ACOUSTAT

MODEL ONE
MODEL THREE
MODEL ONE + ONE
MODEL TWO + TWO

MK 121 & MK 141 VERSIONS

ACOUSTAT Electrostatic Speaker Systems

OWNER'S MANUAL
AND
ASSEMBLY INSTRUCTIONS

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SPECIFICATIONS

MODEL ONE – Frequency Resoonse: 30-18kHz +/-3dB, Sound Pressure Level: 108 dBmeasured @ 15' in a 14' x 18' room. (music Peaks); Minimum Power Requirements: 75 Watts/Channel; Nominal Impedance: 4 ohms; Power Consumption: 5 Watts (120V, 50/60Hz); Dimensions: 72" x 11" x 3 1/2"; Bass Model Dimensions: 18 1/2" x 18 1/2" x 18 1/2"; Weight: 65 Lbs. (Speaker and Interface). 37 Lbs (Bass Module)

MODEL 1 + 1 – Frequency Response: 35-20kHz +/-3dB; Sound Pressure Level: 108 db @ 18' in a 14' x 22 room. (Music Peaks); Minimum Power Requirements: 100 Watts/Channel; Nominal Impedance: 4 Ohms; Power Consumption: 5 watts (120V, 50/60Hz); Dimensions: Model 1 + 1, 94" x 11½" x 3⅝"; Weight: 72 Lbs. (Speaker and Interface)

MODEL THREE – Frequency Response: 30-20kHz ±2db; Sound Pressure Level: 140 db @ 18' in a 14 x 22 room. (Music Peaks); Minimum Power Requirements: 70 Watts/Channel; Nominal Impedance: 4 Ohms; Power Consumption: 5 Watts (120V, 50/60 Hz); Dimensions: 72" x 28 x 3½"; Weight 98 Lbs.

MODEL 2 + 2 – Frequency Response: 28-20kHz ±2db; Sound Pressure Level: 115 db @ 22' in a 16' x 26' room. (Music Peaks); Minimum Power Requirements: 60 Watts/Channel; Nominal Impedance: 4 Ohms; Power Consumption: 5 Watts (120V, 50/60 Hz); Dimensions: 94 x 20" x 3½"; Weight: 95 Lbs.

LIMITED WARRANTY STATEMENT

Acoustat warrants to the owner that the Acoustat [illegible] System (including Sub Woofer) will [illegible] specified and be free of defects in materials and workmanship for as long as the product remains in service, subject tot he conditions below

Acoustat will [illegible] defective units without charge for labor or parts, subject to the conditions below:

a) The [illegible] must not have been altered or damaged through [illegible], abuse, negligence, accident, or improper operation.

b) All [illegible] undertaken at [illegible] or [illegible] by Acoustat. Units submitted for warranty service must be properly packed in the [illegible] king carton tc Acoustat directly, or through an authorized Acoustat dealer. All units will be returned to same freight and [illegible] prepaid by Acoustat

c) Normal wear and maintenance are not covered by the warranty

d) Fuses have not been bypassed and only fuses of the proper value and type have been used.

ACOUSTAT SHALL NOT BE RESPONSIBLE IN ANY WAY FOR [illegible] OR [illegible] 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.

[illegible] not allow exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not [illegible] you.

INTRODUCTION

Congratulations on your purchase of the ACOUSTAT ELECTROSTATIC LOUDSPEAKER SYSTEM. Please review the entire owner's manual before uou 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 fhe proper electronics, the Acoustat electrostatic loudspeakers will provide you with years of listening enjoyment.

REGISTRATION CARDS

Please complete and return the enclosed purchase registration card within ten days of purchased your new speakem. *This* card does not determine your eligibility for warranty, but will allow Acoustat to inform you of updafes and other product news that would be of interest to speaker owners. Any additional information you provide will aid Acoustat 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 cl equipment, and must be property cartoned whenever shipment is necessary. ONLY the original packaging materials may be obtained from Acoustat at a nominal charge.

FUSES

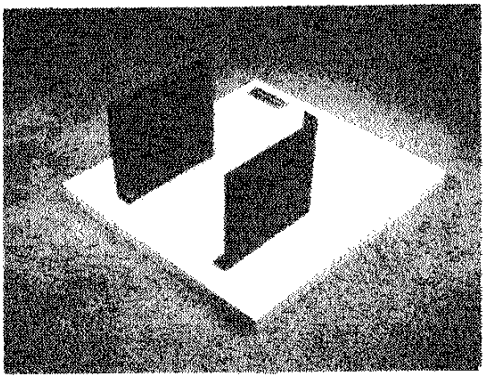
All ACOUSTAT loudspeakers utilize 5-Amp Slo-Blo type fuses In the audio signal path. This fuse is located on the rear panel d t h e interface unit at the base of each loudspeaker. When replacing fuse(s) only those of similar value and type can be used or the warranty may become invalid.

LOW-FREQUENCY TRANSFORMER TAP (FULL RANGE MODELS ONLY)

Before assembly, locate fhe low frequency transformer tap terminal strip (identified by a bright tag) and verify that the setting is correct for your particular model as p e r below:

M1 + 1	Red Wire to Red Lug
M3	Red Wire to Orange Lug
M2 + 2	Red Wire to Yellow Lug

This setting determines the proper bass rewponse for the different speaker models. Improper setfing will result in bass response that is weaker stronger than normal.



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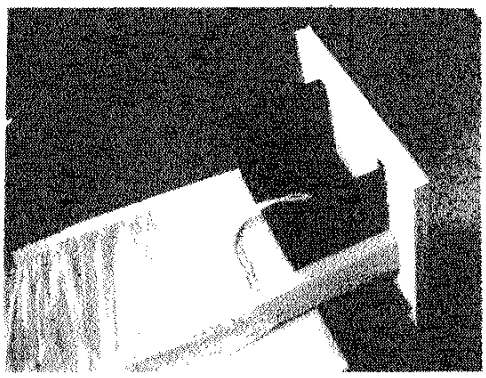

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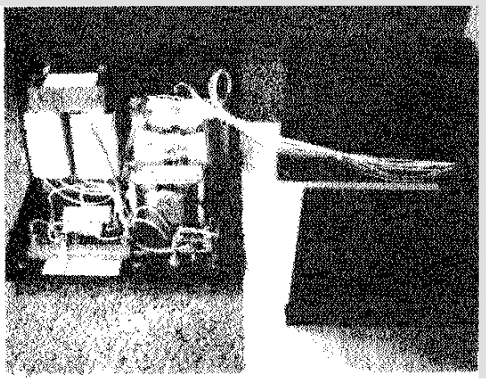

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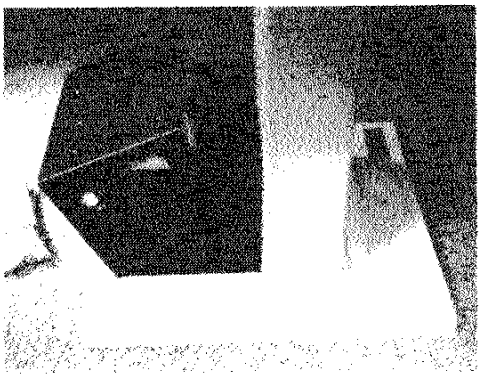

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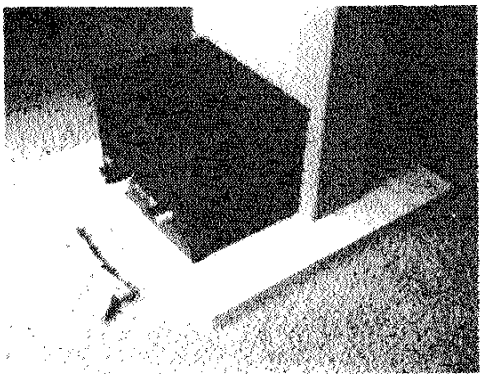

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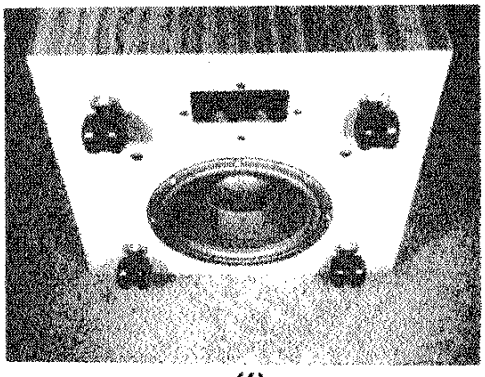


(6)

ASSEMBLY INSTRUCTIONS

FOR ALL MODELS

PLEASE READ COMPLETELY BEFORE YOU BEGIN ASSEMBLY.

For assembly you will require a targe Phillips type screwdriver, and the small hex-wrench attached to the interface line cord.

1. Remove bases, speaker panels and interface units from their packing cartons. To minimize soiling of panel fabric during assembly, leave the plastic bags on the panels, exposing only the lower 12" of the panels for assembly.
2. Using the small hex wrench provided, the disassemble the side plates from the main interface assembly. Set the screws and wrench aside unfil they are required later.
3. Set a speaker base on the floor. nameplate side up. Erect the side plates on the base as shown (1), securing them with two slot head screws per plate. Leave screws loose.
4. Lay a speaker panel GENTLY on the floor, with the wiring harness facing up. DO NOT DROP! The frapped air under fhe panel can rupture fhe speaker diaphragm. Have a helper raise the lower end of the panel, or support it on the box.
5. Place the completed base assembly against the panel as shown (2), aligning the holes in the side plates to the holes in the speaker back panel. Tighten all screws securely.
5. Standing the compfeted speaker up vertically. position the interface assembly behind the speaker as shown (3). Locate the wiring harness emerging from the hole in the back of the speaker panel. Separate the three wire bundles into the RED group, with the pin plug on the end: the BLUE group With the blue sleeved hook on the end; and the WHITE gmup, with the plain hook on the end.
7. Referring to diagram (3), insert the pin plug (RED group) into the RED socket on the circuit board of the interface unit. Affach BLUE hook to the board on the right side identified by the blue dot on the nylon spacer below the thumbscrew, and the word 'BLUE'. Loosen the thumbscrew several turns, top surface of the thumbscrew and washer and tighten securely. Repeaf this procedure for the WHITE hook on fhe other side of the circuit board.
8. Carefully, assemble the inferface unit to the side plates, GENTLY feeding the excess wiring back into the hole in the speaker panel. Align the holes on the interface flanges to the side plates. keeping the flanges on the OUTSIDE of the side plates as shown (4) & (5). Insert the four allen head screws info fhe hofes in the sides of the inferface. and ttghfen securely with the hex wrench provided (5).
9. Position fhe assembled speaker systems in the room, allowing two or three feet from the backwall and at least 18" from the side walls. Adjust speaker 'toe-in' angle according to the 'SPEAKER PLACEMENT' section of the manual. Plug the line cord info an unswitched wall outlet. Connect speaker terminals to amplifier, making sure that proper phasing is maintained (i.e. positive (RED) terminal on speaker is connected to positive (RED) terminal on amplifier, and similarly for negative (BLACK)).

SUB-WOOFER/MK 1411 B INTERFACE SYSTEM

CONNECTION

GENTLY lay fhe woofer module on its side, exposing the woofer cone and left and right terminal connections (6). Connect the woofer terminals on the left to the terminals labeled 'woofer' on the back of the left speaker inferface. Repeat this procedure for the right channel. Be sure to maintain proper phasing (see section on phasing in the placement section of the manual.)

When complete, there will be a left and a right cable leading to the single bass module. Return the bass module to its operating position (woofer cone facing down).

While it is generally advisable to place the bass module at a central location between the speakers, some room arrangements may not permit this. Our listening tests revealed balanced bass performance when the module was placed within the shaded area in the "PLACEMENT DIAGRAM". Close proximity to walls or corners will result in uneven response, with these placements typically yielding increased bass at the expense of low-frequency linearity.

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 feef from the speakers to the rear wall. To determine this distance, measure from f he 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 tong wall, you wilt obtain the largest "listening window" without loss of center All. Race the speakers so that they form an equilateral triangle with the listening posifion at the apex. (Refer to Figure IA).

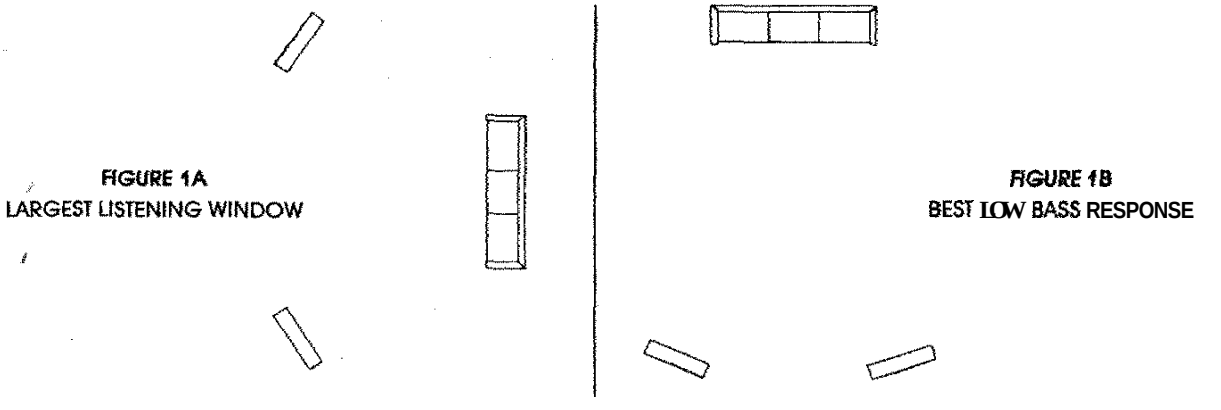


FIGURE 1A
LARGEST LISTENING WINDOW

FIGURE 1B
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 stde of the speaker tot he wall in a narrow room. In this case, it is preferable to use the available space to separate the two speakers, and locafe them closer to the side walls. (Refer to Figure 1B).

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 2 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

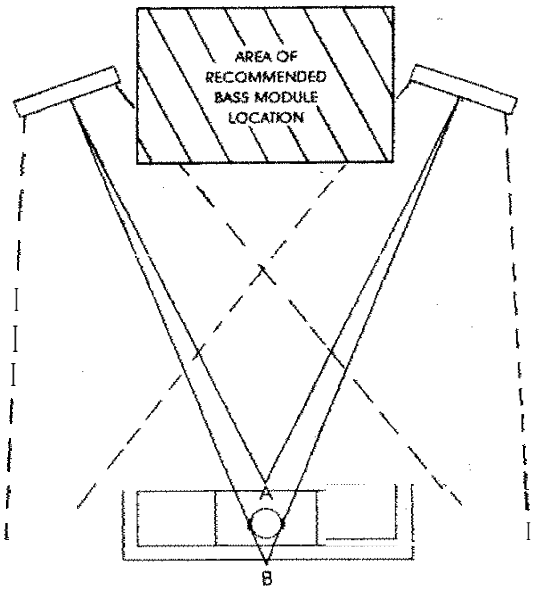
arrangement reduces the "Listening window," but provides a more focused sound. It requires less angling, therefore. the speakers are angled outward slightly to achieve this "apex" position.

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

ACOUSTICAL PROPERTIES OF THE WALLS

A live end-dead end sef-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 fhe walls permanently, using a heavy blanket suspended temporarily while you listen.

FIGURE 2



THE SOLID LINES ARE SHOWN TO FACILITATE ANGLING ONLV 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 FRONT PLANE OF ME SPEAKER PERPENDICULAR TO THE LISTENER IN A ROOM THIS SET—UP WOULD MELD 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 throughouf the system, including the final coupling of the signal to the air. The ensures that both vocalists and instruments will sound as natural as possible. Phasing depends on the correct connecflonsh-om the interface. Be sure these connections are correctly orientred, i.e., red (+) to red, and black(—·) to black.

ELECTRIC FEEDBACK

Electrostatic speakers produce a strong electric Reld 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 feef from the nearest speaker to ensure that no feedback can occur.

WARNING! DO NOT apply audio signal to the intelface 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 and expensive repair not covered by the warranty.

CLEANING

Speakercloth may be cteoned with any commercial cleaning fluid, or any cleaner designed fo be used with polyester knit fabrics. Use a cleaner such as K2R for small concenffated spots.

REMOVAL OF INTERFACE FOR ALL MODELS

WARNING: ALWAYS UNPLUG THE LINE CORD BEFORE REMOVING THE INTERFACE!

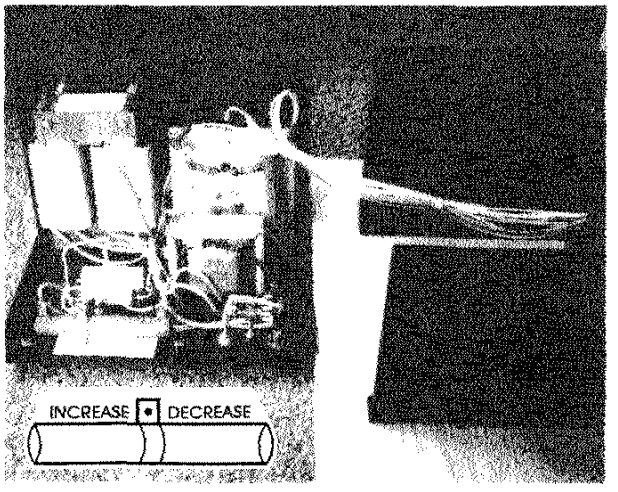
If the interface must be removed from the speaker, the following procedure is necessary to discharge the panels:

1. UNPLUG the interface from the A.C. outlet and disconnect the speaker leads from the amplifier.
2. Remove the four allen head screws that secure the main interface assembly, using the hex-wrech provided.
3. Separate the interface unit from the side support brackets only.
4. Set the interface unit on the Boor directly behind the speaker, being careful not to unpfug the three wire groups or strain the wiring harness.
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 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 fallow these procedures will result in an annoying but harmless electrical shack.

HIGH – FREQUENCY BALANCE CONTROL

The high frequency balance is pre-set at the factory for optimum performance in a room with "typical" acoustics. This level can be adjusted for extreme situations in fhe following manner. Follow the instructions for "REMOVAL OF INTERFACE" at fhe end of the manual. Referring to diagram (6), locate the high frequency batance resistor in the interface assembty. Loosen the center tap and slide left or right, according to the diagram for increase or decrease. After adjustment, tighten tap securely. NOTE For optimum performance and stereo imaging be SURE that both speaker taps are adjusted IDENTICALLY. preferably checked with an ohmmeter.



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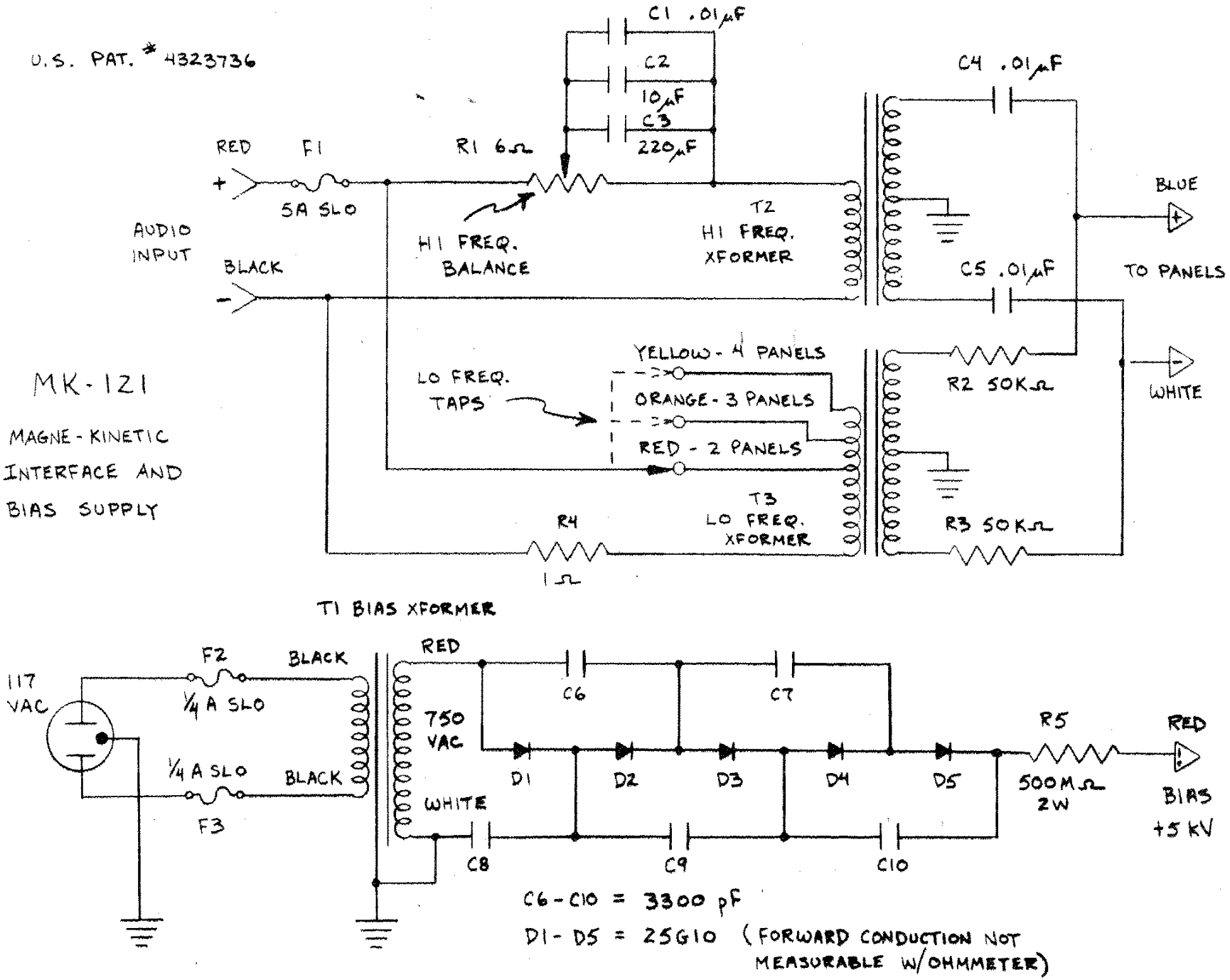


MK-121

MAGNE-KINETIC INTERFACE AND BIAS SUPPLY

C6 - C10 = 3300 pF

D1 - D5 = 25G10 (FORWARD CONDUCTION NOT MEASURABLE W/OHMMETER)

Component Values List – MK-121

C1	.01	uF	Polystyrene
c 2	10	uF	Polypropylene
c 3	220	uF	Non-polar lytic
c4, C5	.01	uF	*6* KV Polypropylene
C6, C7, C8, C9, C10	*3300*	pF	6KV

R1	*6* ohm	50 w	slider adjust
R2. *R3*	50 K ohm	50 w	
R4	1 ohm	20 w	
R5	500 M ohm	2 W	

D1-D5	25G10 High voltage diode

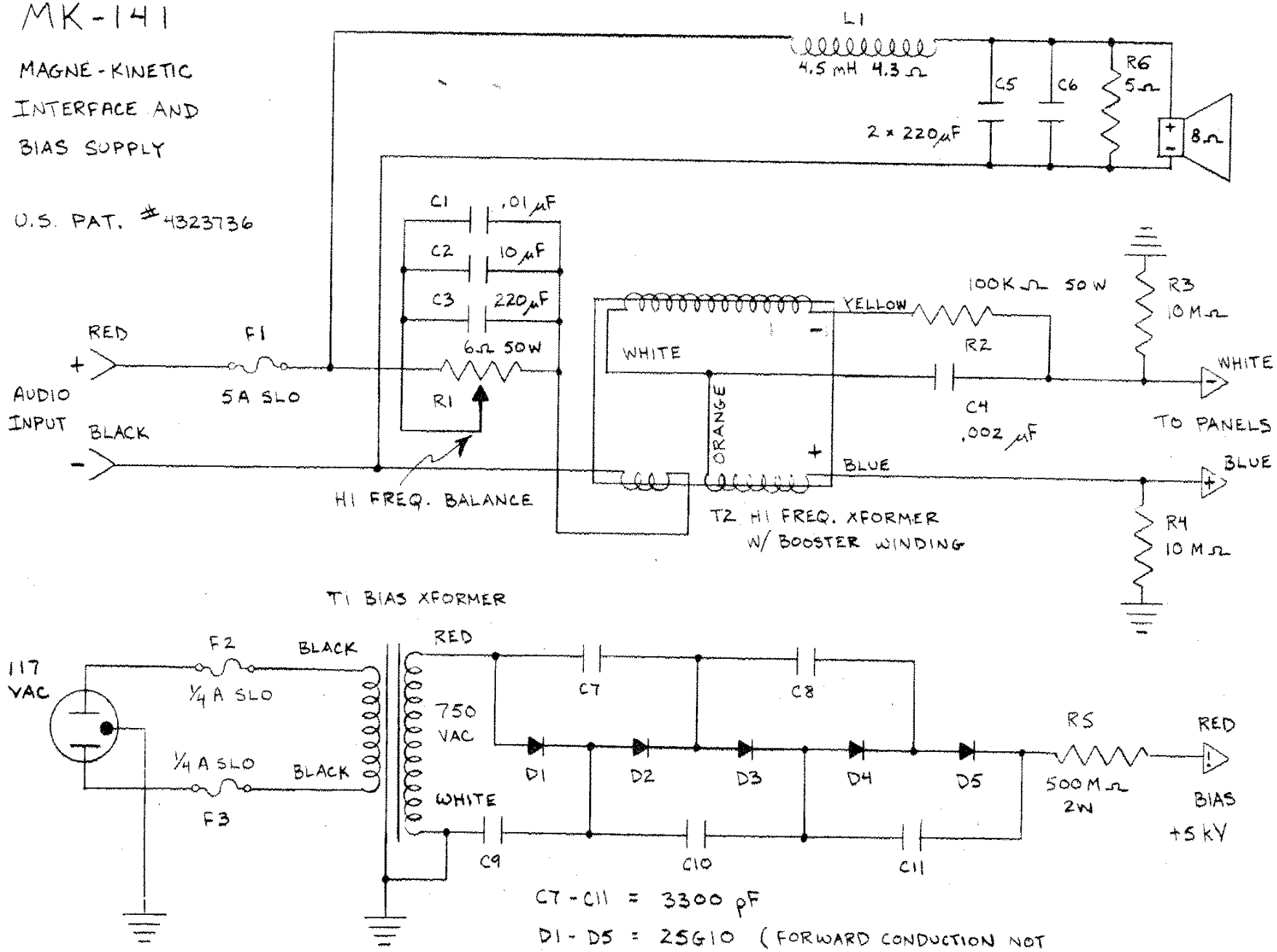
'T1	Acoustat Bias Transformer
T2	Acoustat MK121 Hi Frequency Transformer
*T3	Acousfaf MK121 Lo Frequency Transformer

F1	5 Amp Slo-Blo
F2, *F3*	1/4 Amp Slo-Blo

MK-141

MAGNE-KINETIC
INTERFACE AND
BIAS SUPPLY

U.S. PAT. #4323736



C7 - C11 = 3300 pF

D1 - D5 = 25G10 (FORWARD CONDUCTION NOT MEASURABLE W/ OHMMETER)

Component Values *List* – MK-141

C1	.01	uF	Polystyrene
c2	40	uF	Polypropylene
c3	220	uF	Non-polar lytic
C4	.002	uF	6 KV Ceramic disc
C5, C6	220	UF	Non-polar lytic
C7, C8, C9, CI 0, C11	3300	pF	3 KV Ceramic *disc*

R1	6 ohm	50 w	slider adjust
R2	100 K ohm	50 w	
R3, R4	10 M ohm	3w	
R5	500 M ohm	2 w	
R6	5 ohm	20w	

D1-D5	25610	High voltage diode

L1	45 mH/4.3 ohm	Air core indicator

T1	Acoustat Bias Transformer
T2	Acoustat MK141 Transformer

F1	5 Amp Slo-Blo
F2, F3	1/4 Amp Slo-Blo

ACOUSTAT

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