

ACOUSTAT

Model Two/M
Model Three/M
Model Two/MH
Model Three/MH

ACOUSTAT
Modular Hybrid
Speaker Systems

OWNER'S MANUAL
AND
ASSEMBLY INSTRUCTION

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INTRODUCTION

Congratulations on your purchase of the worlds finest loudspeaker, the Acoustat Modular Hybrid electrostatic with Magne-Kinetic Interface'. Please review the entire owners manual before you begin to assemble your new speakers to assure you of reaching the speaker's full sonic potential. When assembled, placed correctly in the room, and used with the proper electronics, the Acoustat electrostatic loudspeakers will provide you with years of listening enjoyment.

PLEASE NOTE: The speakers require several hours of playing time before their full efficiency can be realized.

REGISTRATION CARDS

Please complete and return the enclosed purchase registration card within ten days of purchase of your new speakers. This card does not determine your eligibility for warranty but will allow Acoustat to inform you of updates and other product news that would be of interest to speaker owners. Any additional information you provide will aid the Acoustat Corporation in continuing to bring music lovers everywhere the finest audio components available today.

PACKAGING

SAVE ALL PACKAGING MATERIALS! Your Acoustat electrostatic loudspeakers are finely crafted pieces of equipment, and must be properly cartoned whenever shipment is necessary. **ONLY** the original packaging materials will insure safe transport. If lost or damaged, replacement packaging materials may be obtained from the Acoustat Corporation at a nominal charge.

FUSES

Acoustat speakers Models Two/M and Three/M and Models Two/MH and Three/MH utilize slo-blo type fuse(s) in the audio signal path. The Models Tw/M and Three/M with Magne-Kinetic 121 Interface, and Models Tw/MH and Three/MH with MagneKinetic 131 Interface utilize 3 amp slo-blow fuse. When replacing fuse(s) only those of similar value and type can be used or the warranty may become invalid.

ASSEMBLY INSTRUCTIONS

For Models Two/M & Three/M

PLEASE READ COMPLETELY BEFORE YOU BEGIN TO ASSEMBLE YOUR SPEAKER SYSTEM!

- 1, Lay the speaker face up on the floor. CAREFULLY and SLOWLY! Dropping the speaker could rupture the diaphragm with trapped air.
2. Remove the three screws from the bottom of the speaker system. The screws are 2-1/2" in length, each with a flat washer. Set them aside.
3. Remove one of the bases from the base box. Place the base against the bottom of the speaker. such that the front/top (name plate is on the front-right hand corner of the base) of the base faces up, and the three holes line up with the three holes in the bottom of the speaker. Start all three long screw/washer assemblies (through the base holes) into the speakers frame, **DO NOT TIGHTEN**
4. Adjust the base so that there are of the base is flush with the rear of the frame. lighten the three screws securely.

5. CAREFULLY turn the speaker over, so that the back side is facing up. Remove one of the **MK-121** Interface units from its carton and set aside the hardware needed. Place the Interface unit on the floor at the base of the speaker, with the opening of the unit facing the back of the speaker.
6. You will notice three groups of wires extending through the rubber grommet on the speaker's firewall plate (lower rear area). Visually identify the three wire groups as the **RED GROUP**, with a pin plug on the end; the **BLUE GROUP**, with a blue sleeved hook on the end; and the **WHITE GROUP**, with a plain hook on the end.
7. (Refer to Figure 1). Insert the pin plug into the **RED** socket on the circuit board of the interface unit. Attach the **BLUE** hook to the board on the right side, identified by the blue tape on the nylon spacer below the thumbscrew, and the word "Blue". Loosen the thumbscrew three turns. Place the hook between the thumb screw and the washer, and tighten securely. Repeat the same procedure for the **WHITE** group, at the white side of the circuit board.

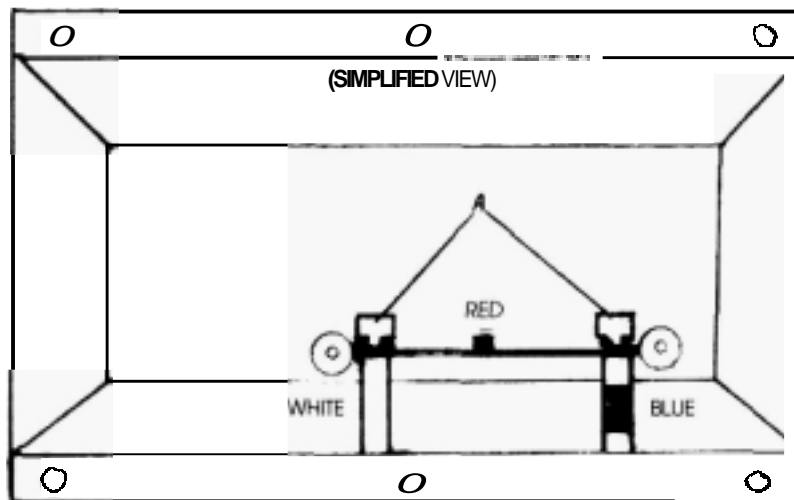


FIGURE 1
PANEL CONNECTIONS AT INTERFACE

8. Push any excess wire into the rubber grommet on the back of the speaker's base.
9. CAREFULLY, place the interface unit on the back of the speaker's base, aligning the six mounting holes. Be careful not to pinch any wires when you set the interface on the metal firewall plate. Using the six screws provided in your hardware packet, attach the interface unit to the speaker's back.
10. Install the two casters included with the unit into the bottom rear corners of the unit. (The casters have nuts prethreaded into the stem.) When assembled and standing, the system should be perpendicular to the floor. This perpendicularity can be determined by two factors: 1) the type of floor the speaker is standing on; and 2) the amount of caster stem thread showing. If the system is to be positioned on a hardwood or cement floor, the caster must be screwed in all the way (or almost all the way) into the interface unit. If the system is to be installed on a carpeted surface, the caster will need to be screwed in only partially. The actual setting can be adjusted when the speaker is standing.
NOTE: Depending on the particular room set-up, a slight degree of tilt back or tilt forward may be desired. This can be accomplished by caster positioning, and will not cause stability problems with the speaker system.
11. When the correct caster adjustment has been obtained, securely tighten the nut on the caster stem against the interface unit chassis.
WARNING: The caster WILL NOT support the entire weight of the assembled speaker system. When moving the system, Do NOT tilt the speaker off its base and roll it like a hand truck. To move the system, slide the base along the floor with the caster acting as an assist only.

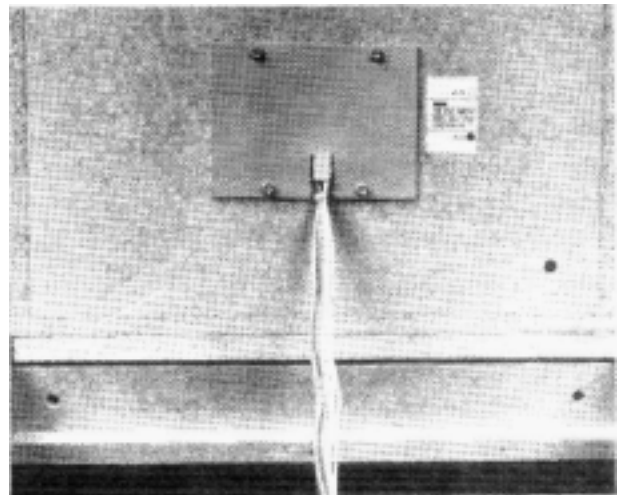
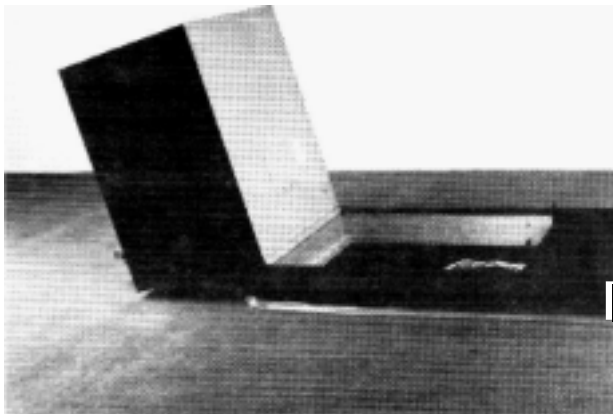
12. Refer to "Recommended Set-Up and Speaker Placement" for room placement suggestions. When you have determined where the speaker will be placed, plug the interface unit into a live wall outlet. The system should remain plugged in at ALL times for proper performance.
NOTE The current draw of the MK-121 Interface unit is very low: about five watts
13. Set the High Frequency balance pot on the interface at approximately the one o'clock position for your initial listening tests. This control affects the frequencies primarily in the last octave (10-20KHz) of the musical spectrum. The proper setting will be that which yields the correct degree of "sparkle" or "airiness" of the sound.
14. Repeat the above procedure for the other speaker.

ASSEMBLY INSTRUCTIONS

For Models Two/MH & Three/MH

PLEASE READ COMPLETELY BEFORE YOU BEGIN TO ASSEMBLE YOUR SPEAKER SYSTEM!

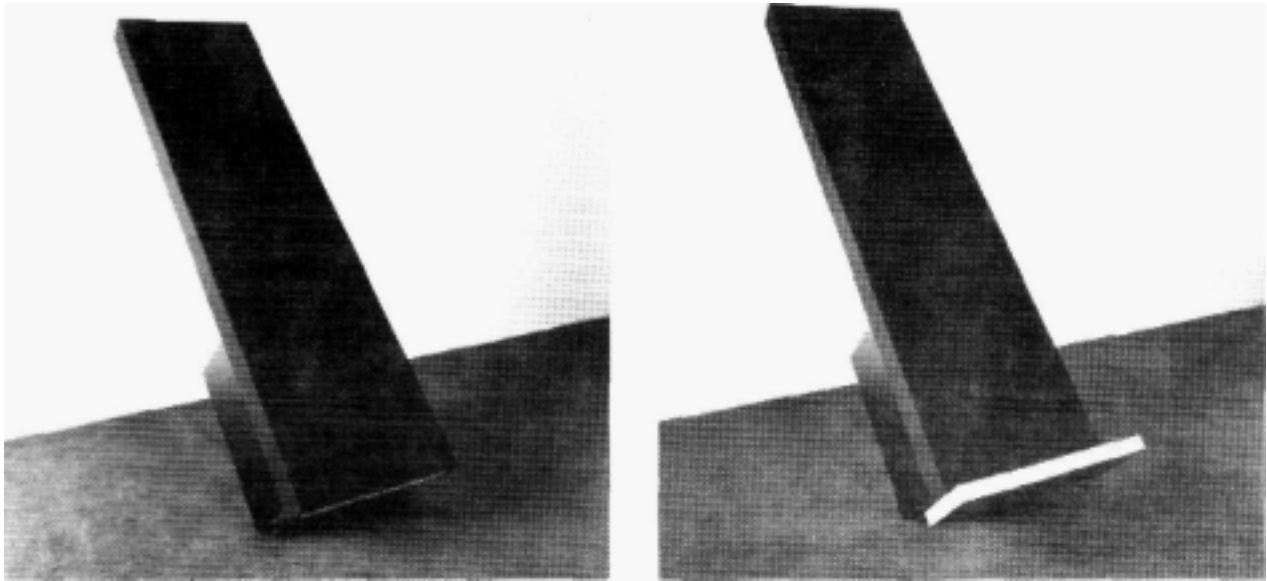
1. To assemble the speaker system, you will need to be allowed enough floor space for the bottom of speaker panel to be parallel to, and five feet from the rear wall. In a later step you will be required to lean the system against this rear wall. Remove one speaker panel unit from box. Remove plastic bag (HINT spread bag on floor before laying down speaker to protect grille cloth.) CAREFULLY lay speaker down in position described above. DO NOT ALLOW THE SPEAKER TO DROP TO THE FLOOR!!!
2. Remove one woofer assembly from its box. Be careful not to put pressure on binding posts, high frequency control knob or woofer. Set hardware kit aside. Set woofer assembly front/bottom edge on the lower rear edge of the speaker's frame. It will balance. Using a flat blade screwdriver or 5/16" nut driver, remove the plastic insulator cover from the front (unfinished side) of the woofer box as follows: 1) Loosen top two screws three turns 2) Remove lower two screws: 3) Slide plate down and off of woofer box.



3. Note the three wire groups originating from the speaker system. Visually identify them as: the RED GROUP, with a pin plug on the end; the BLUE GROUP, with a BLUE-sleeved hook on the end. Insert the RED GROUP pin plug into the RED jack on the connector plate, entering from the LOWER side of the jack. Place the BLUE hook UNDER the lower thumbscrew securely. (NOTE Warning label identifies which thumbscrew is for the WHITE GROUPS hook to other (UPPER) thumbscrew in a similar fashion as the blue group. The three wire groups should then be positioned to exit at the bottom/center of connector plate.
4. Reinstall the plastic insulator plate as follows: 1) Slide the plate under the two upper screws that had been loosened in STEP 2. 2) Position the three wire groups such that they fit under the U shaped flap at the lower/center of the insulator plate. 3) Install the two lower screws and tighten securely, being sure

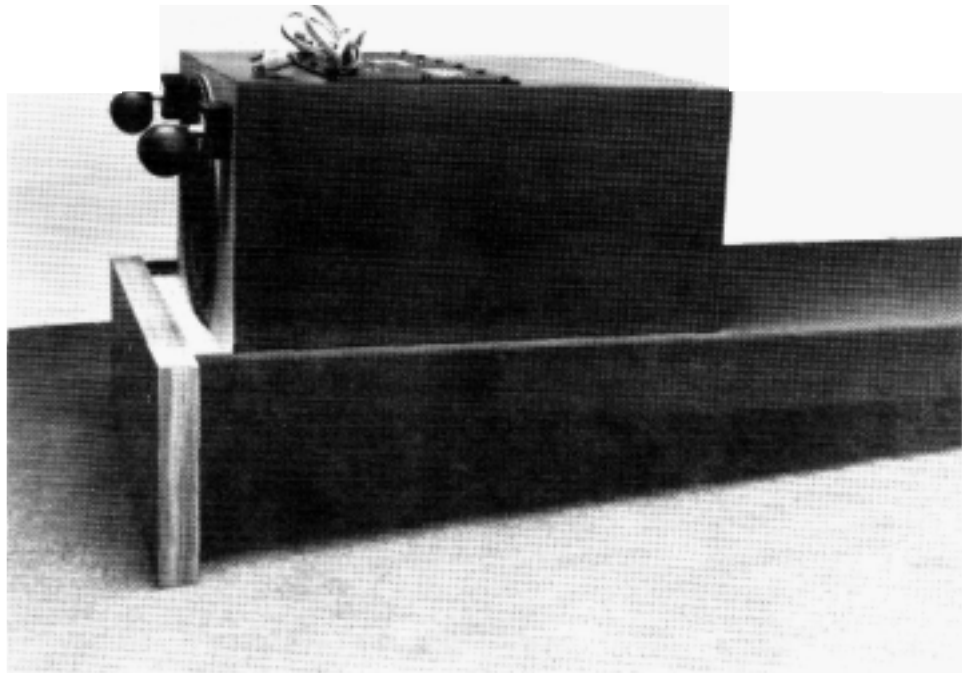
not to pinch any of the wires under the plastic. When properly assembled, the wire groups should ALL fit under the U-shaped flap on the insulator plate.

5. Now the woofer box is to **be** placed into the opening on the back of the speaker. (The box is rather heavy and you may wish to have an assistant help you lift the assembly into place.) Carefully lift the box up off the frame and place it squarely into the opening at the bottom of the speaker's frame. Be sure not to pinch any wires from the three wire groups as the box is set into place. (Be careful Where you grasp the box when lifting it. i.e. don't put your hand through the woofer on the *bottom* of the box!!)
6. Select the two short (1/2") screws from the hardware kit. Using a flat blade screwdriver, install these two screws through the two metal straps at the top of the box and into the two threaded holes on the top of the box.
NOTE: If the holes do not line up, the metal strap can be easily moved to align with the hole. Simply tap the strap with the screwdriver in the direction necessary to align with woofer box hole. Tighten screws securely.
7. Carefully grasp the top of the system and stand the entire assembly upright. At this point, the system will stand, leaning on the lower/back edge of the woofer box. Now, CAREFULLY lean entire assembly back until the top of the speaker rests on the rear wall and the back/bottom edge of the woofer box rests on the floor. This will expose the three holes on the bottom of the speaker frame where the base is to **be** installed. Select the three long (2 1/2") screws and three small washers from the hardware kit. Select one of the bases from the base box.



8. Install a small flat washer on each long screw. Insert one of these assemblies through the bottom right hole on the base (the hole on the side of the base with the Acoustat nameplate), Align this screw with the right-most hole on the bottom of the speaker's frame. Using a flat blade screwdriver, screw LOOSELY into frame. Select another screw/washer assembly and lift left side of base until hole in base aligns with **left** hole in the speaker's frame, insert screw/washer assembly and screw LOOSELY into frame. Select last screw/washer assembly and install in center base/frame holes as before. Once the three screw/washer assemblies have been screwed loosely into the frame, align the rear edge of the base with the rear edge of the speaker's bottom and tighten all three screws VERY SECURELY. WARNING The caster will not support the entire weight of the finished speaker system. The casters are not designed to **be** used like a "dolly" for moving the assembled system but rather are intended to guide the assembled speaker as it is "shuffled" across the floor.

9. Now, CAREFULLY stand the speaker back to an upright position, and then, lean the system forward until the top edge of speaker rests once again on the floor. Select the two casters and two large flat washers from the hardware kit. Note that each caster has a nut on its threaded stem. Install the flat washer over the caster's stem and screw the caster/washer assembly into the wood block on the bottom of the woofer box. Do not yet tighten the lock-nut to secure caster. Repeat for other caster/washer assembly.



10. The exact positioning of the caster, in terms of how much of the stem is screwed into the wood block, will determine whether the finished speaker will stand up straight. The type of floor the system sits on will ultimately determine how far the casters should be threaded in. On a hardwood, tile or cement floor, the casters will need to be threaded in all the way. On a carpeted floor, $\frac{1}{8}$ " to $\frac{1}{2}$ " of thread may need to be left showing, depending on the carpet pile. Once the proper adjustments have been made, the stopnut should be securely tightened against the flat washer. Most likely some adjustment will be necessary after the system has been stood up. At which time the height can be adjusted and the stopnut secured, once the correct setting is achieved. The correct setting is that which leaves the system perpendicular to the floor. Once achieved, use a 7/16 wrench or pliers to tighten the stopnut against the flat washer.

WARNING: The caster will not support the entire weight of the finished speaker system. The casters are not designed to be used like a "dolly" for moving the assembled system, but rather are intended to guide the assembled speaker as it is "shuffled" across the floor.

11. Position the assembled speaker system in the room, such that it is approximately three feet from the back wall and a minimum of two feet from the side wall, angled towards the center listening position. Plug the line cord into an always live outlet. Set the high frequency balance control to the "0" position for your initial setting. Connect speaker terminals to amplifier, making sure to maintain proper "phase". i.e. plus (+) terminal of amplifier wired to plus (+) terminal of the speaker and, minus (-) to minus (-).

12. Repeat the above procedure for the other speaker system.

NOTE Due to the break-in requirement of the electrostatic portion of the speaker system, the first few days of playing time will produce sonic improvement and an increase in efficiency.

RECOMMENDED SET-UP AND SPEAKER PLACEMENT

DISTANCE FROM WALL

Leave at least three feet from the speakers to the rear wall. To determine this distance, measure from the center of the back of the speaker to the rear wall, This measurement should be taken on a perpendicular to the speaker. Allow at least two feet from the side of the speakers to the side walls.

PLACEMENT WITHIN THE ROOM

By placing the speakers far apart against a long wall, you will obtain the largest "listening window" without loss of center fill. Place the speakers so that they form an equilateral triangle with the listening position at the apex (Refer to Figure 2A).



FIGURE 2A
LARGEST LISTENING WINDOW

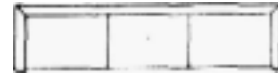


FIGURE 2B
BEST LOW BASS RESPONSE

By placing the speakers against the short wall of the room, with the rear of the speakers projecting into the corners, the deepest possible bass will be obtained. It may be impossible to retain the two feet suggested distance from the side of the speaker to the wall in a narrow room. In this case, it is preferable to use the available space to separate the two speakers, and locate them closer to the side walls. (refer to figure 2B)

ANGLING

Angle the speakers with the panels directed toward the listening position. There are two general methods for angling or toe in (Refer to figure 3 on following page). 1) Angle the speakers so that the "apex" is slightly in front of the listener. (See Position A). This arrangement offers the widest listening window, enabling you to move your listening position with a minimum of tonal change; OR 2) Angle the speakers so that the "apex" is slightly behind the listener. (See Position B) This arrangement reduces the "Listening window", but provides a more focused sound. It requires less angling, therefore, the speakers are angled outward slightly to achieve this "apex" position.

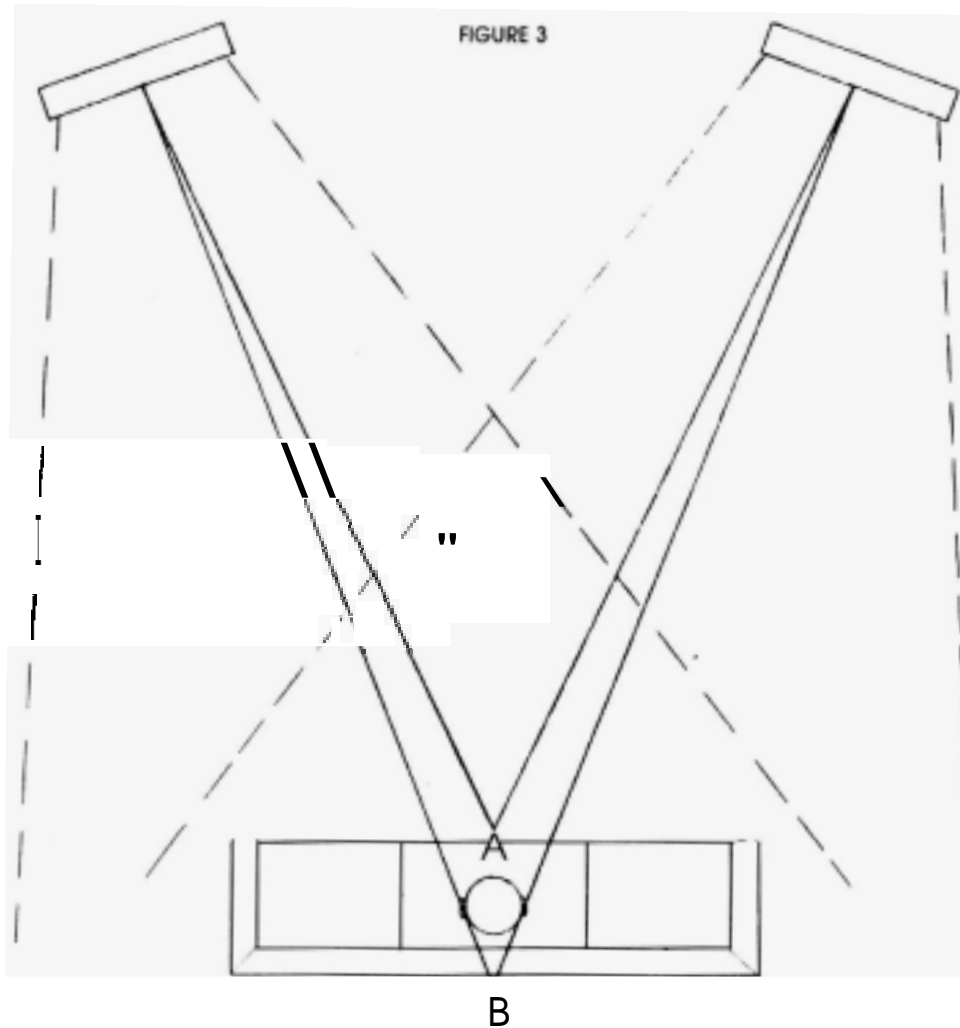
NOTE Neither position is in all cases superior to the other, Personal taste and room placement will determine which is the best for you. Experiment!

ACOUSTICAL PROPERTIES OF THE WALLS

A live end-dead end set-up in the listening room can sometimes improve the sonic characteristics of a speaker system. This can be accomplished by using materials behind the speakers such as Sonex fiberglass panels, carpet, tapestry, etc. Treating the walls can yield more precise imaging and superior focus from your speakers. Perform a listening test before you treat the walls permanently. using a heavy blanket suspended temporarily while you listen.

THE SOLID LINES ARE SHOWN TO FACILITATE ANGLING ONLY.WHEN THE PANELS ARE PERPENDICULAR TO THE RESPECTIVE SOLID LINE THAT APEX IS ACHIEVED

THE DASHED LINES REPRESENT THE SONIC RADIATION OF THE SPEAKERS.



NOTE SPEAKERS SHOWN ARE DRAWN WITH THE FROM PLANE OF THE SPEAKER PERPENDICULAR TO THE LISTENER. IN A ROOM THIS SET-UP WOULD YIELD THE APEX IN THE B POSITION TO ACHIEVE THE APEX IN POSITION A THE SPEAKERS WOULD HAVE TO BE ANGLED IN SLIGHTLY.

PHASING

Acoustat speakers are designed to preserve the correct absolute phase throughout the system, including the final coupling of the signal to the air. This ensures that both vocalists and instruments will sound as natural as possible. Phasing depends on the correct connections from the interface. Be sure these connections are correctly oriented, i.e. red (+) to red, and black (-) to black.

ELECTRIC FEEDBACK

Electrostatic speakers produce a strong electric field which can influence the operation of any low level electronic circuitry in close proximity. This can result in feedback well above the audio spectrum, which has the effect of power dissipation and decreased headroom in the system. For this reason the turntable/cartridge leads and the phono inputs of the preamplifier should be kept at least six to eight feet from the nearest speaker to ensure that no feedback can occur.

WARNING! DO NOT apply audio signal to the interface with the AC Power removed, hence no panel bias! Connection to switched outlets is not recommended. DO NOT exceed fuse ratings or bypass fuse receptacle. Either of the above conditions will result in damage to the low frequency transformer if the interface is overdriven, requiring an expensive repair not covered by the warranty.

CLEANING

Speaker cloth may be cleaned with **any commercial cleaning fluid**, or any cleaner designed to be used with polyester knit fabrics. Use a cleaner such as K2R for small concentrated spots.

REMOVAL OF INTERFACE FOR MODELS TWO/M & THREE/M

WARNING ALWAYS UNPLUG THE LINE CORD BEFORE REMOVING THE INTERFACE!

If the interface must be removed from the speaker, the following procedure is necessary to discharge the panels

- 1, **UNPLUG** the interface from the AC outlet and disconnect the speaker leads from the amplifier.
2. **CAREFULLY**, lay the speaker on the floor. **DROPPING IT CAN RESULT IN DAMAGE!**
3. Unbolt the interface.
4. **Set** the interface on the floor behind the speaker, **king careful not to unplug the three wire groups from the speaker**
5. Remove the center RED pin plug. Hold the wire an Inch behind the pin and **GENTLY** pull. **DO NOT GRAB THE PLUG!** Touch the RED tip to either the BLUE or the WHITE terminal on the circuit board
6. Loosen the two thumbscrews and remove the hooks

WARNING: High static voltages are present in the charged panel. Failure to follow these procedures will result in an annoying, but harmless electrical shock.

REMOVAL OF HYBRID MODULE FOR MODELS TWO/MH & THREE/MH

WARNING ALWAYS UNPLUG THE LINE CORD BEFORE REMOVING THE HYBRID MODULE!

If the Hybrid Module must be removed from the speaker, the following procedure is necessary to discharge the panels

- 1, **UNPLUG** the Hybrid Module from the AC outlet and disconnect the speaker leads from the amplifier.
2. **CAREFULLY**, lay the speaker on the floor **DROPPING CAN RESULT IN DAMAGE!**
3. Unbolt the Hybrid Module, both the two screws on the top of the module, and the three screws on the bottom of the speaker frame.
4. **Set** the module on the floor behind the speaker, being careful not to unplug the three wire groups from the speaker.
5. Remove the plastic insulator cover from the Hybrid Module.
6. Remove the center RED pin plug. Hold the wire an inch behind the pin and **GENTLY** pull. **DO NOT GRAB THE PLUG!** Touch the RED tip to either the BLUE or the WHITE terminal on the circuit **board**
7. Loosen the two thumbscrews and remove the hooks.
8. Replace the plastic insulator cover

WARNING High static voltages are present in a charged panel. Failure to follow these procedures will result in an annoying, but harmless shock.

LIMITED WARRANTY

Amustat Corporation warrants to the owner that the Amustat loudspeaker system excluding the Dynamic Woofer will perform as specified and that it will be free of defects in materials and workmanship for a period of FIVE YEARS from the date of original manufacture.

In addition, the Acoustat Corporation will continue to warrant the product at our option as long as it is in service, subject to the conditions below. Acoustat Corporation warrants to the owner that the Dynamic Woofer employed in the 2mH and 3mH will perform as specified and that it will **be** free of defects in materials and workmanship for a period of (2) *two* years from the original date of manufacture.

Acoustat Corporation will repair defective units without charge for labor or parts subject to the following conditions

- a) **The** unit must not have been altered or damaged through misuse, abuse, negligence, accident, or improper operation
- b) All repairs must be undertaken at the factory **or** other service center designated by Acoustat Corporation. Units submitted for warranty repairs must **be** shipped in the factory packing carton to Acoustat Corporation or its designated owner, and will **be** returned to the owner freight and insurance prepaid by Acoustat Corporation.
- c) Normal wear and maintenance are not covered by this warranty
- d) **Fuses** have not been bypassed and only fuses of the proper value have been used.

ACOUSTAT CORPORATION SHALL NOT BE RESPONSIBLE IN ANY WAY FOR CONSEQUENTIAL OR INDIRECT DAMAGES OR LIABILITIES RESULTING FROM THE USE AND OPERATION OF THE PRODUCT COVERED HEREIN OR RESULTING FROM ANY BREACH OF THIS WARRANTY OR ANY IMPLIED WARRANTY RELATING TO THE **SAID** PRODUCT.

Some states do not allow exclusion or limitation of incidental or consequential damages, **so** the above limitation or exclusion may not apply to you.

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

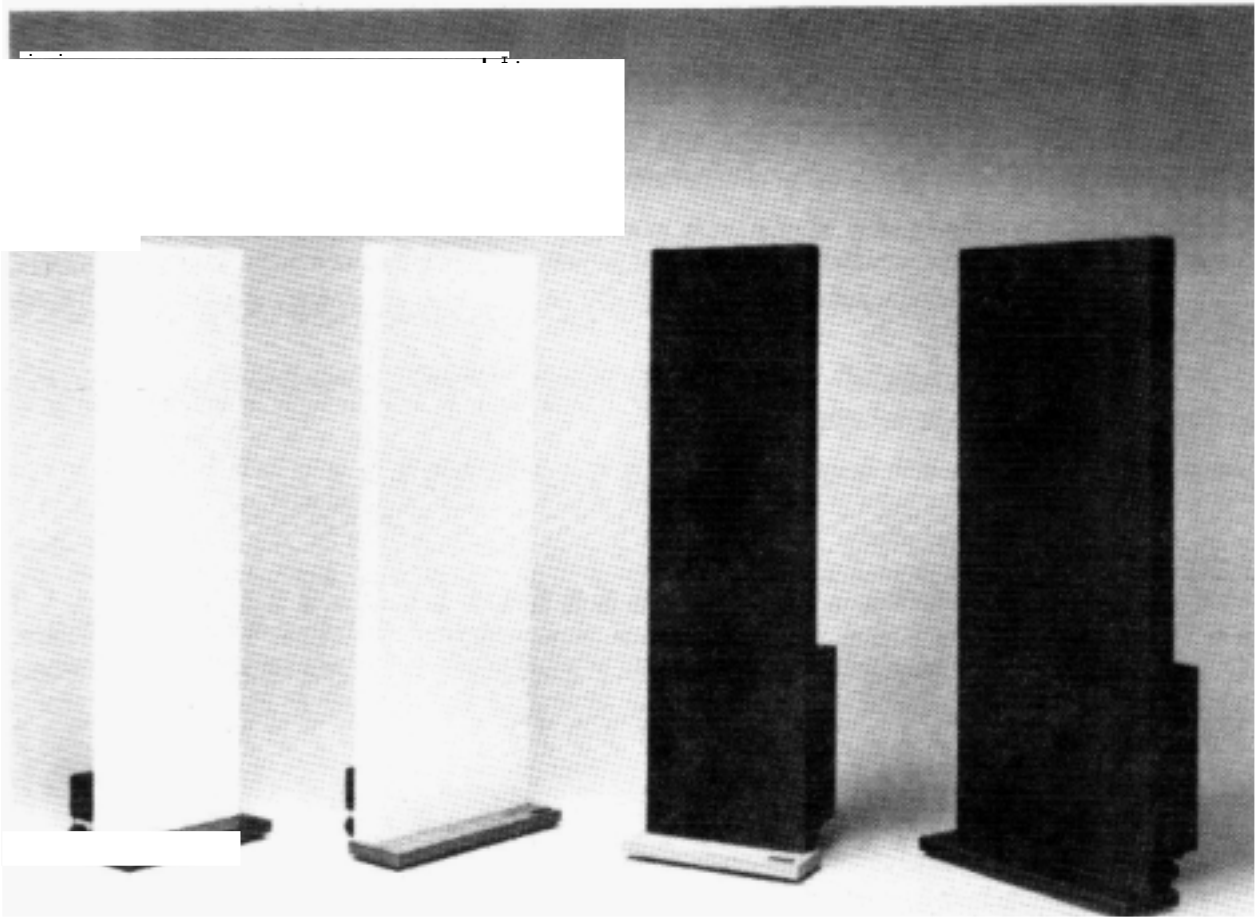
SPECIFICATIONS

MODEL TWOM-Frequency Response: 35-20KHz +/- **2 dB**; Sound Pressure Level: 108dB 18' in a 14x22' room. (Program Material Peaks); Minimum Power Requirements 100 Watts Per Channel; Nominal Impedance: 4 Ohms Power Consumption: 5 **Watts** (120v. **50/60Hz**); Control: High Frequency Balance (Controls frequencies above 10 K Hz); Dimensions 7 2 x 20" x **3 1/2"**; Weight 81 lbs. (Net weight for one speaker with Interface)

MODEL THREE/M-Frequency Response: 30-20KHz +/- **3dB** **Sound Pressure Level: 110dB** 18' in a 14'x22' room. (Program Material Peaks); Minimum Power Requirements: 70 Watts Per Channel; Nominal impedance: 4 Ohms Power Consumption 5 Watts (120v. **50/60Hz**); Control: High Frequency Balance (Controls frequencies above 10K Hz); Dimensions 7 2 x 2 8 x **3 1/2"**; Weight 98 **lbs.** (Net weight for one **speaker** with interface)

MODEL TWOMH-Frequency Response: 30-20KHz +/- **3dB**; Sound Pressure Level: 110dB @ 18 in a 14'x22' room. (Program Material Peaks); Minimum Power Requirements: 40 Watts Per Channel; Nominal Impedance: 4 Ohms Power Consumption: 5 Watts (120~50/60 Hz); Control: High Frequency Balance (Controls **frequencies** above 10K Hz); Dimensions 7 2 x 20" x **3 1/2"**; Woofer enclosure: 21" x 18" x 13"; Weight 110 lbs. (Net weight for one speaker with interface)

MODEL THREE/MH-Frequency Response: 30-20KHz +/- **3dB**; Sound Pressure Level: 112dB @ 18' in a 14'x22' room. (Program Material Peaks); Minimum Power Requirements: 40 Watts Per Channel; Nominal impedance: 4 Ohms Power Consumption: 5 Watts (120~50/60Hz); Control: High Frequency Balance (Controls frequencies above 10K Hz); Dimensions 7 2' x 28" x **3 1/2"**; Woofer enclosure: 21" x 18" x 13"; Weight 127 lbs. (Net weight for one speaker with Interface)



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