



FULTON ELECTRONICS 4428 Zane Avenue North • Minneapolis, Minnesota 55422 • 537-7076

Dear Friend,

I would like to take this opportunity to welcome you into our growing FMI family. Your purchase of the J Modular System is rewarding and encouraging for us because we know that you hear and appreciate what we are trying to accomplish.

The primary objective behind the development of the J has been to build a system that is absolutely faithful to the sound of actual music, scaled to your listening room. This has required complete objectivity in listening and a desire for perfection in every phase of design and production. It has also required exacting attention to such details as transient purity, perspective, proper dynamic intensity, open, free flowing airiness, accurate re-creation of the correct tone structure, size, and vowel color of each individual instrument and voice, as well as the precise spacial imagery, sense of depth, thrust, balance and vitality we normally hear in live music. Countless hours of critical listening and exhaustive experimentation has transformed these concepts into a speaker system that has earned a unique position for itself among music lovers in the audio world.

The fine art of music is a large part of our lives, as I'm sure it is of yours, and we believe it is one of the most dynamic and expressive of the arts. Perfection is inherent in any art, and the art of music demands and deserves not only perfection in performance, but also in re-creation. For this reason every pair of J's we build must pass a stiff examination before shipment. Included is a rigorous mechanical inspection, an electronics check-out of every component, lead, wire harness, and soldered connection, a cabinet air and resonance test, a frequency response and distortion evaluation, a special power-on-demand sequence, and finally, the most demanding of all, a critical listening test. Every effort is made to assure you the highest quality workmanship and dependability.

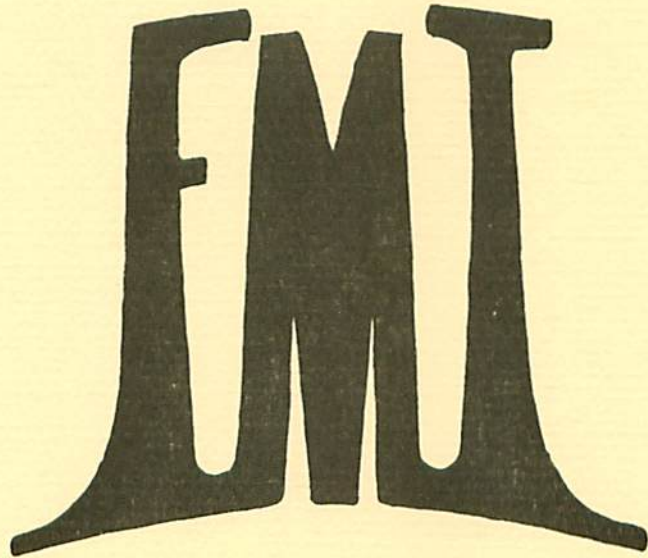
Enclosed you will find an instruction manual that has been formulated to help you realize the full potential of your J's. Strict adherence to the suggestions therein will result in outstanding performance. Selection of only the finest, compatible electronics is also necessary to insure your complete satisfaction.

It is my sincere desire that these speakers will provide you with many years of rewarding listening experiences.

Cordially yours,

FULTON MUSICAL INDUSTRIES
Division of Fulton Electronics

Robert W. Fulton, President



THE J MODULAR SYSTEM

I N S T R U C T I O N M A N U A L

F U L T O N M U S I C A L I N D U S T R I E S
4 4 2 8 Z A N E A V E N U E N O R T H
M I N N E A P O L I S , M N 5 5 4 2 2

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INSTRUCTIONS FOR SETTING UP THE J MODULAR SYSTEM

The FMI J Modular System is composed of three speaker modules, plus an optional cover cube. Each module has been designed to fit a specific position in the J configuration. Misplacing the speakers just a small amount can audibly affect the sound quality. For this reason, follow these directions carefully when setting up your J.

SETTING UP THE J WITH AN OPTIONAL COVER CUBE.

The cover cube contains a guide which positions the FMI 80 precisely.

- {1} Position the cover cube so that the front of the cube is flush with the front of the J woofer and is sitting inside the guides on the top of the J woofer.
- {2} Inside the cover cube are two locating bars {see figure 1}. The long bar is fastened permanently to the cover cube. The short bar is attached inside a plastic bag. Remove the shorter locating bar.
- {3} Position the FMI 80 against the long locating bar fastened to the inside bottom of the cover cube. When viewing the J system from the rear, locate the bottom of the 80 {the end with the logo affixed} flush against the end of the locating bar which points in the direction of the other J speaker system. The 8" driver of the 80 should now be directly above and in center alignment with the 10" driver in the J woofer.
- {4} Invert the FMI-6, turning it upside down so the controls are up and set it atop the FMI 80.
- {5} Move the FMI-6 until it overhangs the FMI 80 by 2 1/2" on the tweeter end of the 80, i.e., the one which does not contain the logo. The FMI 6 should now be 5 7/16 inches from the woofer end of the 80. These measurements are made from wood to wood. See figure 1.
- {6} Marking the FMI-6 carefully, the optional short bar may be used to fix the FMI 6 to the FMI 80. Be careful that the above measurements are correct after installing the short block and remounting the FMI 6. It is not required that the two units be fastened together; however, if the system is moved, these critical measurements should be re-checked.
- {7} The J is now ready for wiring. See the enclosed instructions.

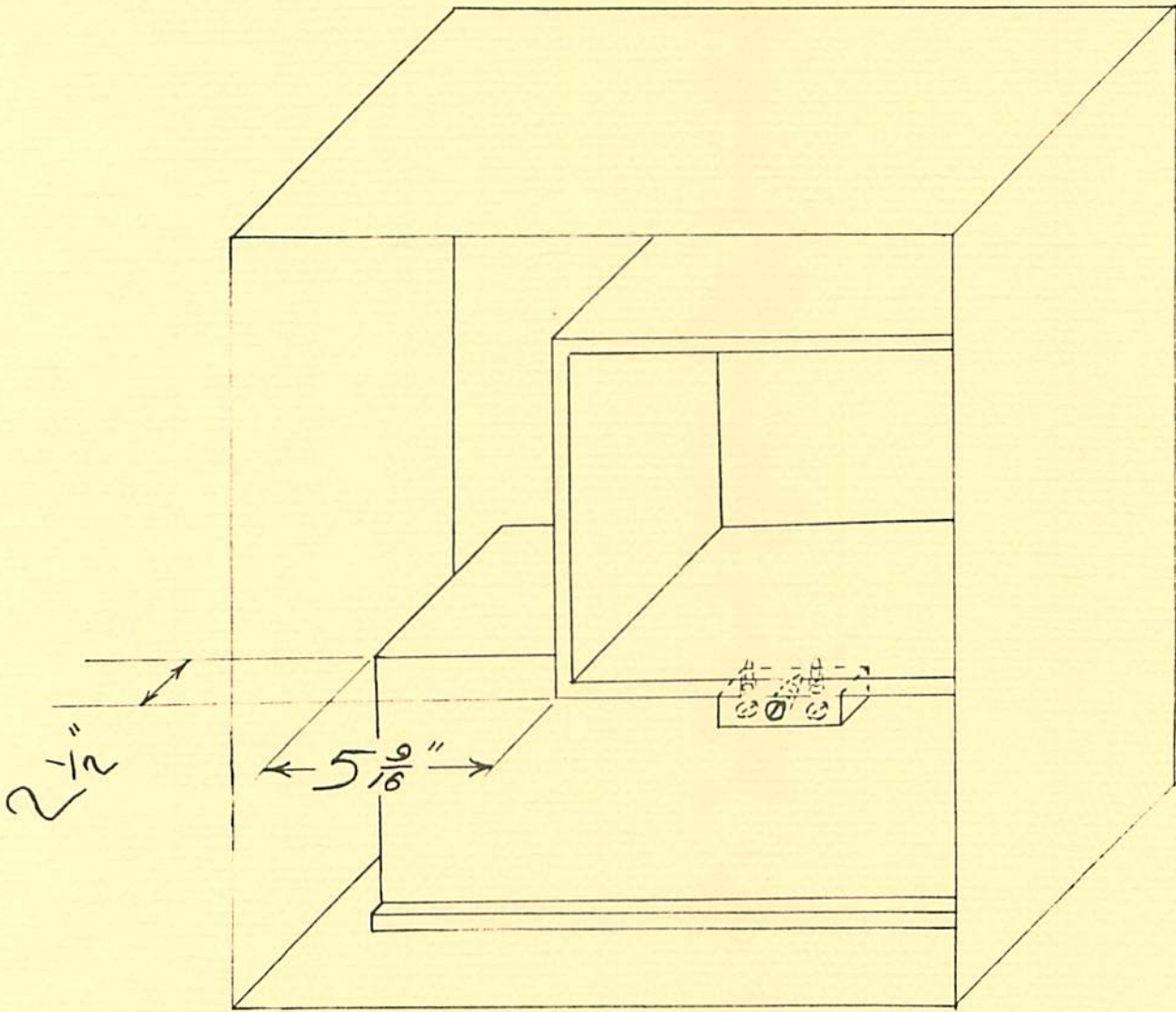
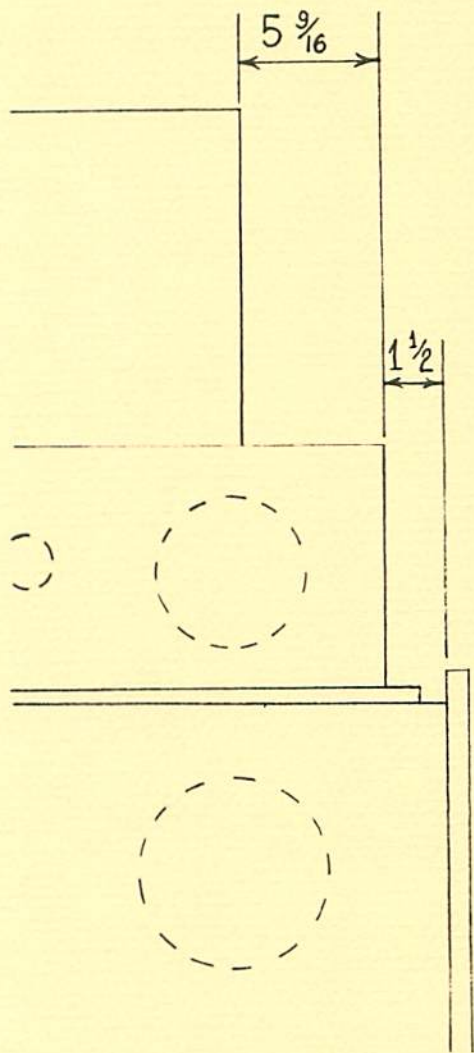


FIG. 1 LEFT

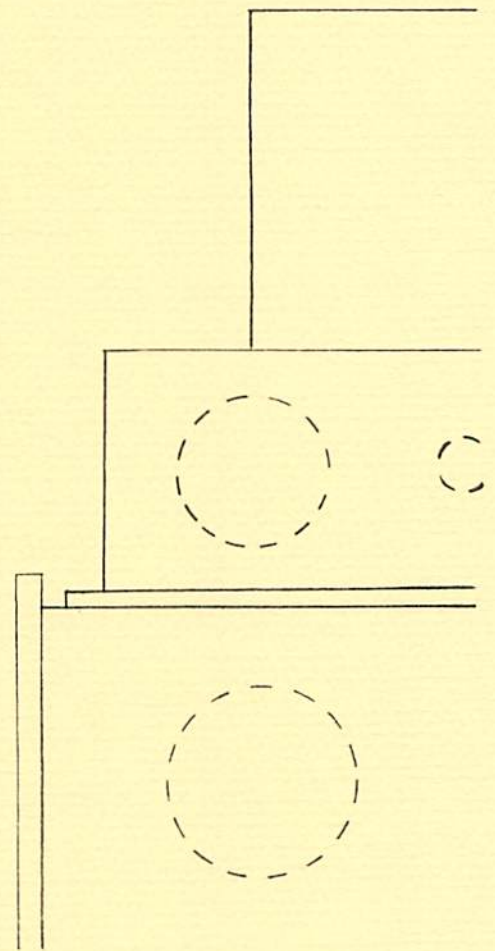
SETTING UP THE J WITHOUT THE OPTIONAL COVER CUBE

If no cover cube is used, the FMI 80 and 6 should be located according to the following dimensions: {See figure 2}

- {1} Place the 3/4 inch spacer platform on top of woofer.
- {2} Position the FMI 80 horizontally on the platform, 2 1/2" from the front of the woofer to the edge of the 80.
- {3} Center the 8" driver in the 80 directly in line with the center of the 10 inch driver. This dimension is 1 1/2 inches from the interior guide on the top of the J woofer.
- {4} Position the electrostatic array on the top of the 80, 1/4" from the front edge of the 80 and 5 9/16" from the woofer end of the 80. Install the FMI-6 with the controls up.
- {5} You are now ready to wire the speakers.

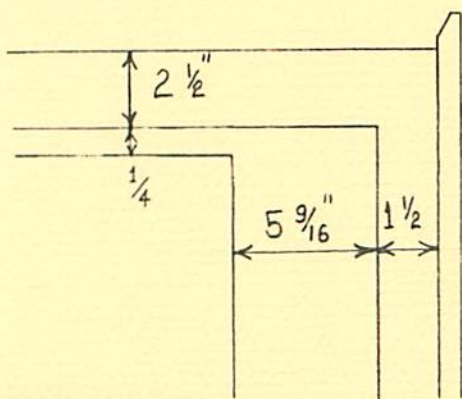


LEFT



RIGHT

FRONT



TOP

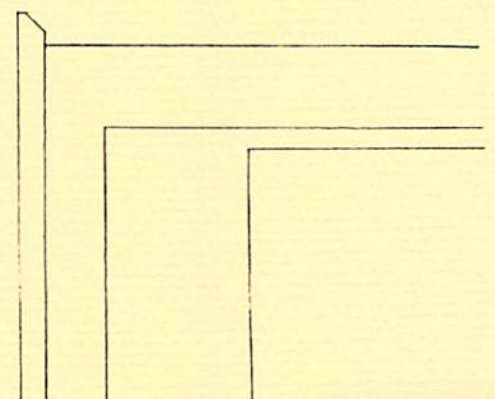


FIG. 2

DIRECTIONS FOR CONNECTING THE J MODULAR SYSTEM

The J Modular System is designed to accommodate up to four amplifiers without any additional crossovers. The J System also may be used with an external electronic crossover. Directions are supplied for single, bi, tri or tetra amplification, with and without an external crossover. There are substantial differences between each type of connection so careful attention should be given to the specific directions for the type of installation being made. The following designations are used in all the directions.

- SUBWOOFER - refers to the driver carrying information from 60 cycles on down.
- UPPER WOOFER - refers to the driver carrying information from 60 cycles to 375 cycles.
- MIDRANGE - refers to the FMI 80
- ELECTROSTATIC ARRAY - refers to the FMI 6
- SHORTING BARS - refer to the single strand wire already connected to the speaker terminals on the back of the J cabinet. Please note - the shorting bars have been wired before shipping for single amplification. They must be changed for any other type of installation. Directions for all installations assume that the user is starting with the system pre-wired for single amplification.
- SHORTING PLUGS - refer to the RCA male connectors inserted in the terminal strips on the back of the J cabinet.
- EXTERNAL CROSSOVER - refers to crossover system other than the one installed in the J system. NOTE: In all cases, you may leave the shorting plugs in when using an external crossover. This would be using double crossovers, the external and internal. We recommend this as a desirable alternative.

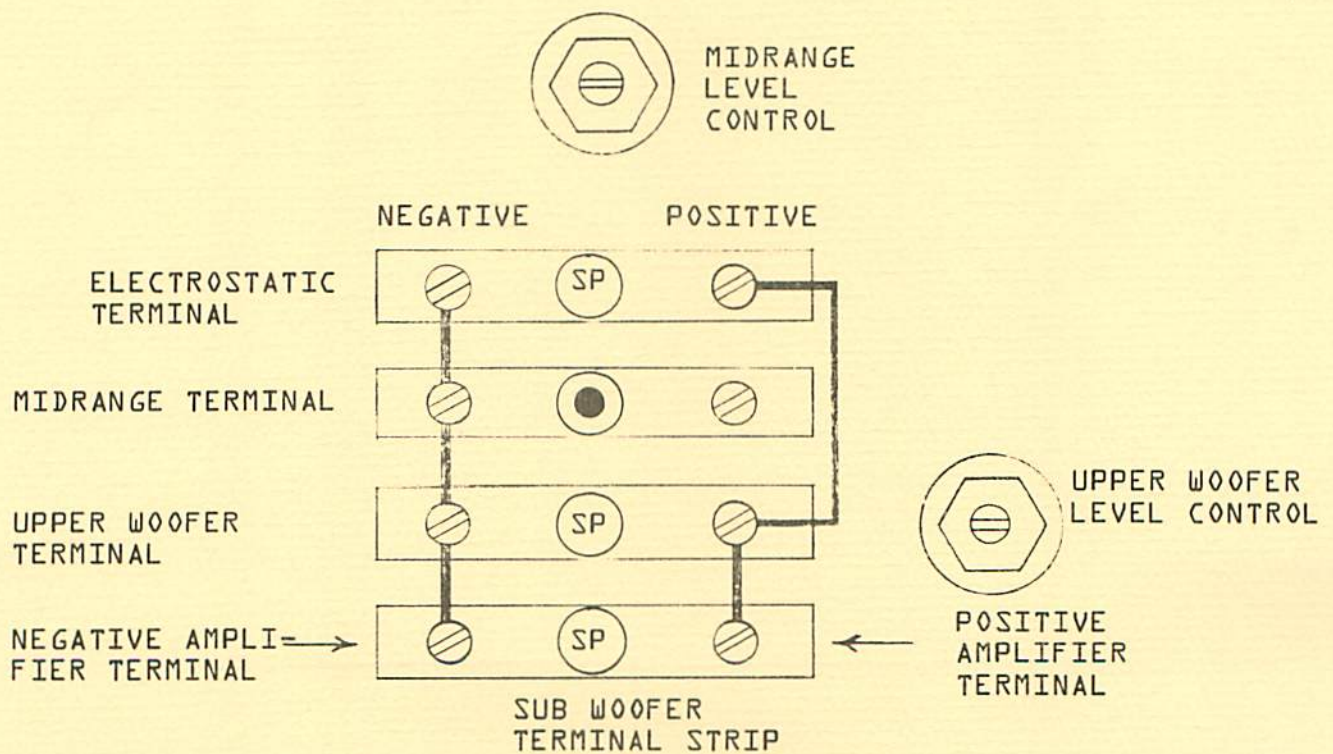
CONNECTION OF THE J MODULAR SYSTEM

SINGLE AMPLIFIERS - NOTE: The J has already been pre-wired in this configuration, so if you have not unwired the terminals, skip to step 4.

- {1} Connect a shorting bar across all the negative or left terminals on the terminal strip. Loop the bar around each screw. {See the diagram included in this set of instructions}.
- {2} Connect a second shorting bar between the positive, right side of the subwoofer terminal strip. Bypass the right, positive terminal of the midrange terminal strip and connect the shorting bar to the right, positive terminal of the electrostatic terminal strip.
- {3} Insert shorting plugs in the subwoofer, upper woofer and electrostatic terminal strips.
- {4} Connect the FMI 80 to the midrange strip, positive of the 80 to the negative or left binding post, and the negative binding post of the 80 to the positive or right binding post of the midrange strip.

NOTE: THIS CONNECTION IS MADE IN REVERSE POLARITY.

- {5} Connect the input terminals of the FMI 6 electrostatic array to the electrostatic terminal strip. Observe normal polarity - black or negative binding post on the FMI 6 to the left terminal on the electrostatic terminal strip, and red or positive binding post on the FMI 6 to the right binding post on the electrostatic terminal strip.
- {6} Connect the amplifier to the subwoofer terminal strip, negative to the left binding post and positive to the right binding post.



BI-AMPLIFICATION WITHOUT AN EXTERNAL CROSSOVER

OPTION 1

{Make sure all shorting bars are disconnected if J came prewired}

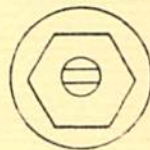
- {1} Connect the left, negative terminals of the upper woofer, midrange, and electrostatic terminal strips with a shorting bar.
- {2} Connect a shorting bar from the right or positive terminal of the upper woofer terminal strip to the right or positive terminal of the electrostatic terminal strip. NOTE: DO NOT CONNECT THIS SHORTING BAR TO EITHER THE RIGHT, POSITIVE TERMINALS OF THE SUBWOOFER OR THE MIDRANGE TERMINAL STRIP.
- {3} Connect the subwoofer amplifier to the subwoofer terminal strip, observing normal polarity.
- {4} Connect the first amplifier to the upper woofer terminals observing normal polarity.
- {5} All other connections are made as in the single amplifier instructions.

BI AMPLIFICATION WITH AN EXTERNAL CROSSOVER

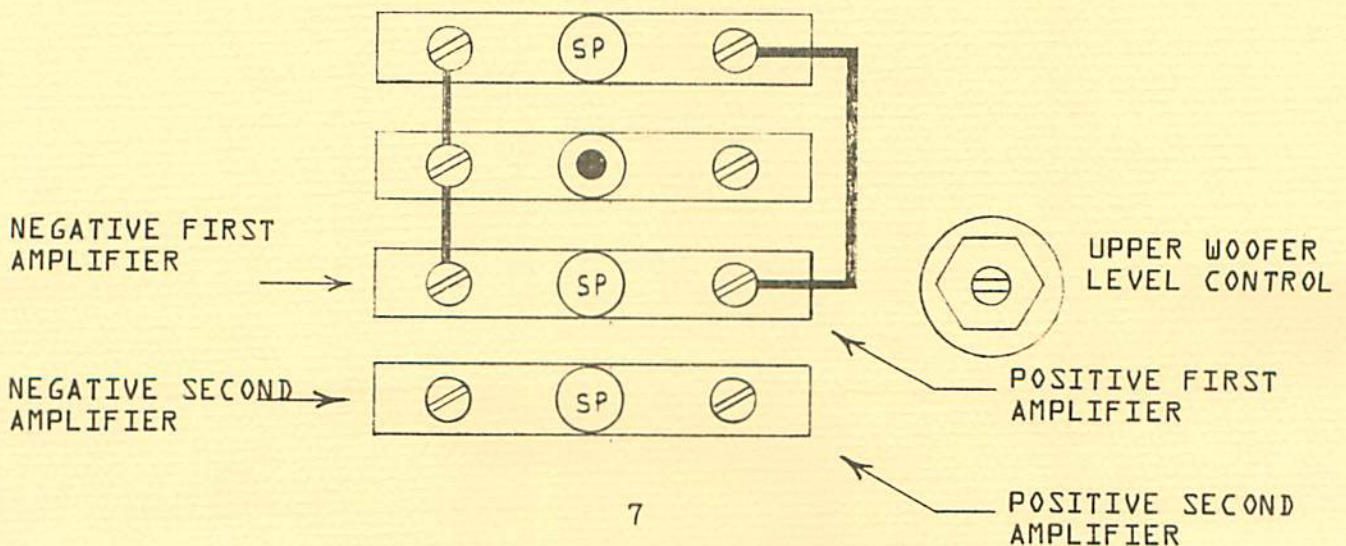
{Suggested crossover point - 68 Hz}

- {1} If the electronic crossover is set for the 68 cycle crossover point, connect the speakers and amplifiers using the same direction as for bi-amping without an electronic crossover.
- {2} If a crossover point for the subwoofer other than 68 cycles is desired, pull the shorting plug from the terminal strip. This will defeat the internal subwoofer crossover and allow the user to employ the subwoofer through whatever range he desires.
- {3} NOTE - If the shorting plug is removed, the subwoofer operates with greater efficiency.

OPERATION WITH SHORTING PLUGS IN IS PREFERRED.



MIDRANGE
LEVEL
CONTROL



BI-AMPLIFICATION WITHOUT EXTERNAL CROSSOVER

OPTION 2

{Make sure all shorting bars are disconnected if J came prewired}

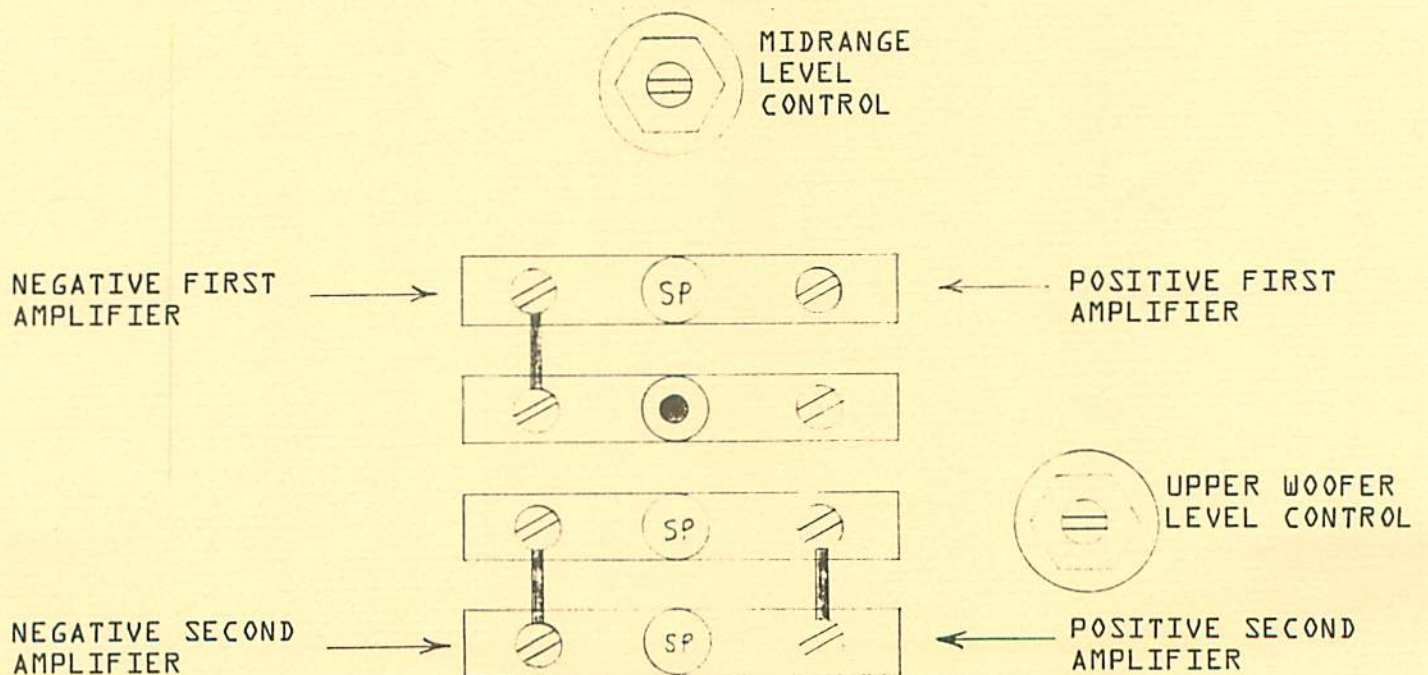
- {1} Connect the left, negative terminals of the midrange and electrostatic terminal strips with a shorting bar.
- {2} Connect the left, negative terminals of the upper woofer and lower woofer terminal strips with a shorting bar.
- {3} Connect the right, positive terminals of the upper woofer and lower woofer terminal strips with a shorting bar.
- {4} Connect the woofer amplifier to the sub-woofer terminal strip, observing normal polarity.
- {5} Connect the midrange-tweeter amplifier to the electrostatic terminal strip, observing normal polarity.
- {6} All other connections are made as in single amplifier instructions.

BI AMPLIFICATION WITH AN EXTERNAL CROSSOVER

{Suggested crossover point - 375 Hz}

- {1} If the electronic crossover is set for the 375 cycle crossover point, connect the speakers and amplifiers using the same direction as for bi-amping without an electronic crossover.
- {2} If a crossover point for the woofers other than 375 cycles is desired, pull the shorting plugs from the terminal strips. This will defeat the internal woofer crossovers and allow the user to employ the woofers through whatever range he desires.
- {3} NOTE - Either or both of the shorting plugs may be removed for greater efficiency; however, leaving both plugs in will sound better.

OPERATION WITH SHORTING PLUGS IN IS PREFERRED.



TRI-AMPLIFICATION OF THE J MODULAR SYSTEM WITHOUT EXTERNAL CROSSOVER

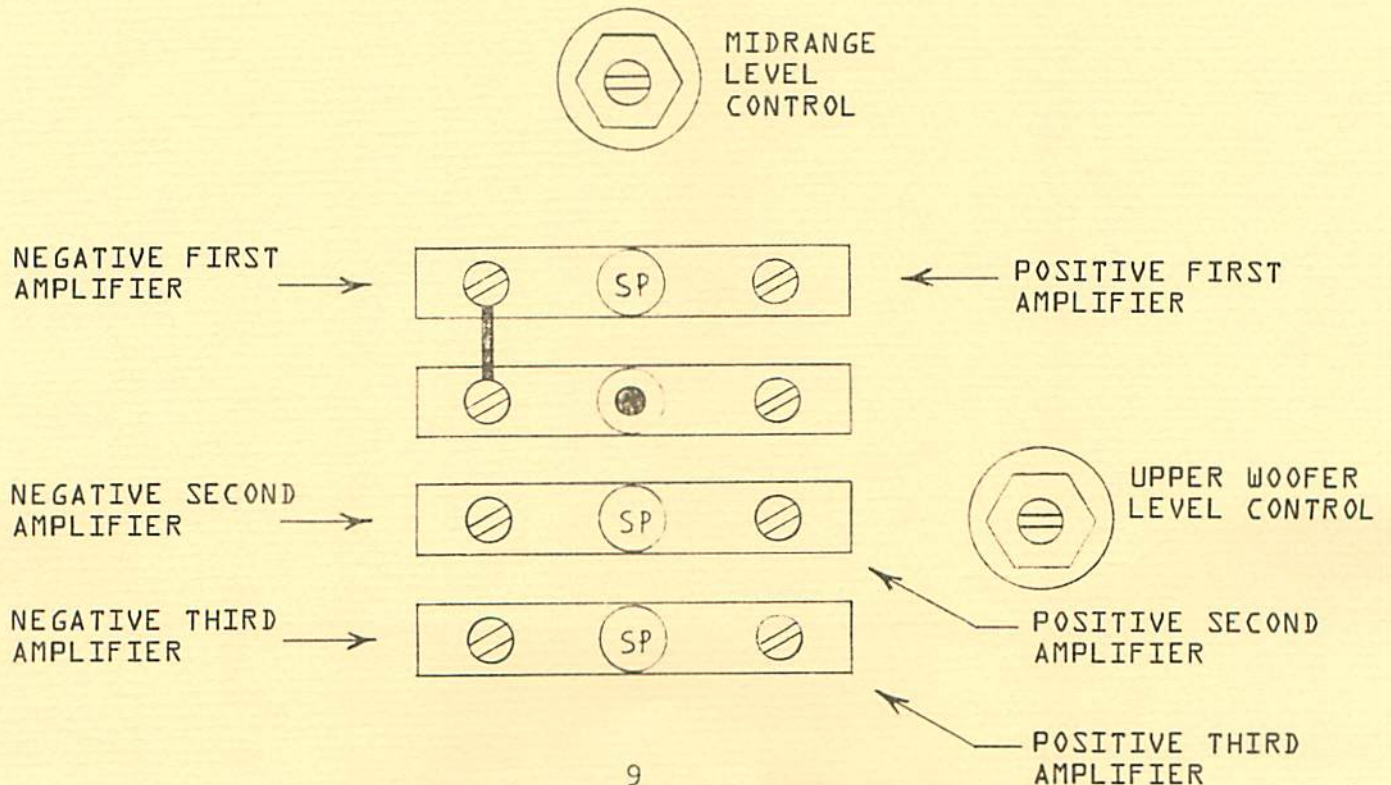
{Make sure all shorting bars are disconnected if J came prewired}

- {1} Connect a shorting bar between the left, negative terminals of the midrange terminal strip and the electrostatic terminal strip.
- {2} Leave all shorting plugs in their respective terminal strips.
- {3} Connect the subwoofer amplifier to the subwoofer terminal strip.
- {4} Connect the upper woofer amplifier to the upper woofer terminal strip.
- {5} Connect the midrange/electrostatic amplifier to the electrostatic terminal strip.
- {6} Connect the FMI 80 to the midrange terminal strip observing REVERSE POLARITY, negative, left pole of the terminal strip to the positive pole on the 80, and the positive, right pole of the midrange terminal strip to the negative pole of the 80.
- {7} Connect the FMI 6 electrostatic array to the electrostatic terminal strip. OBSERVE NORMAL POLARITY.

TRI-AMPLIFICATION WITH AN EXTERNAL CROSSOVER

- {1} The connections are the same as for tri-amping without an external crossover except that shorting plugs must be pulled in the appropriate terminal strips on the J if the user wishes to defeat the built in crossover of the J system.

OPERATION WITH SHORTING PLUGS IN IS PREFERRED.



CONNECTION FOR TETRA AMPLIFICATION {FOUR AMPLIFIERS!} WITHOUT
EXTERNAL CROSSOVER

- {1} No shorting bars are used in this configuration. DISCONNECT ALL SHORTING BARS.
- {2} Shorting plugs should be inserted in the subwoofer and upper woofer terminal strips only.
- {3} Connect the subwoofer amp to the subwoofer terminal strip. Observe normal polarity.
- {4} Connect the upper woofer amplifier to the upper woofer terminal strip. Observe normal polarity.
- {5} Connect the FMI 80 to the midrange terminal strip. REVERSE THE POLARITY WHEN CONNECTING THE 80; that is, positive binding post on the 80 should be connected to the negative, left binding post on the midrange terminal strip. The negative binding post on the 80 should be connected to the positive binding post on the midrange terminal strip.
- {6} Connect the upper midrange amplifier to the upper midrange terminal strip in the following way: Connect the positive lead from the amplifier to the center pin of an RCA phone plug {DO NOT CONNECT THIS LEAD TO THE GROUNDING SHELL OF THE RCA PLUG}. Insert plug into the midrange terminal strip. Connect the negative lead from the amplifier to the left, negative binding post on the midrange terminal strip.
- {7} Connect the electrostatic array to the electrostatic terminal strip observing normal polarity.
- {8} Connect the electrostatic amplifier to the electrostatic terminal strip observing normal polarity.

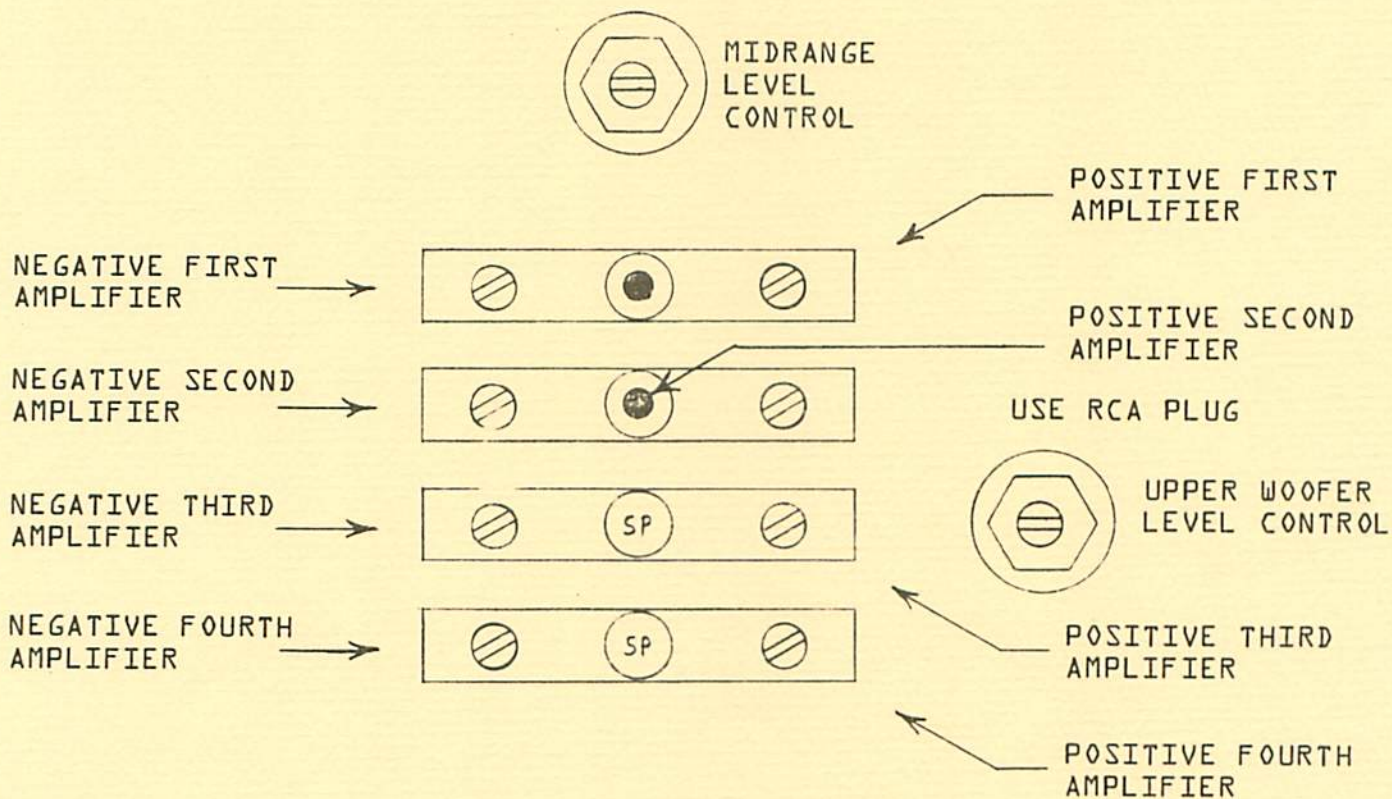
TETRA AMPLIFICATION WITH AN EXTERNAL CROSSOVER

{Suggested crossover points are subwoofer 15-68 cycles, upper woofer 68 to 380 cycles, midrange 380 to 7000 cycles and tweeter 7000 + cycles}.

- {1} Connect the subwoofer amplifier to the subwoofer terminal strip. Observe normal polarity.
- {2} Connect the upper woofer amplifier to the upper woofer terminal strip. Observe normal polarity.
- {3} Connect the FMI 80 directly to the midrange amplifier. DO NOT USE THE TERMINAL STRIP ON THE BACK OF THE J MODULAR SUBWOOFER. OBSERVE REVERSE POLARITY WHEN CONNECTING THE 80--negative terminal of the amplifier to the positive terminal of the 80, and the positive terminal of the amplifier to the negative terminal of the 80.

OPERATION WITH SHORTING PLUGS IN IS PREFERRED.

[4] Connect the tweeter amplifier directly to the electrostatic array WITHOUT using the terminal strip on the J subwoofer. Observe normal polarity in making this connection.



POSITIONING THE J'S IN THE LISTENING ROOM

Correct positioning of the J's in the listening room is essential to realization of their full potential. Since every room is different, only careful listening to known good program material through the finest electronics will enable one to find the ideal positions.

A good starting point is to locate the J's parallel to a solid wall, approximately 45 inches apart and between 4 to 15 inches from the wall. When properly positioned, one should be able to hear a complete stereo perspective while seated in front of either side, as well as in the center. The distance between the J's and the wall is important for optimum performance of the subwoofer. Variations in its sonic qualities can be made by moving the J closer or further from the wall.

Avoid boxing the J's into corners or locating them near doorways, closets or fireplaces. These locations tend to reduce the effectiveness of the subwoofer, especially below 50 Hz. Avoid locating the J's near anything that may rattle or break, such as loosely panelled walls or expensive china! On deep plush carpeting, the J's may tend to lean forward as they are slightly front heavy. In this case, the front of the pedestal should be propped up so they will stand level.

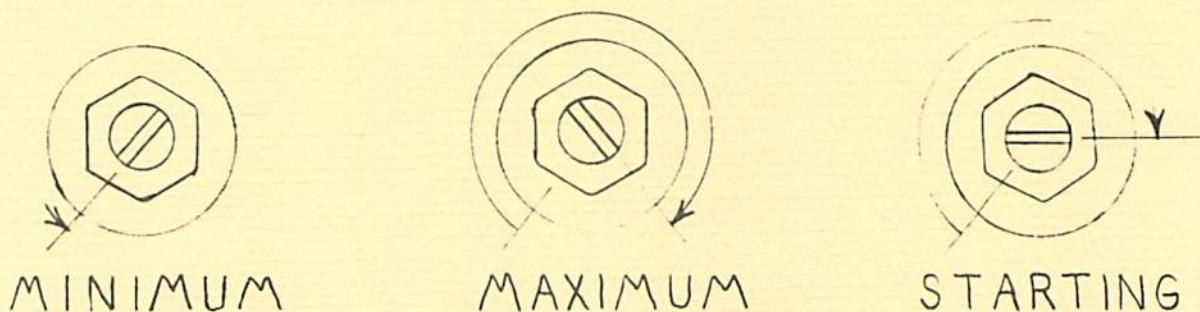
USE ONLY GOOD QUALITY NO. 12 GAUGE TINNED STRANDED COPPER WIRE WITH SOLDERED LUGS ON EACH END FOR CONNECTING THE J'S TO THE AMPLIFIER. USE EQUAL LENGTH WIRE FOR BOTH SIDES.

SETTING THE LEVEL CONTROLS

The level controls come set for an average listening room, and assume the finest associated electronics will be used. However, additional fine tuning may be necessary to compensate for differences in rooms and equipment. These adjustments should be made only after the J's have been properly positioned in the room. We suggest you start by setting both the FMI-b controls at a 2:00 position, as viewed from the back of the J's. With the midrange shorting plug out, set the midrange level control and the upper woofer control at 3:00. [See level control diagram.]

After careful listening, it may be determined that some small adjustments need to be made. The important consideration when making these adjustments is to strive for a perfect blend and balance between the modules. The system should sound smooth from top to bottom with no one section too loud or soft. This may take some experimentation. In an acoustically "live" room, it may be necessary to adjust the level controls downward. In an acoustically "dead" room, they may be adjusted upward. The midrange level can be further increased by inserting the shorting plug in the midrange terminal strip. Adjustments may also be necessary to compensate for certain characteristics of the electronics used. A small adjustment of the controls will also cause noticeable differences in tonal structure, as well as level. Changing the position of the J's in the room or the introduction of new or different peripheral equipment will also require further refinements in control settings. In general, try to avoid frequent or large adjustments of the controls. Give yourself time to live with a certain setting until similar imbalances become apparent on differing program material.

We are convinced that once your J system has been properly set up and is used with the finest available electronics, many enjoyable listening experiences will be yours. We welcome your comments and thank you for choosing the FMI-J Music System.



LEVEL CONTROL DIAGRAM



THE J MODULAR SYSTEM

The J System represents a truly modern concept and breakthrough in sound, sight, sonority and styling. As the name "modular" implies, modular type of construction is used, that is, the entire system is made up of separate "building blocks", each designed to operate separately so as to eliminate cross vibrations and undesirable nodal patterns from interfering and encumbering musical enjoyment. The woofer, as with the other "blocks", can be a separate entity for use with other systems.

The cabinet enclosure design of the woofer is unusual in that the sub woofer faces down. The general design concept is akin to that used so successfully in the great wooden structures of the pedal notes of the mighty pipe organ. Within the confines of this enclosure are located all of the input and output terminals, all of the electronic compensating networks, all of the crossover elements both mechanical and electrical, and the output drive circuitry for the other members of the J system.

The next unit in the system, matching in sound quality, is the very liquid and transparent, uncluttered and uncolored mid-range audio system.

The unveiling of the highs takes place in a beautiful, airy array of totally new, totally transparent electrostatic transducers, gracefully capping this pyramid of sound reproduction.

An aura of grandeur is at last achieved with a masterful and intrinsic blend of physics, mechanics and electronics to produce a truly state-of-the-art device.

SPECIFICATIONS

Frequency Response	22 Hz to 48,000 Hz
Crossover	Includes all crossovers necessary for up to four power amplifiers.
Crossover Frequencies	68 Hz, 375 Hz, 1600 Hz and 6400 Hz
Nominal Impedance	8 ohms
Power Handling	110 W at 400 Hz
Suggested Amplifier Power	25 W and up 150 W Program Material
Speaker Complement	1 low bass special woofer driver 1 upper bass special woofer driver 1 - 8 inch low mid-range 2 - 2 1/8 inch upper mid-range 6 element electrostatic array
Cabinet	American walnut veneers. Also available in teak and rosewood. Optional cover cube available for midrange and electrostatic enclosures
Size	59-3/8 x 25 x 22 deep
Weight	225 pounds each
Warranty	3 years

FULTON MUSICAL INDUSTRIES
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