

OWNER'S MANUAL



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WILSON AUDIO SPECIALTIES, INC

INTRODUCTION



Section 1 - Wilson Audio Theater Comes Home (WATCH®)

If your passion is home theater, and you have sought the full sensory experience created as your eyes absorb the vision and your skin awakens to the power of the sound, Wilson Audio has your answer. Introducing WATCH.

While all Wilson speakers are designed to take full advantage of today's popular multi-channel formats, WATCH is the first Wilson system designed from the ground up to excel specifically at home theater performance. Best of all, it comes in a package as small or as large as you desire.

The fact is, you haven't truly experienced home theater until you've felt the impact, power, and passion of a film score the way the director intended it, and no company will deliver this passion like Wilson Audio. That's why, in the past decade, so many blockbuster hits have been mixed, composed, or recorded using Wilson Audio loudspeakers.

Section 1.1 - Applications

For more than 20 years, Wilson Audio loudspeakers have set the standard for performance in a wide variety of two-channel audio and multi-channel home theater applications. The WATCH surround system was designed to offer a more compact and versatile home theater option for those with limited space. Purchasing a surround system design by Wilson Audio ensures the very best possible integration with your Wilson Audio stereo loudspeakers. The WATCH system is designed to integrate with the Sophia, WATT/Puppy, MAXX, and, in many instances, the Alexandria.

Using structural enclosure, speaker driver, and geometric time alignment technologies developed for the WATT/Puppy, MAXX and the X-1 Grand SLAMM, the WATCH system is truly the thoroughbred of its class and is well suited to carrying on the heritage of Wilson Audio speakers.

One of Wilson Audio's most important criteria in speaker development is that a speaker meets the accuracy and dynamic demands of studio monitoring, analytical

hardware and software evaluation, and, of course, critical music and theater sound track listening. Therefore, the WATCH system has been designed to deliver all of the speed, dynamics, and musical accuracy to satisfy even the most demanding music lovers. The WATCH system will provide years of satisfaction whether listening to two-channel audio, multi-channel audio, or today's latest movie sound track technology.

The WATCH has also been engineered to take full advantage of today's multi-channel surround formats, especially the latest AC-3 (Dolby Digital) and DTS (Digital Theater Systems) formats. The WATCH will provide the speed, dynamic impact, and realism you have come to expect in a high performance home theater system.

Section 1.2 - WATCH Package

WATCH Center

Specifically designed to excel at center channel functions, WATCH Center is extremely dynamic with high sensitivity and robust power handling. Unlike most center channels, it provides listeners not only with optimal on-axis response, but also smooth, linear, off-axis performance. This is, in part, a result of Wilson PDC™ (Phase Delay Correction) technology first developed for the WAMM® and X-1 Grand SLAMM systems and later applied to the rest of the Wilson line. PDC allows for optimal tuning of a loudspeaker for various listening distances and heights and gives listeners much greater control over their sound.



Figure 1 - WATCH Center

The WATCH Center was designed from the ground up as a center channel. It is not merely a standard speaker that was tipped onto its side. The center channel is voiced and optimized to truly represent dialogue for movies as well as music and vocals when used in a multi-channel audio setup.

Of course, WATCH Center lives up to Wilson's high standards of cutting edge design, superior build quality, and stunning sonic performance. WATCH Center is shielded and is available with a matching stand.

WATCH Surround

WATCH Surround is a perfect example of performance disproportionate to size. With strong power handling capacity and low end frequency response reaching 45Hz, this speaker will take your surround sound to new heights. Unlike most surround speakers, WATCH Surround is more than a noisemaker. It brings accuracy, dynamics, and emotion to your theater, and with its gorgeous WilsonGloss™ finish, it looks right at home on your wall.

The greatest challenge for any wall-mount loudspeaker is accounting for the deleterious interaction with the wall and ceiling, as well as degradation caused by the mount itself. This causes frequency nonlinearities - accentuating some frequencies and effectively masking others.

WATCH Surround minimizes wall/ceiling resonant interactions through its advanced mounting system. Using state of the art materials technology first developed for the X-1 Grand SLAMM, WATCH Surround provides stunning results.

The Surround is mounted to its bracket by strategically located spikes, further reducing wall interaction and resonance. The Surround can also be rotated towards the listening position, offering improved integration with the front speakers and better imaging.



Figure 2 - WATCH Surround

WATCH Dog Subwoofer

The WATCH Dog subwoofer is the culmination of over twenty years of experience at Wilson Audio in building high output, ultra-low distortion woofer and subwoofer products. It was designed to further extend and enhance the bottom octave performance of music and theater systems without compromising speed, tonal accuracy or phase coherency. The WATCH Dog will seamlessly and coherently integrate with any loudspeaker, whether you are augmenting a two-channel system or as the LFE channel in a surround system.

Like other WATCH products, along with music system applications, the WATCH Dog was designed to take advantage of today's multi-channel formats. The unique tune-ability of the WATCH Dog via its comprehensive control panel allows the WATCH Dog to be optimized for both music and multi-channel applications, even within the same system. The control panel's adjustments allow critical setup, ensuring the best possible performance in a wide range of rooms and with a variety of speakers.

CONCLUSION

Finally, a surround system designed and manufactured with the same commitment to excellence that has characterized all products from Wilson Audio. The WATCH system combines Olympian structural, design, and finish considerations with superior sonic quality. It is this approach that distinguishes Wilson Audio products. As a part of a truly high-end multi-channel system, or in a music system, the WATCH products offer unparalleled performance, quality of build, and longevity. Wilson Audio delivers a product that maintains the strictest structural tolerances, durability, and reliability. You will have consistent, repeatable performance, unaffected by the climatic conditions, anywhere in the world. The WATCH Surround, as well as the other WATCH products, will provide an experience with film or music only obtainable through Wilson products.

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WATCH
Surround

IN YOUR ROOM



In Your Room

ALCON
Audio

Note: The following section presents conceptual and practical information on room acoustics. These concepts for two-channel audio become even more important when dealing with multi-channel audio or home theater. The presence of two or more speakers in a room only increases the amount of setup difficulties and speaker interactions. Careful study of the room acoustics principles herein, followed by evaluating your own room configuration, will result in a marked improvement in the performance of your multi-channel system.

Section 2 - In Your Room

Wilson Audio loudspeakers are unmatched in their ability to reproduce the musical event. The WATCH System is truly state of the art. However, room acoustics and boundary interactions affect the sound of a loudspeaker to such a large degree that poor setup can seriously degrade your enjoyment of even the finest loudspeaker.

Therefore, we offer the following section, which will present some guidelines on room acoustics and their interactions with loudspeakers. While we will also outline some detailed suggestions on the setup of the WATCH System and WATCH Surround, we strongly suggest that you have your local Wilson Audio dealer perform the final speaker “voicing” with you. Wilson dealers are specially trained in setting up Wilson loudspeakers and will ensure that you realize the full value of your purchase.

Section 2.1 - Final Listening Room Setup (Voicing) System Setup: Multi-Channel

We recommend that you setup your multi-channel system as follows:

- Perform an acoustical analysis of your existing room.
- Find and mark the zones of neutrality for each of the speakers in the WATCH system (more specific details are found below).
- Follow the setup procedures outlined in Section 3 and your left and right channel owner’s manual.

- Perform the final system setup and fine tuning steps outlined in Sections 4.

System Setup: Two-Channel

We recommend that you setup your on-wall speakers as follows:

- Perform an acoustical analysis of your existing room.
- Find and mark the zones of neutrality along the wall for each channel.
- Decide on a mounting location within the marked zone of neutrality.
- Follow the setup procedures outlined Section 3.
- Perform the final system setup and fine tuning steps outlined in Section 4.

Zone of Neutrality: Multi-Channel

The zone of neutrality is a location in your room where the speakers will sound most natural. This location is where the speakers interact the least with the room. (We realize that the location of your WATCH speakers might not be very flexible.) We recommend that you wait to spike your speakers until the final system setup is completed in Section 4.

To find the zone of neutrality do as follows:

1. Stand against the wall **BEHIND** the location where you intend to position your loudspeakers. Speaking in a moderately loud voice and at a constant volume, project your voice out into the room. Your voice will have an overly heavy, “chesty” quality because of your proximity to the rear wall.

2. While speaking, slowly move out into the room, progressing in a direction parallel to the side wall. It is helpful to have another listener seated in the listening position to assist you during this process. Listen to how your voice “frees up” from the added bass energy imparted by the rear wall boundary. Also notice that your voice is quite spatially diffuse (to your assistant, your voice will sound spatially large and difficult to localize) as you begin to ease away from the rear wall.
3. At some point during your progression forward into the room, you will observe a sonic transition in your voice; it will sound more tonally correct and less spatially diffuse (your assistant can now precisely localize the exact origin of your voice). When you hear this transition, you have entered the inner edge of the “Zone of Neutrality.” Place a piece of tape on the floor to mark this location. Although it will vary from room to room, the zone in most rooms begins between two and a half or three feet from the rear wall.
4. Continue to walk slowly away from the rear wall. After some distance, usually one to two feet past the first piece of tape, you will begin to hear your voice lose focus and appear to reflect (echo) in front of you. This is caused by the return of the room’s boundary contribution; your voice is now interacting with the opposite wall. At the point where you begin to hear the reflected sound of your voice, you have reached the inner edge of the “Zone of Neutrality.” Place a piece of tape on the floor and mark this location. The distance between the “inner” and “outer” edge tape marks is usually between eight inches (for small, interactive rooms) and three feet (for large, more neutral rooms).
5. Now position yourself against the side wall perpendicular to the intended speaker location. Stand between the two tape marks. Using the same pro-

cedure as above, begin moving into the room toward the opposite side wall, progressing between the two pieces of tape. As above, listen for the point in the room where your voice transitions from bass-heavy and diffuse to neutral. Mark this point with tape. Continue your progression until there is an obvious interaction with the opposite wall in front of you, and mark this point with tape. The four pieces of tape now form a rectangle that establishes the Zone of Neutrality for the loudspeaker located on that side of the room. Using the four marks as your guide, tape an outline to define the boundaries of the rectangle.

6. Repeat this process for each speaker location individually. These are your Zones of Neutrality, one for each channel.

Note: The more reflective or “live” sounding the room is, the more difficult it will be to detect the changes in your voice; thus, you may have to repeat this process until the zones have been determined.

Zone of Neutrality: Two-Channel

The zone of neutrality is the speaker location where your speakers sound most natural and interact the least with the room. We realize that the location of your on wall speakers is not very flexible. Nevertheless, careful selection of the mounting location will improve the performance of the speakers. To find the zone of neutrality do as follows:

1. Stand on a chair against the wall in the general location where you would like to place the speakers. Speaking in a moderately loud voice and at a constant volume, project your voice out into the room.
2. As you move down the wall, (you will need to have another listener seated in the listening position to aid you in the evaluation), listen to how the voice “frees up” from the added bass energy imparted by the ceiling boundary.

3. When you hear the voice “free up” from this artifact, place a piece of tape on the wall to mark this location.
4. Repeat the procedure coming off of the side walls. Again, listen for your voice to lose the added bass energy from the wall behind you and continue until there is an obvious interaction with the opposite wall in front of you. Do each side or speaker location individually. What you should have at the end of this procedure are two rectangles on the wall (usually near the corners), which is your zone of neutrality for each channel.

Note: The more reflective or “live” sounding the room is, the more difficult it will be to detect the changes in your voice. Thus, you may have to repeat this process until the zones have been determined.

Section 2.2 - Room Reflections

There are three commonly encountered room reflection problems: slap echo, standing waves, and comb filter effects.

Slap Echo

Probably the most obnoxious form of reflection is called “slap echo.” In 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 primarily in two ways:

- Adding harshness to the upper mid-range and treble through energy time storage.

- Destroying the delicate phase relationships which help to establish sound stage and image localization cue.

Nonparallel walls do not support slap echo, but rather allow the sound to diffuse.

Slap echo is a common acoustical problem in typical domestic listening rooms because most of these rooms have walls of a hard, reflective nature, occasionally interrupted by curtains or drapes. Slap echo can be controlled entirely by the application of absorptive materials to hard surfaces, such as:

- Sonex
- Airduct board
- Cork panels
- 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 "duller," much heavier in the bass, less "bright and alive," and "quieter." These changes usually make the room more pleasant for conversation, but sometimes render it too dull in the high frequencies to be musically involving. Diffusers, on the other hand, tend not to change the high frequency tonal balance characteristic of the room, but make the sound more "open." A combination of absorptive and diffusive treatments is usually the best approach.

Standing Waves

Another type of reflection phenomenon is standing waves. Standing waves cause the unnatural boosting of certain frequencies, typically in the bass, at certain discreet locations in 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 are primarily, as follows:

- Tonal balance - bass too heavy
- Low-level detail - masked by long reverberation time - low frequency standing waves
- Sound staging - low frequency component of image shifted

Standing waves are more difficult to correct than slap echo because they tend to occur at lower frequencies, whose wave lengths are long enough to be ineffectively

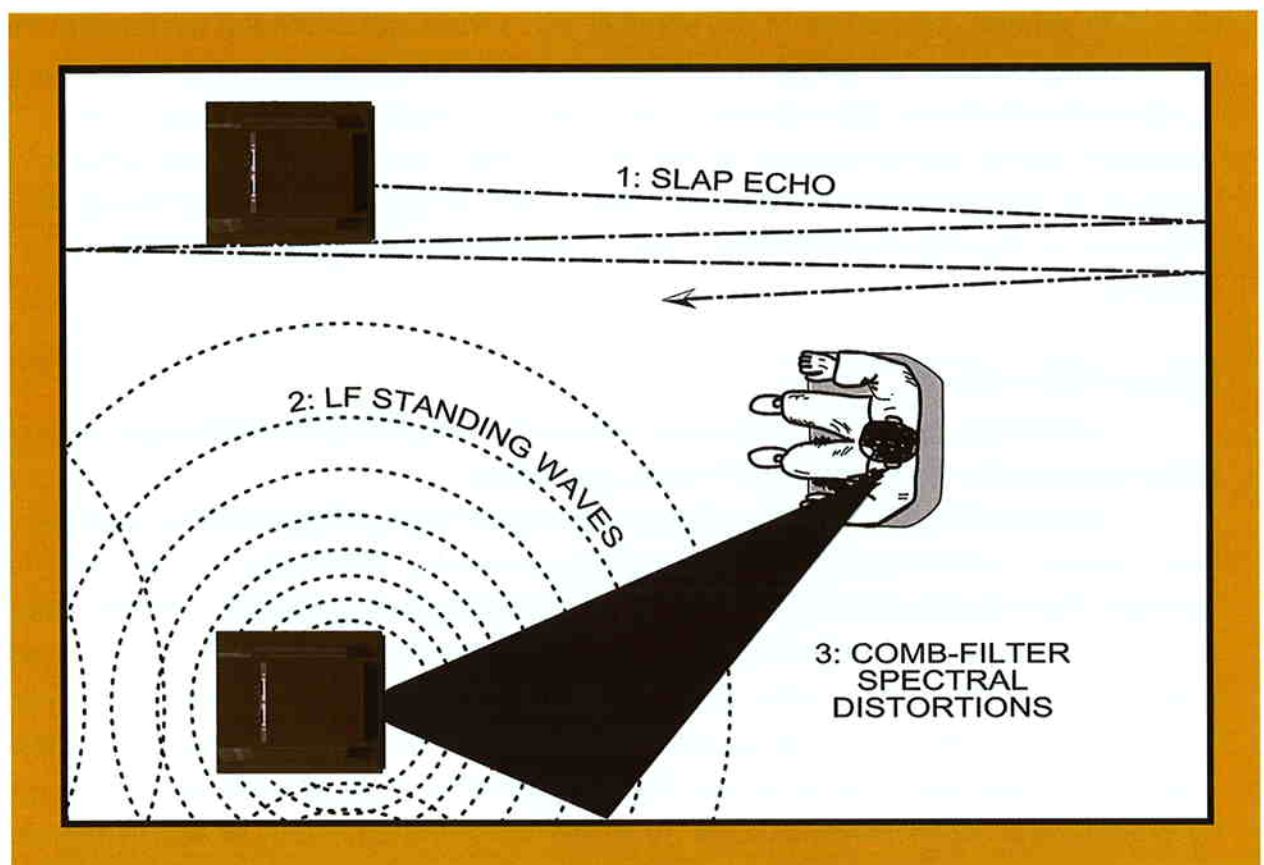


Figure 3 - Common Room Reflection Problems

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 as little as one inch can dramatically alter the tonal balance of a system affected by standing wave problems. Fortunately, minor low frequency standing waves are sometimes well controlled by positioning 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 large window and door areas.

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 so that the standing waves caused by the distance between one speaker and 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

A special type of standing wave, noticeable primarily in the midrange and lower high frequencies, is the so-called "comb filter effect."

Acoustical comb filtering occurs when sound from a single source, such as a loudspeaker, is directed toward a microphone or listener at a distance. The first sound to reach the microphone will be the direct sound, followed by 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. There is augmentation at other frequencies where the direct and the reflected sounds arrive in phase. Because it is a function of wave length, the comb filter effect will notch out portions of the audio spectrum at linearly spaced intervals.

The subjective effect of comb filter effects (such as is shown in Figure 3) 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 usually caused by side wall reflections. They are best controlled by very careful speaker placement and by the placement of Sonex or air duct panels applied to that part of the wall where the reflection occurs.

Section 2.2 - Resonance

Resonance in listening rooms is generally caused by two sources:

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

Structural Resonance

Structural resonances 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 heel of your hand or stomping on the floor. If it is a wooden floor, this is done to detect the primary spectral center of the resonance. 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 resonances 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. Short of actually adding additional layers of sheet rock or bookshelves to flimsy walls, there is little that can be done to eliminate wall resonances.

Air Volume Resonance

The volume of air in a room will also resonate at a frequency determined by the boundary location and size of the room. Larger rooms will resonate at a lower frequency than will smaller rooms. Air volume resonances, wall panel resonances, and low frequency standing waves combine to form a low frequency coloration in the sound. At its worst, the result is a grossly exaggerated fullness which tends to obscure detail and distort the natural tonal balance of the speaker system. Occasionally, however, a small-amplitude resonance can add a desirable warmth to the sound - an addition some listeners prefer. Tube traps, manufactured by the ASC corporation, have been found to be effective in reducing some low frequency room colorations. Custom designed and constructed bass traps, such as perforated Helmholtz resonators, provide the greatest degree of low frequency control.

Section 2.4 - Your Room

Room Shapes

Standing waves are pressure waves propagated by the interaction of sound and opposing parallel walls. This interaction creates patterns of low and high acoustical pressure zones that accentuate and attenuate particular frequencies. Those frequencies are dependent on room size and dimension.

There are three basic shapes for most rooms: square, rectangular, and L-shaped (see Figure 4).

A perfectly square room is the most difficult room in which to set up speakers. By virtue of its shape, a square room is the perfect medium for building and sustaining standing waves.

These rooms 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 create several standing wave nodes, which will have different standing wave frequency exaggerations depending on where you are sitting. Additionally, these long rooms are often

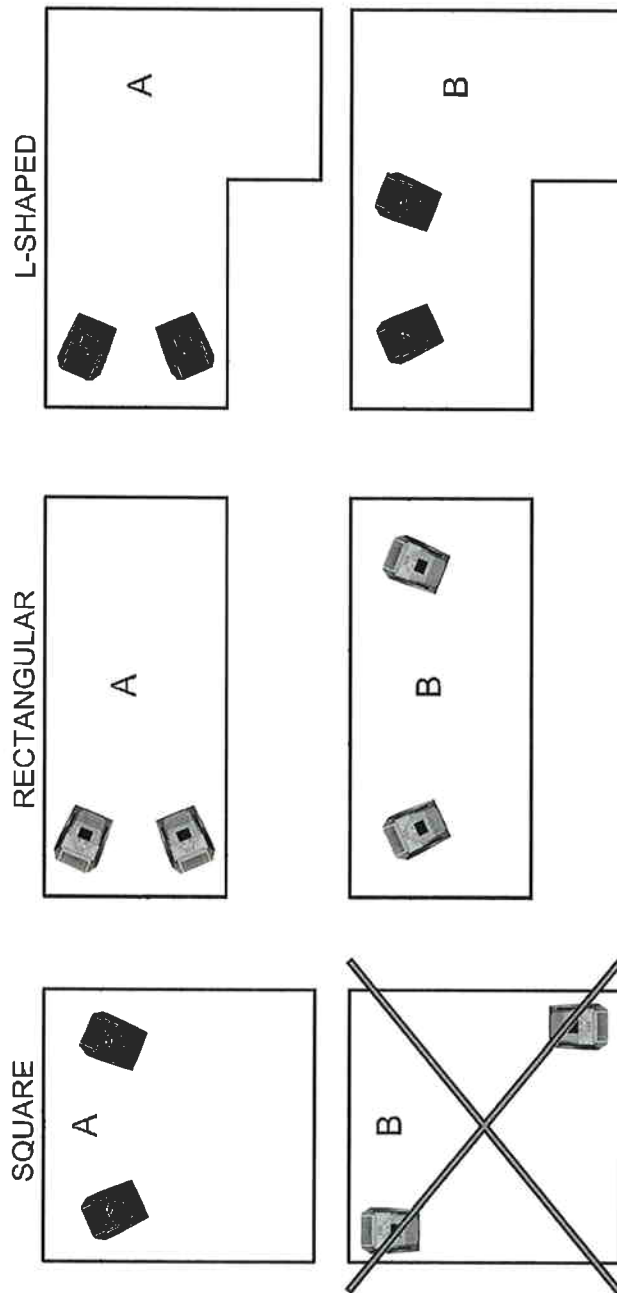


Figure 4 - Possible Placement of Main Speakers within Various Room Shapes

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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 L, or they should be along the longest wall. 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 (see Figure 4).

WATCH System in a Dedicated Home Theater

Home theaters can be organized many different ways. Some use rows of couches. Others use rows of multiple chairs.

In addition to watching movies, most users want to listen to two-channel music at the highest quality possible. It is desirable, therefore, to choose a single optimum seating position in a home theater and build the rest of the seating positions around this position.

If your optimum position is located on a couch, you should center the loudspeakers on the center position of the couch.

If the seating area consists of multiple rows of chairs, the second row should be optimized for the best sound quality. Odd numbers of chairs arranged in rows work best as this will allow a single chair to be positioned in the center. This approach will also provide the best overall sound for the greatest number of seats.

Speaker Placement Versus Listening Position

The location of your listening position is as important as the careful setup of your speakers. 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 more than 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. This approach will not yield the finest sound. Carefully consider your listening position. Our experience has shown that any listening position that places your head closer than 14" from a room boundary will diminish the sonic results of your listening.

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 sidewalls as a sonic influence in your system. Speakers placed too close to the sidewalls 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 a loudspeaker is 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 these effects. Overcompensated systems are sometimes pleasing in the short-term, but long-term satisfaction is always achieved through proper balance.

Center Channel

After determining the general area for the Left and Right Channels, determine the best place for your Center channel. The following center channel configurations are possible:

- On the floor with the speaker angled up towards the listener.
- Mounted on a stand with no upward rotation.
- Mounted on a stand with longer spikes in the front of the stand and shorter spikes in the back, allowing the stand and speaker to be rotated up toward the listener.
- Mounted above the TV on a custom made bracket.
- Mounted upside down on the ceiling, angled down towards the listener.

With the exception of Center channels mounted on the ceiling, each of these options allow for some fine tuning of the Center channel placement. If you are mounting the Center channel on the ceiling, be sure to choose the location carefully as you will not be able to easily adjust it once it is mounted. A poor placement of the Center channel will hamper its integration with the rest of the system. As a general rule, the distance from the main Left and Right channels, as well as the Center channel (as measured from the tweeters) should be equal in their relationship to the listening position. This maintains the time coherence of the three front loudspeakers. Ultimately, the Center channel phase delay correction will be made via the sliding tweeter module.

Wilson recommends that the Center channel be positioned as centrally between the Left and Right speakers as possible. Using the Wilson Audio Setup Procedure, experiment with the fore to aft placement of the center channel. This process will help you find the location that offers the smoothest left, right, and center channel integration. More information on this process is included in the “Zone of Neutrality” portion of this section.

Surround Channel

Wilson Audio has done everything possible to eliminate the boundary interactions caused by mounting a speaker onto the wall. The mounting bracket allows for

significant improvements in detail, speed, and clarity. The surround channels will perform well in almost any location in which they are placed. The mounting bracket and the careful design of the surround channel has eliminated most of the sonic problems encountered when placing a standard speaker too close to a boundary. Nevertheless, we have performed extensive testing on the surround channel and found that significant improvement on speaker linearity and integration can be achieved by careful selection of the surround channel mounting location.

We realize that the location of the surround channel is generally set by the architecture of the room. However, if you have some flexibility in locating your surrounds, we suggest that you use WASP to find the zone of neutrality. Be sure to listen for room modes and frequency response peaks or dips.

WATCH Dog Subwoofer

Because the WATCH Dog's frequency range is limited to the sub-frequency bass range, its placement requirements are slightly different than for a full frequency speaker. The ideal position of the WATCH Dog subwoofer is somewhat dependent on its primary use.

In home theaters where the WATCH Dog is used as the Low Frequency Effects (LFE) Channel, it may be located in a variety of positions, depending on architectural considerations. In general, the lower frequency range will be reinforced by room boundaries and corners. Since most of the information contained in the LFE channel is in the sub-frequency bass range, with little information in the mid and upper bass, there are some advantages to placing the WATCH Dog near the room boundaries or near a corner. Some care is needed to avoid introducing upper-bass colorations caused by corner placement. While surround processors provide the low frequency equalized signal for the LFE Channel, it has been our experience that in some systems it is desirable to use the Low Pass crossover on the WATCH Dog Control Panel to additionally limit upper bass range. This is particularly important and useful when the WATCH Dog is placed in the corner. Since all Wilson Audio Speakers are phase and time coherent, it is very important to time align the WATCH Dog in the room using the Phase Control on the Control Panel.

The WATCH Dog subwoofer was engineered to extend and enhance the low frequency performance of music systems without compromising the phase and time accuracy of Wilson loudspeakers. The powerfully versatile Phase control on the Control Panel allows the WATCH Dog to be optimized in the time domain within the listening environment. Correct Phase setup of the WATCH Dog allows proper integration in the time domain between the WATCH Dog and the main loudspeakers, resulting in greater frequency linearity, dynamic impact, sound-stage accuracy, and speed.

In music systems, to achieve the most coherent spacial and tonal presentation, it is best to position the WATCH Dog behind the plane of the main speakers. Placement in front of the main loudspeakers, or behind the listener, can potentially compromise the phase accuracy in two-channel music systems. This will result in a less coherent presentation of the spatial, dynamic, and tonal information. Successful integration with the main loudspeakers is more easily achieved when the WATCH Dog is placed between and behind the two main speakers or in the left or right corners behind the main loudspeakers. Corner placement provides the greatest low frequency reinforcement, but care is required to avoid upper bass colorations resulting in less coherent integration with the main speaker. Corner induced upper-bass colorations can be reduced by lowering the Low Pass Filter frequency crossover point. Further correction of room-induced anomalies in the in-room bass response can be minimized with the WATCH Dog's unique Bass Equalization Control.

The WATCH Dog can be used simultaneously as both the LFE channel subwoofer in the surround mode and as the subwoofer to the main speakers when listening to music. This is achieved by switching between the "Line" and "Processor" inputs on the Control Panel. Low and High Pass filter settings are also switchable, allowing the WATCH Dog to be optimized for both music and home theater - even within the same system.

Section 2.5 - Initial Setup Summary

Ideally, the speakers should not be positioned too far from the listener, if maximum resolution of low level detail is required (near-field monitoring). 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, preferable so that the listener at his seated position can barely see the surface of the inner side panel of the left and right speakers as he faces the speaker. It is recommended that a distance of 2-3 feet, and possibly more, be maintained between the front panel of the left and right speakers and reflective side walls. Use of sound absorbent materials may reduce the space requirement somewhat. Experiment for each room.

Be sure to place the Center channel even with or slightly behind the front inner edge of the left and right speakers.

The Surround channel should be mounted on the wall in a location that has the least amount of reflections and standing waves. The location should have natural sound if you stand next to it and project your voice into the room.

The WATCH Dog has a great degree of flexibility in its placement. The final location will be determined by aesthetics and user taste, balancing the quality verses the quantity of bass.

WILSON AUDIO SPECIALTIES, INC

MOUNTING THE SURROUND



Mounting the
Surround

Note: Before setting up the Surround channels, study carefully Section 2 on room acoustics and initial setup information. They provide valuable information on determining the ideal room locations for your speakers.

Section 3 - Mounting the Surround

Before You Begin

- Inspect the speakers for shipping damage. Report any damage to shipping company.
- Read carefully the safety warning on page 39. This will help you determine if you will need to re-enforce your wall prior to installing the Surrounds. Failure to read this section could result in the speaker falling from the wall causing property damage or personal injury.

You will need the following items:

- Supplied hardware kit
- Tape measure
- Known listening position
- Hand Drill

Setup Procedure

Note: Be careful not to touch the driving elements when you are moving your Surround channel. You may damage the driver.

1. Gently slide the Surround channels out of the crate. Remove the plastic outer bag. Do not remove the protective film until you are ready to place the surrounds onto the mounting bracket.

Note: Do not cut the bag off of the Surround channels. You may mark the cabinet or damage a driving element. Additionally, you will need this bag, if you need to repackage the Surround. Save your shipping crates and all packing materials. They are specifically designed to prevent harm from coming to your

Surround channels.

2. Select the appropriate locations for the Surround speakers (see Section 2).
3. Take a moment familiarize yourself with the mounting bracket. Note the locations for mounting hardware, spikes, instruction plate and speaker wire (see Figure 5) below. Notice that with some advanced planning you can conceal your speaker cable by feeding it through the mounting bracket.

Note: There are two geometries of the Mounting Brackets, clockwise (CW) and counter clockwise (CCW - See Figure 5 below). They refer to the direction of adjustment rotation possible for the Surround speakers. Usually you will want to rotate the speakers toward the listening position.

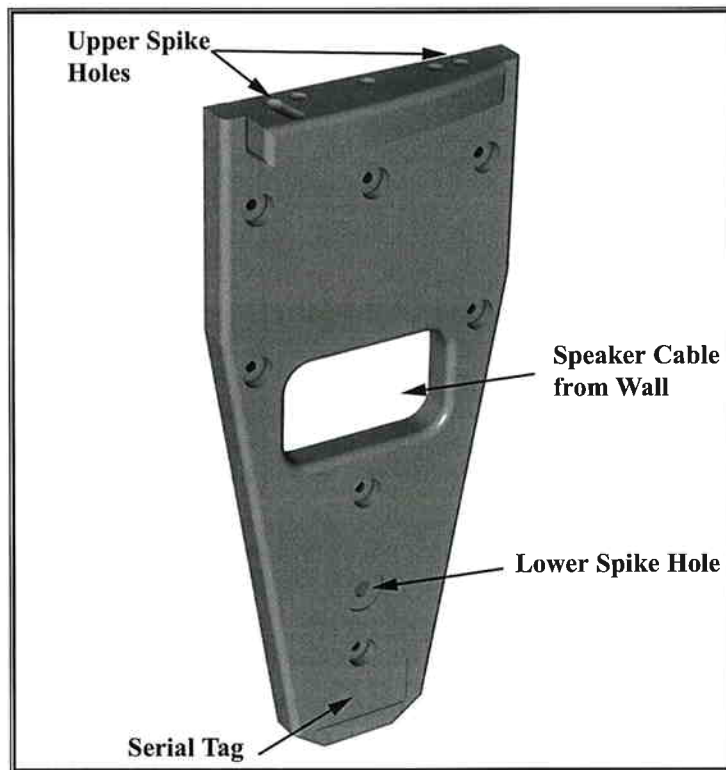


Figure 5- Surround Mounting Bracket

Section 3.1 - Safety Warning

SERIOUS INJURY MAY OCCUR IF YOU DO NOT FOLLOW THESE INSTRUCTIONS CAREFULLY.

This wall mounting bracket was designed to be mounted into wood or concrete. The Surround channel weighs over 50 lbs. and requires that the mounting plate be firmly attached to the wall. We recommend that you have your professional home theater installers mount the Surround channel to the wall. They can make sure that the mounting plate is properly attached to the wall. Before any holes are drilled you must make sure that there are no electrical wires in the wall behind the speaker. If you cannot verify the location of all of the electrical wiring, do not proceed with the installation. Contact your contractor or an installation specialist.

Mounting Surface Evaluation

Is your wall strong enough to support the Surround speaker? Wilson Audio has provided two different wall anchors depending on whether you are mounting into wood or concrete. We have evaluated these anchors and found them to securely attach the wall mounting bracket to the wall in most domestic environments in the U.S.A (specifically to cement foundations, 2"x4" studs, or 2 layers of reinforced plywood). These attachments may also work well in other countries. Because of the large variation in wall construction from country to country, we cannot predict their performance outside of the U.S.A. We recommend that you have a professional evaluate your particular wall construction and determine the ideal mounting hardware.

Section 3.2 - Mounting the Wall Bracket

The Surround channel mount has been designed to mount into concrete or at least 1.5" thick wood. Depending upon your wall construction, you may need to reinforce the wall before attaching the mount to the wall. Use care when attaching the wall mount. If it is not attached correctly, it may fall and cause injury.

Marking Location

- Decide how the speaker cables will be routed to the speaker through the opening in the mounting bracket or from some other location).

Using the template provided, mark the mounting holes on the wall according to Figures 6 and 7 below.

- If you are mounting into concrete, mark the outer 5 holes.
- If you are mounting into a wood surface, mark the 3 center holes.
- If you are not mounting into a wall stud but into a wood support, mark the outer 5 holes.

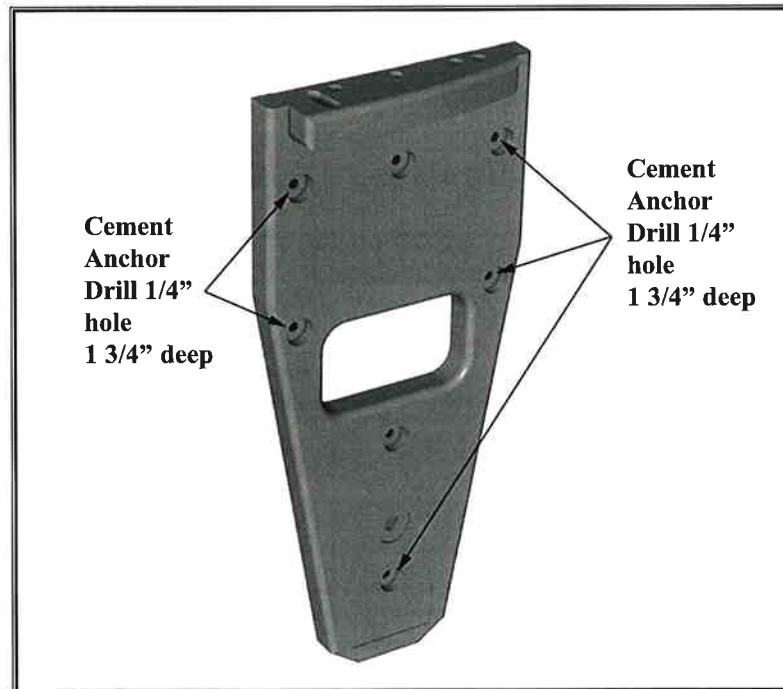


Figure 6 - Mounting Locations for a Concrete Wall

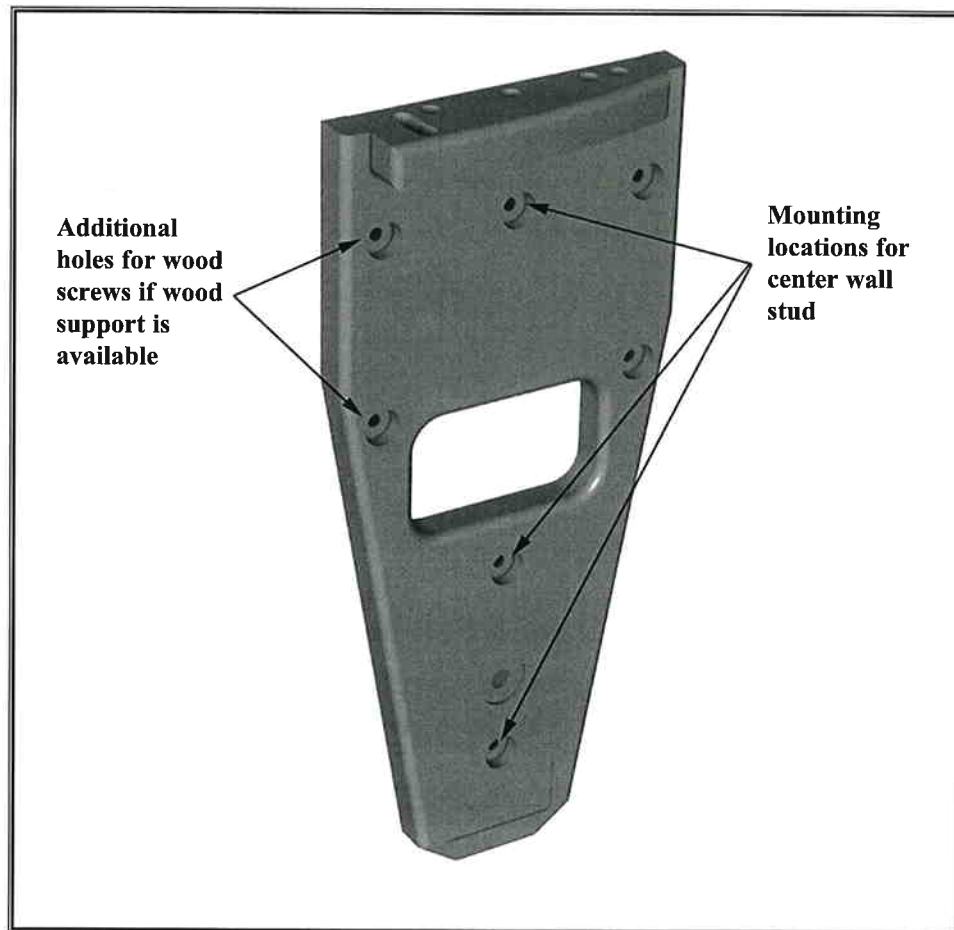


Figure 7 - Mount Locations for Wall Stud or Wood Support

Important: Know the location of all internal wall electrical wiring in order to avoid problems.

Drilling Pilot Holes

Drill the mounting pilot holes into the marked wall locations as follows:

- **Concrete:** drill a pilot hole 1/4" diameter and 1 3/4" deep using provided cement drill bit and a hammer drill.

- Wood: drill a 3/16" diameter by 1 3/4" deep pilot hole.
- Using the provided wall anchors (lag bolt or concrete anchor), washers and ratchet with socket, position the correct mounting bracket (CW or CCW) onto wall and screw into placing.
- Check that the mounting bracket is securely attached to the wall by pulling on the bracket. If properly attached, the bracket should be able to support 200+ lbs.

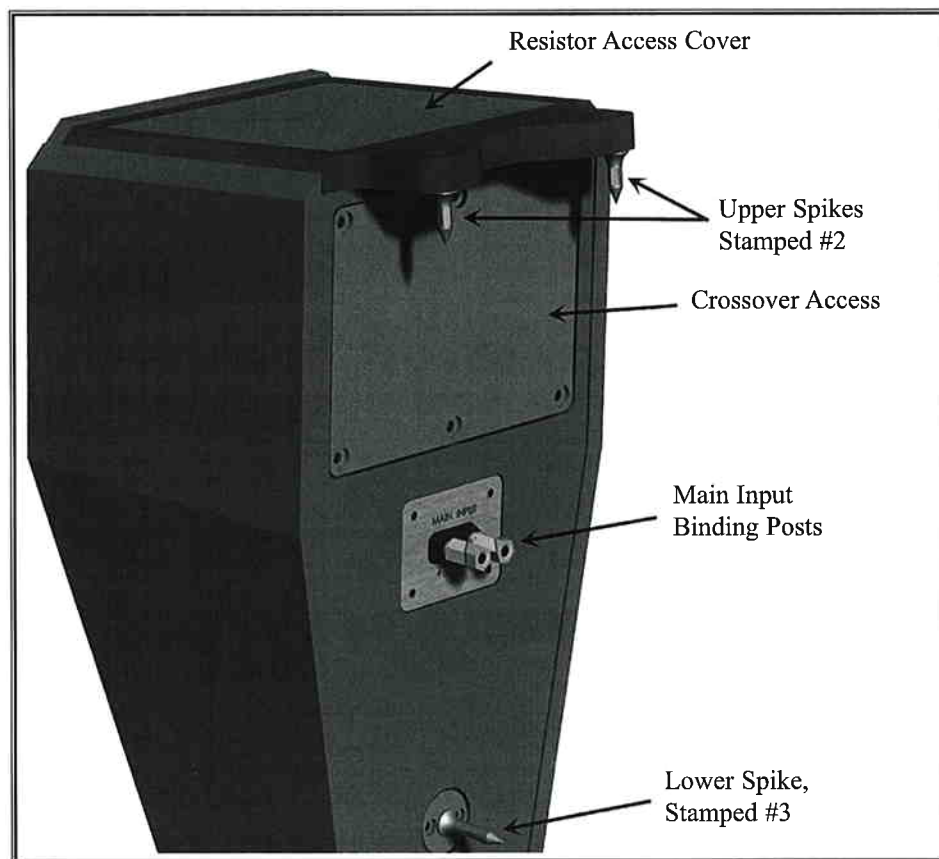


Figure 8 - Surround Hardware Attachment

Section 3.3 - Placing Surround

Attach the mounting spikes, as indicated in Figure 8, by screwing them into place until snug. Note the other hardware shown in the figure.

There are two different lower spike options, #2 and #3. Start with the Spike stamped #3. If needed, during final setup and system tuning you may change this spike to improve the Surround channel integration.

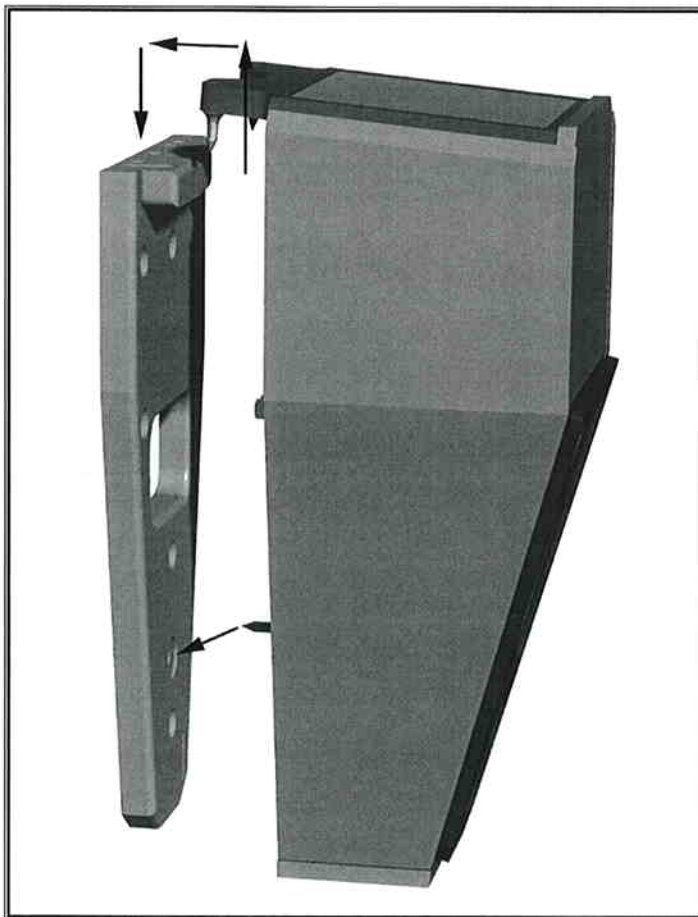
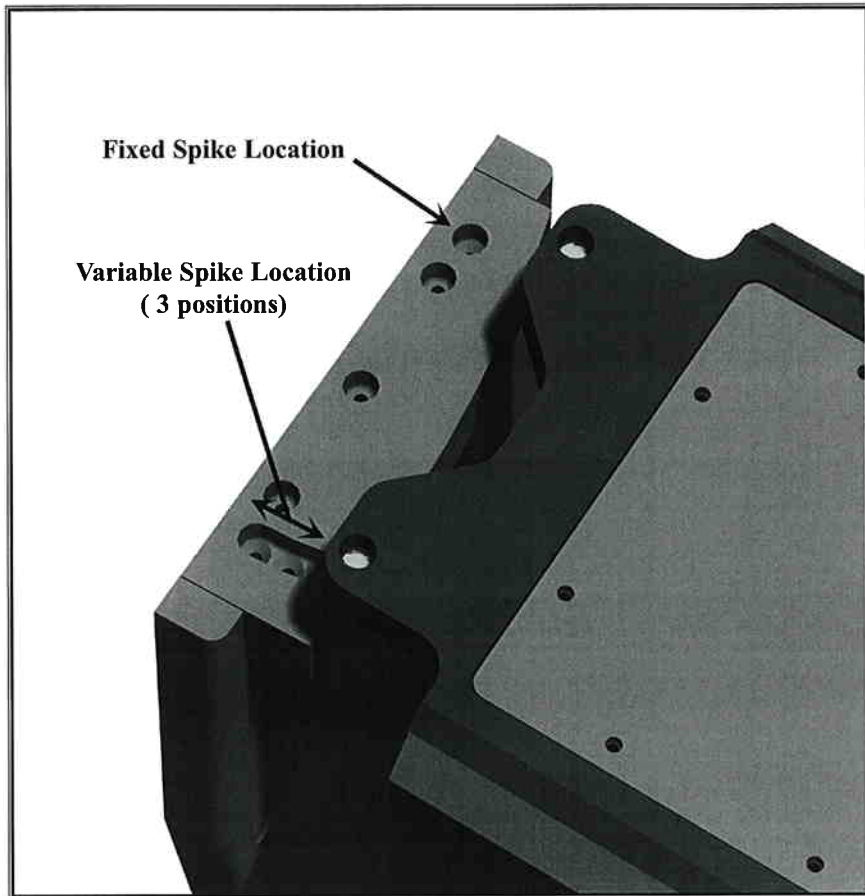


Figure 9 - Placing the Surround Channel onto the Mounting Bracket

Placing Surround on Bracket

Place the WATCH Surround onto the bracket by lifting it up, then into the upper spike holes. Finally, position the lower spike into the lower spike hole located on the mounting bracket (see Figures 9-11).

Note: The upper left spike location has 3 different possible locations, allowing for some rotation in towards the listening position. Place the spike into the spike hole that is closest to the wall. The final location will be determined during the final setup and voicing performed in Section 4.



**Figure 10 - Lowering Surround Channel
onto Upper Spikes**

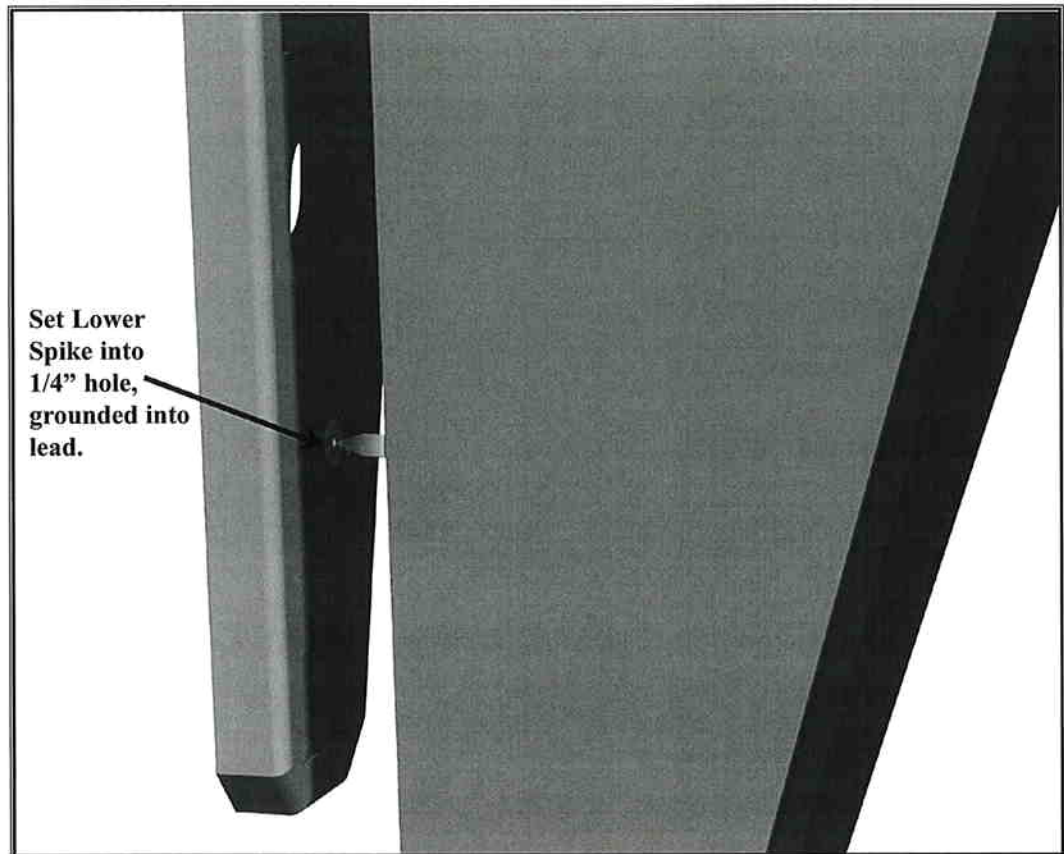


Figure 11 - Positioning Lower Spike

Section 3.4 - Connecting Speaker to Amplifier

- Turn off the power amplifier(s) and remove the AC power cord from the wall outlet.
- Lay out the speaker cables before hooking them up to the Surround channel. Make sure that there are no *kinks*, *twists*, or *right angle bends* in the cable. If you need to turn corners, attempt to use a gradual curve as opposed to a severe right-angled bend.
- Connect the negative (normally black) end of the speaker cable to the high current speaker binding post with the engraved “-” above it.

Note: Do not over tighten the binding post. Over tightening can cause the posts to break off.

- Connect the positive (normally red) end of the speaker cable to the high current speaker binding post with the engraved “+” above it.
- Plug your amplifier(s) AC power cord into the wall outlet.

Note: Always attempt to keep your pair of speaker cables the same length. This will ensure that the signals arrive at each speaker in the proper time frame as the signals travel the same distance to each speaker.

Speaker Cables

We recommend the use of the very highest quality loudspeaker cables, particularly those designed for high frequency propagation correction and phase linearity. Beware of “zip cord” type speaker cables, which will smear the sound from your Surround channels and limit their effective bandwidth. Also, do not use braided litz-type loudspeaker cables as they will cause an unnatural brightness to the sound, compromise sound staging performance, and may cause instability, oscillation, and damage in wide bandwidth solid state amplifiers.

Spade Lugs

The spade lugs of some of the high quality cables often used with the Surround channel are angled to reduce pressures on the cable during installation. Avoid the instinct to push the cable’s spade lug ends all the way into the Surround channel’s connectors (see Figure 12). Partial insertion of these angled spade lugs will actually improve the reliability of the connection. Flat lugs may be fully inserted to connectors before tightening.

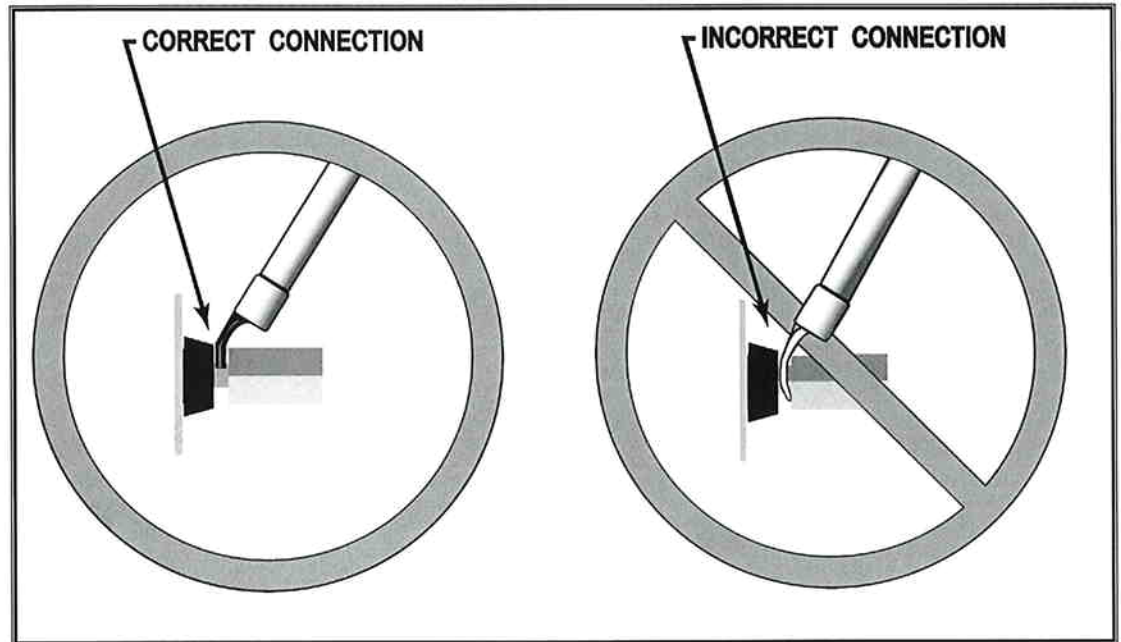


Figure 12 - Spade Lug Attachment

Section 3.5 - Surround Setup Completed

This completes the initial setup of your Surround channel. Final system tuning and voicing should be performed as outlined in Section 4. Section 4 will evaluate your entire speaker setup and allow you to make small modifications in speaker rotation and location (except, of course, the Surround channel), which will greatly improve the performance of your multi-channel audio or home theater system.

WILSON AUDIO SPECIALTIES, INC

FINAL SYSTEM TUNING AND VOICING



Wilson
Audio

Final System
Tuning and Voicing

Section 4 - Final System Tuning and Voicing

This loudspeaker placement method was developed by David A. Wilson, for Wilson Audio Specialties, to find optimum loudspeaker location in any given room within one hour. Participating in numerous audio/multi-channel/home theater shows with very different and difficult acoustic environments necessitated this procedure. Currently, all Wilson Audio dealers employ this setup procedure for their customers in order to quickly and predictably achieve the best performance from their systems (This procedure can be used successfully with ANY moving coil speaker system).

Proper system calibration is the most important step in the setup of your multi-channel/home theater system. The WATCH system offers increased resolution and overall system performance. This increased resolution allows you to fine tune your system, thus increasing overall performance, more than any other system available.

Fine tuning and “voicing” generally involve only small changes in location and rotation (or toe) of your multi-channel system. With proper calibration you will find that changes as small as 1 inch will have an impact on the performance of your system. The following sections step you through this fine tuning process. For multi-channel setup, refer to the information under “Left and Right Channels” beginning on page 52 and to “Integrating the WATCH System” beginning on page 54. For two-channel audio, see “Two-Channel Final Setup Procedure” on page 57. The multi-channel setup will be done as follows:

- Set up of Left and Right Channels, with all other speakers disconnected
- Add the Center Channel
- Add the Surround Channels
- Add the Subwoofer

Adding one speaker at a time will allow you to easily evaluate the integration with the system and make the necessary adjustments to fine tune the setup.

Section 4.1 - Left and Right Channels

Determining Front to Back Distance

The proper setup of the left and right channels is crucial for optimum system performance. If these speakers are not set up correctly, the entire system will suffer from poor integration. Please follow these steps carefully:

- Place the speaker in an appropriate location relative to your screen and listening area. Make certain to remove the grilles and spikes.
- Toe the speakers in so that you can just barely see the inside edge when seated in the primary listening position.
- Using removable masking tape, graph off the floor so that you can accurately move both speakers forward and backward in 1/2" increments.
- Place your multi-channel processor into stereo mode.
- Using a piece of full range music (dynamic with a lot of low frequency information) played at a moderately high level, take notes on the sound quality. Pay specific attention to upper and lower bass quality, dynamic contrasts, image height and focus.
- Move the speakers back or forward in 1" increments and then 1/2" increments.

Note: Moving the speakers BACK will generally increase low bass, sharpen focus, lower image height, and increase dynamics up to the point where you go too far, in which case the sound will start to lose these qualities in addition to becoming boomy and slow sounding. Moving the speakers FORWARD will-

increase air and bloom, raise image height, and generally increase the sense of space. Moving too far forward will cause the sound-stage to become unnaturally high with a lack of focus, dynamics, and low end extension.

- Find the front to back location where the bass is tight, dynamics are correct, image is well-focused, and you find the best sound staging.
- Mark this as your final front to back location.

Determining Side to Side Distance

The distance the speakers are from the side walls is very important. This distance determines the amount of comb filtering you will hear. In effect, you are “tuning” the comb filter interaction between the speaker and the wall. Perform the side to side analysis as follows:

- Place a piece of tape on the floor parallel to the front edge of the speaker and again mark off 1/2” increments side to side.
- Using only one channel/speaker at a time, you will now determine the optimum position with regard to the side walls.

Note: A high quality, solo piano recording works well for this step.

- While the music is playing, slowly move the speakers left or right 1” then 1/2” at a time until you achieve the best harmonic integrity.

You should not need to move the speaker any more than one inch left or right from the original location. Do this independently for each channel. What you will hear when the speaker moves into the correct location is a reduction of hardness and muddied harmonies from the piano.

Note: If you continue moving the speaker past this point, you will begin to hear again this fatiguing artifact.

When you have determined the optimum location for each speaker, mark it carefully, and make certain the toe-in is correct. When installing the spikes, the speakers may shift slightly, but you can move them precisely back to the correct location again using your tape markers.

Section 4.2 - Integrating the WATCH System

Note: Many processors offer a setup guide that steps you through the integration of each of the speakers. Specifically, setting speaker distances, delays and phase rotation. These adjustments are made via internal electrical adjustments. We have found that actual geometric changes, that is, moving the speaker location and rotation, offer improved results when integrating speakers. We recommend that you follow the steps outlined below, evaluate your system performance, and then make adjustments in the processor. Ultimately, you will, of course, need to make level adjustments via the processor.

Integrating the WATCH Center

The next step in the setup process is to fine tune the location and rotation of the Center channel. Do as follows:

- Place the Center channel centered between the main speakers and even with the front inner edge. Set the spikes as indicated in the Center channel manual.
- Follow the processor instructions on level adjustment. Adjust the level on the Center channel so it matches in level with the left and right channels. Do not be surprised if the Center channel requires 7-10 dB lower adjustment than the left and right channel.
- Make sure that only the front left, right, and Center channels are connected.
- With the Center channel spiked, put on a multi-channel audio track or

movie scene with which you are familiar.

- Play the selection and listen for the integration with the main speakers. As the audio moves across the three front speakers, listen for a smooth transition from one speaker to the next. You should not hear any voids in the sound stage.
- Make 1/2" changes in front to back location until you find the Center channel location that offers the best integration.

Image Height

Check the image height. Does the dialogue of a movie have the correct height? Is it too low or too high?

If needed, adjust the amount of rotation until the image height is correct. On a stand or floor mounted Center channel, raising the front spikes will raise the image height; lowering the front spikes will lower the image height (You may need to add or remove a spacer to get the correct image height).

Center Rotation

Our testing has shown that a stand mounted Center channel, at listening distances greater than 6-7 feet, requires the front of the center channel to be raised about 1". This is because the effects of comb filtering are more noticeable the further away you are from the Center channel. This comb filtering reveals itself as a slight nasal sound in the voice. If you notice this in the sound, you should raise the front spikes of your Center channel until the comb filtering is reduced. Often, raising the front spikes as little as 1/2" will eliminate the comb filtering.

Resetting the PDC

Once the final rotation has been determined, you will need to reset the PDC. This may be done as follows:

- Measure the distance you have raised the speaker.
- Slide the tweeter forward 1/2 of the distance you raised the speaker.

Note: If you lowered the speaker, then the tweeter will slide back 1/2 of the lowered distance.

Every system has a unique time and phase character, which can affect the PDC accuracy. Because of this, you may find that sliding the tweeter forward or backwards a few positions increases the clarity and correctness of your Center channel. If you like, experiment with the tweeter position, and lock it in position when you find the location you feel to be most accurate.

Center Channel Polarity

Establish the polarity of the Center channel according to the test disc provided. The test disc will play pink noise through the Center channel together with alternating Left and Right channels. If the polarity is correct on the Center channel, you will hear the pink noise centered between the Center channel and either the Left or Right speakers. If the polarity is incorrect, you will hear two point sources that are unfocused and located at each speaker playing.

Integrating the Surround Channels

- Follow the processor instructions on level adjustment. Adjust the level on the Surround channels so they match in level with the front channels.
- Play a DVD that has a scene with something moving around the room. Listen for the correct spacial imaging. A correctly adjusted Surround channel will have good imaging characteristics, will be seamlessly blended, and should be just as transparent as the front channels.
- Adjust the rotation of the surround channel until you find the best integration. Remember that the rotation has two different adjustments:

rotation on the upper two spikes and rotation by changing the lower spike.

Note: The Surround channel rotates on the upper two spikes. Carefully examine this rotation and the mounting bracket before trying to adjust the angle of rotation. Be careful when rotating the speaker as it is very heavy and could fall off of the mounting bracket.

Integrating the WATCH Dog

The subwoofer will perform well in almost any location in the room. In general, the closer you place the subwoofer to a wall or corner, the greater the augmentation of the bass. However, the increase in bass comes at a cost of perceived speed, dynamics, and bass clarity. We recommend that you experiment with the placement of the subwoofer to find a balance of the above mentioned items. For complete information on integrating a Wilson Audio subwoofer, please refer to your subwoofer owner's manual.

Section 4.3 - Two-Channel Final Setup Procedure

The final step in setting up your on wall stereo speakers is to set the rotation. Remember that the mounting bracket allows for the speaker to rotate on the upper spikes. This rotation allows the speaker to be toed-in towards the listening position. The lower spike can be changed to optimize the phase delay character of the speaker and set the correct image height. For this purpose, three different length lower spikes are provided. Careful evaluation of the rotation will significantly improve the performance of your speakers. Determine the correct rotation as follows:

- Sit in your listening position. Make certain to remove the grilles.
- Adjust the rotation of the speakers so that they are firing straight forward.

- Using a piece of full range music (dynamic with a lot of low frequency information) played at a moderately high level, take notes on the sound quality. Pay specific attention to upper and lower bass quality, dynamic contrasts, image height, and focus.
- Find the rotation where the bass is tight, dynamics are correct, image is well focused, and you find the best sound staging.
- Play a simple piece of music with one vocal only. The selection should be one that you are familiar with and know to have clean and well focused vocals.
- Find the lower spike (#2, #3) that offers the most correct image height and an overall naturalness in the voice.
- Set this as your final location.

WILSON AUDIO SPECIALTIES, INC

WATCH
Surround

CARE OF THE SURROUND



ALCON
Audio

Care of the
Surround

Section 5 - Care of the WATCH Surround

Your WATCH Surround enclosures are hand-painted with WilsonGloss™ paint and hand-polished to a high luster. While the paint 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 Surrounds during final manufacturing, 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 will leave impressions on the paint.

Section 5.1 - Care of the Finish

It is important that the delicate paint finish of the WATCH speakers 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 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 finger prints and other minor smudges may be removed with a glass cleaner. When cleaning the painted surface of your

Surround, always use the dust cloth. Stronger solvents are not recommended under any circumstances as they may damage the paint. 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 nonabrasive carnauba-based wax and soft cloth.

Several pieces of the WATCH system are made of black "X" material. Where this material is not painted, it will require periodic polishing to maintain the semigloss finish. We recommend a silicone-based plastic polish (available at automotive supply stores).

Section 5.2 - 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 percent 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 CD on repeat overnight can accomplish this task quickly. Wilson Audio recommends chamber music for this task.

Section 5.3 - Binding Posts

The binding posts used with the WATCH are specifically made for Wilson Audio. David Wilson and his engineering team spent many hours listening to a variety of binding posts and making modifications to each until the most musical combination was achieved.

Note: the binding posts should be tightened only snugly. Over-tightening can result in breakage of the posts. Please take care when attaching the spade lugs to the WATCH System.

Section 5.4 - Enclosure Construction

Enclosure Materials

Only the very best in materials are used in the WATCH enclosures. The enclosures of the WATCH system use the same proprietary techniques that have been very successfully utilized in the Alexandria X-2, MAXX, Sophia, and the WATT/PUPPY systems. The enclosure is made from a non-resonant composite material which is then highly cross-braced to further reduce cabinet resonance. In the most critical areas, the WATCH System uses our proprietary "X" material, a very dense, strong composite originally developed for the X-1 Grand SLAMM®.

Adhesives

The engineers at Wilson have performed extensive research on the adhesives used to construct our enclosures. Other speaker manufacturers often overlook this critical variable. Wilson has found that the adhesives used to construct enclosures are crucial to the proper performance and longevity of a loudspeaker. Some of the important factors considered when selecting an adhesive are: correct modulus of elasticity, coefficient of thermal expansion, and natural frequency response.

A highly cross-linked, thermoset 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 experience, engineering depth, and precision manufacturing using the best in composite materials and adhesive technology, provided to us by the leaders in their industries, allow us to design enclosures with unmatched performance. The WATCH system has been designed to eliminate vibration and cabinet signature while maintaining an internal acoustical integrity that is simply without equal.

WILSON AUDIO SPECIALTIES, INC

SYSTEM SPECIFICATIONS



Section 6 - WATCH Surround Specifications

Measurements:

Impedance: 8 Ohms, see Impedance Curve page ____
Sensitivity: 89 dB, 2.38 V input, measured @ 1m.
Frequency Response: 45 Hz to 22 kHz

Dimensions:

Height: 22.5" {57.15 cm}
Depth Unmounted: 8" {20.32 cm}
Depth Mounted: 10.5" {26.67 cm}
Width at Top: 9.5" {24.13 cm}
Width at Bottom: 5" {12.70 cm}

Weight (uncrated):

WATCH Surround: 50 lbs. {22.68 kg}
Universal Mount: 15 lbs. {6.80 kg}

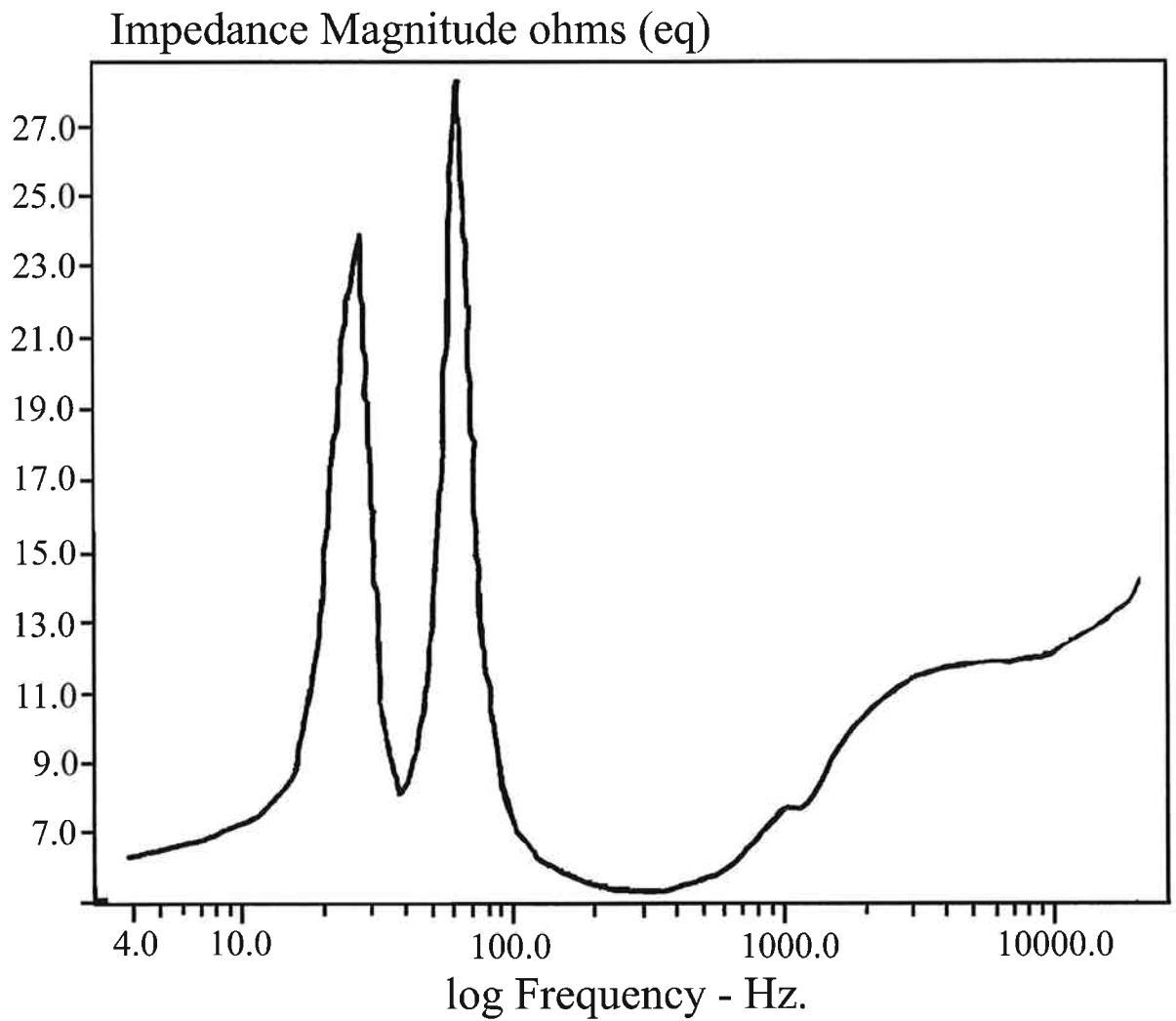
Shipping Weight (approximate):

WATCH Surround, Universal Mount, tool kits, etc: 140 lbs. {63.50 kg}

Finishes:

Speaker - WilsonGloss™ Paint
Bracket - Not painted (standard)
Neutral tone paint finish (optional)

Surround Channel Impedance Curve



WILSON AUDIO SPECIALTIES, INC

TROUBLE SHOOTING GUIDE



Trouble Shooting
Guide

Section 7 - Troubleshooting Guide

Problem

Reason

One channel is not operating:

Check interconnects from source.

Check the connections on the speaker cables, both at the amplifier and speaker ends. Watch especially for connectors touching each other.

Imaging is off-center:

Check your connections. When a tweeter or mid-range driver is not working, or is out of phase, the image will be off. Double check your connections for red-to-red and black-to-black.

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.

A chronic lack of bass energy:

Check the input cable connections on your woofer enclosure. If one channel is out of phase (connections reversed), bass will be cancelled. **Note: Turn off your amplifier, and unplug it from the wall.**

Driver not playing after connections have been verified:

If you have found a driver that would not play, move to the rear of this particular loudspeaker.

Using the appropriate Allen key, remove the resistor cover.

Locate the resistor and remove the resistor using a soldering iron. Replace the resistor and solder the new resistor in the old one's place.

Note: Use only Wilson Audio replacement resistors in your Surround. An improper resistor value will deteriorate your speaker 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, or a conductor contacting the amplifier chassis.

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

If the problem is solved:

There is likely something wrong with your pre-amplifier or interconnect. Contact your dealer.

If the problem persists:

Leave the preamp leads disconnected, and continue 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 speaker. Now turn on the amplifier.

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 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 from whom you bought your amplifier. You appear to have a problem with this component.

WILSON AUDIO SPECIALTIES, INC

REPAIR PROCEDURES



Repair Procedures

Section 8 - Repair Procedures

Replacing a Blown Resistor

The WATCH Surround loudspeaker has a resistor that will protect the tweeter, in most cases, if the speaker is over driven during normal operation. This is done so that the driver is not damaged. Replace a blown resistor as follows:

1. Determine which driver is not playing music.
2. Remove the appropriate resistor access cover from the enclosure by removing each of the 10-32 button head machine screws (see Section 5 for resistor cover locations).
3. Heat up the leads of the resistor with a 45 watt soldering pencil and remove the faulty resistor.
4. Wrap the leads of the new resistor around the ends of the posts and resolder the leads.
5. Reattach the resistor access cover to the enclosure, making sure not to over-tighten the screws.

Replacing a Bad Driver

If you believe that a driver is blown, make sure that you have tried replacing the protective resistor before you replace the driver. No sound coming from a driver is often a blown resistor and not a bad driver. If you need to replace a driver, do so as follows:

1. Using the supplied Allen wrench, remove the machine screws holding the

driver in place.

2. Insert the Allen wrench into one of the driver screw holes 1/8". Gently lift out the driver and place it onto the foam pad covering the front baffle.

Note: It is best to place an old towel under the driver so that you will not damage the enclosure when unsoldering the driver.

3. Using a 750 to 900 degree F soldering iron, heat up the solder joints and remove the driver.

4. Melt a small 1/8" diameter bead of solder onto the tip of each wire, heat the wire up until you see the solder wick into the copper.

5. Place the replacement driver onto the cloth and solder the wires to the driver, with the white wire to the positive side and the black wire to the negative. The positive side is generally indicated by a red dot. Make sure to heat up the solder joint completely and hold the wire firmly in place until the solder sets.

6. Replace the driver foam gasket.

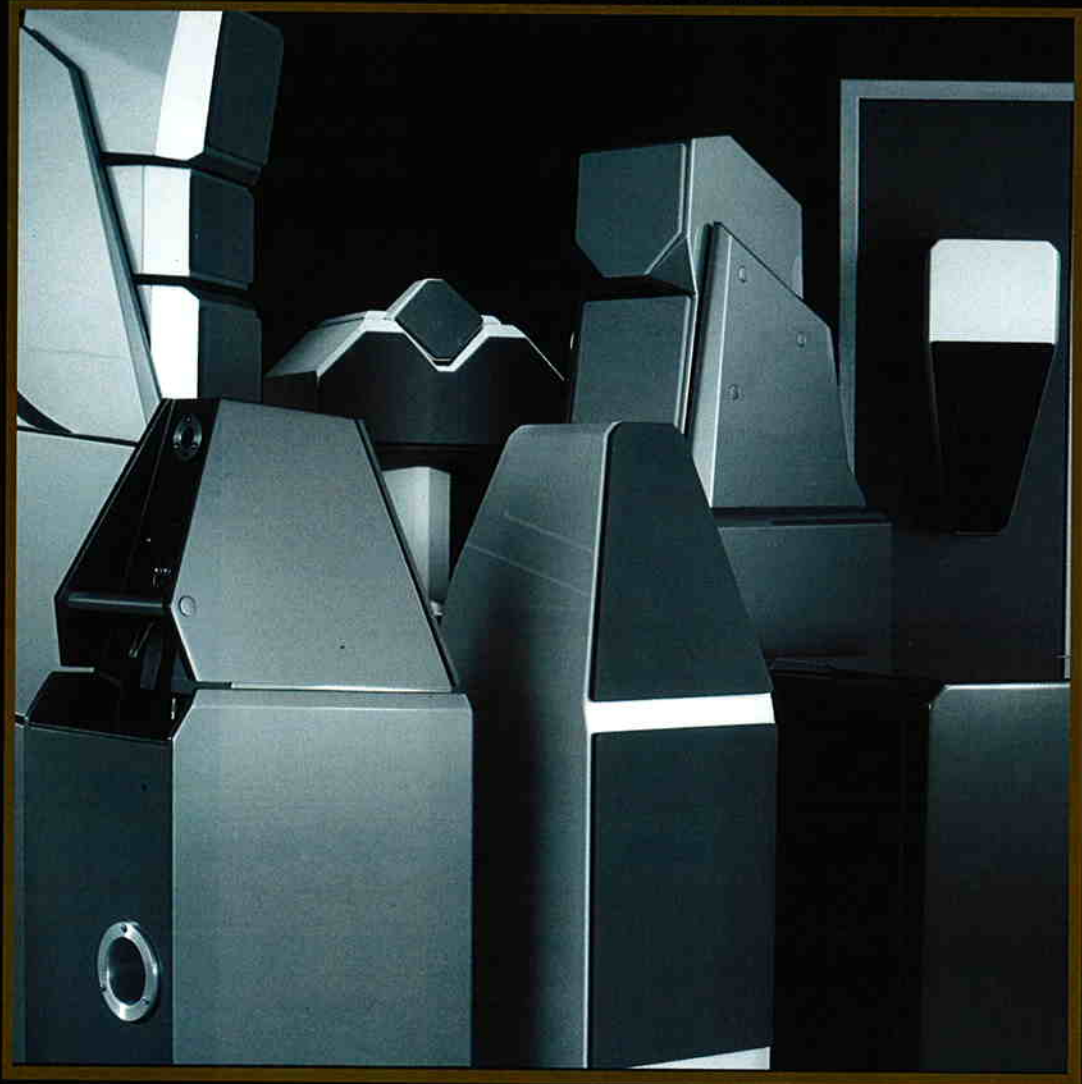
7. Place the driver into the machined recess.

8. Replace the machine screws, tightening them to 15 inch-pounds of torque.

Note: Be careful not to over-tighten the screws. It may cause the brass insert to spin.

WILSON AUDIO SPECIALTIES, INC

WARRANTY INFORMATION



ALSO

Warranty
Information

Wilson Audio Limited Warranty Terms & Conditions

Limited Warranty

Subject to the conditions set forth herein, Wilson Audio warrants its loudspeakers to be free of manufacturing defects in material and workmanship for the Warranty Period. The Warranty Period is a period of 90 days from the date of purchase by the original purchaser, or if both of the following two requirements are met, the Warranty Period is a period of five (5) years from the date of purchase by the original purchaser:

Requirement No. 1. No later than 30 days after product delivery to the customer, the Warranty Registration Form must have been returned by the customer to Wilson Audio;

Requirement No. 2. The product must have been professionally installed by the Wilson Audio dealer that sold the product to the customer.

FAILURE TO COMPLY WITH EITHER REQUIREMENT NO. 1 OR REQUIREMENT NO. 2 WILL RESULT IN THE WARRANTY PERIOD BEING LIMITED TO A PERIOD OF 90 DAYS ONLY.

Conditions

This Limited Warranty is also subject to the following conditions and limitations. The Limited Warranty is void and inapplicable if the product has been used or handled other than in accordance with the instructions in the owner's manual, or has been abused or misused, damaged by accident or neglect or in being transported, or if the product has been tampered with or service or repair of the product has been attempted or performed by anyone other than Wilson Audio, an authorized Wilson Audio

Dealer Technician or a service or repair center authorized by Wilson Audio to service or repair the product. Contact Wilson Audio at (801) 377-2233 for information on location of Wilson Audio Dealers and authorized service and repair centers. Most repairs can be made in the field. In instances where return to Wilson Audio's factory is required, the dealer or customer must first obtain a return authorization. Purchaser must pay for shipping to Wilson Audio, and Wilson Audio will pay for shipping of its choice to return the product to purchaser. **A RETURNED PRODUCT MUST BE ACCOMPANIED BY A WRITTEN DESCRIPTION OF THE DEFECT.** Wilson Audio reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any product without notice or obligation to any person.

Remedy

In the event that the product fails to meet the above Limited Warranty and the conditions set forth herein have been met, the purchaser's sole remedy under this Limited Warranty shall be to: (1) contact an authorized Wilson Audio Dealer within the Warranty Period for service or repair of the product without charge for parts or labor, which service or repair, at the Dealer's option, shall take place either at the location where the product is installed or at the Dealer's place of business; or (2) if purchaser has timely sought service or repair and the product cannot be serviced or repaired by the Dealer, then purchaser may obtain a return authorization from Wilson Audio and at purchaser's expense return the product to Wilson Audio where the defect will be rectified without charge for parts or labor.

Warranty is Limited to Original Purchaser

This Limited Warranty is for the sole benefit of the original purchaser of the covered product and shall not be transferred to a subsequent purchaser of the product, unless the product is purchased by the subsequent purchaser from an authorized Wilson Audio Dealer who has certified the product in accordance with Wilson Audio

standards and requirements and the certification has been accepted by Wilson Audio, in which event the Limited Warranty for the product so purchased and certified shall expire at the end of the original Warranty Period applicable to the product.

Demonstration Equipment

Equipment, while used by an authorized dealer for demonstration purposes, is warranted to be free of manufacturing defects in materials and workmanship for a period of five (5) years from the date of shipment to the dealer. Demo equipment needing warranty service may be repaired on-site or, if necessary, correctly packed and returned to Wilson Audio by the dealer at dealer's sole expense. Wilson Audio will pay return freight of its choice. A returned product must be accompanied by a written description of the defect. Dealer owned demonstration equipment sold at retail within two (2) years of date of shipment to the dealer is warranted to the first retail customer to be free of manufacturing defects in materials and workmanship for the same time periods as if the product had originally been bought for immediate resale to the retail customer. Wilson Audio products are warranted for a period of 90 days, unless extended to 5 years, as provided above, by return and filing of completed Warranty Registration at Wilson Audio within 30 days after product delivery to customer and the product was professionally installed by the Wilson Audio Dealer that sold the product to the customer.

Miscellaneous

ALL EXPRESS AND IMPLIED WARRANTIES NOT PROVIDED FOR HEREIN ARE HEREBY EXPRESSLY DISCLAIMED. ANY LEGALLY IMPOSED IMPLIED WARRANTIES RELATING TO THE PRODUCT SHALL BE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. THIS LIMITED WARRANTY DOES NOT EXTEND TO ANY INCIDENTAL OR CONSEQUENTIAL COSTS OR DAMAGES TO THE PURCHASER. Some states do not allow limitations on how long an implied warranty lasts or an

exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state.