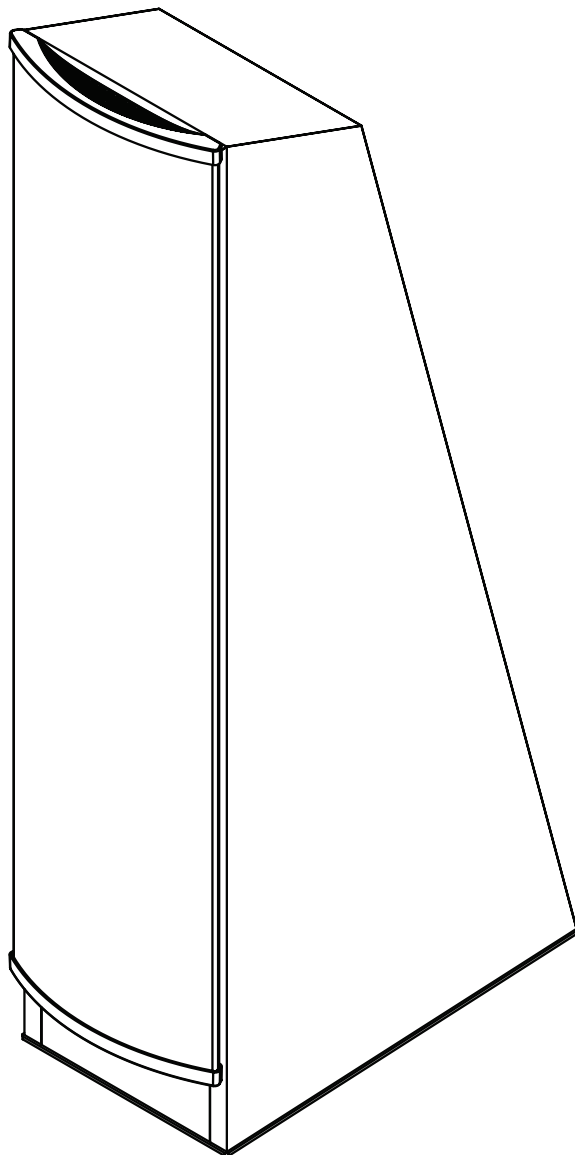


PREFACE™



u s e r ' s m a n u a l

Thank you—to you the MartinLogan owner,
for loving what we do,
and
for making it possible for us to do what we love.

Serial Numbers: _____ / _____

Record your serial numbers here for easy reference. You will need this information when filling out your warranty registration. Preface's serial number is located near the bottom of the backplate and on the shipping container. Each individual unit has a unique serial number.

This product complies with all applicable European directives. Applicable directives:

EMC directive 2004/108/EEC


- 1 The product will not cause electromagnetic interference.
- 2 The product is not adversely affected by electromagnetic interference.




In accordance with the European Union WEEE (Waste Electrical and Electronic Equipment) directive effective August 13, 2005, we would like to notify you that this product may contain regulated materials which upon disposal, according to the WEEE directive, require special reuse and recycling processing.

For this reason MartinLogan has arranged with our distributors in European Union member nations to collect and recycle this product at no cost to you. To find your local distributor please contact the dealer from whom you purchased this product, email info@martinlogan.com or visit the distributor locator at www.martinlogan.com.

Please note, only this product itself falls under the WEEE directive. When disposing of packaging and other related shipping materials we encourage you to recycle these items through the normal channels.



The lightning bolt flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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INTRODUCTION & INSTALLATION IN BRIEF

Introduction

Congratulations! You have invested in a new world of high-performance audio!

The MartinLogan Preface represents the extension of an intensive, dedicated group research program directed toward establishing a world class reference monitor utilizing leading-edge technology, without compromising durability, reliability, craftsmanship or aesthetic design.

The result of cumulative technology gleaned from previous research and development projects, the Preface represents the latest developments in advanced thin film and hybrid loudspeaker technology.

The materials in your new Preface speaker are of the highest quality and will provide years of enduring enjoyment and deepening respect. Preface's state-of-the-art Vojtko™ crossover is designed and manufactured with the same meticulous attention, care and precision as those found in MartinLogan's ultimate loudspeaker products.

This User's Manual will explain in detail the operation of your Preface speaker and the philosophy applied to their design. A clear understanding of your speakers will insure that you obtain maximum performance and pleasure from this most exacting transducer. It has been designed and constructed to give you years of trouble-free listening enjoyment.



WARNING!

- Refer servicing to a qualified technician.
- To prevent fire or shock hazard, do not expose this module to moisture.
- Turn amplifier off should any abnormal conditions occur.
- Do not drive speaker beyond its rated power.

Installation In Brief

We know you are eager to hear your Preface speakers, so this section is provided to allow fast and easy set up. Once you have them operational, please take the time to read, in depth, the rest of the information in this manual. It will give you perspective on how to attain the greatest possible performance from this most exacting transducer.

If you should experience any difficulties in the setup or operation of your Preface speakers, please refer to the Room Acoustics, Placement or Operation sections of this manual. Should you encounter a persistent problem that cannot be resolved, please contact your authorized MartinLogan dealer. They will provide you with the appropriate technical analysis to alleviate the situation.

Step 1: Unpacking

Remove your new Preface speakers from their packaging.

Step 2: Placement

Place each Preface at least two feet from the back wall and angle them slightly toward your listening area. This is a good place to start. Please see the Placement section (pages 6–8) of this manual for more details.

Step 3: Signal Connection

Use the best speaker cables you can. Higher quality cables, available from your specialty dealer, are recommended and will give you superior performance. Spade connectors are suggested for optimum contact and ease of installation.

Attach your speaker cables to the signal input section on the rear panel. Be consistent when connecting speaker leads to the terminals on the back of the Preface. Take great care to assign the same color to the (+) terminal on both the left and right channels. If bass is nonexistent and you cannot discern a tight, coherent image, you may need to reverse the (+) and (–) leads on one side to bring the system into proper polarity.

For detailed setup instructions, please turn to the Connections section (page 5) of this manual for more details.

Step 4: Listen and Enjoy

Now, you may turn on your system and enjoy!


Signal Connection

Use the best speaker cables you can. The length and type of speaker cable used in your system will have an audible effect. Under no circumstance should a wire of gauge higher (thinner) than #16 be used. In general, the longer the length used, the greater the necessity of a lower gauge, and the lower the gauge, the better the sound, with diminishing returns setting in around #8 to #12.

A variety of cables are available whose manufacturers claim better performance than standard heavy gauge wire. We have verified this in many cases, and the improvements available are often more noticeable than the differences between wires of different gauge. The effects of cables may be masked if equipment is not of the highest quality.

Connections are done at the signal input section on the rear electronics panel of the Preface. Use spade connectors for optimum contact and ease of installation. Hand tighten the binding posts, but do not overtighten—do not use a tool to tighten the binding posts.

Be consistent when connecting the speaker cables to the signal input terminals. Take care to assign the same color cable lead to the (+) terminal on both the left and right channel speakers. If bass is nonexistent and you cannot discern a tight, coherent image, you may need to reverse the (+) and (-) leads on one speaker to bring the system into proper polarity.

 **WARNING!** Turn your amplifier off before making or breaking any signal connections!

Break-In

When you first begin to play your Preface speakers, they will sound a bit bass shy. This is due to the high quality, long-life components used in our woofer. Our custom made, butyl surround woofer requires approximately 72 hours of break-in at 90 dB (moderate listening levels) before any critical listening. The break-in requirements of the crossover components and ATF transducer are equivalent.

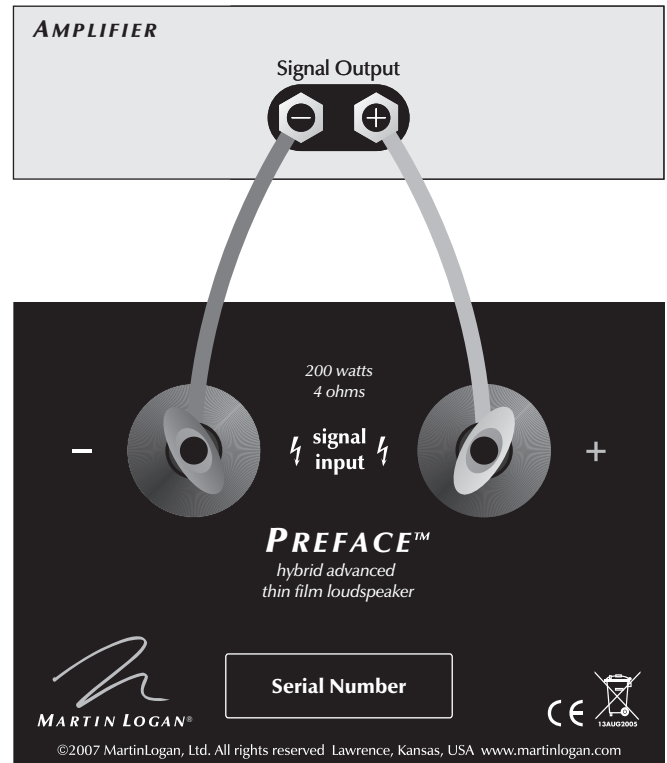


Figure 1. Signal and Power Connection. One channel shown.

PLACEMENT & ROOM ACOUSTICS

Listening Position

Your speakers should be placed approximately two to three feet from the front wall, the wall in front of the listening position, and at least two feet from the side walls. Your sitting distance should be further than the distance between the speakers themselves. You are trying to attain the impression of good center imaging and stage width.

There is no correct distance between speakers and listener, but there is a relationship. In long rooms, naturally, that relationship changes. The distance between the speakers will be far less than the distance from you to the speaker system. However, in a wide room, you will still find that if the distance from the listener to the speakers becomes smaller than the distance between the speakers themselves, the image will no longer focus in the center.

Now that you have positioned your speaker system, spend time listening. Wait to make any major changes in your initial setup for the next few days as the speaker system itself will change subtly in its sound. Over the first 72 hours of play the actual tonal quality will change slightly with deeper bass and more spacious highs resulting. After a few days of listening you can begin to make refinements and hear the differences.

The Wall Behind the Listener

Near-field reflections can also occur from your back wall (the wall behind the listening position). If your listening position is close to the back wall, these reflections can cause problems and confuse imaging quality. It is better for the wall behind you to be absorptive than to be reflective. If you have a hard back wall and your listening position is close to it, experiment with devices that will absorb information (i.e. wall hangings and possibly even sound absorbing panels).

The Wall Behind the Speakers

The front surface, the wall behind the speakers, should not be extremely hard or soft. A pane of glass will cause reflections, brightness and confused imaging. Curtains, drapery and objects such as bookshelves can be placed along the wall to diffuse an overly reflective surface. A standard sheet rock or textured wall is generally an adequate surface if the rest of the room is not too bright and hard. Walls can also be too soft. If the entire front wall consists of heavy drapery, your system can sound dull. You may hear muted music with little ambience. Harder surfaces will actually help in this case.

The front surface ideally should be one long wall without any doors or openings. If you have openings, the reflection and bass characteristics from each channel can be different.

The Side Walls

A good rule of thumb is to have the side walls as far away from the speaker sides as possible, minimizing near-field side wall reflections—a position as little as two feet from the side walls often proves adequate. Sometimes, if the system is bright or the imaging is not to your liking, and the side walls are very near, try putting curtains or softening material directly to the edge of each speaker. An ideal side wall, however, is no side wall at all.

Experimentation

Toe-in

Now you can begin to experiment. First begin by toeing your speakers in towards the listening area and then facing them straight into the room. You will notice the tonal balance and imaging changing. You will notice that as the speakers are toed-in, the system becomes slightly brighter than when toed-out. This design gives you the flexibility to compensate for a soft or bright room.

Imaging

In their final location, your Prefaces can have a stage width somewhat wider than the speakers themselves. On well-recorded music, the instruments can extend beyond the edges of each speaker (left and right), yet a vocalist should appear directly in the middle. The size of the instruments should be neither too large nor too small, subject to the intent and results of each unique audio recording.

Additionally, you should find good clues as to stage depth. Make sure that the vertical alignment, distance from the front wall, and toe-in is exactly the same for both speakers. This will greatly enhance the quality of your imaging.

Bass Response

Your bass response should neither be 'one note' nor should it be too heavy. It should extend to the deepest organ passages and yet be tight and well defined. Kick drums should be tight and percussive—string bass notes should be uniform and consistent throughout the entirety of the run without booming or thudding.

Tonal Balance

Voices should be natural and full and cymbals should be

detailed and articulate yet not bright and piercing, pianos should have a nice transient characteristic and deep tonal registers. This will give you clues on how to get closer to these ideal virtues.

Final Placement

After the full break in period, obtaining good wall treatments, and the proper toe-in angle, begin to experiment with the distance from the wall behind the speakers. Move your speaker slightly forward into the room. What happened to the bass response? What happened to the imaging? If the imaging is more open and spacious and the bass response is tightened, that is a superior position. Move the speakers back six inches from the initial setup position and again listen to the imaging and bass response. There will be a position where you will have pinpoint imaging and good bass response. That position is the point of the optimal placement from the front wall.

Now experiment with placing the speakers farther apart. As the speakers are positioned farther apart, listen again, not so much for bass response but for stage width and good pinpoint focusing. Your ideal listening position and speaker position will be determined by:

- Tightness and extension of bass response
- Width of the stage
- Pinpoint focusing of imaging

Once you have determined the best of all three of these considerations, you will have your best speaker location.

Your Room

This is one of those areas that requires both a little background to understand and some time and experimentation to obtain the best performance from your system.

Your room is actually a component and an important part of your system. It can dramatically add to, or subtract from, a great musical experience.

All sound is composed of waves. Each note has its own wave size, with the lower bass notes literally encompassing from 10' feet to as much as 40' feet. Your room participates in this wave experience like a three dimensional pool with waves reflecting and becoming enhanced depending on the size of the room and the types of surfaces in the room.

Remember, your audio system can literally generate all of the information required to recreate a musical event in time, space, and tonal balance. Ideally, your room should not contribute to that information. However, every room does contribute to the sound to some degree. Fortunately MartinLogan had designed the Preface to minimize these anomalies

Terminology

Standing Waves

The parallel walls in your room will reinforce certain notes to the point that they will sound louder than the rest of the audio spectrum and cause "one note bass", "boomy bass" or "bloated bass". For instance, 100Hz represents a 10 feet wavelength. Your room will reinforce that specific frequency if one of the dominant dimensions is 10 feet. Large objects in the room such as cabinetry or furniture can help to minimize this potential problem. Some serious "audiophiles" will literally build a special room with no parallel walls just to help eliminate this phenomenon.

Reflective Surfaces (near-field reflections)

The hard surfaces of your room, particularly if close to your speaker system, will reflect some waves back into the room over and over again, confusing the clarity and imaging of your system. The smaller sound waves are mostly affected here, and occur in the mid and high frequencies. This is where voice and frequencies as high as the cymbals occur.

Resonant Surfaces and Objects

All of the surfaces and objects in your room are subject to the frequencies generated by your system. Much like an instrument, they will vibrate and "carry on" in syncopation with the music, and contribute in a negative way to the music. Ringing, boominess, and even brightness can occur simply because they are "singing along" with your music.

Resonant Cavities

Small alcoves or closet type areas in your room can be chambers that create their own "standing waves" and can drum their own "one note" sounds.

Clap your hands. Can you hear an instant echo respond back? You have near-field reflections. Stomp your foot. Can you hear a "boom"? You have standing waves or large panel resonances such as a poorly supported wall. Put your head in a small cavity area and talk loudly. Hear a booming? You've just experienced a cavity resonance.

Rules of Thumb

Hard vs. Soft Surfaces

If the front or back wall of your listening room is soft, it might benefit you to have a hard or reflective wall in opposition. The ceiling and floor should follow the same basic guideline as well. However, the side walls should be roughly the same in order to deliver a focused image.

This rule suggests that a little reflection is good. As a matter of fact, some rooms can be so “over damped” with carpeting, drapes and sound absorbers that the music system can sound dull and lifeless. On the other hand, rooms can be so hard that the system can sound like a gymnasium with too much reflection and brightness. The point is that balance is the optimum environment.

Breakup Objects

Objects with complex shapes, such as bookshelves, cabinetry and multiple shaped walls can help break up those sonic gremlins and diffuse any dominant frequencies.

Solid Footing

After living and experimenting with your Preface speakers, you may want to use ETC (energy transfer coupler) Spikes (see figure 2). With the use of these spikes, the Preface will become more firmly planted on the floor and, consequently, bass will tighten and imaging will become more coherent and detailed. It is best not to implement the spikes, however, until you are secure in the positioning, as the spikes can damage the floor if the speaker is moved. MartinLogan ETC spikes will fit any common 1/4" x 20 thread insert that may be found on your other audio equipment (racks, etc.)

- 1 Carefully place your speaker on its side.
- 2 Remove existing feet. Thread new spikes into holes and screw them in all of the way. If the speaker does not sit level loosen one spike until level is achieved.
- 3 Tighten the jam nut snugly by hand. Do not over tighten.
- 4 Right the speaker. **Caution:** Make sure your hands and any cabling are clear of the spikes. Do not slide speaker as spikes are sharp and can damage your floor or carpet.
- 5 Adjust to level by rotating spikes. Tighten the jam nut securely when satisfied that speaker is level. **Caution:** Walking the speaker may result in a broken spike.

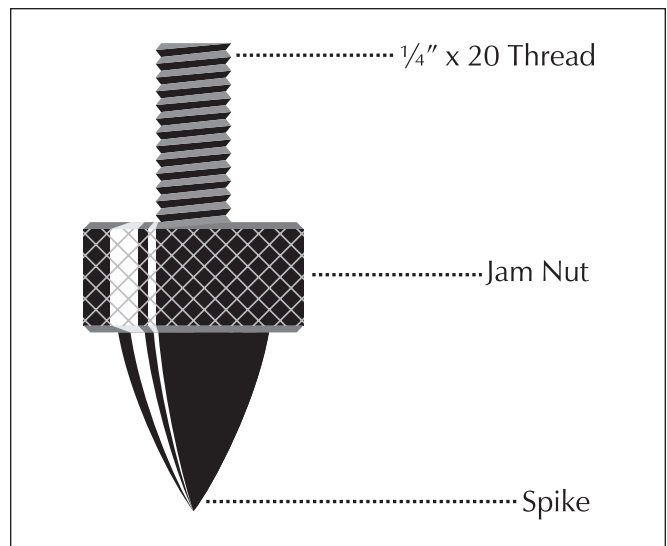


Figure 2. The ETC Spike.

It had long been the practice of stereo buffs to connect their television to a stereo system. The advantage was the use of the larger speakers and more powerful amplifier of the stereo system. Even though the sound was greatly improved, it was still mono and limited by the broadcast signal.

In the late 1970's and early 1980's two new home movie formats became widely available to the public: VCR and laser disc.

By 1985, both formats had developed into very high quality audio/video sources. In fact, the sonic performance of some video formats exceeded audio-only formats. Now, with theater-quality sound available at home, the only element missing was the "surround sound" presentation found in movie houses.

Fortunately, Dolby and DTS encoded DVD's emerged with the same surround sound information encoded on home releases as the theatrical release. Additionally, new high-resolution home-viewing formats such as HD-DVD and Blu-ray as well as high-definition content provided via cable or satellite have evolved which include multi-channel encoded audio that is virtually master tape quality. All that is required to retrieve this information is a decoder and additional speakers and amps to reproduce it.

Home theater is a complex purchase and we recommend that you consult your local MartinLogan dealer, as they are well versed in this subject.

Each piece of a surround system can be purchased separately. Take your time and buy quality. No one has ever complained that the movie was too real. The following list and descriptions will give you only a brief outline of the responsibilities and demands placed on each speaker.

Front Left and Front Right

If these speakers will be the same two used for your stereo playback, they should be of very high quality and able to play loudly (over 102 dB) and reproduce bass below 80 Hz.

Center Channel

This is the most important speaker in a home theater system, as almost all of the dialogue and a large portion of the front speaker information is reproduced by the center channel. It is important that the center speaker be extremely accurate and mate well with the front speaker,

and that it is recommended for use as a center speaker. This is not the place to cut corners.

Surround Speakers

We recommend (along with the film industry) that the surround speakers play down to at least 80 Hz. Surround speakers contain the information that makes it appear that planes are flying over your head. Some may suggest that this is the place to save money and purchase small, inexpensive speakers. If you choose to do so, be prepared to upgrade in the future as discrete multi-channel digital encoding is proliferating rapidly and the demands on surround speakers have increased.

Subwoofer

With any good surround system you will need one or more high-quality subwoofers (the .1 in a 5.1, 6.1, or 7.1 channel surround system). Most movie soundtracks contain large amounts of bass information as part of the special effects. Good subwoofers will provide a foundation for the rest of the system.

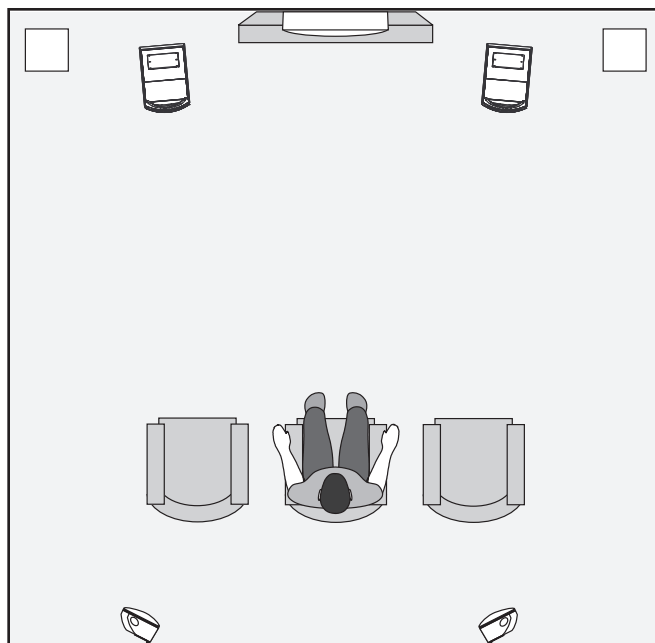


Figure 3. Preface speakers as front channels, Vignette speakers above the television and along the back wall as the center and surround (effects) channels, and Dynamo subwoofers in the front corners as the 0.1 (effects) channel.

ATF (ADVANCED THIN FILM)

ATF Operation

The MartinLogan ATF transducer (based on RADIA planar technology) consists of a micro-thin, low-mass Kaladex diaphragm with an ultra-light, etched conductive aluminum surface suspended between two high field strength neodymium super magnet arrays (see figure 4). When an electrical current (music signal) passes through the etched aluminum on the diaphragm's surface it is simultaneously pulled towards one of the neodymium arrays and pushed away from the opposing array. When the direction of current is reversed the diaphragm is simultaneously pushed and pulled in the opposite direction, thus producing sound.

Extremely Low-Mass Diaphragm —Blazing Speed and Inner Detail

Low-mass diaphragms are crucial to a loudspeaker's ability to accurately reproduce sound. As the mass of a transducer's diaphragm decreases, its ability to resolve detail increases. With extremely low-mass characteristics, the ATF transducer tracks the audio signal with almost perfect accuracy.

MartinLogan ATF diaphragms are constructed of extremely low mass Dupont Kaladex® PEN (polyethylene naphthalate)—a material chemically similar to the low-mass PET (polyethylene terephthalate) film used in MartinLogan's generation 2 electrostatic transducers, yet capable of handling the high thermal requirements required for stable magnetic thin film operation.

High Field Strength —Superb Control and Efficiency

With a field strength almost 2000% more powerful than traditional systems, Neodymium iron boron (NIB) rare-earth super magnets are one of the world's strongest commercially available magnetic materials. This incredible field strength proves ideal for maintaining perfect control over the low-mass Kaladex diaphragm. Super-low distortion levels, high-resolution, and crystal-clear transparency are just a few of the benefits resulting from this superb combination of low-mass diaphragm and high field strength.

Push-Pull Operation = Ideal Linearity

Linearity is another factor contributing to a loudspeaker's ability to achieve ultimate clarity, detail and resolution. By positioning neodymium magnet arrays in a push-pull configuration, MartinLogan ATF transducer technology maintains uniform diaphragm control, regardless of position as it traverses the entire audio signal. The push-pull concept is a major contributor to the linearity and sonic superiority of ATF transducers.

Direct Full-Surface Drive Provides Outstanding Clarity

Unlike traditional voice coil driven systems, ATF diaphragms are directly and uniformly driven throughout their entire surface. This full-surface drive system results in ultra-fast transient response with no cone break up and the ability to accurately reproduce sound with great delicacy, nuance and clarity.

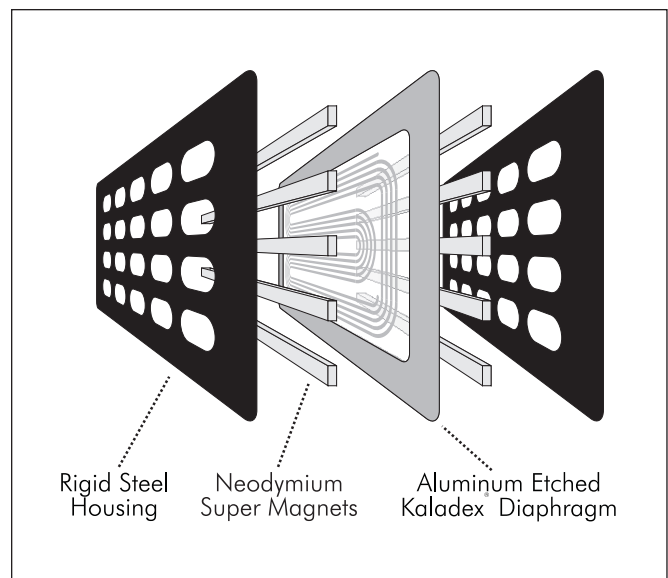


Figure 4. Cut away view of an ATF transducer. Note the simplicity due to minimal part usage.

Frequently Asked Questions

How do I clean my speakers?

Just use a dust free cloth or a soft brush to remove the dust from your speakers. We recommend a specialty cloth (available at the Xtatic shop at www.martinlogan.com) that cleans your speakers better than anything else we have tried. **Do not spray any kind of cleaning agent on or in close proximity to the ATF element.**

What size amplifier should I use?

We recommend an amplifier with 100 watts per channel for most applications. Probably less would be adequate when used in home theater where a subwoofer is employed. Our hybrid designs will perform well with either a tube or transistorized amplifier, and will reveal the sonic character of either type. However, it is important that the amplifier be stable operating into varying impedance loads: a stable amplifier will be able to deliver twice its rated wattage into 4 Ohms and should again double into 2 Ohms.

Could you suggest a list of suitable electronics and cables ideal for MartinLogan speakers?

The area of electronics and cable choice is probably the most common type of question that we receive. It is also the most subjective. We have repeatedly found that brands that work well in one setup will drive someone else nuts in another. We use many brands with great success. Again, we have no favorites; we use electronics and cables quite interchangeably. We would suggest listening to a number of brands—and above all else—trust your ears. Dealers are always the best source for information when purchasing additional audio equipment.

Is there likely to be any interaction between my speakers and the television in my A/V system?

We recommend that you keep your speakers at least one foot away from the TV because of the dynamic woofer they employ.

Will exposure to sunlight affect the life or performance of my speakers?

We recommend you not place any loudspeaker in direct sunlight. The ultraviolet (UV) rays from the sun can cause deterioration of grill cloth, speaker cones, etc. Small exposures to UV will not cause a problem. In general, the filtering of UV rays through glass will greatly reduce the negative effects.

Troubleshooting

Output

- Check that all your system components are turned on.
- Check your speaker wires and connections.
- Check all interconnecting cables.

GENERAL INFORMATION

Specifications*

System Frequency Response:

35–20,000 Hz \pm 3db

Sensitivity

92 dB/2.83 volts/meter

Impedance

4 ohms

Crossover Frequency

2,200 Hz

Components

Air core coils and large steel laminate inductor, polyester film capacitors in series and low DF electrolytic capacitors

High Frequency Driver

1.5" x 2.25" (3.8cm x 5.7cm) ATF Transducer

Woofer Type

Three 6.5" (16.5 cm) cast basket, paper-cone, non-resonant asymmetrical chamber format.

Power Handling

200 watts per channel

Weight

46 lbs. each (20.9 kg)

Size

39.6" h x 9" w x 17" d
(100.6 h x 22.9 w x 43.3 d cm)

**Specifications are subject to change without notice.*

Warranty and Registration

Your Preface speakers are provided with an automatic Limited 90 Day Warranty coverage. You have the option, at no additional charge, to receive a Limited 5 Year Warranty coverage. To obtain the Limited 5 Year Warranty coverage you need to complete and return the Certificate of Registration, included with your speakers, and provide a copy of your dealer receipt, to MartinLogan within 30 days of purchase. For your convenience MartinLogan also offers online warranty registration at www.martinlogan.com.

MartinLogan may not honor warranty service claims unless we have a completed Warranty Registration card on file! If you did not receive a Certificate of Registration with your new Preface speakers you cannot be sure of having received new units. If this is the case, please contact your authorized MartinLogan dealer.

Serial Number

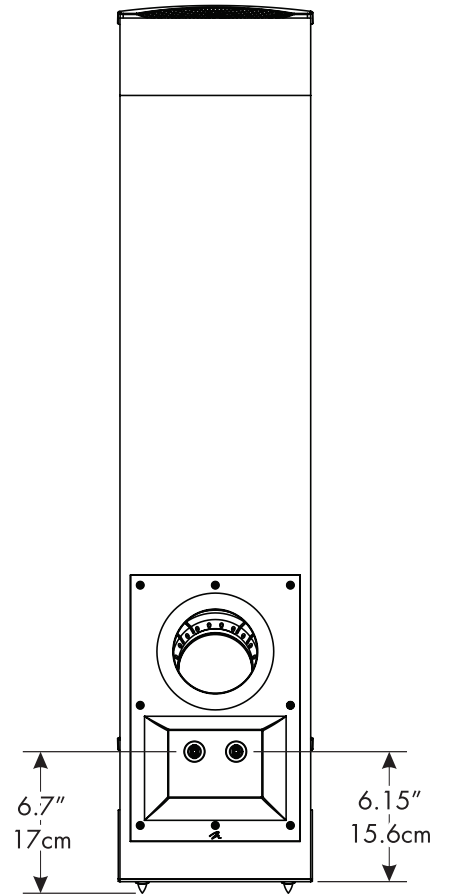
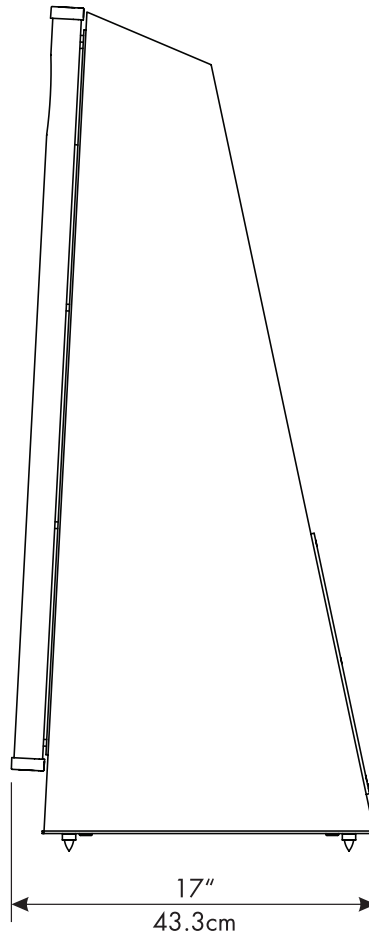
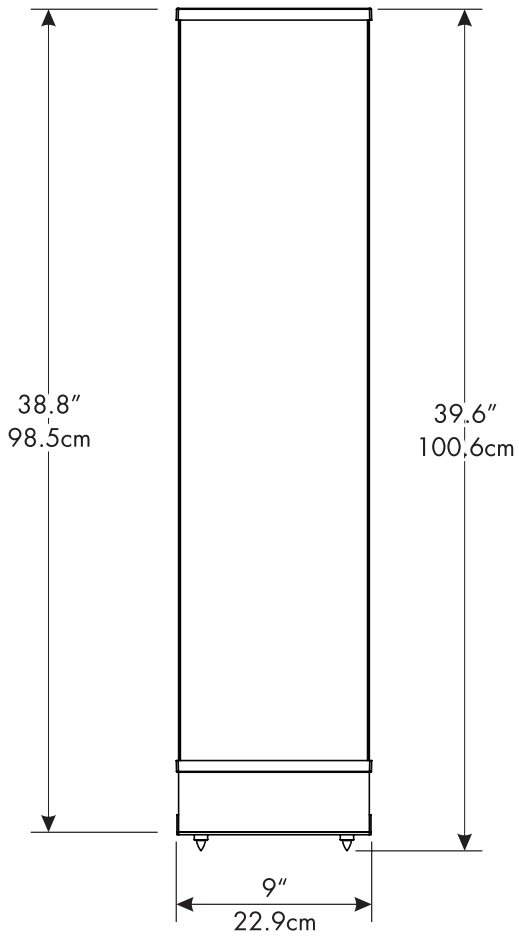
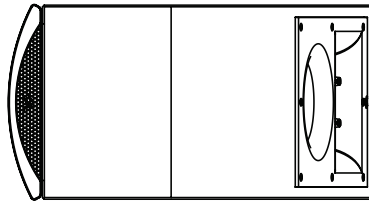
Preface's serial number is located near the binding posts. Each individual unit has a unique serial number.

Service

Should you be using your MartinLogan product in a country other than the one in which it was originally purchased, we ask that you note the following:

- 1 The appointed MartinLogan distributor for any given country is responsible for warranty servicing only on units distributed by or through it in that country in accordance with its applicable warranty.
- 2 Should a MartinLogan product require servicing in a country other than the one in which it was originally purchased, the end user may seek to have repairs performed by the nearest MartinLogan distributor, subject to that distributor's local servicing policies, but all cost of repairs (parts, labor, transportation) must be born by the owner of the MartinLogan product.
- 3 If, after owning your speakers for six months, you relocate to a country other than the one in which you purchased your speakers, your warranty may be transferable. Contact MartinLogan for details.

DIMENSIONAL DRAWINGS



GLOSSARY OF AUDIO TERMS

AC. Abbreviation for alternating current.

Active crossover. Uses active devices (transistors, IC's, tubes) and some form of power supply to operate.

Amplitude. The extreme range of a signal. Usually measured from the average to the extreme.

Arc. The visible sparks generated by an electrical discharge.

Bass. The lowest frequencies of sound.

Bi-Amplification. Uses an electronic crossover, or line-level passive crossover, and separate power amplifiers for the high and low frequency loudspeaker drivers.

Capacitance. That property of a capacitor which determines how much charge can be stored in it for a given potential difference between its terminals, measured in farads, by the ratio of the charge stored to the potential difference.

Capacitor. A device consisting of two or more conducting plates separated from one another by an insulating material and used for storing an electrical charge. Sometimes called a condenser.

Clipping. Distortion of a signal by its being chopped off. An overload problem caused by pushing an amplifier beyond its capabilities. The flat-topped signal has high levels of harmonic distortion which creates heat in a loudspeaker and is the major cause of loudspeaker component failure.

CLS. The abbreviation for curvilinear linesource.

Crossover. An electrical circuit that divides a full bandwidth signal into the desired frequency bands for the loudspeaker components.

dB (decibel). A numerical expression of the relative loudness of a sound. The difference in decibels between two sounds is ten times the Base 10 logarithm of the ratio of their power levels.

DC. Abbreviation for direct current.

Diffraction. The breaking up of a sound wave caused by some type of mechanical interference such as a cabinet edge, grill frame or other similar object.

Diaphragm. A thin flexible membrane or cone that vibrates in response to electrical signals to produce sound waves.

Distortion. Usually referred to in terms of total harmonic distortion (THD) which is the percentage of unwanted harmonics of the drive signal present with the wanted signal. Generally used to mean any unwanted change introduced by the device under question.

Driver. See transducer.

Dynamic Range. The range between the quietest and the loudest sounds a device can handle (often quoted in dB).

Efficiency. The acoustic power delivered for a given electrical input. Often expressed as decibels/watt/meter (dB/w/m).

ESL. The abbreviation for electrostatic loudspeaker.

Headroom. The difference, in decibels, between the peak and RMS levels in program material.

Hybrid. A product created by the marriage of two different technologies. Meant here as the combination of a dynamic woofer with an electrostatic transducer.

Hz (Hertz). Unit of frequency equivalent to the number of cycles per second.

Imaging. To make a representation or imitation of the original sonic event.

Impedance. The total opposition offered by an electric circuit to the flow of an alternating current of a single frequency. It is a combination of resistance and reactance and is measured in ohms. Remember that a speaker's impedance changes with frequency, it is not a constant value.

Inductance. The property of an electrical circuit by which a varying current in it produces a varying magnetic field that introduces voltages in the same circuit or in a nearby circuit. It is measured in henrys.

Inductor. A device designed primarily to introduce inductance into an electrical circuit. Sometimes called a choke or coil.

Linearity. The extent to which any signal handling process is accomplished without amplitude distortion.

Midrange. The middle frequencies where the ear is the most sensitive.

Passive crossover. Uses no active components (transistors, IC's, tubes) and needs no power supply (AC, DC, battery) to operate. The crossover in a typical loudspeaker is of the passive variety. Passive crossovers consist of capacitors, inductors and resistors.

Phase. The amount by which one sine wave leads or lags a second wave of the same frequency. The difference is described by the term phase angle. Sine waves in phase reinforce each other; those out of phase cancel.

Pink noise. A random noise used in measurements, as it has the same amount of energy in each octave.

Polarity. The condition of being positive or negative with respect to some reference point or object.

RMS. Abbreviation for root mean square. The effective value of a given waveform is its RMS value. Acoustic power is proportional to the square of the RMS sound pressure.

Resistance. That property of a conductor by which it opposes the flow of electric current, resulting in the generation of heat in the conducting material, usually expressed in ohms.

Resistor. A device used in a circuit to provide resistance.

Resonance. The effect produced when the natural vibration frequency of a body is greatly amplified by reinforcing vibrations at the same or nearly the same frequency from another body.

Sensitivity. The volume of sound delivered for a given electrical input.

Stator. The fixed part forming the reference for the moving diaphragm in a planar speaker.

THD. The abbreviation for total harmonic distortion. (See Distortion)

TIM. The abbreviation for transient intermodulation distortion.

Transducer. Any of various devices that transmit energy from one system to another, sometimes one that converts the energy in form. Loudspeaker transducers convert electrical energy into mechanical motion.

Transient. Applies to that which lasts or stays but a short time. A change from one steady-state condition to another.

Tweeter. A small drive unit designed to reproduce only high frequencies.

Wavelength. The distance measured in the direction of progression of a wave, from any given point characterized by the same phase.

White noise. A random noise used in measurements, as it has the same amount of energy at each frequency.

Woofers. A drive unit operating in the bass frequencies only. Drive units in two-way systems are not true woofers but are more accurately described as being mid/bass drivers.



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