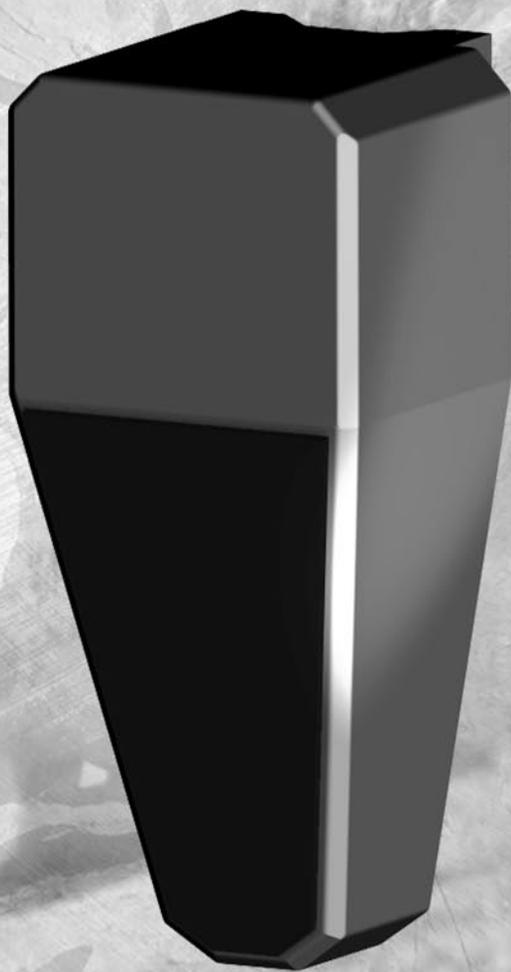


W.A.T.C.H. System Surround Channel



Owner's Manual

Wilson Audio Specialties, Inc

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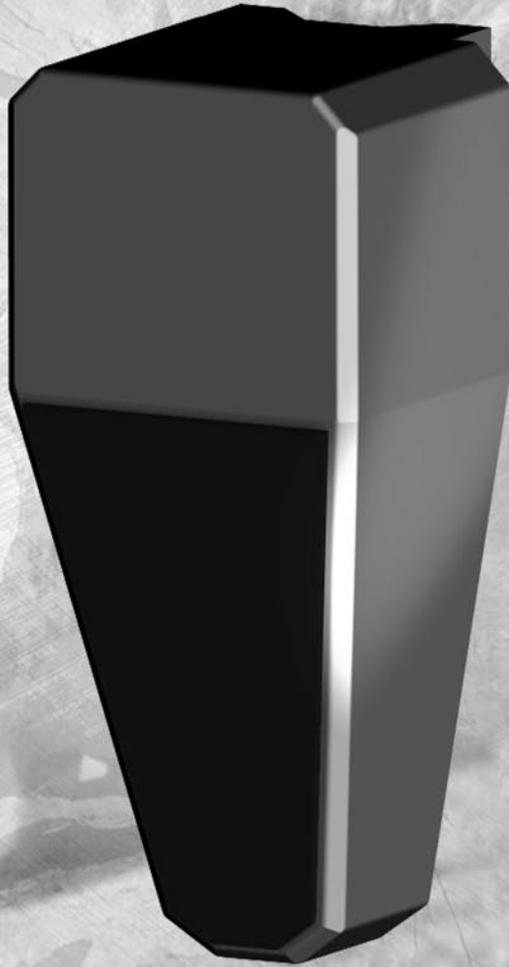
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SECTION 1.0 WATCH INTRODUCTION

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 multichannel 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, more blockbuster hits have been mixed, composed, or recorded using Wilson Audio than any other loudspeaker.

SECTION 1.1 APPLICATIONS

APPLICATIONS

For more than 20 years, Wilson Audio loudspeakers have set the standard for performance in a wide variety of 2 channel audio and multichannel home theater applications. The WATCH (Wilson Audio Theater Come Home) 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 insures the very best possible integration with your Wilson Audio stereo loudspeakers. The Watch system is designed to integrate with the Cub, WATT/Puppy, MAXX and in many instances the X-1 Grand SLAMM.

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 David Wilson'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 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, multichannel audio or today's latest movie sound track technology.

The WATCH has also been engineered to take full advantage of today's multichannel 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.

DESIGN CONSIDERATIONS

Your WATCH system has been designed to perform all of the specific functions of a high performance home theater system. This was a difficult task because of the many interactions that occur in a home theater environment. Because the WATCH system was designed in-house and voiced with a variety of Wilson speakers you can be sure that the driver blend will be excellent whether your system includes Cubs or X-1 Grand SLAMMs. To accomplish this task David Wilson and his engineering department used some extraordinary materials and enclosure techniques. The discussion of a few of these follows.

ENCLOSURE MATERIALS TECHNOLOGY

Only the very best in materials are used in the WATCH enclosures. The enclosures of the WATCH system use the same proprietary techniques as have been very successfully used in the X-1 Grand SLAMM, MAXX and the WATT/PUPPY systems. The enclosures are made from a non-resonant material that is highly-cross braced to further reduce cabinet resonance. In the most critical area, the WATCH uses our proprietary “X” material, a very dense, strong composite, developed for the X-1 Grand SLAMM.

ADHESIVE

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

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 the best in composite materials and adhesive technology, provided to us by the leaders in their industries, allows 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, the best.

SECTION 1.2 WATCH PACKAGE

WATCH CENTER

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

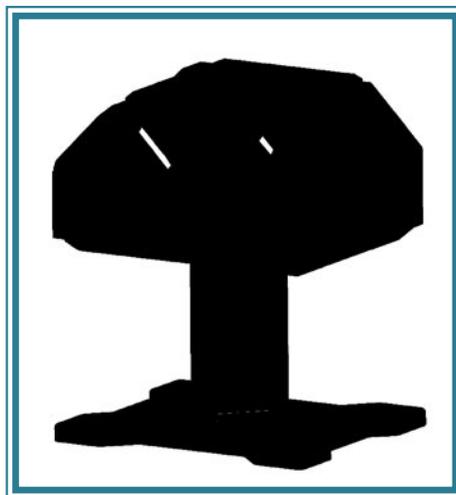


FIGURE 1.1 WATCH CENTER

The WATCH center channel 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 was voiced and optimized to truly represent dialogue for movies as well as music and vocals when used in a multichannel audio setup.

Of course, WATCH-Center lives up to Wilson 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 Mirrorgloss™ finish, it looks right at home on your wall.

WATCH-Surround also minimizes wall/ceiling resonant interactions through its advanced mounting system. Perhaps the greatest challenge for a mounted speaker, these interactions cause coloration of sound; accentuating some frequencies and effectively masking others. Using state of the art materials technology first developed for the X-1 Grand SLAMM, WATCH-Surround provides stunning results.

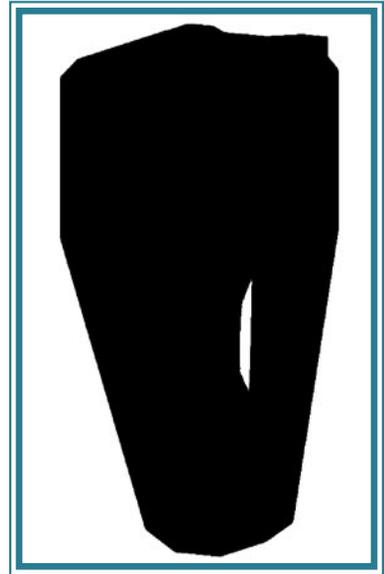


FIGURE 1.2 WATCH SURROUND

The Surround wall mounting bracket allows the Surround to be spiked to the bracket, further reducing wall interaction and resonance. The Surround can also be rotated in towards the listening position offering improved integration with the front speakers and better imaging.

WATCH SUBWOOFER

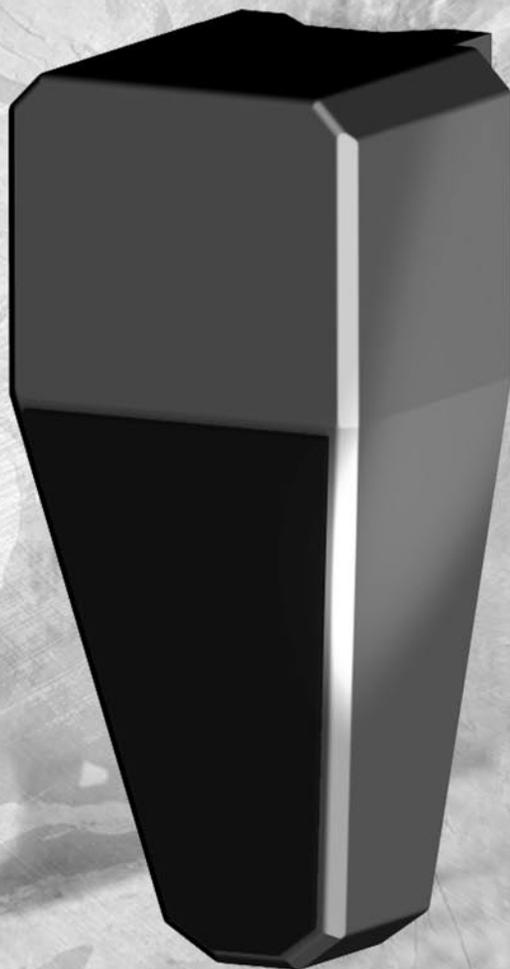
The WATCH Subwoofer has been designed to integrate well with any of the Wilson Audio loudspeakers you chose for your multichannel system. The bass is clean, powerful, and uncolored. It offers speed, dynamics and clarity that are often talked about with a Subwoofer, but rarely realized in the design. If you are looking for that extra bass extension, the WATCH Subwoofer is the only solution to give you truly high-end audio bass, without compromise.

CONCLUSION

Finally, a home theater, designed from the ground up as multichannel, that is truly high-end. Combine the structural and design considerations with the superior sonic quality and finish and you find what makes Wilson Audio the leader in the industry. 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. You are about to experience multichannel audio/home theater, like you never thought possible, except from Wilson

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SECTION 2.0 CARE OF THE FINISH

Your WATCH Surround enclosures are hand-painted with Wilson gloss™ 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.** 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. 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 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 semi-gloss finish. We recommend a silicone based plastic polish (available at automotive supply stores).

BREAK IN PERIOD

All audio equipment will sound its best after the 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 25-50% 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.

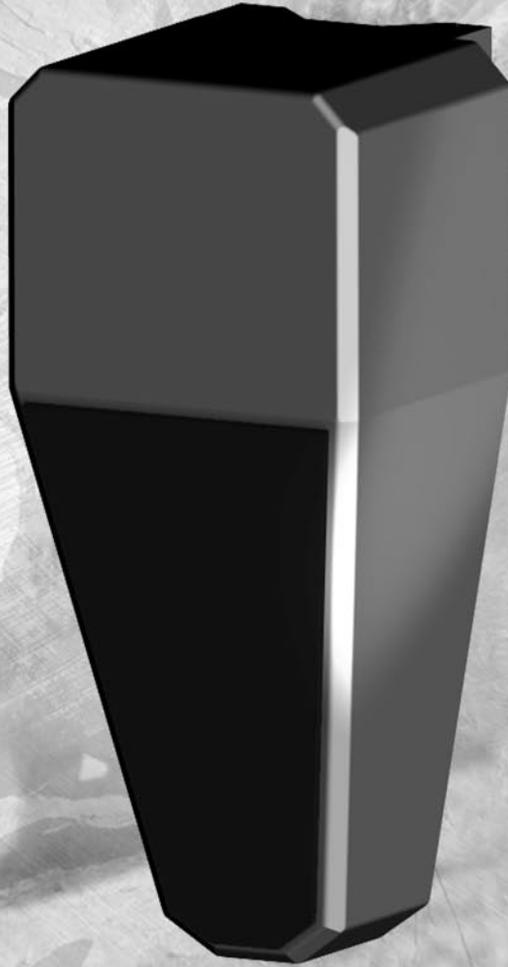
BINDING POSTS

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 the breakage of the posts. Please take care when attaching the spade lugs to the WATCH System.

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Note: The following section presents important information on room acoustics. These important concepts for two channel audio become even more important when dealing with multichannel audio or home theater. The presence of more than two speakers in a room only increase the amount of setup difficulties and speaker interactions. By studying carefully the concepts presented and then evaluating your own room configuration, you will hear marked improvement in the performance of your multichannel system.

SECTION 3.0 ROOM REFLECTIONS

There are 3 commonly encountered room reflection problems, slap-echo, standing waves, and comb filter effects.

SLAP-ECHO

Probably the most obnoxious form of reflection is the 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 clues.

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

Slap echo is a common acoustical problem in the typical domestic listening room, because most of these rooms have walls of a hard, reflective nature, usually being only 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 “deader”, much heavier in bass tonal balance, 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 to not 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 LF standing waves

- Sound staging- LF 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 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 because of 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 regular octave-spaced intervals.

The subjective effect of comb filter effects, (such as is shown in Figure 3.1) 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.

REFLECTIVE ACOUSTICAL COMB FILTER EFFECT

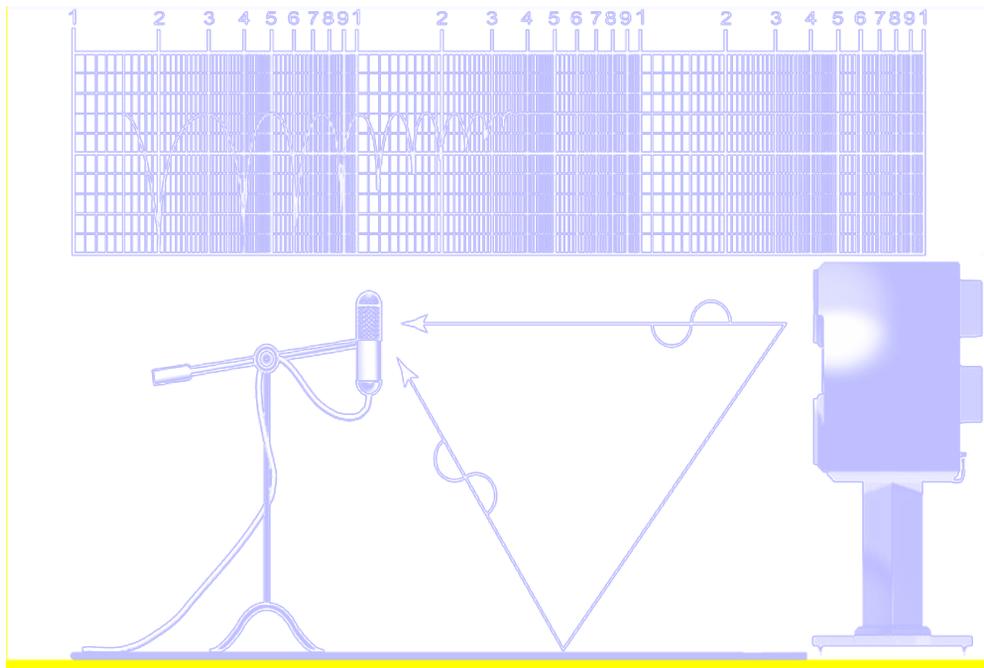


FIGURE 3.1 COMB FILTER EFFECT

SECTION 3.1 RESONANCE

Resonance in listening rooms are generally caused by two sources:

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

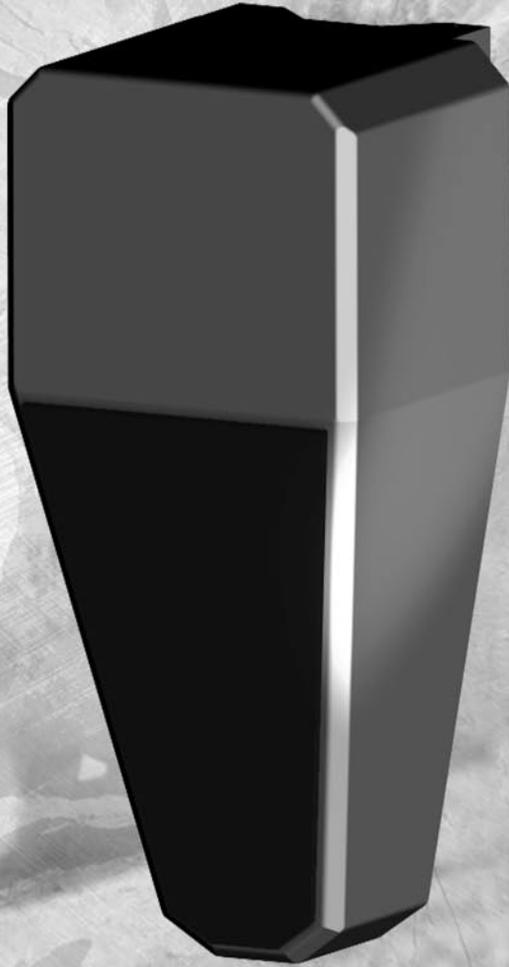
STRUCTURAL RESONANCE

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 book shelves, to flimsy walls, however, 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 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, 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 have been found to be effective in reducing some of these low frequency room colorations. While custom designed and constructed bass traps, such as perforated Helmholtz resonators, provide the greatest degree of low frequency control.





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Note: This section contains initial setup information for the all of the speakers of a multichannel system with the surround channels. If you are using the speakers for two channel audio, please proceed to section 5.

SECTION 4.0 INITIAL SYSTEM SETUP

We strongly recommend that you have a Wilson Audio dealer come to your home and help you with the set up of the WATCH System. They have been trained on setting up our systems to provide you with the most satisfying results. However, if you choose to set up the system yourself we have provided some instruction that will allow you to achieve very good performance from the WATCH System.

If you have not read the previous section on room acoustics, do so now. It will provide you with valuable information for determining the overall best speaker placements and listening position. As well as allow you to fully evaluate the acoustical qualities of your existing room and give you some idea's on how you can improve your overall system performance.

SYSTEM SETUP PROCEDURE

We recommend that you setup your multichannel 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 section 5 and your left and right channel owners manual.
- Perform the final system setup and fine tuning steps outlined in section 7.

ZONE OF NEUTRALITY

The zone of neutrality is the speaker location where your speakers sound most natural. This location is where the speakers interact the least with the room. We realize that the location of your WATCH speakers are not very flexible. However, we recommend that you place your speakers in the general area where you want them to be and then wait to spike them until the final system setup is completed in section 7. To find the zone of neutrality do as follows:

1. Stand against the wall BEHIND the speakers. Speaking in a moderately loud voice and a constant volume, project your voice out into the room.
2. As you slowly walk out from 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 rear wall boundary.
3. When you hear the voice “free up” from this artifact, place a piece of tape on the floor to mark this location. You will now be entering the “zone of neutrality”.
4. Continue to walk slowly away from the wall. You will hear the beginning of a new artifact - the interaction with the opposite wall. This will manifest itself in a sound that loses focus and appears to “slap” off of the wall back to you.
5. When you begin to hear this artifact, place a piece of tape on the floor and mark this location.
6. Repeat the procedure coming off of the side walls, again listening for your voice to lose the added bass energy from the wall behind you, and continuing 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 floor (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 4.1 CHOOSING A LISTENING POSITION

Decide where you want your listening position to be. Please remember that your WATCH System can fill most rooms with beautiful sound. However, for the PDC advantage, we want to ensure that you get all the benefits possible with the group delay adjustment features that are built into this design. Listening positions that are too close to a boundary will deteriorate the overall system performance.

LEFT AND RIGHT SPEAKERS

SPEAKER PLACEMENT VS. LISTENING POSITION

The location of your listening position is as important as the careful setup placement of your speakers in your room. The listening position should ideally be no more than 1.1 to 1.25 times the distance between the left and right channel 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. Experiment carefully for best low frequency response.

Some 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.

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 minimize the influence of the side walls on the sound of 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.

Another important aspect of speaker placement is how far to place the speakers from the wall behind them. 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 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 Channel, determine the best place for your center channel, the following center channel configurations are possible:

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

All of the above arrangements will allow for some fine tuning of speaker placement once the entire system is set up except for the ceiling mounted option. If you are mounting the speaker to the ceiling be sure to choose the location carefully as you will not be able to move the center channel once it is bolted to the ceiling. A poor placement will lower overall system integration and performance. As a general rule the distance from the main left and right tweeters to the listening position should be the same as the distance from the center channel tweeter to the listening position. This allows the sound provided by each speaker to arrive at the ear at the same time. The phase delay correction will be made via the sliding tweeter module on the center channel.

Our testing has shown that a floor or stand mounted center channel integrates best when placed centered between the left and right speaker and either aligned horizontally with the front inner edge of the left and right speakers or slightly behind the front inner edge. You will want to experiment with the center channel distances and find the location that offers the smoothest left, right and center channel integration. We will step you through this process in Section 7.

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 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 the wall mounting location we suggest that you perform the zone of neutrality test, as outlined on page 4-2. Find the area along the wall where your voice sounds the most natural and has the least amount of reflections or standing waves. Be sure to listen for room modes and frequency response peaks or dips.

SUBWOOFER

The subwoofer will perform very well in 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 with which you are satisfied.

SECTION 4.2 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, preferably 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 left and right speakers and the rear walls. A distance of at least 1 1/2 feet should 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.

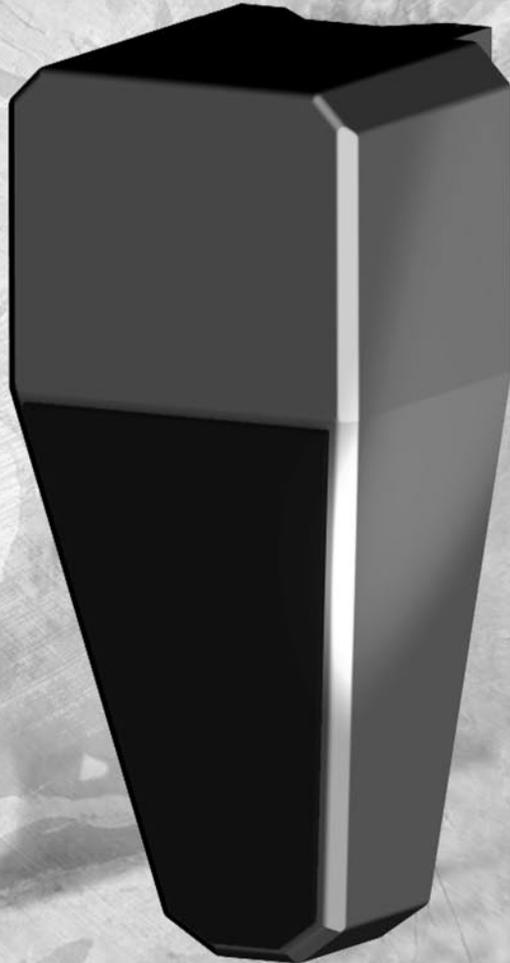
Be sure to place the center channel even with or slightly behind the front inner edge of the left and right speakers.

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 a natural sound if you stand next to it and project your voice into the room.

The subwoofer 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.

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SECTION 5.0 INITIAL SYSTEM SETUP- TWO CHANNEL AUDIO

We recommend that you have a Wilson Audio dealer come to your home and help you with the set up of on wall speakers. They have been trained on setting up our systems to provide you with the most satisfying results. However, if you choose to set up the system yourself we have provided some instruction that will allow you to achieve very good performance from your speakers.

If you have not read Section 3 on room acoustics, do so now. It will provide you with valuable information for determining the overall best speaker placements and listening position. As well as allow you to fully evaluate the acoustical qualities of your existing room and give you some idea's on how you can improve your overall system performance.

SYSTEM SETUP PROCEDURE

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 6.
- Perform the final system setup and fine tuning steps outlined in section 7.

ZONE OF NEUTRALITY

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 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, listening for your voice to lose the added bass energy from the wall behind you, and continuing 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 5.1 CHOOSING A LISTENING POSITION

Decide where you want your listening position to be. Please remember that your on wall speaker can fill most rooms with beautiful sound. However, for the PDC advantage, we want to ensure that you get all the benefits possible with the group delay adjustment features that are built into this design. Listening positions that are too close to a boundary will deteriorate the overall system performance.

SPEAKER PLACEMENT VS. LISTENING POSITION

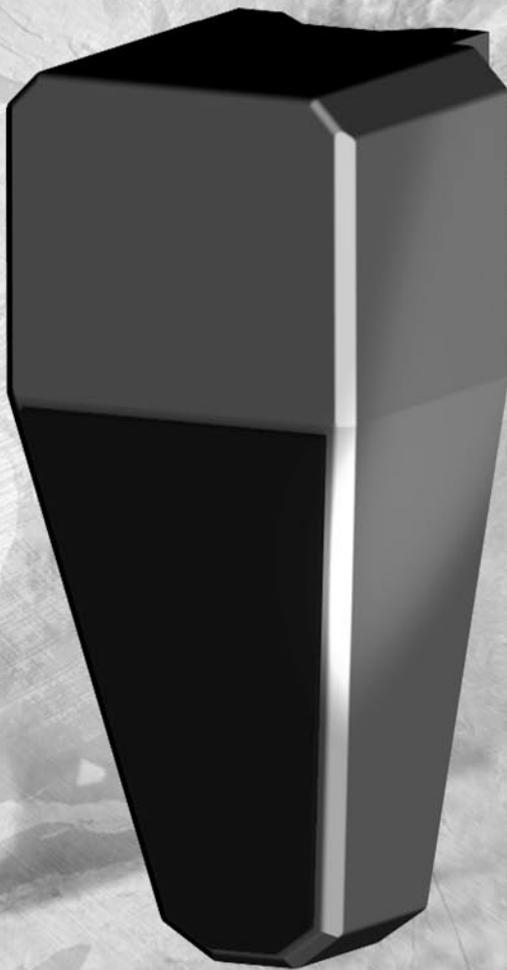
The location of your listening position is as important as the careful setup placement of your speakers in your room. The listening position should ideally be no more than 1.1 to 1.25 times the distance between the left and right channel tweeters on each speaker. Therefore, in a long rectangular room 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. Some 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.

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 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 the wall mounting location we suggest that you perform the zone of neutrality test, as outlined on page 5-2. Find the area along the wall where your voice sounds the most natural and has the least amount of reflections or standing waves. Be sure to listen for room modes and frequency response peaks or dips.





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Note: Before setting up the Surround channels study carefully the sections 3-5 on room acoustics and initial setup information. They provide valuable information on determining the ideal room locations for your speakers.

SECTION 6.0 PREPARATION

BEFORE YOU BEGIN

- Inspect the speakers for shipping damage. Report any damage to shipping company.
- Read carefully the safety warning in section 6.1 on page 6-3. 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 3).

3. Take a moment familiarize yourself with the mounting bracket. Note the locations for mounting hardware, spikes, instruction plate and speaker wire (see Figure 6.1) 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). 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.

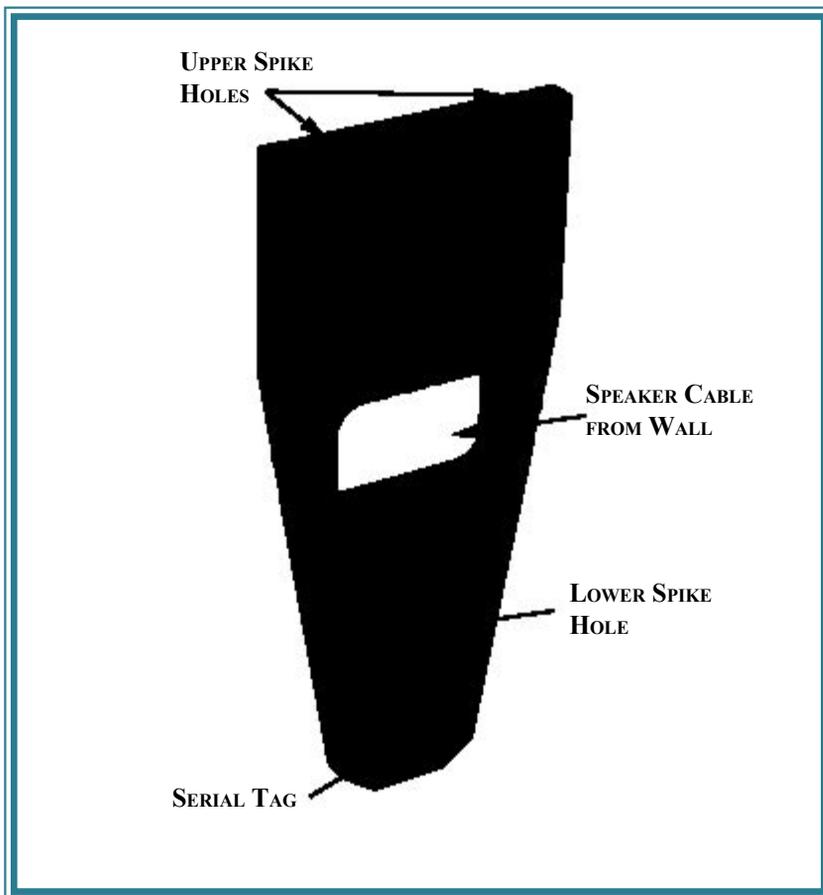


FIGURE 6.1- SURROUND MOUNTING BRACKET

SECTION 6.1 SAFETY WARNING

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 6.2 MOUNTING THE WALL BRACKET

The Surround channel mount has been designed to mount into concrete or at least 1.5" thick wood. Depending your wall 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 6.2 and 6.3 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.

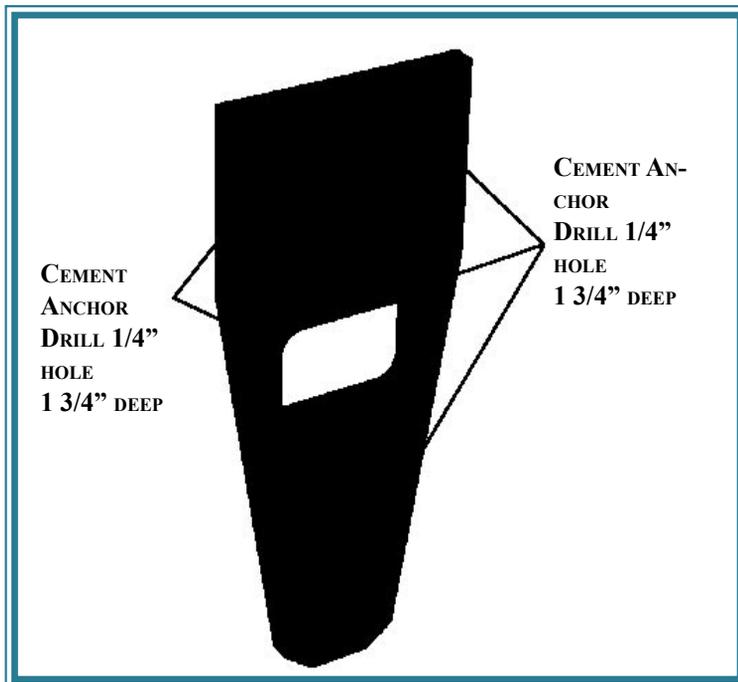


FIGURE 6.2- MOUNTING LOCATIONS FOR A CONCRETE WALL.

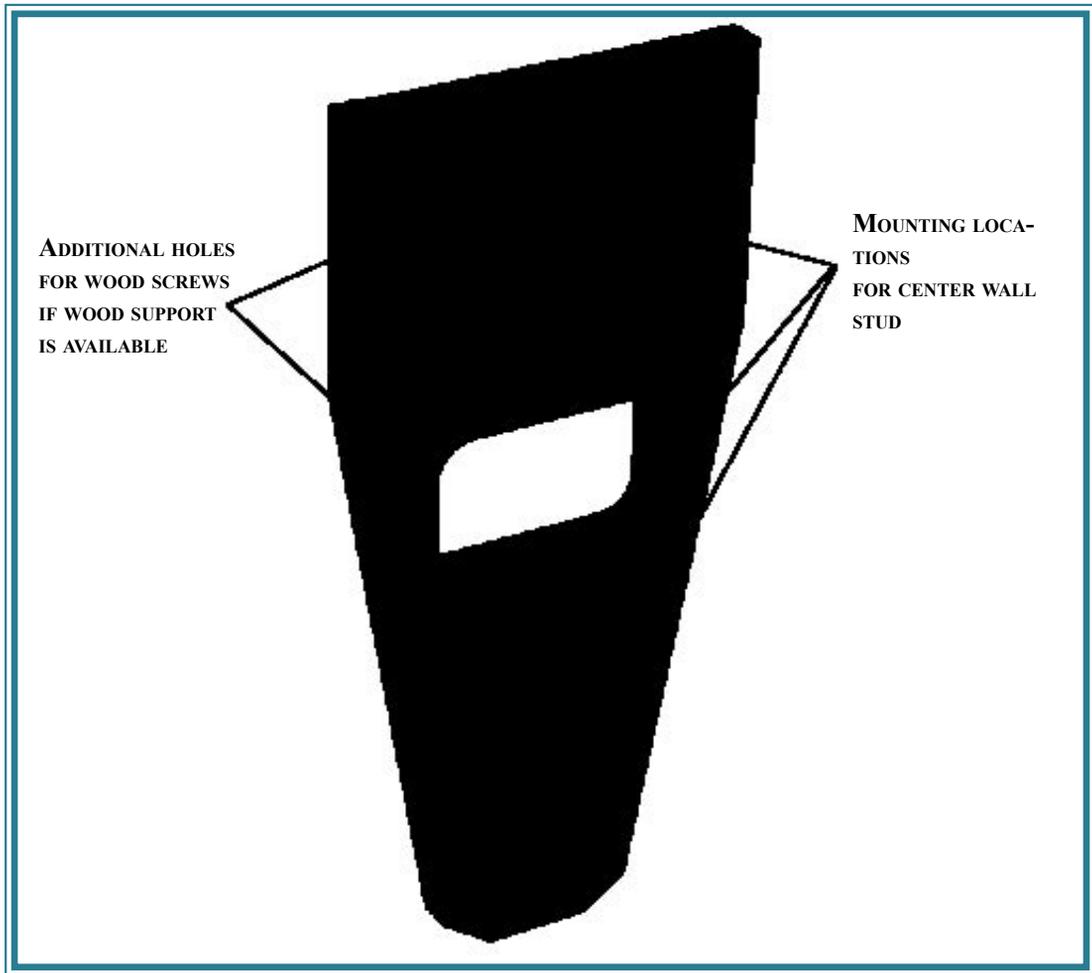


FIGURE 6.3- MOUNT LOCATIONS FOR WALL STUD OR WOOD SUPPORT.

Remember: Have you verified the location of all internal wall electrical wiring?

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.

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MOUNTING BRACKET

- 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 place.
- 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.

SECTION 6.3 PLACING SURROUND

Attach the mounting spikes as indicated in Figure 6.4, by screwing them into place until snug. Note the other hardware shown in the figure.

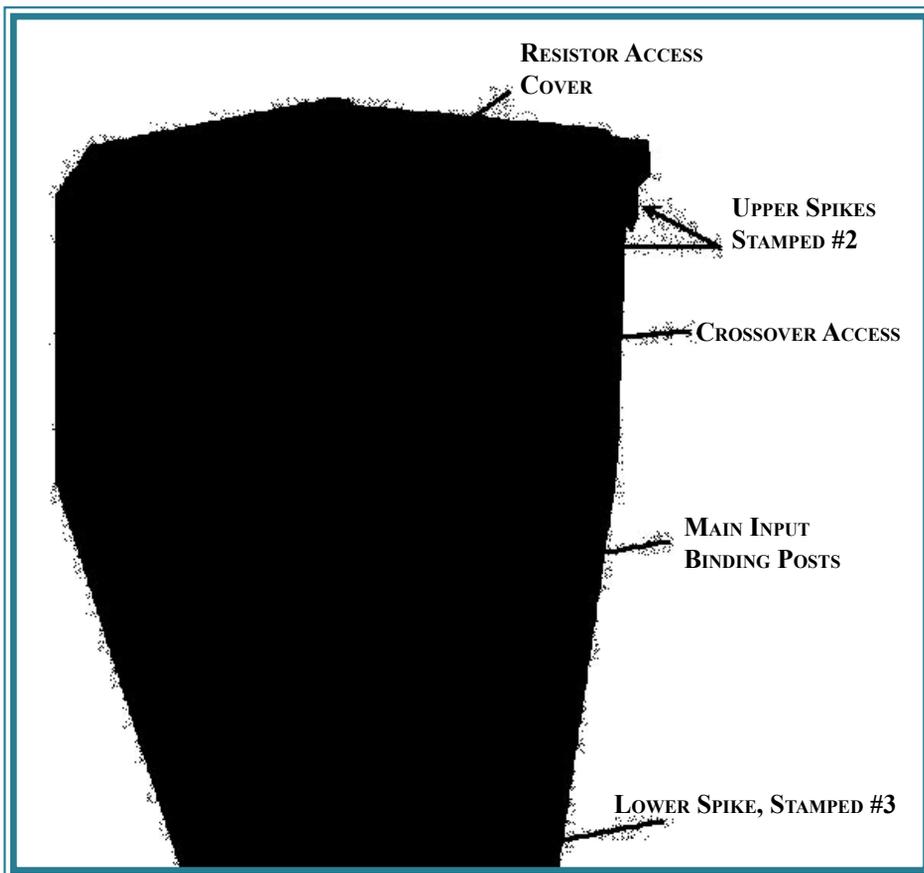


FIGURE 6.4- SURROUND HARDWARE ATTACHMENT
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There are three different lower spike options, #2, #3, and #4. Start with the Spike stamped #3. If needed, during final setup and system tuning you may change this spike to improve the Surround channel integration.

PLACING SURROUND ON BRACKET

Place the WATCH Surround onto the bracket by lifting it up, then into the upper spike holes. Finally, positioning the lower spike into the lower spike hole located on the mounting bracket (see Figures 6.5-6.7).

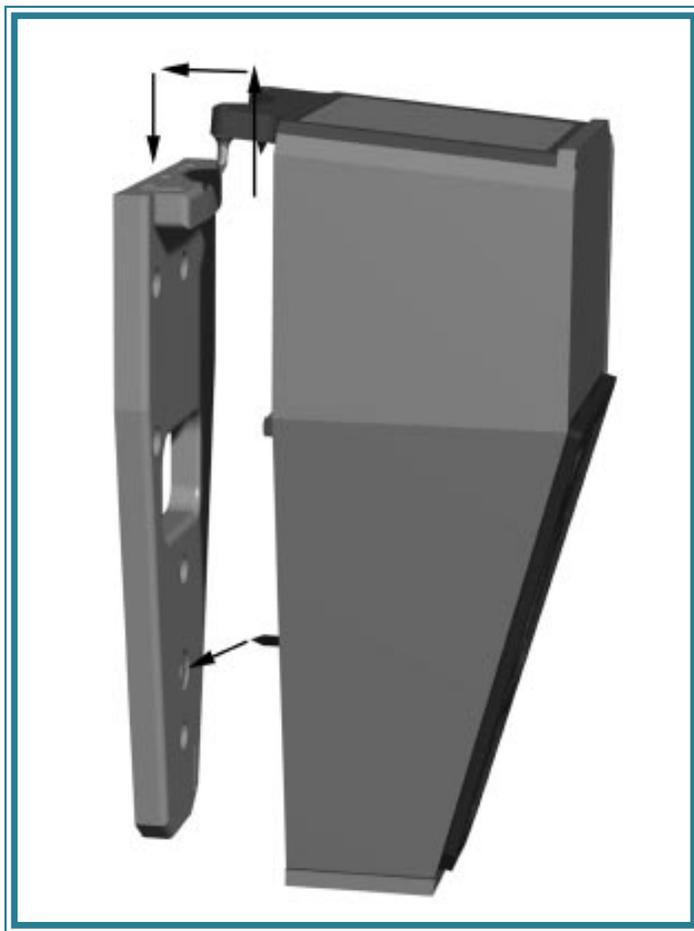


FIGURE 6.5- PLACING THE SURROUND CHANNEL ONTO THE MOUNTING BRACKET

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 7.

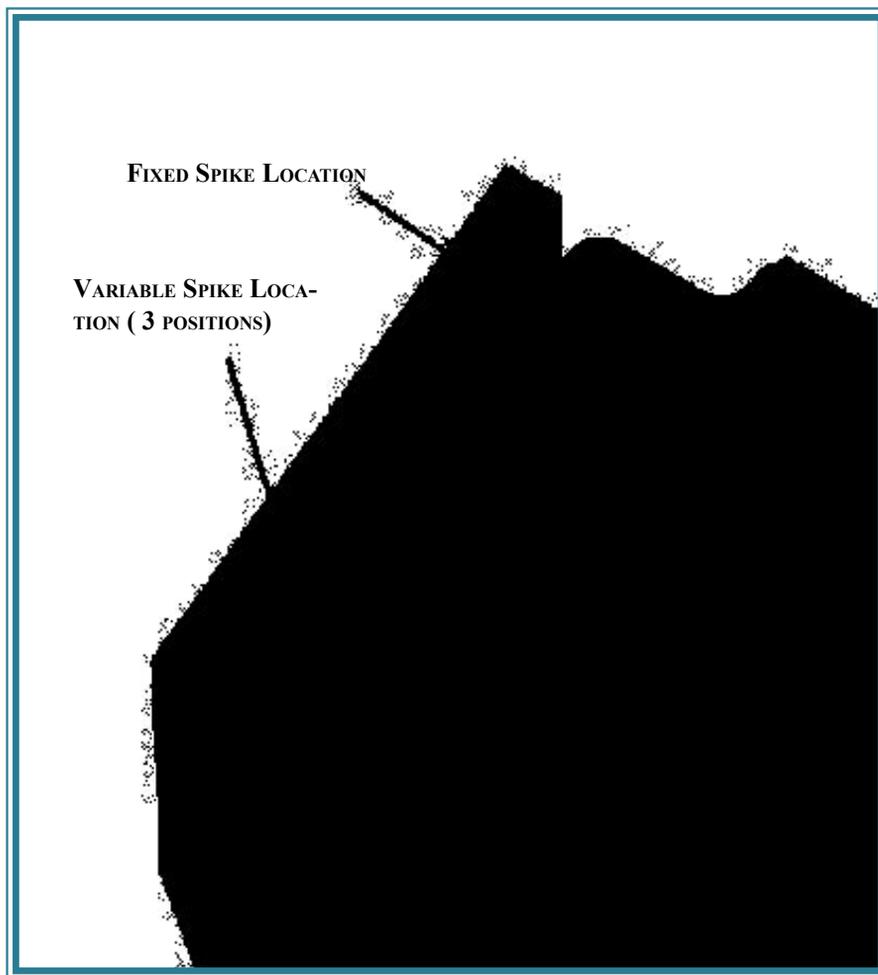


FIGURE 6.6- LOWERING SURROUND CHANNEL ONTO UPPER SPIKES.

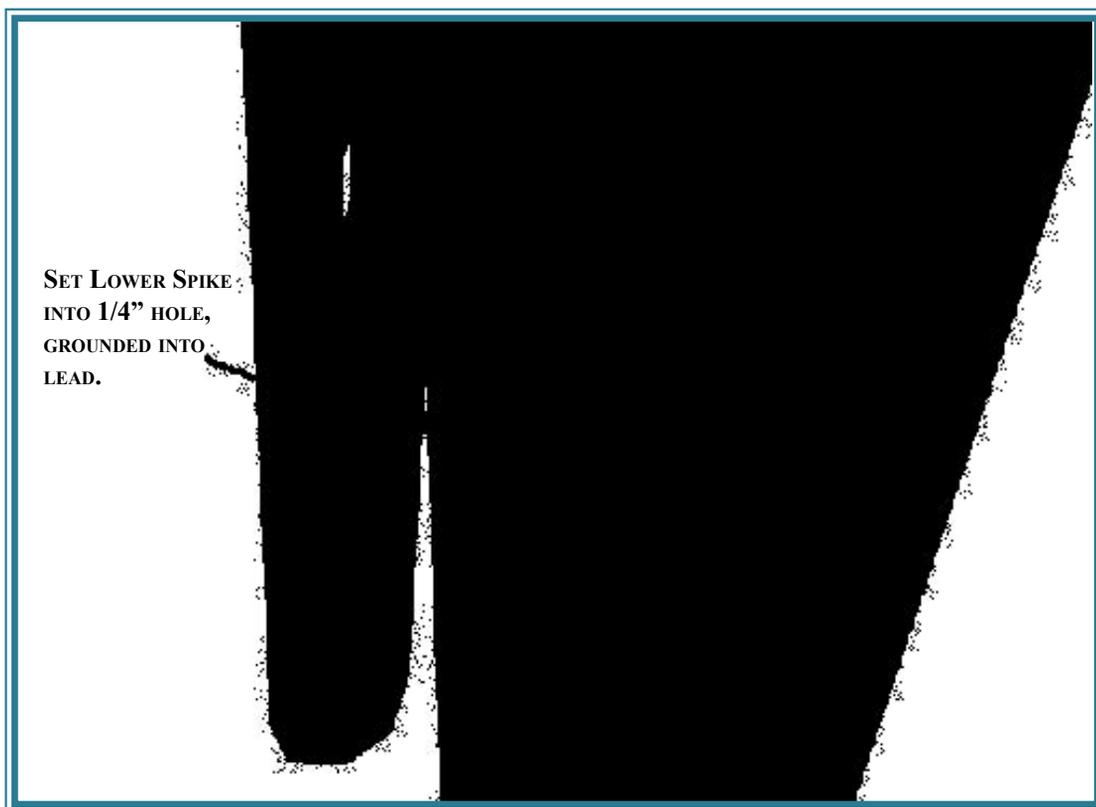


FIGURE 6.7- POSITIONING LOWER SPIKE

SECTION 6.4 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 rightangle 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 posts. Overtightening 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, by traveling the same distance to each speaker.

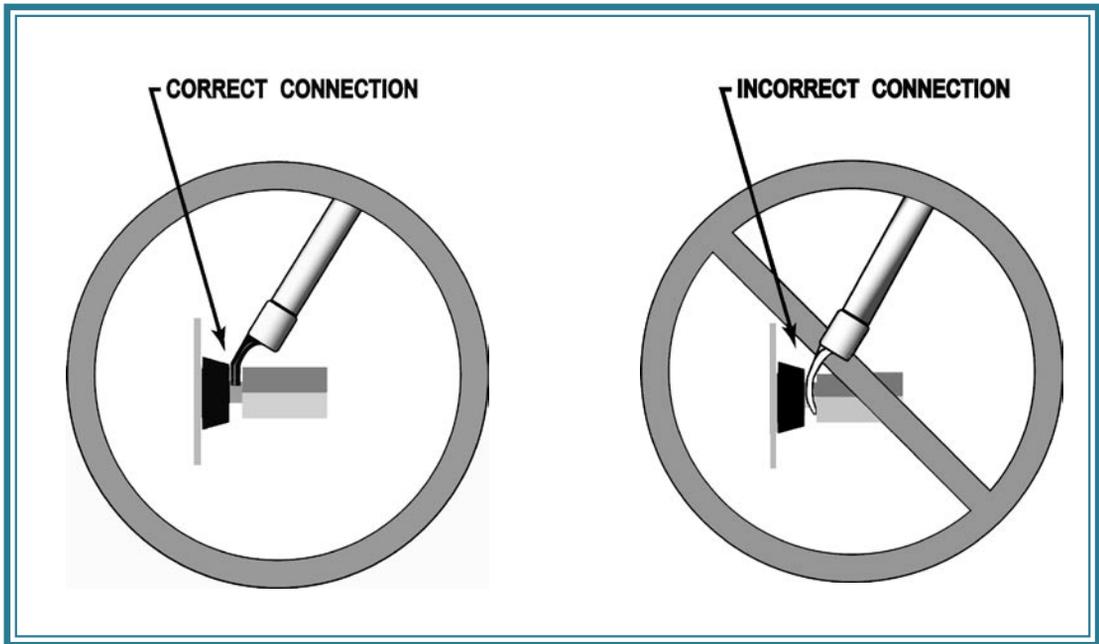


FIGURE 6.8- SPADE LUG ATTACHMENT

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

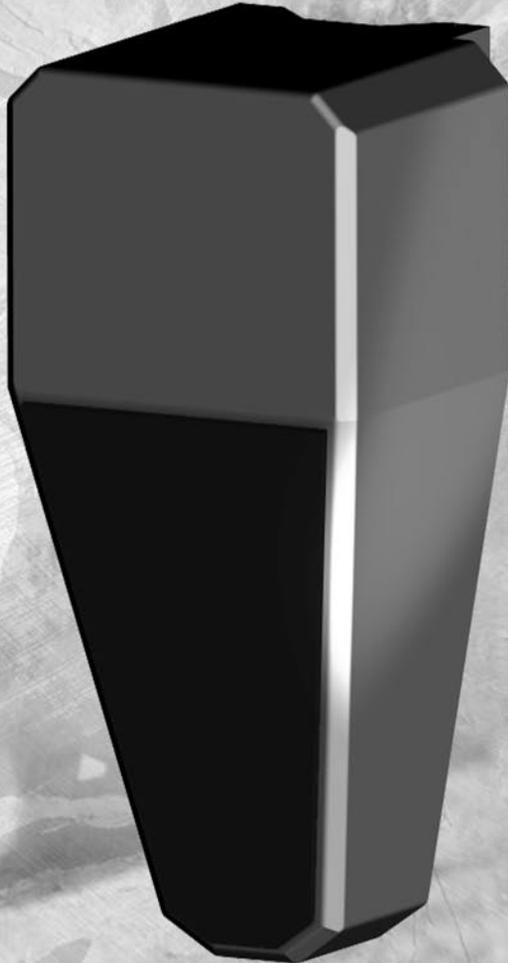
The spade lugs of some of the high quality cables often used with the Surround channel are *angled* to reduce pressures on the cable during installation. Avoid the instinct to push the cable’s spade lug ends all the way into the Surround channel’s connectors (see Figure 6.8). Partial insertion of these *angled* spade lugs will actually improve the reliability of the connection. Flat lugs may be fully inserted to connectors before tightening.

SURROUND SETUP COMPLETED

This completes the initial setup of your Surround channel. Final system tuning and voicing should be performed as outlined in Section 7. Section 7 will evaluate your entire speaker setup and allow you to make small modifications in speaker rotation and location (except of course the Surround channel), that will greatly improve the performance of your multichannel audio or home theater system.

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SECTION 7.0 INTRODUCTION

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/multichannel/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 multichannel/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 multichannel 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. Sections 7.1 and 7.2 will cover a multichannel setup. Section 7.3 will cover two channel audio. The multichannel 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 7.1 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 inch increments.
- Place your multichannel 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 inch increments and then 1/2 inch 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 inch 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 inch then 1/2 inch 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 muddled harmonics 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 7.2 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 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 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 multichannel 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 2-3 meters, 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 you are away from the Center channel. This combfiltering 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 combfiltering is reduced. Often, raising the front spikes as little as 1/2" will eliminate the combfiltering.

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 effect 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, 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. Examine carefully 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 SUBWOOFER

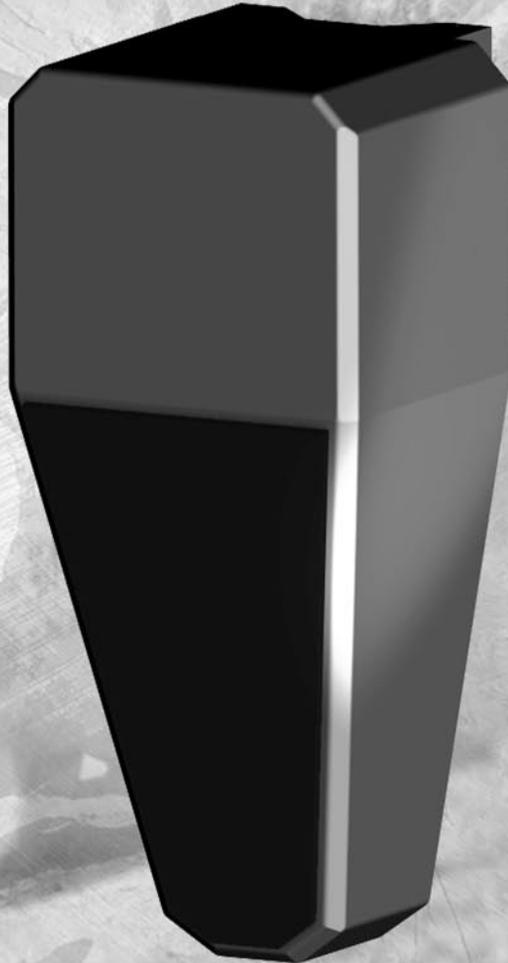
The subwoofer will perform well in almost any location in the room. In general, the closer you place the subwoofer to a wall or corner, the greater the augmentation of the bass. However, the increase in bass comes at a cost of perceived speed, dynamics and bass clarity. We recommend that you experiment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

SECTION 7.3 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, #4), that offers the most correct image height and an overall naturalness in the voice.
- Set this as your final location.





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SECTION 8.0 WATCH SYSTEM SPECIFICATIONS

WATCH - SURROUND

Measurements:

Impedance: 8 Ohms, see Impedance Curve page 8-2
 Sensitivity: 89 dB, 2.38 V input, measured @ 1m.
 Frequency Response: 45Hz to 22kHz

Dimensions:

Height 22.5"
 Depth Unmounted 8"
 Depth Mounted 10.5"
 Width at Top 9.5"
 Width at Bottom 5"

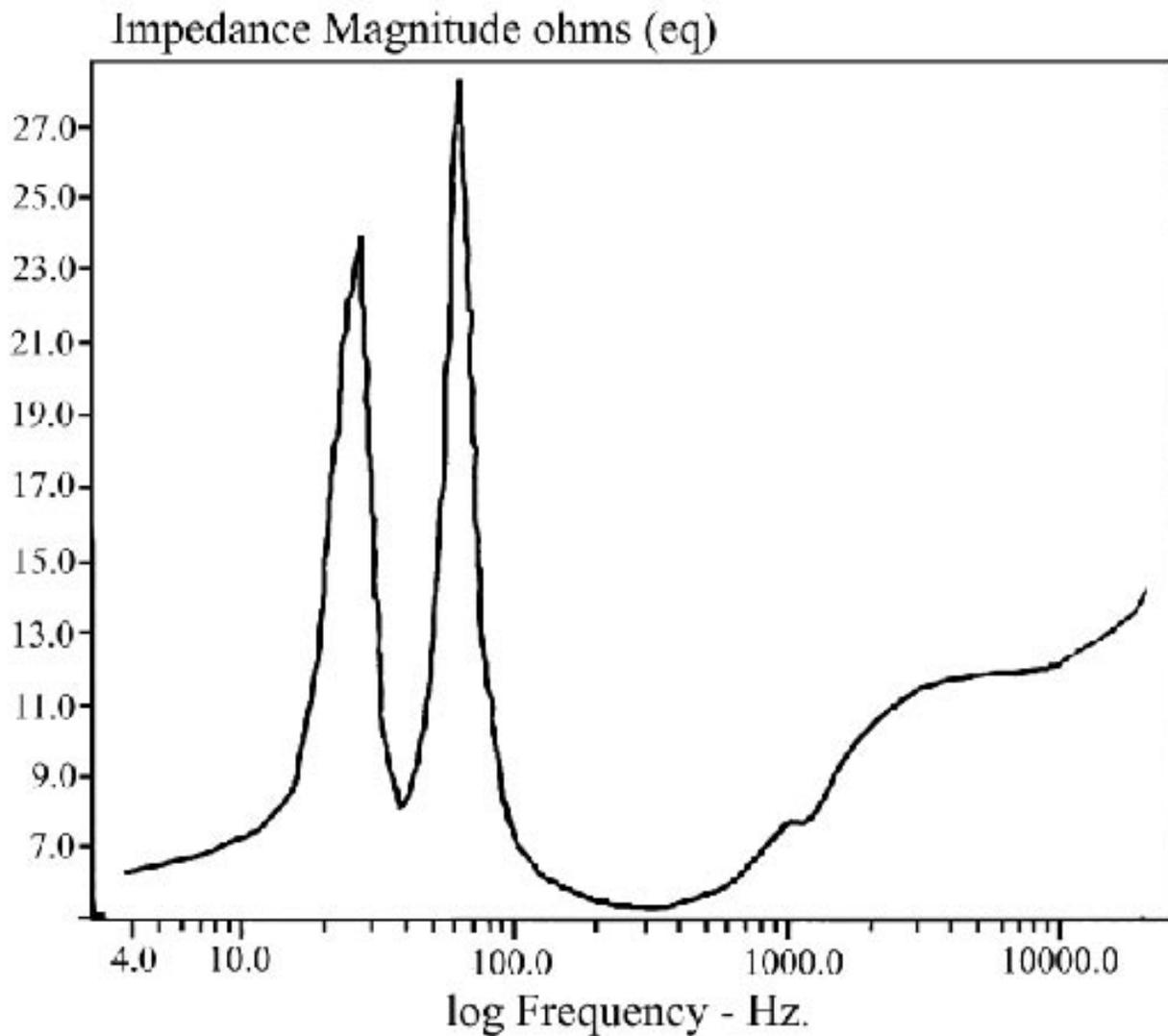
Weight (uncrated):

WATCH-Surround 50 lbs.
 Universal Mount 15 lbs.

Finishes:

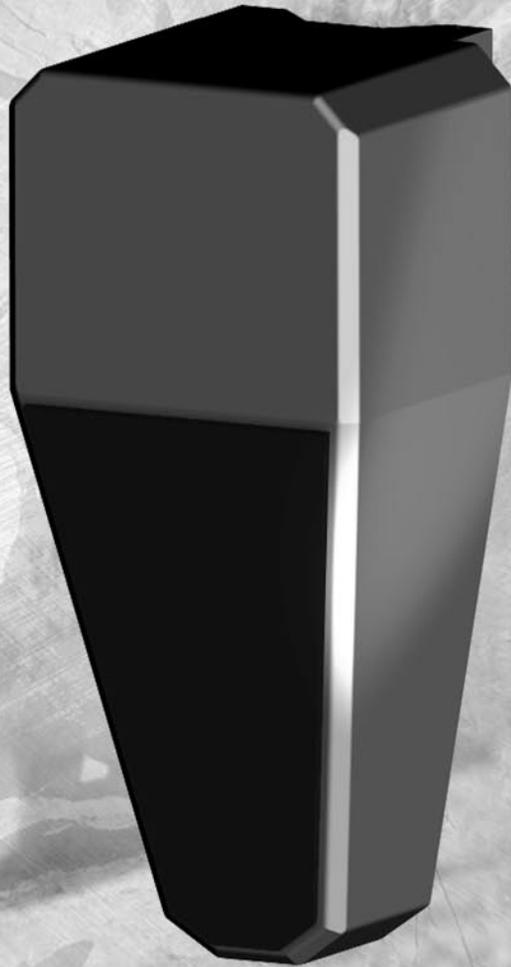
Speaker - Wilson Gloss Paint
 Bracket - Not painted (standard)
 Neutral tone paint finish (optional)

SURROUND CHANNEL IMPEDANCE CURVE



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WILSON AUDIO LOUDSPEAKER

LIMITED WARRANTY

TERMS AND CONDITIONS

LIMITED WARRANTY

Wilson Audio warrants its loudspeakers to be free of manufacturing defects in material and workmanship, subject to the conditions hereinafter set forth for a period of 90 days from the date of purchase by the original purchaser, of five (5) years, if a Warranty Registration Form has been correctly filed at Wilson Audio, no later than 30 days after product delivery to the customer.

CONDITIONS

This warranty is subject to the following conditions and limitations. The 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, abused or misused, damaged by accident or neglect or in being transported or the defect is due to the product being repaired or tampered with by anyone other than Wilson Audio, or an authorized repair center. Most repairs can be made in the field by an authorized Wilson Audio agent. In instances when return to Wilson Audio's factory is required, a return authorization must first be obtained by the dealer or customer. Wilson Audio will pay return freight of its choice. **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 above product fails to meet the above Warranty and the above conditions have been met, the purchaser's sole remedy under this Limited Warranty

shall be to return the product to Wilson Audio or to an authorized Wilson Audio repair center where the defect will be rectified without charge for parts or labor.

LIMITED TO ORIGINAL PURCHASER

This 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. Any subsequent purchaser should contact a Wilson Audio dealer to request a new warranty.

DEMONSTRATION EQUIPMENT

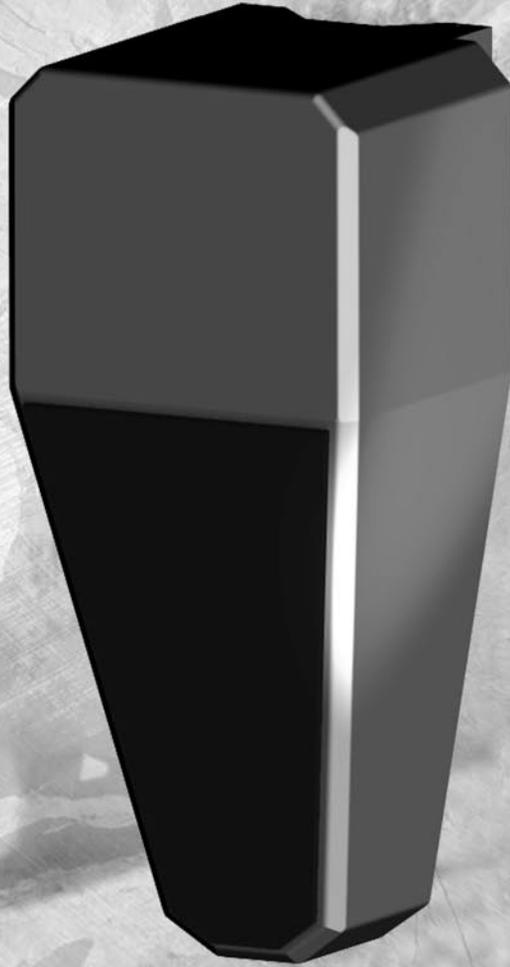
Equipment used by an authorized dealer for demonstration purposes is warranted to be free of manufacturing defects in materials and workmanship for a period of five (5) years from the date of shipment to the dealer. Demo equipment needing warranty service may be repaired on-site or, if necessary, correctly packed and returned to Wilson Audio by the dealer at his 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. In other words, 90 Day basic warranty, unless extended to 5 years by return of completed Warranty Registration.

MISCELLANEOUS

ANY IMPLIED WARRANTIES RELATING TO THE ABOVE PRODUCT SHALL BE LIMITED TO THE DURATION OF THIS WARRANTY. THE 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 Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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Owner's Manual

WILSON AUDIO SPECIALTIES, INC.

Problem

Reason

One channel is not operating... Check interconnects from source.

Check the connections on the speaker cables. Both at amplifier and speaker ends. Watch especially for connector 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 imaging 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

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

Using the 1/8" Allen wrench 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 ones place.

Note: 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, 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 speaker** . 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.

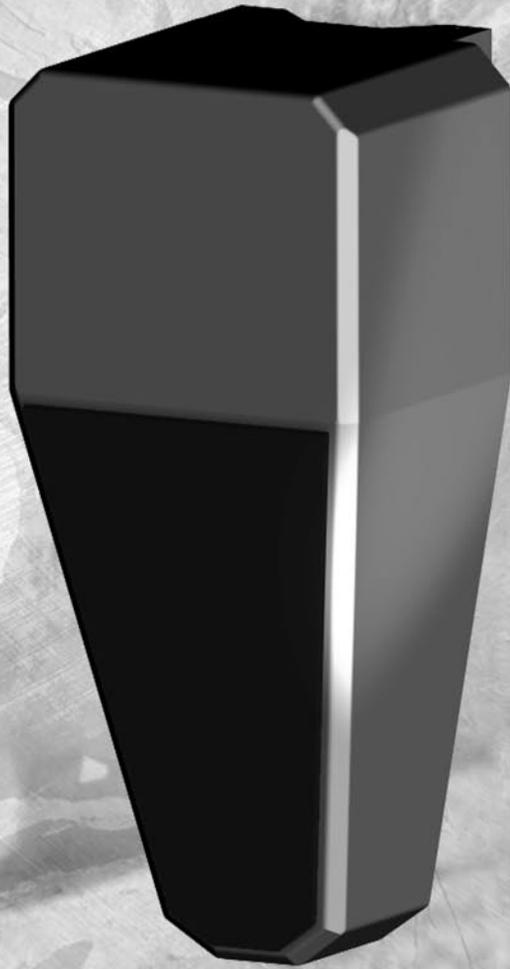
If the problem is solved: You have a short in your speaker cables. Check for frayed ends, holes (from spike feet), or make sure that your spade lug is not touching the chassis while it is connected to the binding post.

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

WILSON AUDIO SPECIALTIES, INC.

REPAIR PROCEDURES

B



Owner's Manual

WILSON AUDIO SPECIALTIES, INC.

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 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 on the wires to the driver. White wire to the positive side and black to the negative. The positive side is generally indicated by a red dot. Make sure to heat up the solder joint completely and hold 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.

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