



MAGNEPLANAR MG IIIa

Instruction Manual

MAGNEPLANAR[®] PRODUCTS
WHITE BEAR LAKE, MINNESOTA 55110

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1. GENERAL DESCRIPTION

Your Magneplanar MG-IIIa loudspeaker system consists of one pair of oak-framed screens, labeled "1" and "2" (for identification). Each screen contains one, five-foot long ribbon tweeter and one mid/bass, planar/magnetic driver. The planar/magnetic driver consists of a bass section and a midrange section on a common mylar diaphragm.

The crossover components between the bass and midrange/tweeter are housed in a pair of external crossover boxes. The midrange to treble crossover components are housed in the speaker panel and are non-defeat-able.

Although the MG-IIIa system is set up for conventional amplification, the loudspeaker input plates provide bi-amplification as an option.

2. ACCESSORY CARTON CONTENTS

- 4 - Speaker Support Feet
- 8 - Speaker Support Bolts
- 4 - 2½ Amp. Normal Blow Fuses
- 2 - External Crossover Boxes
- 1 - Allen Wrench
- 2 - Magneplanar Emblems

3. PACKAGING

Save all packaging. If you need to transport the speakers they can be shipped safely only in the original packaging. You may never have to return your loudspeakers, but should the occasion arise, they should not be shipped in any packaging but the original. Should you discard it, factory packaging is available.

4. SPEAKER UNPACKING AND ASSEMBLY

UNPACKING SPEAKER

Do not pull a speaker abruptly from the carton. The resulting partial vacuum could burst the ribbon. Do not remove the tweeter protector strip until the speaker is completely assembled.

SPEAKER ASSEMBLY

The four support feet for the MG-IIIa speakers are shipped in the separate accessory carton along with the eight mounting bolts. Two feet must be fastened to the backside of each of the panels. The nuts are already installed in the panels.

SUPPORT FEET INSTALLATION

- A. Stand speakers upright as shown in Figure 1. We suggest that you have a second person hold the speakers during installation to ensure they do not fall.
- B. Locate the four holes in the fabric along lower backside of the panel.
- C. Carefully slide a foot from the backside under the panel so the holes in the foot align with the holes in the panel. Insert bolts through the foot and into the panel until they engage nuts in the panel. Tighten with a Phillips #2 screwdriver. Care should be taken so that the bolts are not cross-threaded.
- D. Repeat Step C for remaining feet.

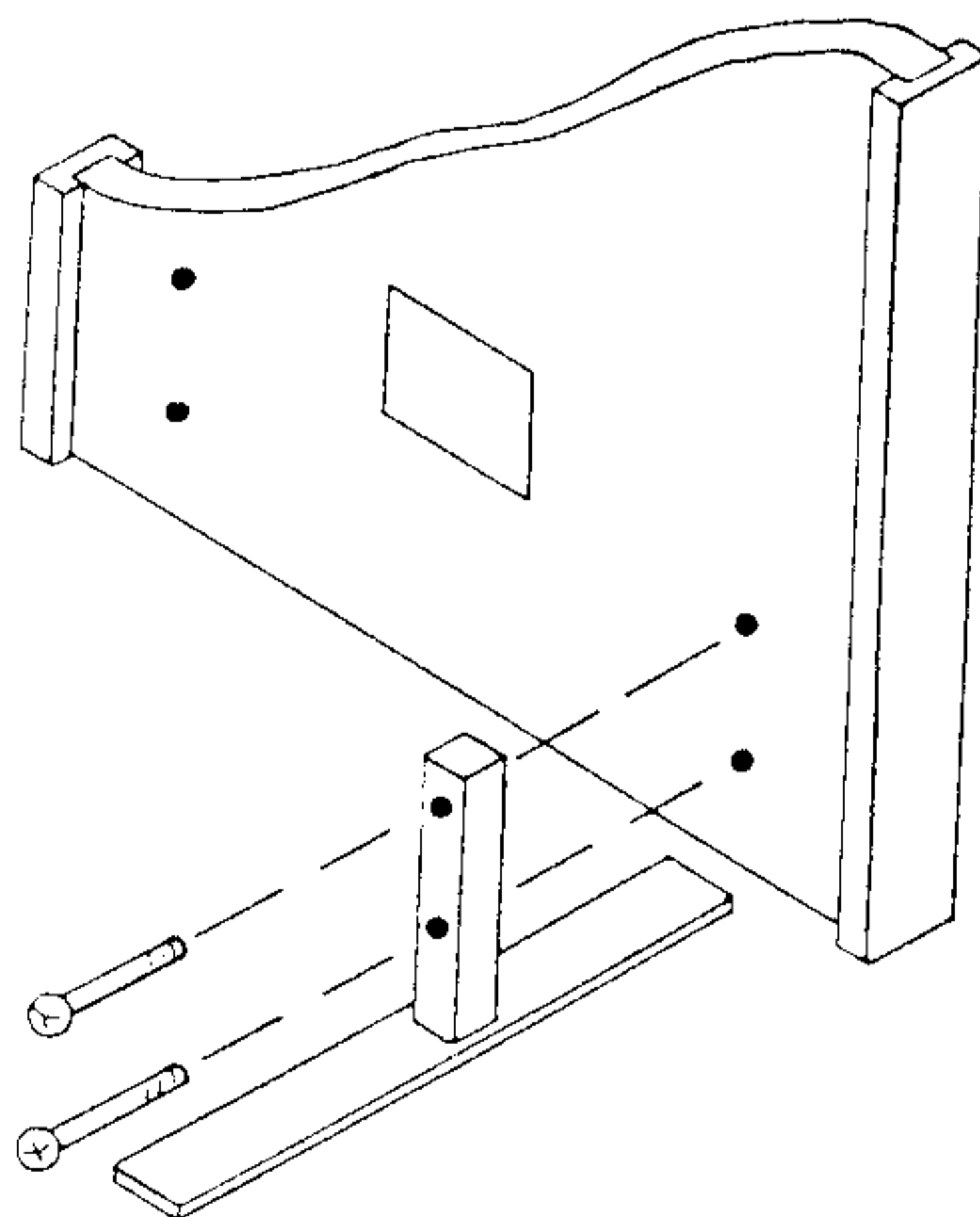


Figure 1

5. HOOKUP

This section covers amplification with a single stereo amplifier. For instruction on bi-amplification refer to Section 10.

The MG-IIIa features new, high-current cable connectors which provide optimum contact area with speaker cables up to 10 gauge. To prepare cables, strip $\frac{1}{2}$ " of insulation from the end of the cable. Insert the bare wire into the connector and tighten the set-screw with the Allen wrench provided.

Connect the amplifier speaker cable to the input of the MG-IIIa external crossover box. Cut a short length (1-2 feet) of speaker cable and connect the mid/treble output of the crossover box to the mid/treble inputs on the speaker panel. Repeat this step between the bass output of crossover and the MG-IIIa bass inputs. Take special precautions to ensure correct polarity on all speaker cable connections. Most speaker cables have some sort of coding on one lead, either printing, colors, or a "rib" to help in maintaining polarity.

Every connection point on the outboard crossover and speaker is color-coded red or black, and marked positive (+) or negative (-). Make a choice as to which lead is either positive or negative, and make sure all connections are consistent with this marking.

DOUBLE-CHECK YOUR CONNECTIONS! THERE ARE 20 CONNECTIONS TO MAKE ON YOUR MG-IIIa. One mistake will put your system partially or totally out of phase.

6. IMPORTANT PRECAUTIONS

FRAGILE! The foil element in the ribbon tweeter is quite fragile. Handle the speaker panel with care. Do not drop them flat on the floor. Air pressure can rupture the element. Use the ribbon protector strip when handling.

RUPTURED RIBBON ELEMENTS ARE NOT COVERED UNDER THE WARRANTY!

ULTRAVIOLET DAMAGE

The diaphragm side of the planar-magnetic drivers should not be exposed to ultraviolet light for long periods of time. Sunlight is the worst, but skylight is almost as bad. Long exposure to strong fluorescent lights can also be a problem.

FUSING

The mid and treble sections of the MG-IIIa are protected with 2½ amp. normal blow fuses. (The bass section does not require fusing protection.) The fuse value should never be increased or bypassed. Do not use slow-blow fuses. Fuses remain in effect when bi-amplifying. This is done for your protection since it prevents overdriving from an amplifier, or the distortion that results from an overdriven amplifier (clipping).

In case the MG-IIIa's do not sound "quite right," especially after high volume levels, please check the midrange fuse. When it is blown some owners do not realize it since a blown midrange fuse is not as apparent as a blown tweeter fuse.

Some amplifiers will distort or go into thermal overload when driving MG-IIIa's with a blown midrange fuse.

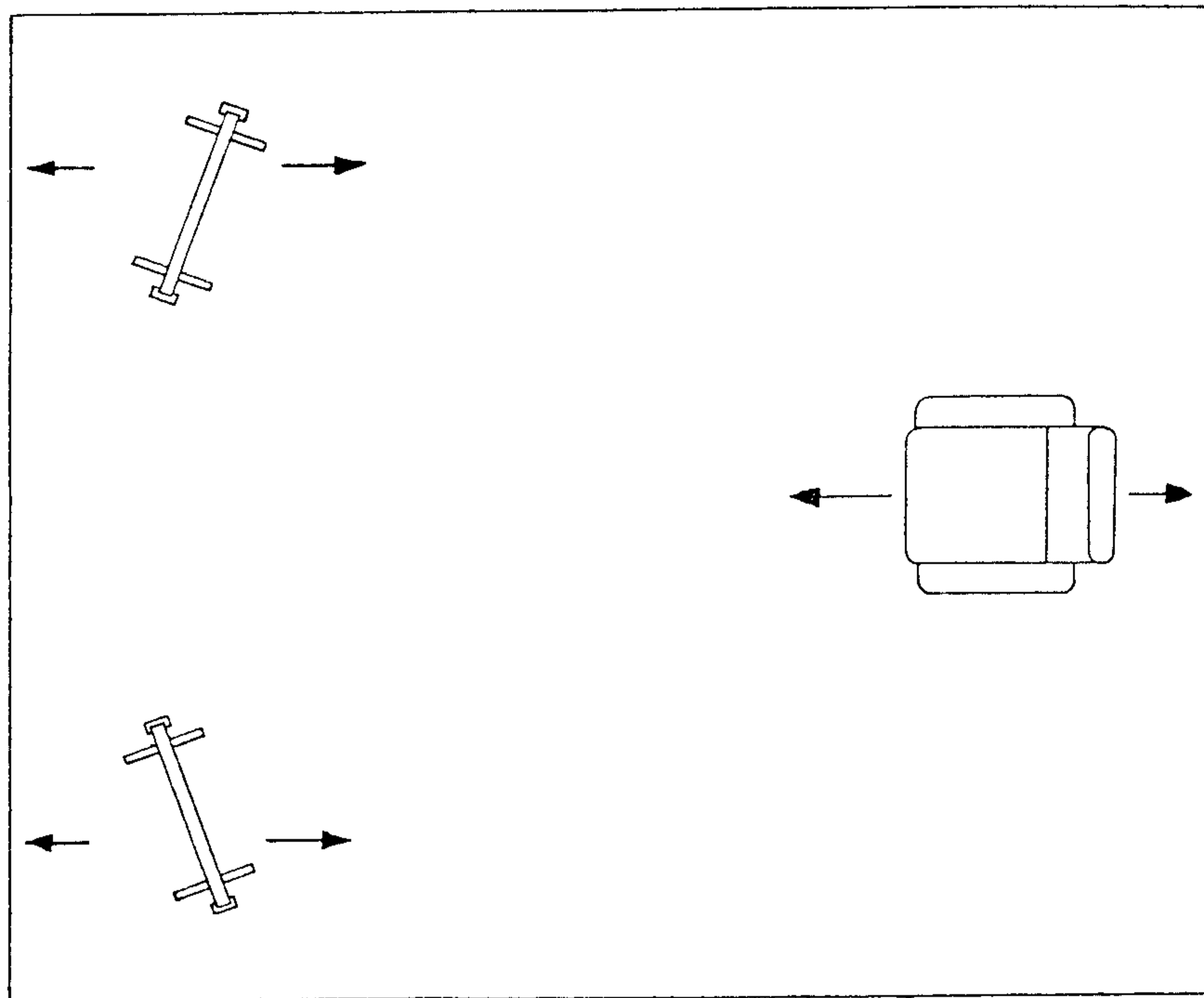
BURNED OUT MID OR TREBLE SECTIONS ARE NOT COVERED UNDER THE WARRANTY.

7. SPEAKER PLACEMENT

Proper speaker placement and room acoustics can have more effect on a music system than upgrading one of the components in the system. Unfortunately, there is no definitive guideline which will cover all possible listening rooms. Considerable experimentation is required for locating the optimum position. The following are a few general guidelines:

BASS RESPONSE--If you do not have access to a spectrum analyzer, play a record with a repetitive bass line (preferably an acoustical bass instrument). Try the speakers in several parts of the room. Start experimenting with the speakers about 3 feet from the back wall. Try moving the speakers forward or backward by increments of 6 to 12 inches

at a time. One part of the room should be noticeably better than the rest, as should one distance from the rear wall. (Figure 2)



ADJUSTING FOR BASS

Figure 2

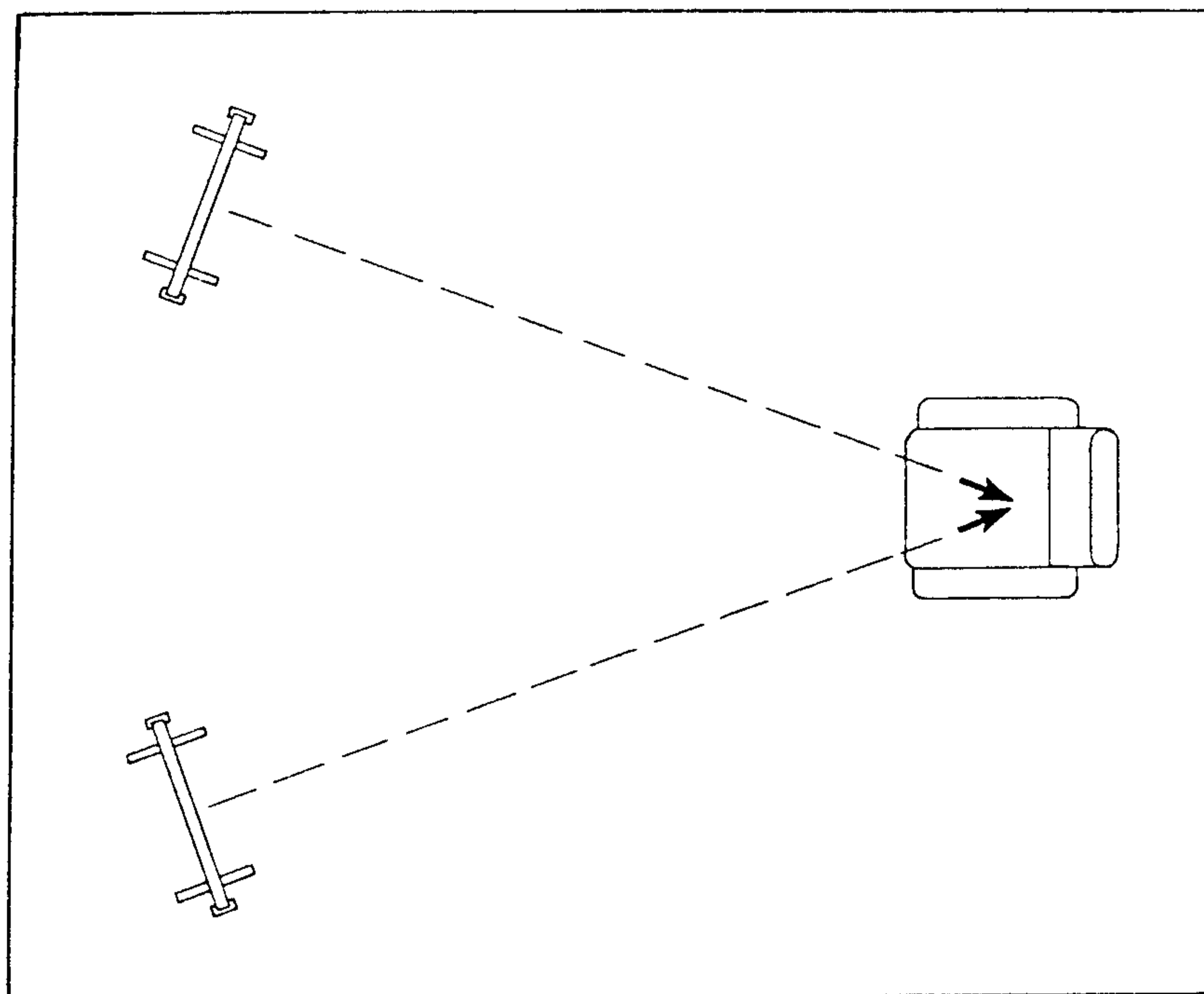
STEREO WIDTH AND IMAGING--Once you have located the best position for the speakers and your chair for good bass performance, separate the tweeters by 50% of the distance from your chair to the speakers. (For example, if your chair is 10 feet from the speakers, move the tweeters 5 feet apart.) Now move the speakers apart in increments of 3 or 4 inches at a time, listening carefully at each position. At some point you will start to hear two separate speakers instead of getting a "stage effect" (or continuous image). If you have a hole-in-the-middle effect, your speakers are too far apart: begin moving

the speakers closer together in small increments until you notice a point at which you achieve one cohesive "sound stage."

Depending on room acoustics and your own personal tastes, you may prefer the sound with the tweeters on the inside. In most rooms this will increase the central focus of the sound and may improve imaging. With either arrangement the smoothest frequency response is obtained by listening with the tweeters directly on axis as shown in Figure 3.

Once you have located the ideal speaker position you should mark it. A small tack or piece of tape can be attached to the carpet so that the ideal spot can be easily relocated when the speakers (or chair) are moved for cleaning, etc.

The entire placement procedure may seem like a great deal of work, but is necessary in the set-up of any high quality system. The time and effort expended should only be necessary once, but will repay the owner with countless hours of musical enjoyment.



PHASING

Figure 3

8. ROOM ACOUSTICS

Magneplanars, like other bipolar speakers, usually sound best with a moderately reflective surface behind the speakers. In situations where the speakers must be placed closer than 2 feet from the back wall, a heavy damping material directly behind the speakers is advised; however, it should not cover the entire wall.

Damping material in other parts of the room is a matter of trial and error. A word of caution--when audiophiles discover the effectiveness of damping material, they sometimes overdo it (on the premise that if a little is good, more is better). Before you make a permanent change to your room, experiment with the positioning of the damping material. Usually, a portion of one of two parallel walls should have some damping.

An overdamped room will provide very precise imaging, but you will have a reduced sense of ambience (less reverberation, spaciousness). An underdamped room may heighten the illusion of being in a concert hall, but the imaging will seem imprecise with all the instruments mixed together. Moderation is the word.

9. OPTIONAL RIBBON TWEETER ATTENUATION

There are two principal reasons for needing to attenuate the Magneplanar Ribbon Tweeter:

- A. Recordings, typically in the "pop" or "rock" vein, often exhibit a pronounced rise in the region above 6kHz.
- B. The Magneplanar Ribbon Tweeter is very efficient in its total "energy dispersion." If the surrounding walls are exceptionally reflective, the overall perceived acoustical balance will be tipped towards a "hot" high end.

Attenuation is performed through insertion of a simple non-inductive resistor in series with the tweeter.

There are inputs provided on the connector plate of each speaker for insertion of a resistor, below the tweeter/midrange inputs. To insert a

resistor simply loosen the Allen screws, remove the jumper, insert the resistor, and tighten the screws.

Resistors of different values are included. These will work in most installations when attenuation is necessary. Other values are available. Please contact your Magneplanar dealer.

10. BI-AMPLIFICATION

The MG-IIIa is arranged conveniently for bi-amplification. By adding an additional stereo amplifier and a crossover you can enjoy the benefits of increased dynamic range and lower distortion.

The following is a description of two methods of bi-amplifying your MG-IIIa:

A. BI-AMPLIFICATION WITH MAGNEPLANAR XO-1--(Available from your Magneplanar dealer)

The XO-1 utilizes a simple, high quality capacitor network for the midrange/tweeter section, and is used in conjunction with the low pass portion of the external crossover for the bass section. This allows the least amount of signal processing, giving the purest possible reproduction of all frequencies. The XO-1 includes controls to balance the bass amp to the mid/treble amp.

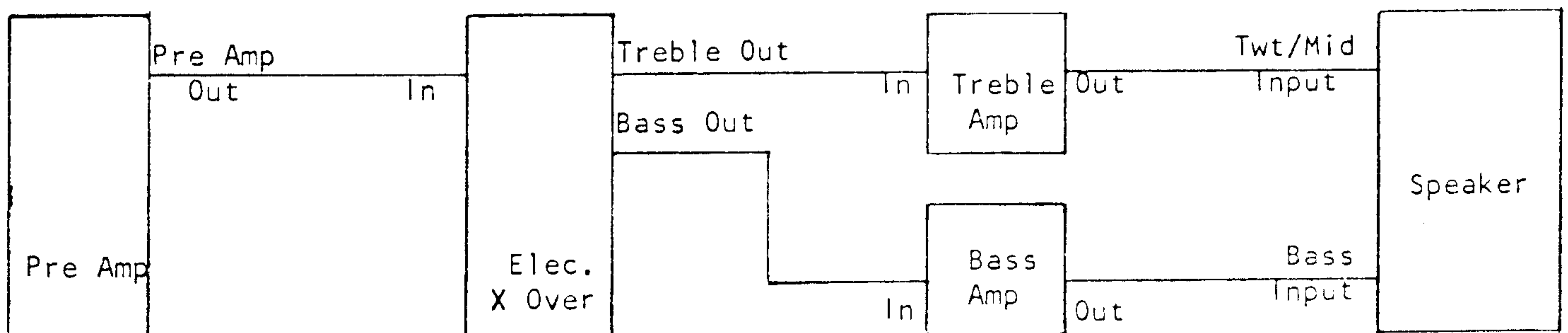
B. BI-AMPLIFICATION WITH CONVENTIONAL ELECTRONIC CROSSOVER--

1. Set your electronic crossover at the following points and slopes:

Low Pass: -3dB at 300 Hz at 18dB per octave

High Pass: -3dB at 500 Hz at 12 dB per octave

2. Connect the bass and mid/treble amplifiers directly to the speakers as shown below (do not use the MG-IIIa outboard crossover box):



3. Since the effective crossover point for the MG-IIIa is approximately 350 Hz, the power requirements for the bass and treble amps are nearly the same. Part of the reason for bi-amplification is increased dynamic range; therefore, use amplifiers with an 8 ohm rating of at least 100 watts per channel.

11. MAINTENANCE

1. A) In the event the speaker's fabric is soiled, use light, repeated applications of K2R Spray Cleaner.
B) Allow the cleaner to dry thoroughly after each application.
C) Brush lightly and blow the residual powder from the fabric. (Your dealer can supply replacement speaker fabrics which can be easily installed if the fabric is damaged or soiled beyond repair.)
2. For the first month or so, the adhesive on the speaker diaphragm may have enough tack to cause the fabric to stick to the diaphragm if the fabric is pressed against the back of the speaker. This will not damage the speaker and the fabric may be gently pulled free.
3. For owners with cats, we recommend cat repellent around the base of the speakers!
4. Do not use a vacuum cleaner!

12. SERVICE

In the unlikely event that you should need service for your MG-IIIa loudspeakers, we recommend that you contact your dealer. He is experienced in providing service and can assist you if the speakers must be returned to the factory.

If it is determined that your speakers must be returned for repair, ship your speakers freight prepaid. (Ask for Class 100) to:

Magnepan, Incorporated
1645 Ninth Street
White Bear Lake, MN 55110

Include a packing slip or letter describing the nature of the problem. Please include your name, address, and a daytime telephone number.

SHIPPING--Before packaging, very carefully install the steel protector strip over the ribbon: do not let it slap against the magnet.

13. THE RIBBON TWEETER

Because the foil element in your MG-IIIa line source tweeter is only .00015 inches thick, it is very fragile. It's the price we pay for ultra-high performance. Most users will find the ribbon will last for many years; others may find it needs replacing every two years or so. The determining factor will be thermal fatigue caused by the frequent heating and cooling of the foil element. Users that frequently push the 2½ amp tweeter fuse capacity will be the most likely to experience early failure. Because of this the tweeter has been designed to be easily replaced, requiring only a screwdriver and a soldering iron. The time required should be less than 30 minutes.

If you have a defective tweeter, you should contact your dealer for a replacement. Your defective unit will be returned to Magnepan for installation of a new foil element at a minimal charge to you: there is no charge if it is within the one-year warranty period that covers the foil element and Magnepan determines that there is no evidence of abuse.

DO NOT SHIP A TWEETER BACK TO MAGNEPAN WITHOUT CONTACTING YOUR DEALER OR MAGNEPAN FIRST. Tweeters must be returned in authorized containers only. Tweeters that are damaged in shipment are the responsibility of the customer.

14. RIBBON TWEETER REPLACEMENT

MG-IIIa's with serial number 062758 and above, have a non-inductive resistor built in to accommodate a resistance change in ribbon tweeters after tweeter serial number 09247. (The mass and performance of the ribbon tweeter has not changed.)

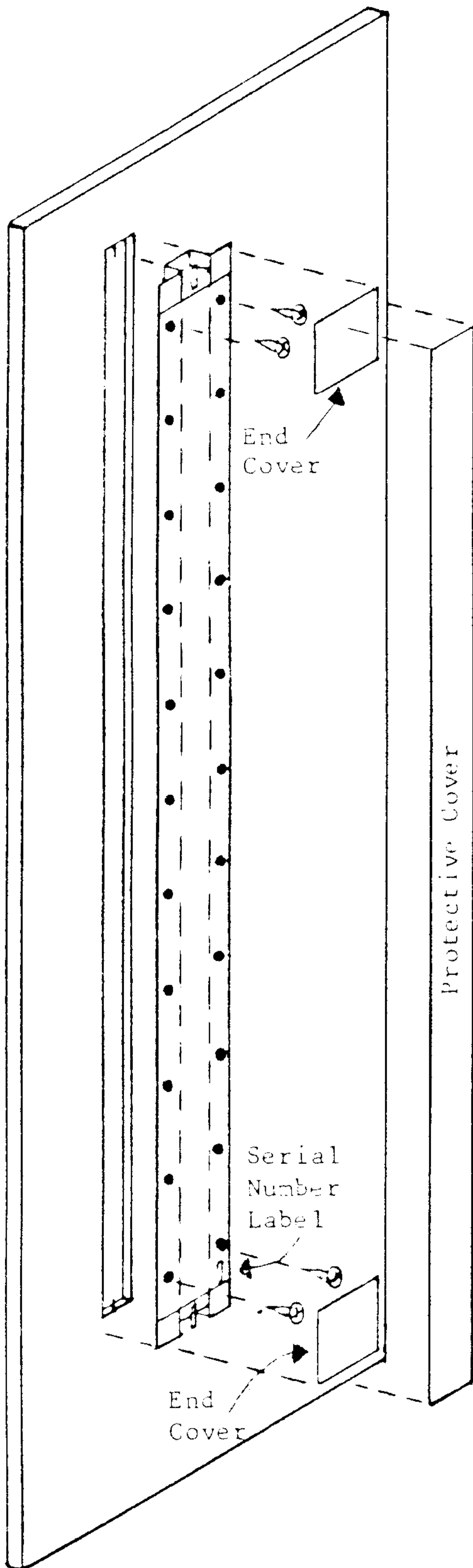
MG-III/IIIa's prior to serial number 062758 must have a resistor inserted internally when using a ribbon tweeter after serial number 09247. Please check the chart below to check the compatability of ribbon tweeters and MG-III/IIIa's. Instructions for inserting a non-inductive resistor in MG-III/IIIa's below serial number 062758 are included with replacement ribbon tweeters.

		<u>RIBBON TWEETER</u>	
		Before 09247	After 09247
<u>MG-III/IIIa</u>	Before 062758	Okay	Need Resistor
	After 062758	Not Compatible*	Okay

*Please contact your Magneplanar dealer.

15. RIBBON TWEETER REPLACEMENT INSTALLATION

Tools Needed: #2 Phillips Screwdriver
Soldering Iron, Solder



- A. Place protective cover over backside of ribbon tweeter, as shown (to prevent damage to ribbon while moving the speaker panel).
- B. Carefully lay speaker on a flat table or working surface.
- C. Remove the protective cover and pry away the two end covers.
- D. Desolder the wire at each end of the ribbon tweeter.
- E. Reinstall protective cover over ribbon.
- F. Remove the screws that attach the ribbon tweeter to the frame and then remove the tweeter.
- G. Install the new ribbon tweeter in the frame. Serial number label must be at the bottom.
- H. Insert the screws. (Tighten until snug, then back off $\frac{1}{2}$ revolution.)
- I. Remove protective cover and solder the wires to the ribbon lugs. (Use rosin core solder.)
- J. Peel liner from back of end covers and adhere to each end of tweeter.
- K. Install protective cover.
- L. Reposition speakers in listening position and remove protective cover.
- M. Repack and return the old tweeter in the tube provided, to your dealer.

Caution: Do not bump or touch the ribbon at its end terminals. Also do not tug on the fine wire jumper that is soldered to the foil and attached to the end terminal.

16. MG-IIIa SPECIFICATIONS

SYSTEM DESCRIPTION: 3-Way, combination planar-magnetic and true ribbon tweeter with bi-amplification option

BASS SECTION: 620 Sq. in. planar magnetic

MIDRANGE SECTION: 170 Sq. in. planar magnetic

TWEETER SECTION: $\frac{1}{4}$ In. wide, 55 in. long x .00015 in. thick, true ribbon line source

*FREQUENCY RESPONSE: \pm 3dB from **37 Hz to 40 kHz

POLAR RESPONSE - RIBBON DRIVER: 180° Horizontal dispersion both front and back to 20 kHz

MINIMUM RECOMMENDED POWER: 50 WRMS (8 ohm rated)

MAXIMUM RECOMMENDED POWER: 200 WRMS (8 ohm rated)

SENSITIVITY: 1 Watt RMS, 500 Hz, 85dB @1 meter

1 Watt RMS, 20-40,000 Hz pink noise, 83dB @1 meter

IMPEDANCE: Purely resistive: Bass--4 ohms

Midrange & ribbon tweeter--3 ohms

CROSSOVER SYSTEM: Low-pass (bass): -18dB Butterworth @300 Hz

High-pass (midrange/tweeter): -12dB @500 Hz

Crossover between midrange and tweeter is approximately 3000 Hz and is non-defeatable.

FINISH: Panels covered with off-white, black or brown fabric, with solid oak trim

WARRANTY: Limited. Non-transferrable - Ribbon foil element - 1 year
Balance of speaker - 3 years

SHIPPING WEIGHT: 130 Lbs.

*Because there are no universally accepted methods for loudspeaker measurements, frequency response specifications may be stated by most manufacturers without reference to measurement techniques and/or specific locations in rooms. Magneplanar loudspeaker frequency response curves are minimum average performance levels that may reasonably be expected in normal installations.

**New Magneplanar MG-IIIa speakers will not display their full bass potential. After a month or two of use the bass response will lower 5 Hz or more. At this point the response will stabilize and the speakers rated performance (or better) can be realized. While this 5 Hz or more of lower bass response is important, the most important factors in obtaining good bass response from the MG-IIIa speakers are room size and geometry, wall material, and speaker placement.