

Wilson Audio Specialties, Inc.

MAXX™



Owner's Manual

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WILSON AUDIO SPECIALTIES

MAXX™

OWNER'S MANUAL

WILSON AUDIO SPECIALTIES, INC.

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TABLE OF GRAPHICS	iii
SECTION 1.0- ROOM ACOUSTICS	1-1
FINAL LISTENING ROOM SETUP (VOICING)	1-1
SECTION 1.1-ROOM REFLECTIONS	1-2
SLAP ECHO	1-2
STANDING WAVES	1-3
COMB FILTER EFFECT	1-4
SECTION 1.2-RESONANCE'S	1-5
STRUCTURAL RESONANCE	1-5
AIR VOLUME RESONANCE	1-5
SECTION 1.3-IN YOUR ROOM	1-6
ROOM SHAPES	1-6
SPEAKER PLACEMENT VS. LISTENING POSITION	1-7
CHOOSING A LISTENING POSITION	1-7
SPEAKER ORIENTATION	1-8
SUMMARY	1-9
SECTION 2.0-CARE OF THE MAXX	2-1
PAINTED FINISH	2-1
BREAK IN PERIOD	2-2
ENCLOSURE CONSTRUCTION	2-2
MATERIAL	2-2
ADHESIVE	2-3
DEPTH OF DESIGN	2-3
CONCLUSION	2-3
SECTION 3.0-UNCRATING MAXX	3-1
INITIAL CHECK	3-1
UNCRATING THE WOOFER CABINETS	3-2
MATERIALS REQUIRED	3-2
UNPACKING THE WOOFER	3-2
UNCRATING THE UPPER MODULES	3-2
SECTION 4.0- MAXX SET UP	4-1
HARDWARE	4-1
CRATE CONTENTS: CHECKLIST	4-3
ASSEMBLING SPIKES:	4-4

TABLE OF CONTENTS CONT.

SECTION 4.1- MAXX HARDWARE INSTALLATION	4-6
UPPER MODULE	4-6
ALIGNMENT BLOCK INSTALLATION	4-7
SECTION 4.2 PLACEMENT OF UPPER MODULE	4-8
SECTION 4.3- PHASE DELAY CORRECTION	4-10
ROOM SETUP	4-10
ALIGNMENT PROCEDURE	4-11
SECTION 4.4-ANCHORING UPPER TO FASCIA	4-14
SECTION 4.5-WIRING ATTACHMENTS	4-15
SECTION 4.6- SPIKE INSTALLATION	4-16
MATERIALS REQUIRED	4-16
INSTALLATION PROCEDURE	4-16
SECTION 4.7-LEVELING THE MAXX	4-17
SECTION 5.0- WARRANTY INFORMATION	5-1
SECTION 6.0 -TROUBLESHOOTING SETUP DIFFICULTIES	6-1
SECTION 7.0- SPECIFICATIONS	7-1
APPENDIX A- TIMING TABLE	A-1

TABLE OF GRAPHICS

Figure 1-Woofer and Stand.....	3-1
Figure 2-Upper Module.....	3-1
Figure 3-Alignment Assembly.....	4-1
Figure 4-Standard Alignment Spike.....	4-1
Figure 5-Two Inch Alignment Spike.....	4-1
Figure 6-Upper Front Spike.....	4-1
Figure 7-Puppy Paws.....	4-2
Figure 8-Nylon Tipped Screw.....	4-2
Figure 9-Fascia Screw Cover.....	4-2
Figure 10-Alignment Block and Bolt.....	4-2
Figure 11-Exploded View of Paws.....	4-5
Figure 12-Upper Module with Spikes Installed.....	4-6
Figure 13-Installation of the Alignment Block.....	4-7
Figure 14-Placing Maxx onto Woofer Cabinet.....	4-8
Figure 15-Upper Front Spike Placement.....	4-9
Figure 16-Alignment with Standard Spike.....	4-9
Figure 17-Listening Distance and Ear Height Example.....	4-10
Figure 18-Rotation of the Upper Module.....	4-11
Figure 19-Alignment Block Step Configuration.....	4-12
Figure 20-Alignment using Standard.....	4-13
Figure 21-Alignment using 2" Spike.....	4-13
Figure 22-Installing the Nylon Tipped Screws.....	4-14
Figure 23-Wiring Maxx.....	4-15
Figure 24-Installing the Spikes.....	4-16
Table 1- Step Alignment Information.....	A-1



You are surely excited about setting up your Maxx loudspeakers and doing some listening, but before you begin we would like to discuss some of the important room acoustical information that will help you set up your loudspeakers properly.

FINAL LISTENING ROOM SETUP (VOICING)

Your Maxx loudspeakers will give you years of music satisfaction. However, their high performance characteristics and abilities can only be fully appreciated with the proper acoustical setup.

The following section will present some guidelines on room acoustics and their interactions with loudspeakers. We will also offer some detailed suggestions on the setup of Maxx, but we strongly suggest that you have your local Wilson Audio dealer perform the final speaker “voicing” for you. They are specially trained in setting up Wilson loudspeakers and will ensure that you realize the full value of your purchase.

SECTION 1.1 ROOM REFLECTIONS

There are 3 commonly encountered room reflection problems: slap echo's, standing-waves, and comb filter effect.

SLAP ECHO

Probably the most obnoxious form of reflection is called "slap echo." With slap echo, primarily mid-range and high frequency sounds reflect off of two parallel hard surfaces. The sound literally reverberates back and forth until it is finally dissipated over time. You can test for slap echo in any room by clapping your hands sharply in the middle of the room and listening for the characteristic sound of the echo in the mid-range. Slap echo destroys the sound quality of a stereo system in two ways:

- It adds harshness to the upper mid-range and treble through energy time storage.
- It destroys the delicate phase relationships, which help to establish an accurate sound stage.

Slap echo is a common acoustical problem in the typical domestic listening room because most of these rooms have walls with a hard, reflective nature, usually being only occasionally interrupted by curtains or drapes. The best solution to eliminate slap echo is non-parallel walls, this is because non-parallel walls do not support slap echo, but rather allow the sound to diffuse. Otherwise, slap echo can be controlled entirely by the application of absorptive materials to the hard surfaces, such as:

- Sonex
- Airduct board
- Cork panels to the hard surfaces.
- Large ceiling to floor drapes
- Carpeting to wall surfaces.

In many domestic listening environments, heavy stuffed furnishings are the primary structural control to slap echo. Unfortunately, their effectiveness is not predictable. Diffusers are

sometimes also used to very good subjective effect, particularly in quite large rooms. Sound absorbent materials such as described above will alter the tonal characteristic of the room by making it sound “deader,” less “bright and alive” and “quieter.” These changes also make the room more pleasant for conversation. Diffusers, on the other hand, tend to not change the tonal balance characteristic of the room, but make the sound smoother and more open.

STANDING WAVES

Another type of reflection phenomenon is “standing waves.” Standing waves cause the unnatural boosting or accentuation of certain frequencies, typically in the bass, to be found at certain discreet locations on the room. A room generating severe standing waves will tend to make a loudspeaker sound one way when placed in one location and entirely different when placed in another. The effects of standing waves on a loudspeaker’s performance primarily as follows:

- Tonal balance
- Resolution of low-level detail
- Sound-staging

Standing waves are more difficult to correct than slap echo because they tend to occur at a lower frequency, whose wavelength is long enough to be ineffectively controlled by absorbent materials such as Sonex. Moving speakers about slightly in the room is, for most people, their only control over standing waves. Sometimes a change of placement of as little as two or three inches can dramatically alter the tonal balance of a small system. Fortunately, minor low frequency standing waves are well controlled by positioning ASC tube traps in the corners of the room. Very serious low frequency accentuation usually requires a custom-designed bass trap system.

Low frequency standing waves can be particularly troublesome in rooms constructed of concrete or brick. These materials trap the bass in the room, unless it is allowed to leak out of the room, through windows and doors.

In general, placement of the speaker in a corner will excite the maximal number of standing waves in a room, and is to be avoided for most direct radiator, full range loudspeaker systems. Some benefit is achieved by placing the stereo pair of loudspeakers slightly asymmetrically in the listening room. This is so that the standing waves caused by the distance between one speaker, its adjacent walls and floors are not the same as the standing wave frequencies excited by the dimensions in the other channel.

COMB FILTER EFFECT

The comb filter effect is a special type of standing wave noticeable primarily at higher frequencies and shorter wavelengths.

Acoustical comb filtering occurs when sound from a single source, such as a loudspeaker, is directed toward a microphone or listener from a distance. The first sound to reach the microphone is the direct sound, followed by a delayed, reflected sound. At certain frequencies cancellation occurs, because the reflected sound lags in phase relative to the direct sound. This cancellation is most apparent where the two are 180 degrees out of phase. Further, there is augmentation at other frequencies where the direct and the reflected sounds arrive in phase. Because it is a function of wavelength, the comb filter effect will notch out portions of the audio spectrum at regular octave-spaced intervals. The subjective effect of comb filter effects is as follows:

- Added roughness to the sound
- Reduction of harmonic richness
- Smearing of lateral sound stage image focus and placement

Comb filter effects are caused by side wall reflections. These are best controlled by careful speaker placement and by the placement of Sonex or air duct panels to the part of the wall where the reflection occurs.

RESONANCE'S

Resonance in listening rooms is generally caused by two sources:

- Structures within the listening room
- The volume of the air itself in the listening room

STRUCTURAL RESONANCE

Structural resonance's are familiar to most people as buzzes and rattles, but this type of resonance usually only occurs at extremely high volume levels, and is usually masked by the music. In many wood frame rooms the most common type of structural resonance problem is "booming" of walls and floors. You can test for these very easily by tapping the wall with the palm of your hand or stomping on the floor. To give you an idea of what the perfect wall would sound like, imagine rapping your hand against the side of a mountain. Structural wall resonance's generally occur in the low to mid-bass frequencies and add tonal balance fullness to any system played in that room. They too are more prominent at louder levels, but their contribution to the sound of the speaker is more progressive. Rattling windows, picture frames, lamp shades, etc. can generally be silenced with small pieces of caulk or with blocks of felt. However, short of actually adding additional layers of sheet rock to flimsy walls, there is little that can be done to eliminate wall resonance's.

AIR VOLUME RESONANCE

The volume of air in a room will also resonate at a frequency determined by the size of the room. Larger rooms will resonate at a lower frequency than will smaller rooms. Air volume resonance's, wall panel resonance's, and low frequency standing waves, together, combine to form a low frequency coloration in the sound. At its worst, it is a grossly exaggerated fullness, which tends to obscure detail and distort the natural tonal balance of the speaker system.

Occasionally, however, there is just enough resonance to give a little added warmth to the sound... an addition some listeners prefer. Tube traps manufactured by the ASC Corporation are effective in reducing some of this low frequency room coloration. While, custom designed bass traps, such as perforated Helmholtz resonators, provide the greatest degree of low frequency control.

SECTION 1.3- IN YOUR ROOM

ROOM SHAPES

There are three basic shapes for most rooms: square, rectangular, and L-shaped. A perfectly square room is the most difficult room to set up speakers in because, by virtue of its shape, square rooms are the perfect medium for building and sustaining standing waves. Standing waves are pressure waves created by the integration of sound and opposing, parallel walls which accentuate particular frequencies. They heavily influence the music played by loudspeakers, greatly diminishing the listening experience.

Long, narrow rectangular rooms also pose their own special acoustical problems for speaker setup. They have the ability to set up several standing wave nodes, which will have different standing wave frequency exaggerations depending on where you are sitting. Additionally, these long rooms are often quite lean in the bass near the center of the room. Rectangular rooms are still preferred to square rooms because by having two sets of dissimilar length walls, standing waves are not as strongly reinforced and will dissipate more quickly than in a square room. In these rooms the preferred speaker position for spatial placement and midrange resolution would be on the longer walls. Bass response would be reinforced by speaker placement on the short walls.

In many cases L-shaped rooms offer the best environment for speaker setup. Ideally, speakers should be set up along the primary (longest) leg of the room. They should fire from the end of the leg (short wall) toward the bend, or they should be along the longest wall, with the speaker furthest to the bend being inside of the bend. In this way both speakers are firing the same distance to the back wall. The asymmetry of the walls in L-shaped rooms resists the buildup of standing waves.

SPEAKER PLACEMENT VS. LISTENING POSITION

The location of your listening position is as important as the careful setup placement of Maxx speakers in your room. The listening position should ideally be no more than 1.1 to 1.25 times the distance between the tweeters on each speaker. Therefore, in a long rectangular room of 12' x 18', if the speaker tweeters are going to be 9' apart, you should be sitting 9'11" to 11'3" from the speaker. This would be about halfway down the long axis of the room.

Many people place the speakers on one end and sit at the other end of the room. Needless to say, this will not yield the finest sound. Carefully consider your listening position for optimal performance. Our experience has shown that any listening position which places your head closer than 14" to a room boundary will diminish the sonic results of your listening.

CHOOSING A LISTENING POSITION

Decide where you want your favorite listening position to be. Please remember that your Maxx will fill any room with the most beautiful sound available. However, for the time aligning advantage, we want to ensure that you get all the benefits that are built into this design. For this purpose we have designed the following questions:

What is the main purpose of your Maxx? Is it for a listening room dedicated to 2-channel audio? If yes, you should choose your position carefully to yield the finest sound. Wilson Audio uses a formula: The distance between the 2 woofers of each channel times 1.2 equals the distance you should sit from each loudspeaker.

For instance, if you measure the distance between the center of the left channel woofer to the corresponding right channel woofer and it is equal to 10 feet, multiply it by 1.2. This means that you should sit 12 feet from each Maxx.

Are your Maxx's dedicated for a home theater?

If it is a couch, you should center the loudspeakers on the center position of the couch.

Multiple rows of chairs - In this case you should dedicate the 1.2 times equation on your second row of seating. Now more people will enjoy the power of your Maxx.

Do you still want to listen to 2 channel music at its highest quality? In this way you can enjoy a great time aligned sound from that second seat.

SPEAKER ORIENTATION

Speaker placement and orientation are two of the most important considerations in obtaining superior sound. The first thing you need to do is eliminate the side walls as a sonic influence in your system. Speakers placed too close to the side walls will suffer from a strong primary reflection. This can cause out-of-phase cancellations, or comb filtering, which will cancel some frequencies and change the tonal balance of the music. A good place to start is with the speakers about 18" from each wall and, if you need to move them relative to the side wall, move them away from the wall, not closer.

A very important aspect of speaker placement is how far from the back wall to place the speakers. The closer to the back wall the more pronounced the low bass energy and centering of the image will be. However, this comes at a definite reduction in stage size and bloom, as well as a deterioration of upper bass quality. You must find the proper balance of these two factors, but remember, if you are partial to bass response or air and bloom, do not overcompensate your adjustments to maximize their effects. Overbalanced systems are sometime pleasing in the short term, but long term satisfaction is always achieved through proper balance.

The Maxx is designed for maximum phase coherence and pulse replication accuracy when they are aimed directly at the listener or microphone. Thus, your Maxx should be "toed in." In other words, the listener, when seated in the listening position, should just barely see the surface of the inner side of Maxx. Toeing in the speakers provides dramatic improvements in resolution of low level detail in the midrange, as well as dramatic improvements in sound staging performance.

SUMMARY

In summary, for optimal tonal balance accuracy, resolution of low level detail, and sound staging performance, the Maxx should be positioned as outlined in this section. Ideally, the speakers should not be positioned too far from the listener, if maximum resolution of low level detail is required. If possible the speakers should be positioned out into the room, slightly asymmetrically away from side and rear walls. The speakers should be “toed in” toward the listener, preferably so that the listener at his seated position can barely see the surface of the inner side of the Maxx as he/she faces the speaker. It is recommended that a distance of 2-3 feet, and possibly more, be maintained between the Maxx and the rear walls and a distance of at least 2 feet be maintained between the front panel of the Maxx and reflective side walls. However, use of sound absorbent materials will reduce the space requirement depending on the room.

By following the guidelines in this manual and your own common judgment, your new Maxx loudspeakers will provide you with a lifetime of pure music reproduction.



SECTION 2.0 - PAINTED FINISH

Your Maxx loudspeakers are hand painted with Wilsongloss paint and hand polished to a high luster. While the finish seems quite dry to the touch, final curing and complete hardening takes place over a period of several weeks. To protect the finish of the Maxx during final manufacture, shipment, and setup in your listening room, we have applied a removable layer of protective film over the finish. We recommend that this film be left in place until the speakers are in their final location in your listening room. Once you have determined their final position, remove the film by peeling it off. **Do not leave this film on indefinitely, as it may leave impressions on the paint.**

It is important that the delicate paint finish of the Maxx be dusted carefully with the dust cloth, which has been provided. We recommend that the following procedure be observed when dusting the speakers:

- Blow off all loose dust.
- Using the special dust cloth as a brush, gently whisk off any remaining loose dust.
- Shake out the dust cloth.
- Dust the finish, using linear motions in one direction parallel to the floor. Avoid using circular or vertical motions.

Because the paint requires a period of several weeks to fully cure, we recommend that no cleaning fluids such as glass cleaners be used during this initial period of time. When the paint is fully cured, heavy fingerprints and other minor smudges may be removed with a glass cleaner. Always use the dust cloth. Stronger solvents are not recommended under any circumstances. Consult your dealer for further information if required. Periodic polishing may be desired over the years to maintain the high luster of the finish. We recommend a non-abrasive carnauba-based wax and soft cloth.

BREAK IN PERIOD

All audio equipment will sound its best after its components have been broken in for some period of use. Wilson Audio breaks in all woofers and mid-range drivers for a 12 hour period. All drivers are then tested, calibrated, and matched for their acoustical properties. In your listening room, expect 25 to 50% of break-in to be complete after two hours of playing music fairly loudly. Ninety percent of break-in is complete after 24 hours of playing. Playing a "disc repeat" overnight can accomplish this task quickly. Wilson Audio recommends chamber music for this task.

SECTION 2.1- ENCLOSURE CONSTRUCTION

At the core of each Wilson Audio loudspeaker design is the knowledge that to achieve the best performance in the world, you must start with the best materials. Here are a few of the products that comprise the Maxx enclosure.

MATERIAL

The Maxx cabinet is constructed from a high-density, phenolic resin based composite. This composite meets and exceeds the highest of ANSI test standards for its use, while offering very tight tolerances, high hardness, uniform density, and dimensional stability. The high hardness of this composite not only offers excellent acoustical properties but it also provides an ideal surface for painting. Thus, your high gloss finish will be as durable as it is beautiful.

ADHESIVE

What's in an adhesive? Everything. This often over looked element is crucial to the proper performance of a loudspeaker. Correct modulus of elasticity, co-efficient thermal expansion and natural frequency response are just a few of the important elements.

A highly cross-linked, thermo-set adhesive is used for the construction of the enclosure. It was also chosen for its excellent bond strength, solvent resistance, hardness and optimum vibrational characteristics.

DEPTH OF DESIGN

The combination of the best in composite materials and adhesive technology, provided to us by the leaders in their industry, allow us to design an enclosure with unmatched performance. The Maxx upper and lower cabinet modules have been designed to eliminate vibration and cabinet signature, while maintaining an internal acoustical integrity that is simply, the best.

Further, the Maxx loudspeaker has over 1,150 constraining relationships defining the placement of over 395 parts. These relationships ensure both dimensional stability and repeatability. In short, the first Maxx built will be as good as the hundredth.

CONCLUSION

All of these structural aspects combine to allow Wilson Audio to deliver a product that maintains the strictest structural tolerances, durability and reliability. This also means that you will have consistent, repeatable performance, unaffected by the climatic conditions, anywhere in the world. Remarkably, given the breadth and depth is this design, Maxx maintains it's simplistic elegance requiring only two enclosures / channel.



Note: You will have four modules to unpack that will need to be separated into right and left channels. Clear out 2 spaces to place your left and right channel modules. Place the ODD numbered modules in the LEFT channel section and the EVEN in the RIGHT channel section

INITIAL CHECK

The Maxx is sent to you in three crates. Upon receiving these crates, please check their condition. If any of the crates are damaged, please report it to the shipping company for insurance verification. The woofer modules have separate crates and a single crate for both of the upper modules. The contents of these crates are the owners manual, tool kit and the following:

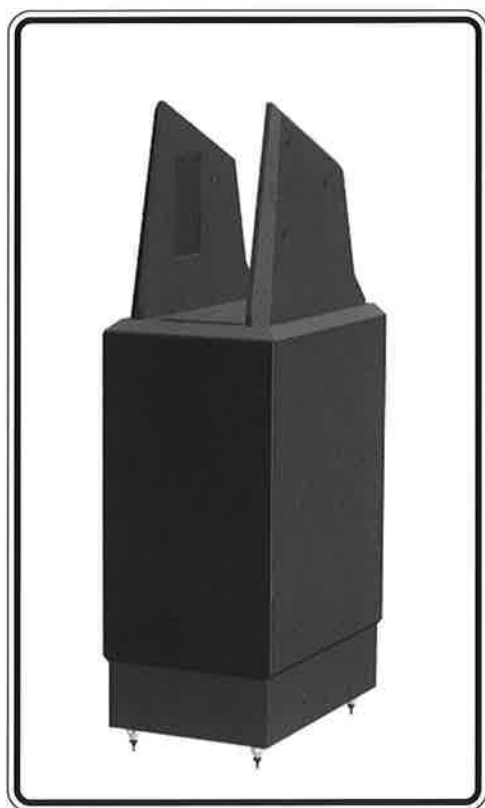


FIGURE 1- TWO WOOFER AND
BASE ENCLOSURES

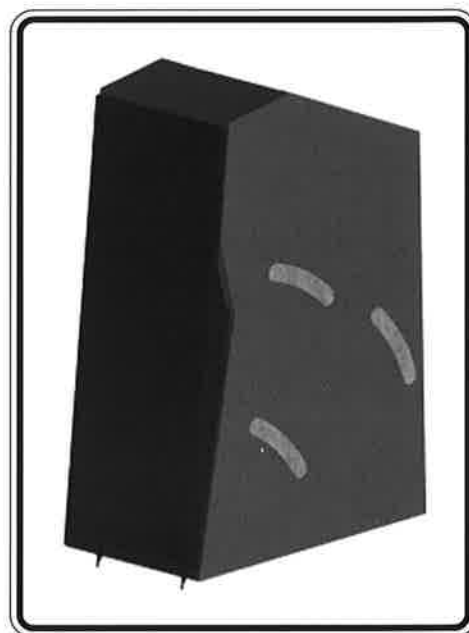


FIGURE 2- TWO UPPER MOD-
ULES

UNCRATING THE WOOFER CABINETS

A minimum of two strong adults is required to set up the system. Locate the two largest crates. These contain the woofer enclosures and are the first components of the systems to unpack.

Note: These two woofer enclosures are very heavy, and care should be taken to prevent injury.

MATERIALS REQUIRED

- Metal shears
- Electric screw driver
- Phillips head drive bit

UNPACKING THE WOOFER

- Open the top of each crate and determine the side where the casters are connected to the bottom of the woofer module.
- Remove the packing material from between the casters and set the crate up so that the casters on the woofer are toward the floor.
- With one person holding the crate, the other person should roll the Maxx module out of the crate. Be very careful not to scratch the module during this process.

Finally, move the woofer cabinets over to the locations you decided for the left and right channels. If you have not yet performed this room analysis please refer to Section 1 of this manual.

UNCRATING THE UPPER MODULES

The Upper modules are both in one crate and only need to be lifted straight out by two people.



Note: In order to realize the capabilities of the Maxx we recommend that you have it installed by a trained Wilson Audio installer. Your dealer will have a person trained in the art of a Maxx installation. If you choose to do this installation yourself, here are some guidelines to assist you. These guidelines come from many years of experience and should be followed closely.

HARDWARE

The following list contains a description of all hardware you will be dealing with during the set-up of Maxx.

Maxx is shipped with the following alignment hardware attached:

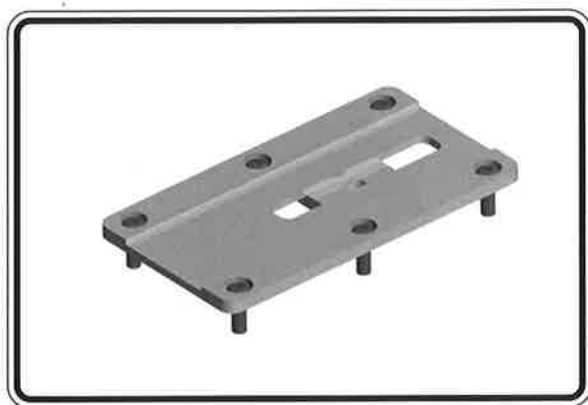


FIGURE 3- ALIGNMENT ASSEMBLY

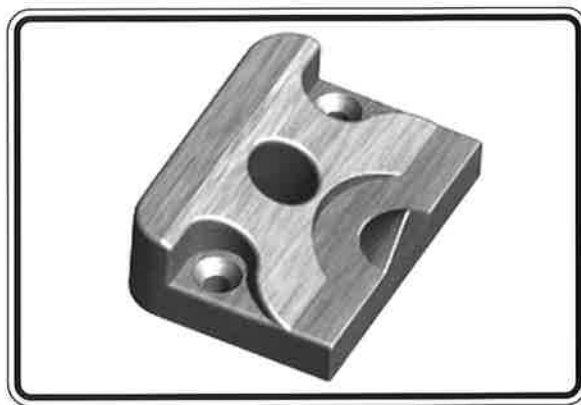


FIGURE 4- STANDARD ALIGNMENT SPIKE

Maxx tool kit contains the following hardware:

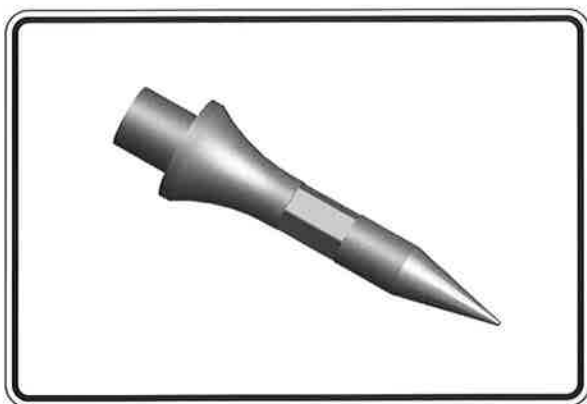


FIGURE 5- TWO INCH ALIGNMENT SPIKE

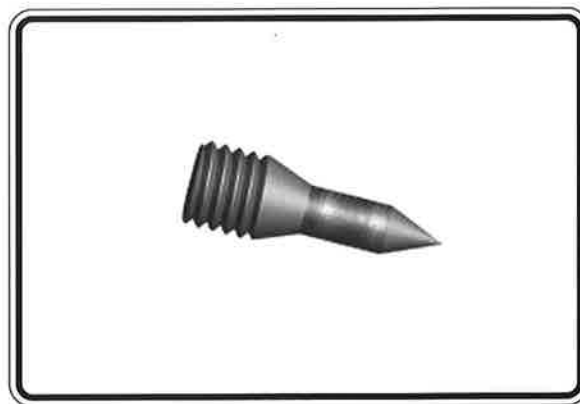


FIGURE 6- UPPER FRONT SPIKE

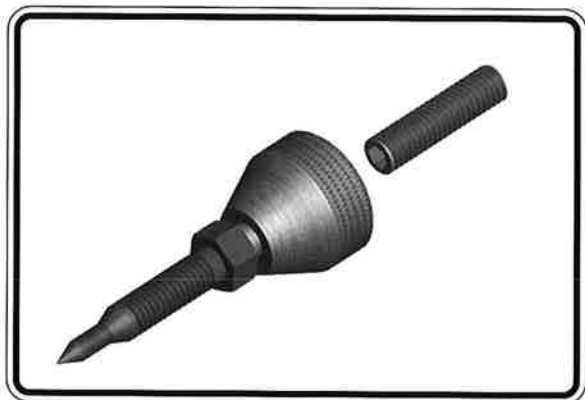


FIGURE 7- PUPPY PAWS

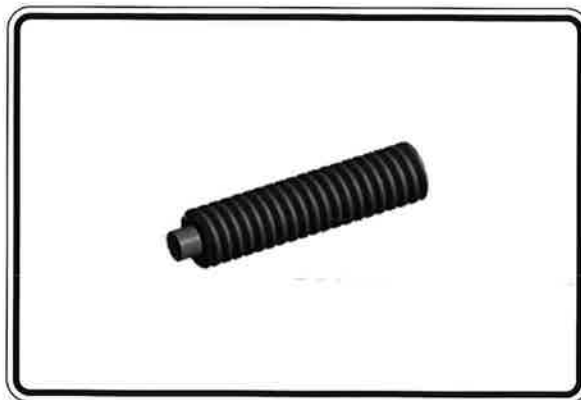


FIGURE 8- NYLON TIPPED SCREW

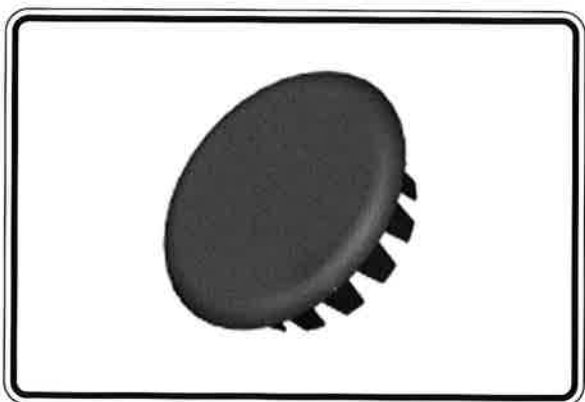


FIGURE 9- FASCIA SCREW COVER

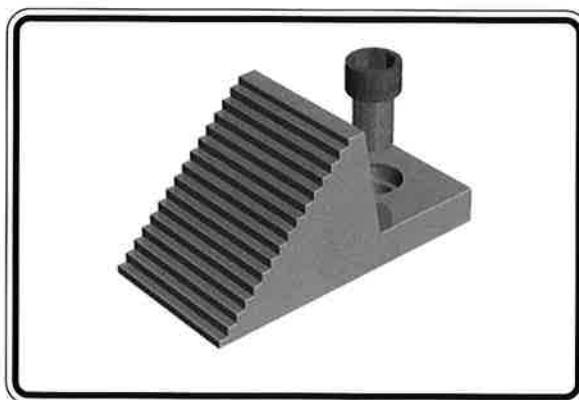


FIGURE 10- ALIGNMENT BLOCK AND BOLT

CRATE CONTENTS: CHECKLIST

Now that you have everything unpacked you can inventory your items. Please contact your dealer if you do not have all of these items:

Quantity	Description
2	Woofers / Base enclosures
2	Upper Modules
1	3/32" T-Wrench
1	1/8" T-Wrench
1	3/8" T-Wrench
1	3/16" Allen Wrench
2	Polishing Cloths
1	9/16" Combination Wrench
8	1" Brass Pads
12	20 x 1" Nylon Tipped Set Screws
4	Upper Front Spikes
2	2" Rear Alignment Spikes
16	Maxx Hole Covers
2	5.7 ohm Resistor
2	4.2 ohm Resistor
1	1/2" Nut Driver
8	1 1/2" Set Screws
8	Puppy Diodes
8	3/8" Nut
8	Puppy Spike
2	Timing Blocks
1	Owner's Manual
1	Warranty Information Packet

MAXX SPIKES

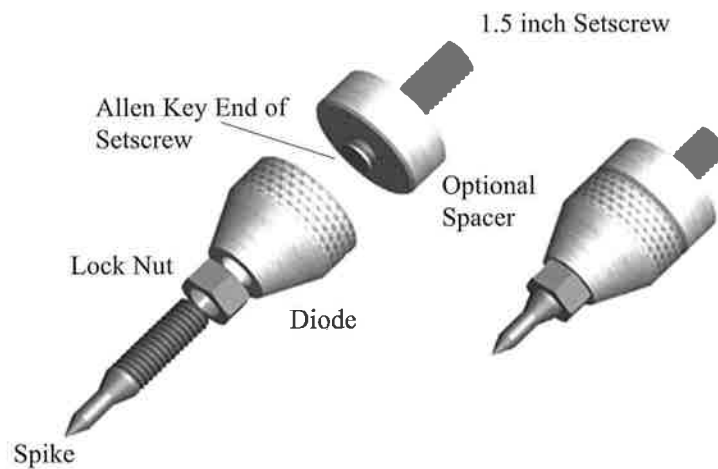
Included with your MAXX are two sets of spikes, which provide acoustical isolation as well as optimal height placement for your speakers. There are three ways of assembling the paws (without spacers, or with one or two spacers), and your choice will depend on your listening room and personal tastes. Wilson generally recommends no spacers, for simplicity and rigidity. However, the addition of spacers changes the driver-to-floor dimension, and can sometimes be used to reduce an objectionable upper-bass/lower mid-range standing wave.

ASSEMBLY:

1. Insert either the short or the long threaded bolt, depending on the desired height (see Figure 11 next page) as far as it will go into the hole in the bottom of the MAXX. Make sure the Allen key end is accessible.
2. If desired, place the corresponding number of spacer discs over the bolt.
3. Screw the acoustical diode onto the bolt until it butts up against the spacers or MAXX bottom.
4. Screw the spike (with nut) all the way in until it just touches the bolt. Do not tighten the nut at this time.
5. Repeat steps 1 through 4 with the other three paws.
6. To provide the proper mechanical coupling between the spikes and the floor, make sure that the MAXX is level by unscrewing individual spikes as needed until even contact is achieved by all four spikes. A bubble level is often helpful in this procedure.
7. Once all adjustments have been made, tighten the nut on the spike to the diode with the $\frac{9}{16}$ " wrench provided. DO NOT OVERTIGHTEN! "Snug" is tight enough.

MAXX SPIKES ASSEMBLY DIAGRAM

Option 1 (0-1 Spacers)



Option 2 (2 Spacers)

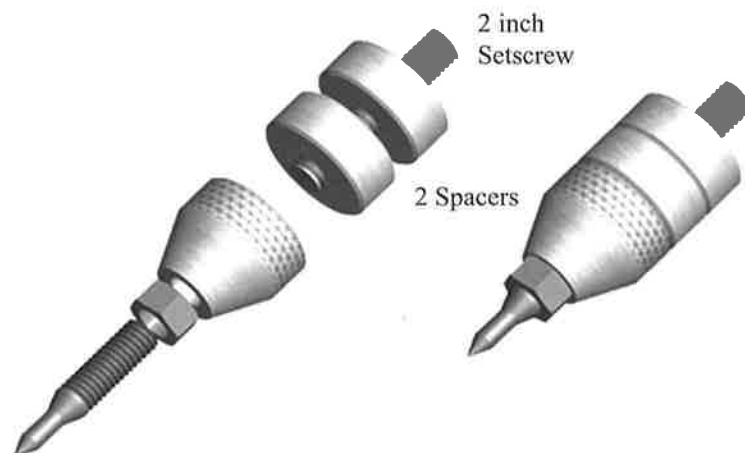


FIGURE 11

HARDWARE INSTALLATION

UPPER MODULE

The upper module requires only the installation of the front spikes (see Figure 6 on page 4-1). The spikes screw into the bottom of the upper module as shown in Figure 12 below. The spikes should be screwed in all the way until they are hand tight. Do not over tighten spikes. This figure also shows the 2" alignment spike. **Do not install the 2" alignment spike at this time.**

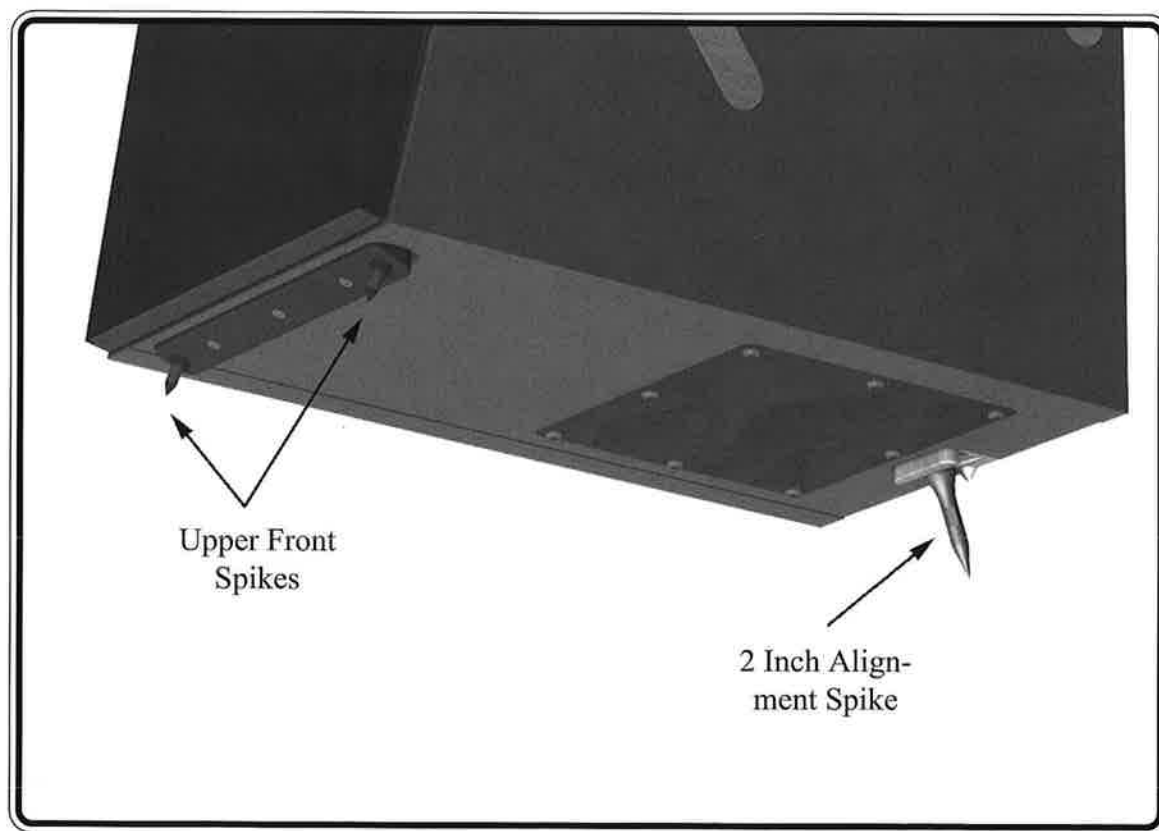


FIGURE 12- UPPER MODULE WITH FRONT SPIKES
INSTALLED

ALIGNMENT BLOCK INSTALLATION

The alignment block is used to set the final position of the upper module. The block mounts to the top of the woofer enclosure as follows:

- Place the alignment block into the channel of the alignment plate
- Position the hole at the back of the alignment block over the threaded alignment nut
- Loosely tighten the Hex bolt

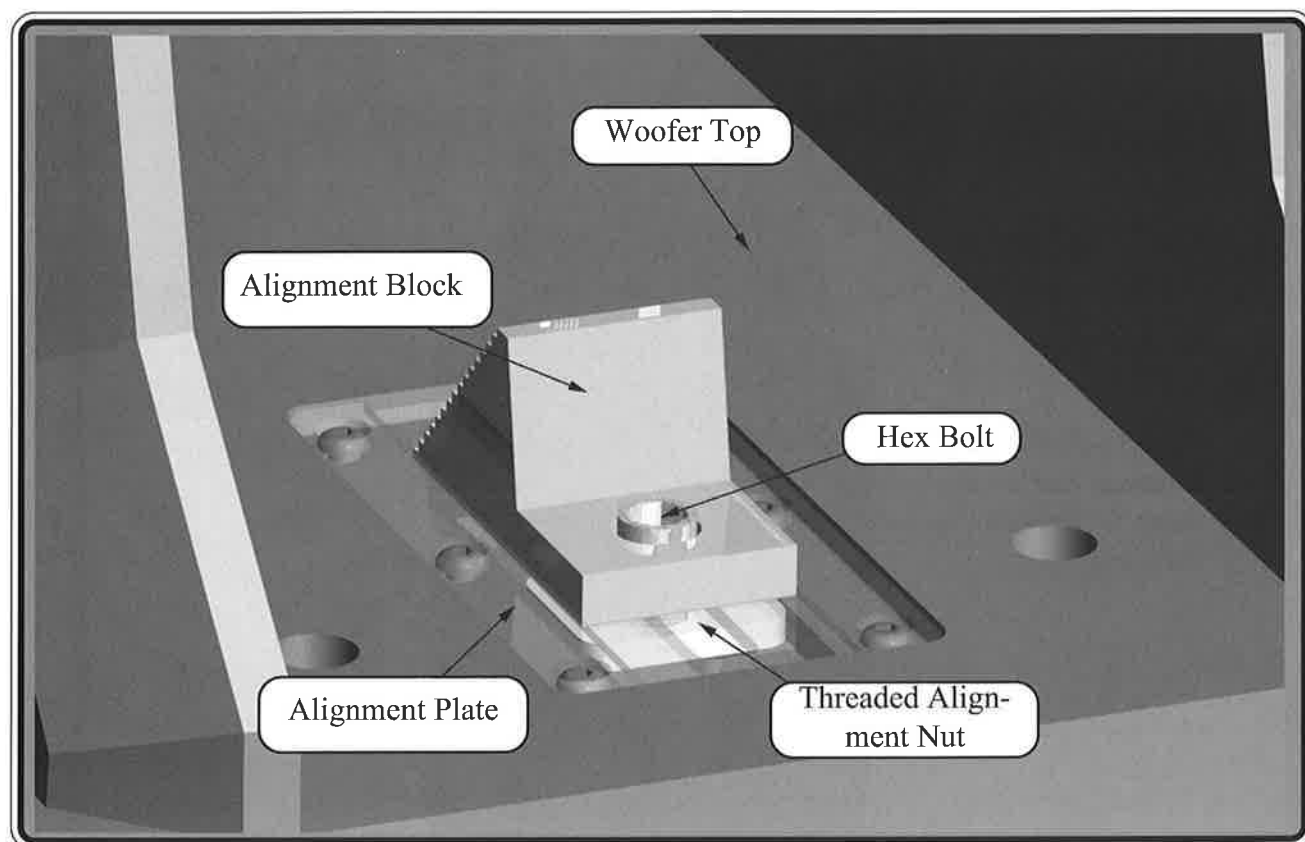


FIGURE 13- INSTALLATION OF THE ALIGNMENT BLOCK

SECTION 4.2 PLACEMENT OF UPPER MODULE

The next step in the installation is to place the upper module onto the woofer cabinet.

Note: Placement of the upper module requires 2 people.

1. Loosen the large anchor bolt located on the Alignment Assembly.
2. Carefully lift the upper module and slide it between the fascia's.

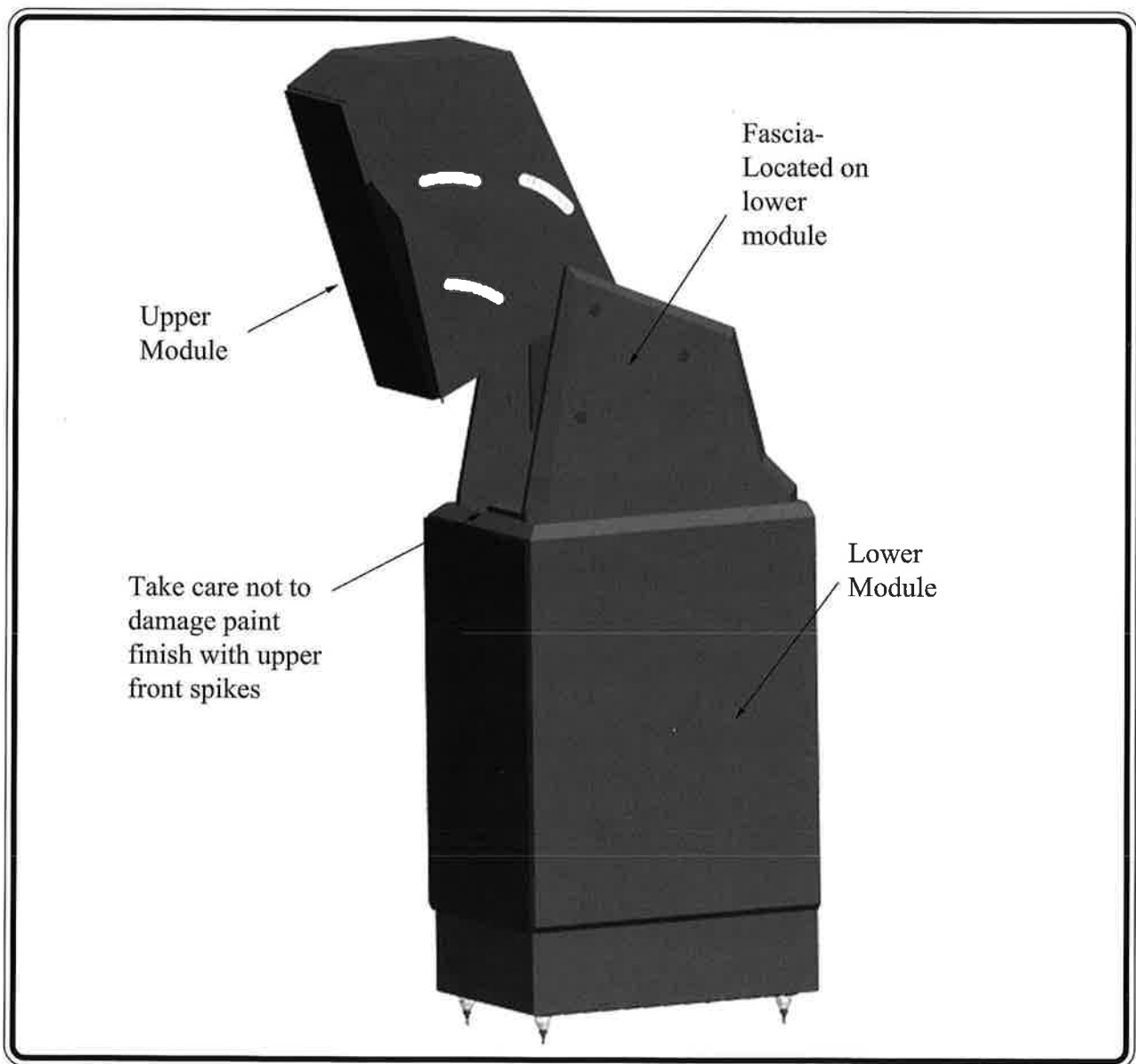


FIGURE 14- PLACEMENT OF MAXX UPPER ONTO LOWER MODULE

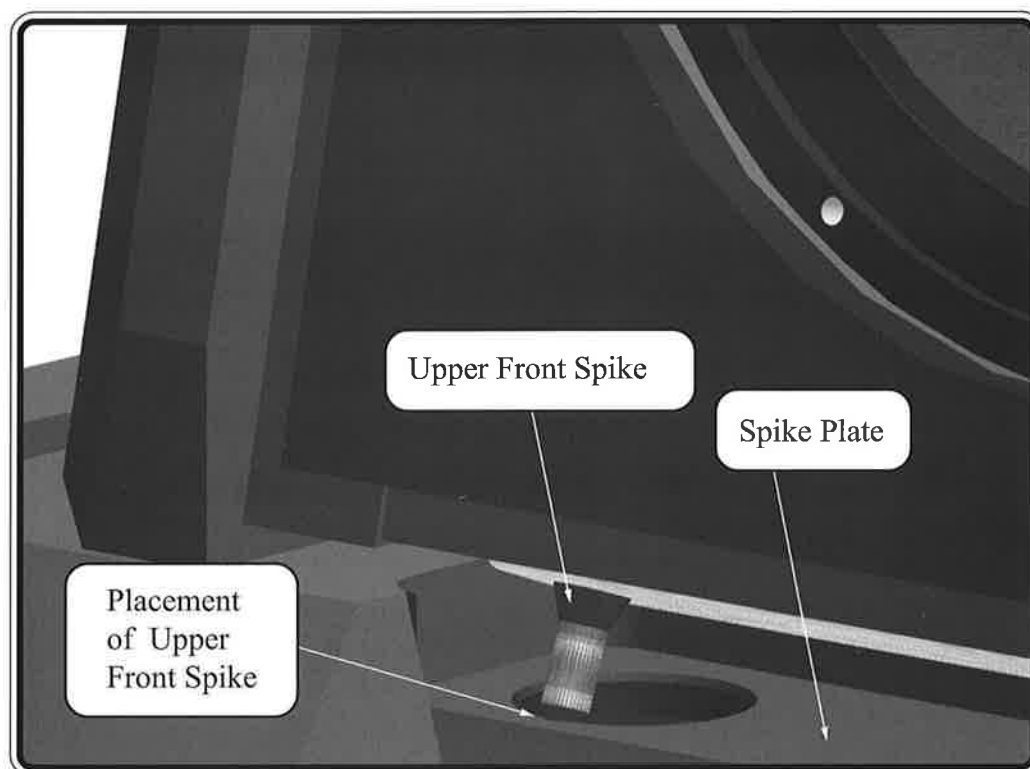


FIGURE 15- UPPER SPIKE PLACEMENT

3. Set the front spikes into the Spike Plate, as indicated in Figure 15.

Note: proper placement of these spikes is critical for time alignment.

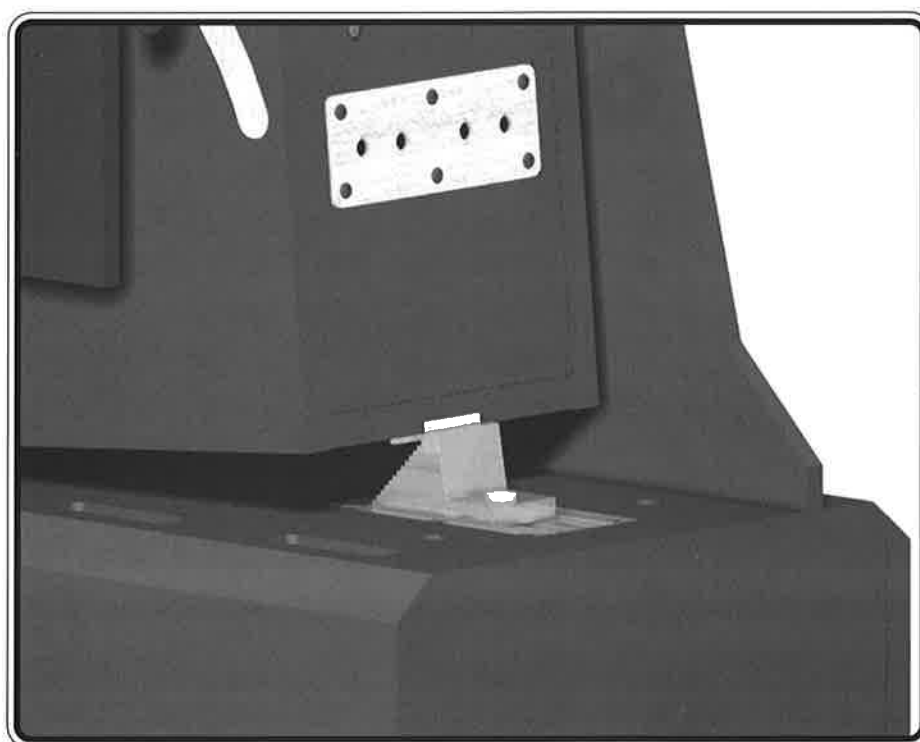


FIGURE 16- ALIGNMENT ASSEMBLY WITH STANDARD SPIKE ONLY

4. Set the back end of the upper down, placing the Standard Spike onto one of the steps in the Alignment Block.

SECTION 4.3-PHASE DELAY CORRECTION

ROOM SETUP

The Maxx system allows for different listening distances (away from the speakers) and listening ear heights (measured distances from the floor up to your ear), see Figure 17 below. For each distance/ear height combination there is a unique upper module rotation.

To make correct in-home set up of the Maxx possible without test equipment, Wilson Audio has measured the correct geometric time domain alignment for different distance/ear height combinations. This information is provided in Appendix A. By measuring the ear height and the distance from the speaker to the listening position, you will be able to align the system for your listening position.

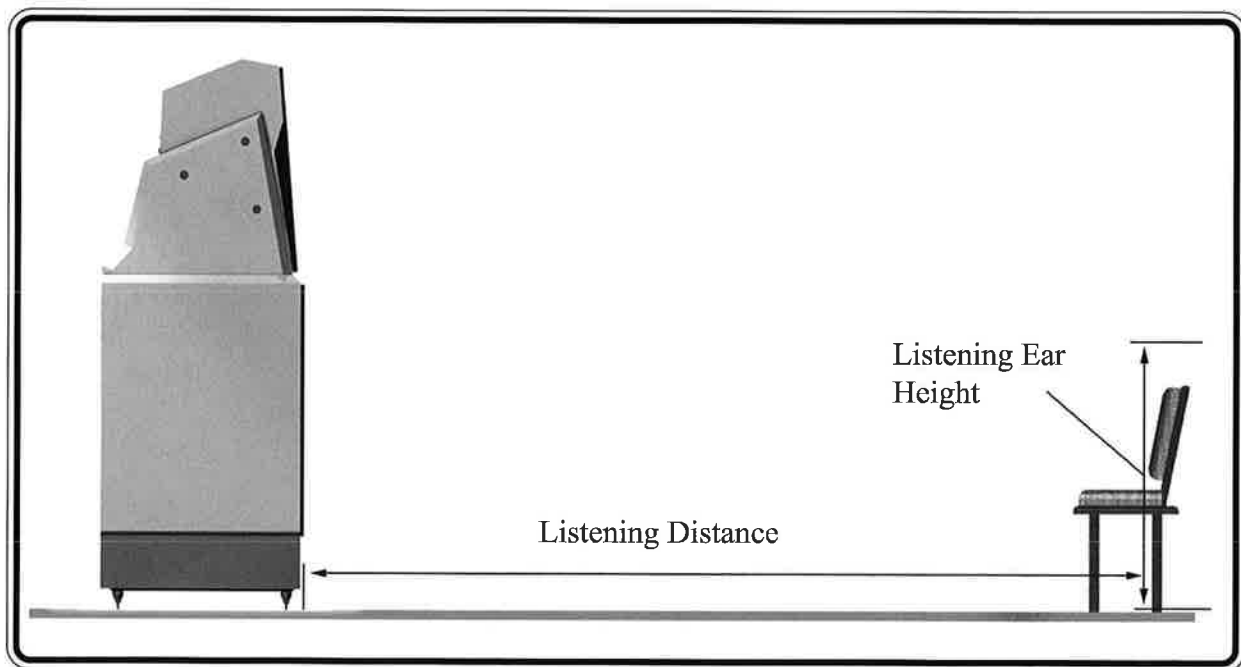


FIGURE 17- LISTENING DISTANCE AND EAR HEIGHT

ALIGNMENT PROCEDURE

Maxx is fully adjustable in the time domain for ear height and listening distance. The phase delay correction in Maxx is achieved through the rotation of the upper module (see Figure 18). The rotation is accomplished by placing the upper module on a given alignment step. The higher the step, the greater the rotation.

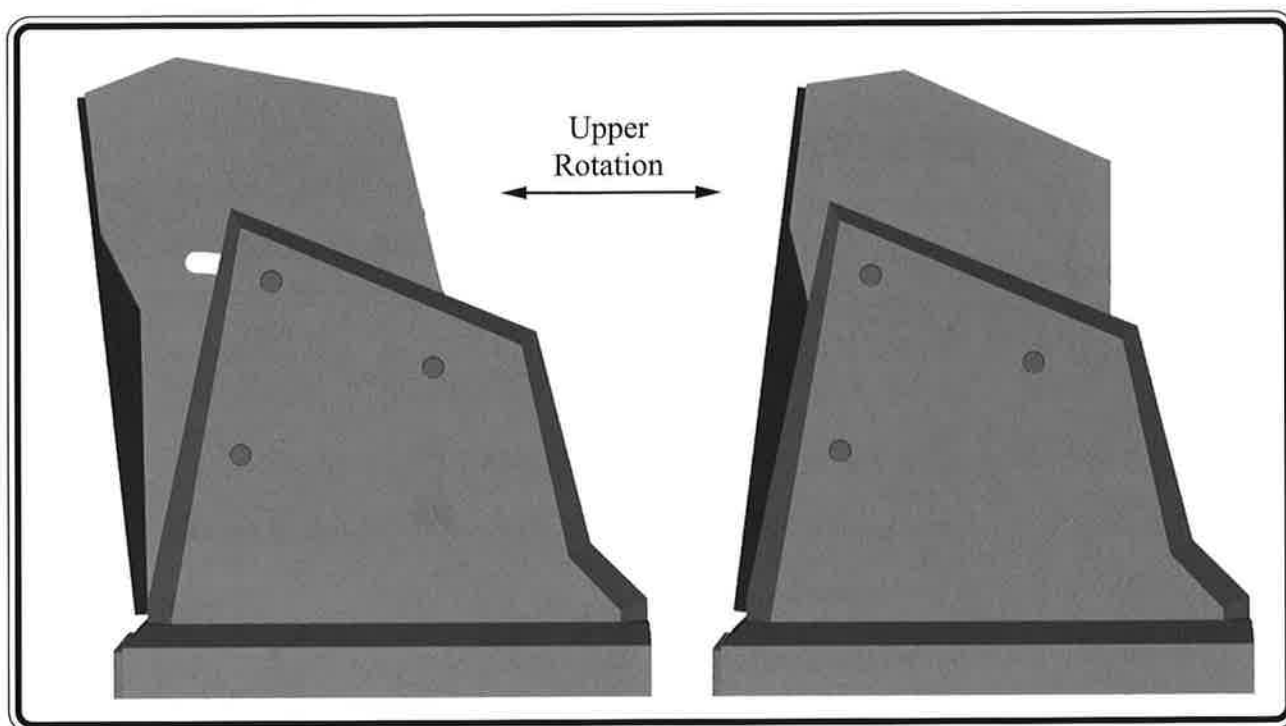


FIGURE 18- ROTATION OF UPPER MODULE

To determine the amount of rotation needed, find the desired ear height and listening distance on table 1 (found in Appendix A) and read from it the step required. A number of 1 thru 15 requires the use of the standard alignment spike (see Figure 20 on page 4-13). A number preceded by an "S" (S+1, S+2, etc) requires the use the longer, 2 inch spike (see Figure 21 on page 4-13). Figure 19 shows the step numbering.

As mentioned, the alignment height is set by the alignment hardware found at the rear of the woofer cabinet. The procedure is as follows:

1. Find the measured ear height and listening distance in Table 1 in Appendix A and read from it the step required.
2. Choose the proper spike (standard or 2 inch).
3. The standard spike is installed at the factory and requires no installation-**do not remove it**. If the 2 inch spike is required for your setup, screw it into the threaded hole on the center of the standard spike until it is flush with the base of the standard spike.
4. Place the spike on the step indicated from Table 1 in Appendix A.

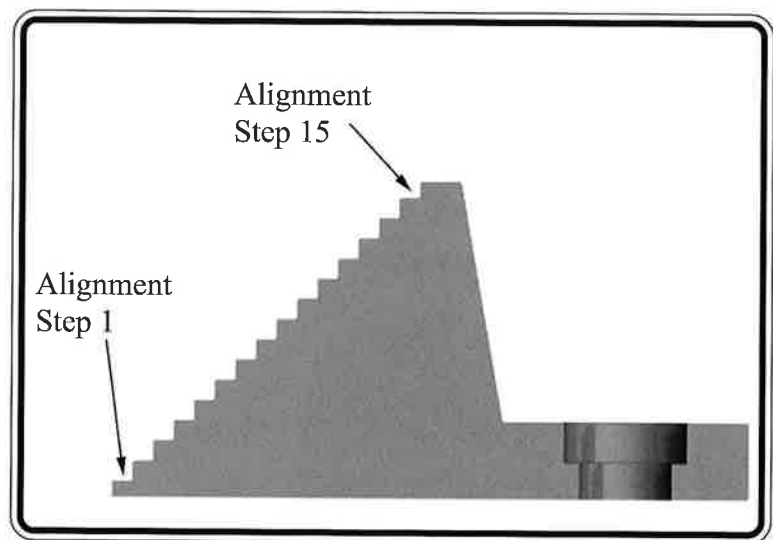


FIGURE 19- ALIGNMENT BLOCK- STEP CONFIGURATION

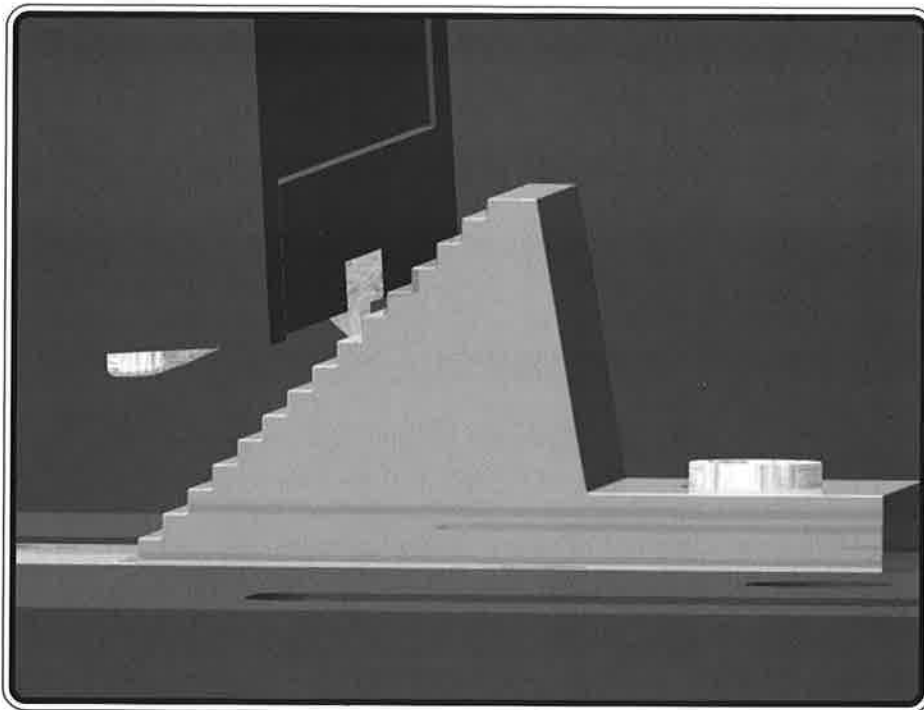


FIGURE 20- ALIGNMENT ASSEMBLY WITH STANDARD SPIKE ONLY. USED FOR ALIGNMENT HEIGHTS 1 THRU 15.

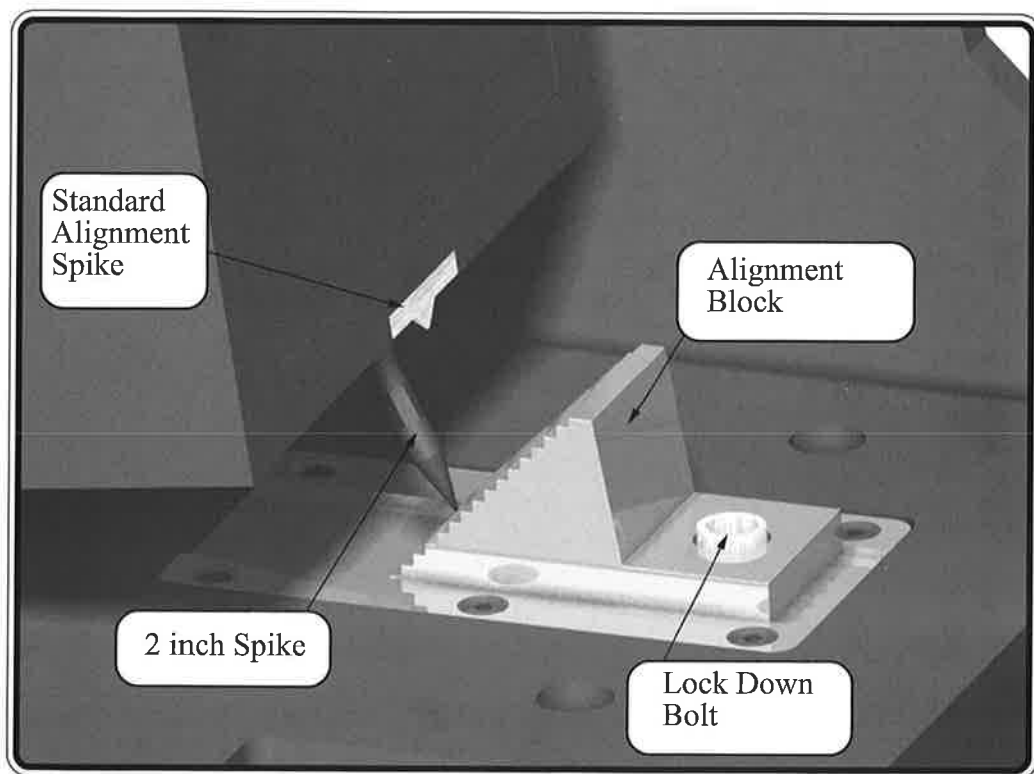


FIGURE 21- ALIGNMENT ASSEMBLY WITH 2 INCH SPIKE. USED FOR ALIGNMENT HEIGHTS S+1 THRU S+15.



TROUBLESHOOTING SETUP DIFFICULTIES

Problem

One channel is not operating...

Reason

Check the inter-connect from the pre-amp to the amplifier.

Check the connection on the speaker cables. One of them may have come loose.

Imaging is off center...

Check your connections. One of the connections to the modules may have slipped off. When a tweeter or mid-range driver is not working, the imaging will be off.

Play music at a low level, and listen to each driver in each channel. You may have a driver that is not operating correctly. If you find a driver that is silent please go to the “Driver Out section” of this troubleshooting guide.

Check your connections for red-to-red and black-to-black. One of the drivers may be out of phase. Crossing connections will the imaging qualities MAXX.

A chronic lack of bass energy...

Check the input cable connections on your woofer enclosure. Red-to-red and black-to-black phase matching is vital for producing bass.

Driver out...

Note: Turn off your amplifier, and unplug it from the wall.

If you have found a driver that is silent, move to the rear of this particular loudspeaker.

Open the small aluminum door on the back of the upper cross over. You will find some resistor connections, they will be labeled Mid-Frequency and High Frequency.

Find the proper module that pertains to the driver that is out and remove the resistor.

Replace the resistor with the supplied matching resistor. Tighten the new resistor in the old ones place.

Note: An improper resistor value will hinder your MAXX performance

Plug your amplifier into the wall and turn it on.

Listen to the channel at a low level. The driver should now be operating correctly.

Amplifier shuts off as soon as it is turned on:

Check to see if your speaker cables are properly secured. Look for frayed ends, loose connections, a conductor contacting the amplifier chassis.

Turn the amplifier off and disconnect it from the AC wall outlet. Disconnect the preamplifier leads to the amplifier. Now turn back on the amplifier.

If the problem is solved: There is something wrong with your preamplifier or interconnect. Call your dealer.

If the problem persists: Leave the pre-amp leads disconnected and continue on to the next step.

Turn the amplifier off and disconnect it from the AC wall outlet. Disconnect the speaker leads **at the main input to the MAXX**. Now turn the amplifier on.

If the problem is solved: Call your Wilson Audio dealer. There may be a problem with the crossover or the speaker's internal wiring.

If the problem persists continue on to the next step.

Turn the amplifier off and disconnect it from the AC wall outlet. Disconnect the speaker cable leads to the amplifier and turn the amplifier on again.

If the problem is solved: You have a short in your speaker cables. Check for frayed ends, holes (from spike feet), or make sure that your spade lug is not touching the chassis while it is connected to the binding post.

If the problem persists: Call the dealer where you bought your amplifier. You appear to have a problem with this component.



SECTION 7.0- SPECIFICATIONS

Dimensions	63"H x 22"D x 17"W
Weight / pair	Approx. 800 lbs.
Ship Weight	Approx. 1100 lbs.
Woofers	One 12", One 10"
Mids	Two 7"
Tweeter	One 1" Inverted Titanium Dome
Freq. Response	20Hz to 21kHz (-3dB)
SPL, dB (1W/1M)	93dB
Min Amp Power	7 WPC
Impedance, Ohms	8 Nominal/3 Minimal



PHASE DELAY CORRECTION TABLE 1

Measured Ear Height- (distance from floor to center of ear)																
		36	38	40	42	44	46	48		36	38	40	42	44	46	48
L i s t e n i n g	8'0"	S+12	S+10	S+7	S+4	S+2	14	11		16'4"	S+2	S+1	15	14	12	11
	8'4"	S+11	S+9	S+6	S+4	S+1	14	11		16'8"	S+2	S+1	15	13	12	11
	8'8"	S+11	S+8	S+6	S+3	15	13	11		17'0"	S+2	S+1	14	13	12	11
	9'0"	S+10	S+8	S+5	S+3	15	13	11		17'4"	S+2	S+1	14	13	12	11
	9'4"	S+9	S+7	S+5	S+3	15	13	11		17'8"	S+2	S+1	14	13	12	11
	9'8"	S+9	S+7	S+5	S+2	15	13	11		18'0"	S+2	15	14	13	12	11
	10'0"	S+8	S+6	S+4	S+2	15	13	11		18'4"	S+1	15	14	13	12	11
	10'4"	S+8	S+6	S+4	S+2	15	13	11		18'8"	S+1	15	14	13	12	11
	10'8"	S+7	S+5	S+3	S+2	15	13	11		19'0"	S+1	15	14	13	12	11
	11'0"	S+7	S+5	S+3	S+1	14	12	11		19'4"	S+1	15	14	13	12	11
	11'4"	S+7	S+5	S+3	S+1	14	12	10		19'8"	S+1	15	14	13	12	11
	11'8"	S+6	S+4	S+3	S+1	14	12	10		20'0"	S+1	15	14	13	12	10
	12'0"	S+6	S+4	S+2	S+1	14	12	10		20'4"	S+1	15	14	13	11	10
	12'4"	S+5	S+4	S+2	15	14	12	10		20'8"	S+1	14	13	12	11	10
	12'8"	S+5	S+4	S+2	15	14	12	10		21'0"	15	14	13	12	11	10
	13'0"	S+5	S+3	S+2	15	13	12	10		21'4"	15	14	13	12	11	10
	13'4"	S+5	S+3	S+1	15	13	12	10		21'8"	15	14	13	12	11	10
	13'8"	S+4	S+3	S+1	15	13	12	10		22'0"	15	14	13	12	11	10
	14'0"	S+4	S+3	S+1	15	13	12	10		22'4"	15	14	13	12	11	10
D i s t a n c e	14'4"	S+4	S+2	S+1	14	13	11	10		22'8"	15	14	13	12	11	10
	14'8"	S+4	S+2	S+1	14	13	11	10		23'0"	15	14	13	12	11	10
	15'0"	S+3	S+2	15	14	13	11	10		23'4"	15	14	13	12	11	10
	15'4"	S+3	S+2	15	14	13	11	10		23'8"	15	14	13	12	11	10
	15'8"	S+3	S+2	15	14	12	11	10		24'0"	15	14	13	12	11	10
	16'0"	S+3	S+1	15	14	12	11	10								

