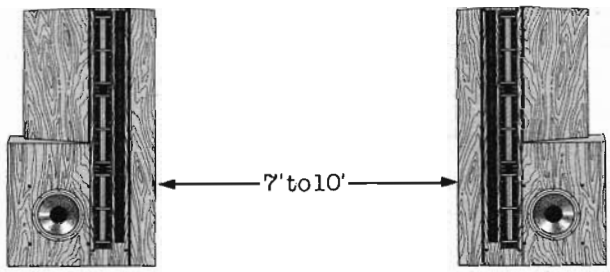
The electronic crossover requires 110v, 50/60 Hz A.C. line supply. (220v optional)

Connect each speaker using two-conductor cord, coded for polarity. Coding may be by color, or by a thin ridge or stripe on the insulation of one conductor. Use of 14-gauge cord (or heavier) is recommended. It is important that the speakers are connected to the amplifiers "in phase." Use the polarity coding to make sure that the "+" (red) terminal of each speaker is connected to its "+" amplifier output (sometimes coded red or marked "hot" or "ground" amplifier output).

Before switching on, check

carefully to make sure that stray or frayed strands of wire are not shorting between "+" and "–" at either amplifier or speaker terminals.

Positioning



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

It is worthwhile experimenting with different room positions for speakers and listeners to obtain the best results, because room acoustics vary widely and even small changes in position will affect the sound. The position of your speakers primarily affects tonal balance between bass and lower middle frequencies. For example, if the sound seems bass-heavy, move the speakers farther from corners or walls. If the sound seems bass-light, move the speakers closer to one of these room boundaries. Equivalent changes in tonal balance will result from changing your listening position.

To obtain the low coloration and stereo imaging of which the QRS speakers are capable, it is essential to position them at least two to three feet (2/3 to 1 meter) from walls and corners. If the sound is bass-light under these conditions, use the controls, rather than speaker position, to alter the balance.

Setting the Controls

The electronic crossover which is part of the QRS system allows compensation for room acoustics and speaker position.

BASS CROSSOVER: Sets the minus-3 db point of the woofers' low-pass filter. The "0" position is nominal. The "low" position cuts off at a lower frequency and the "high" position cuts off higher than the zero position.

BASS LEVEL: Sets the output level to the woofer amplifier. The nominal "flat" position of the control is at the mark near the "two o'clock" position, corresponding to unity gain.

LOWER-MID CROSSOVER: Sets the minus-3 db point of the midrange high-pass filter. The "0" position is nominal. The low position rolls off lower, and the high position rolls off higher than the zero position. Note that it is not necessary to have the bass and lower-mid crossover controls set to the same position. If the bass control is set to "low" and the lower-mid control is set to "high," a reduction of acoustic output occurs in the 100Hz region. Conversely, if the bass control is set to "high" and the lower-mid control is set to "low," an increase in acoustic output occurs in this region. This allows a measure of compensation for differences in room acoustics and speaker position.

MID-HIGH LEVEL: Sets the output level to the midrange-tweeter power amplifier. Nominal flat position is at the mark near two o'clock, corresponding to unity gain.

HIGH-TURNOVER: Adjusts the frequency where variable high-frequency boost occurs. "Low" is the lowest turnover frequency, increasing in the "mid" and "high" positions respectively. "Neutral" provides no high-frequency boost, and in this position the high-frequency level control is inoperative.

HIGH LEVEL: Controls the amount of high-frequency boost. Note that when the high turnover control is in the "neutral" position, the high-frequency acoustic output is lower than is required for a flat response. Adjusting the high-level control adjusts the relative high-frequency acoustic output from below normal, through normal, to above normal. This compensates for different room acoustics.

Feedback

If, after taking care with positioning your loudspeakers, you find the bass response is "boomy" and lacking "tightness," or if you hear a rumble when playing records, or you notice excessive cone movement, then the cause may be acoustic feedback. This means that vibrations from the loudspeakers are reaching your turntable. The extended low-frequency response of the QRS may make particular care necessary to isolate the turntable from these vibrations.

In general, always make sure that the turntable is placed on a heavy solid support, as far away as possible from the loudspeakers. Some turntable-tone arm-cartridge combinations are much more prone to feedback than others, and if you continue to experience difficulties, you should consult your dealer for assistance.

In case of trouble

Note that you can use your QRS system's four separate channels of information for simple trouble-shooting. If the sound quality is distorted, listen to each bass and midrange-tweeter combination separately to check where the fault lies. If the fault is present in the whole system, then its origin is most likely in the preamplifier or signal source. If it is present in only one part of the system, exchanging power amplifiers will indicate the source of problem.

If your speakers are not working satisfactorily, contact the factory (800-423-5244. In California: 800-382-3372) for the name of your nearest authorized service station. Service under the terms of the warranty is available from any authorized service station, irrespective of where the product was first purchased.

We get you back to what it's all about.
Music.

7930 Deering Avenue
Canoga Park, California 91304, USA
(213) 883-4800. TWX (910) 494-4919.
Toll-free numbers: 800-423-5244.
(In California, 800-382-3372.)