

WATCH DOG OWNER'S MANUAL



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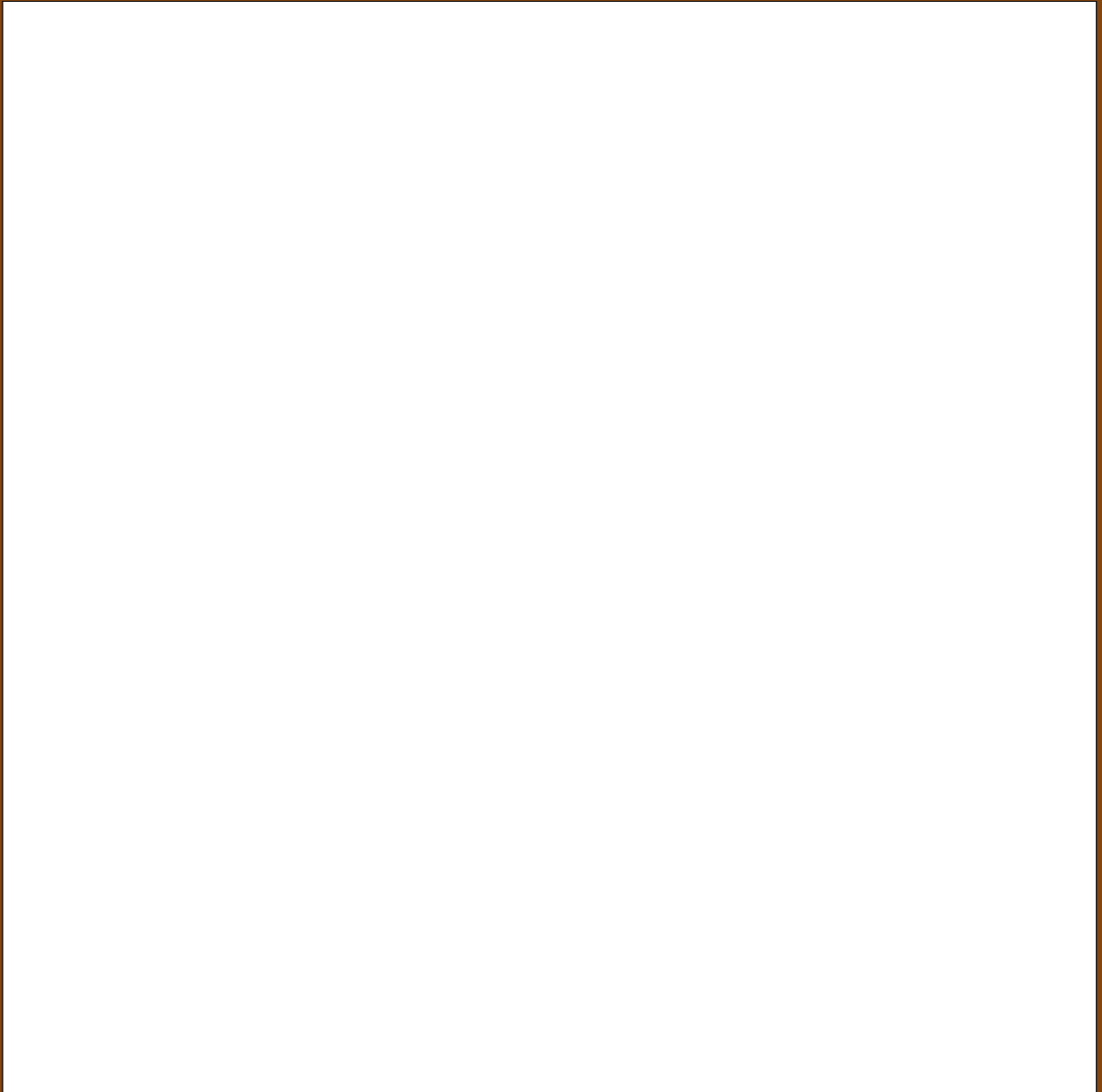
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SECTION 1 - INTRODUCTION



Section 1.1 – Passive WATCH Dog Introduction

The WATCH (Wilson Audio Theater Comes Home) 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 using the Dog 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 tuneability of the WATCH Dog is greatly enhanced when used with the Wilson Controller active crossover. The Controller's comprehensive control allows the WATCH Dog to be optimized for both music and multi-channel applications, even within the same system. The Controller's adjustments allow critical setup, ensuring the best possible performance in a wide range of rooms and with a variety of speakers.

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.

Design Considerations

Your WATCH Dog subwoofer has been designed to augment and extend the bottom octave performance of Wilson Audio loudspeakers. This was a difficult task because of the inherent speed, phase coherency, and dynamics typical of Wilson speakers. 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 Dog subwoof-

er ensures the most seamless integration with your Wilson Audio loudspeakers. The WATCH Dog system is the only sub designed specifically to match the inherent quality of the Sophia, WATT/Puppy, MAXX, and, in many instances, the Alexandria X-2.

Applications

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 soundtrack listening. The WATCH Dog has been designed to deliver all of the speed, dynamics, and musical accuracy to satisfy even the most demanding music lovers.

The WATCH Dog has been engineered to take full advantage of today's multi-channel surround formats, including the latest AC-3 (Dolby Digital) and DTS (Digital Theater Systems) formats.

It will provide years of satisfaction whether listening to two-channel audio, multi-channel audio, or to the latest movie sound track.

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.

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 was 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 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 re-

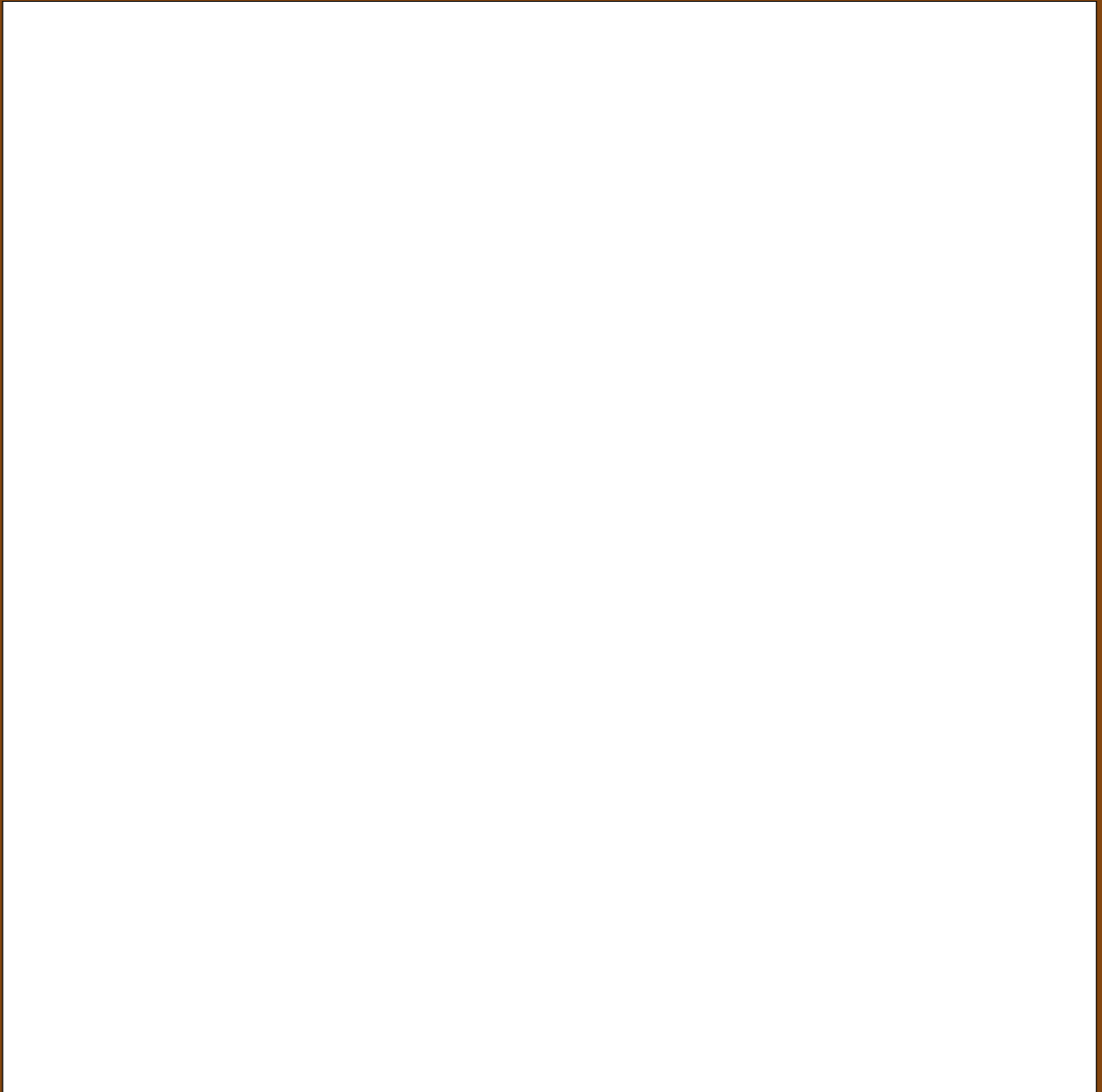
ducing wall interaction and resonance. The Surround can also be rotated towards the listening position, offering improved integration with the front speakers and better imaging.

Conclusion

Finally, a subwoofer designed and manufactured with the same commitment to excellence that has characterized all products from Wilson Audio. The WATCH Dog 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 Dog, as well as the other WATCH products, will provide an experience with film or music only obtainable through Wilson products.



SECTION 2 – UNCRATING YOUR WATCH DOG



Section 2.1 - Preparation

You will need the following items:

- Supplied hardware kit
- Tape measure
- Known listening position
- Electric screwdriver
- Phillips head drive bit

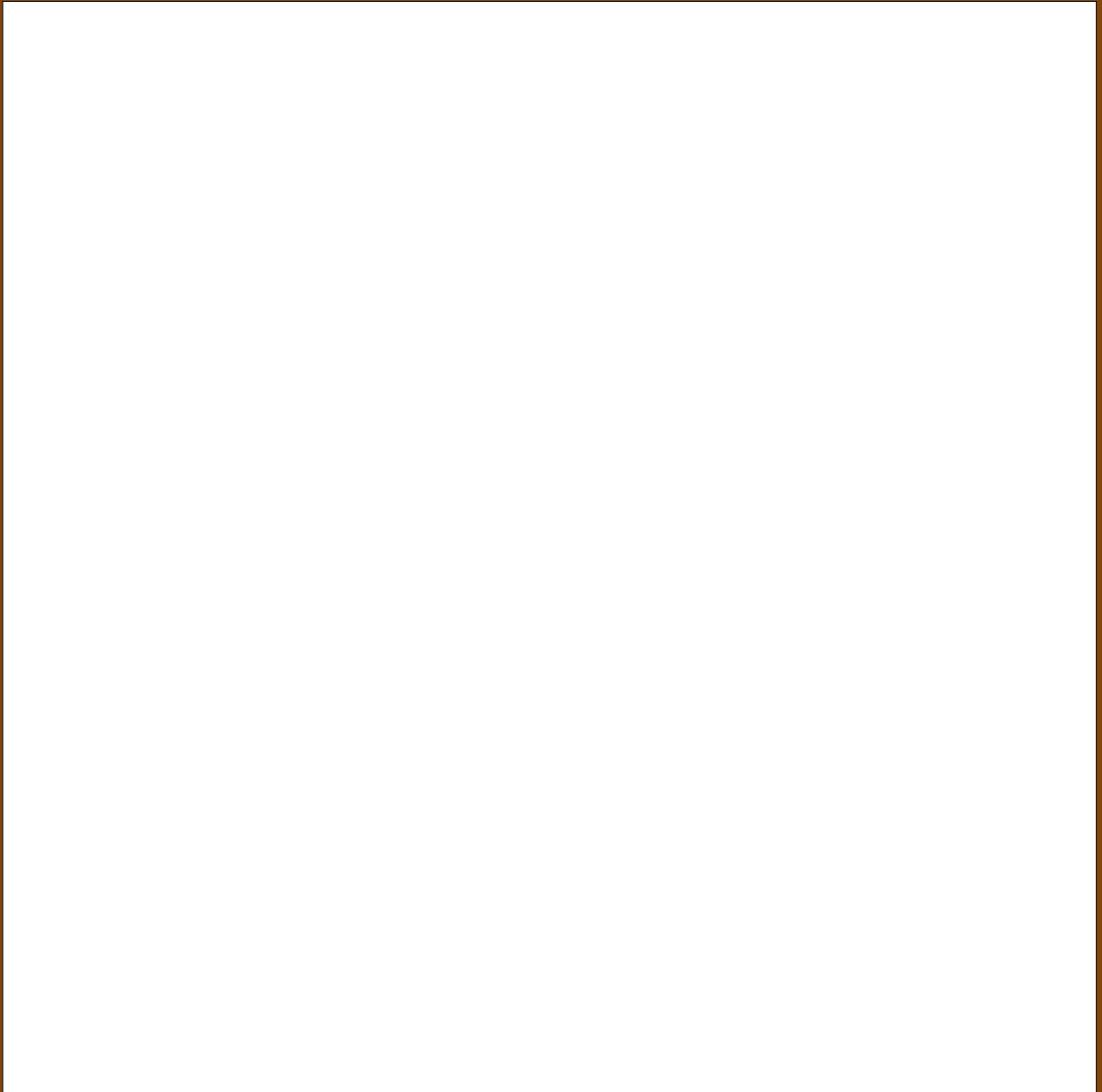
Uncrating the WATCH Dog

A minimum of two strong adults are required to set up the WATCH Dog. The WATCH Dog is very heavy and care should be taken to prevent injury.

1. With the crate lid facing up, unscrew the wood screws securing the lid. Remove the lid. Remove the foam packing material that is positioned between the casters (on the bottom of the WATCH Dog). The WATCH Dog will not roll out of the crate with this packing material in place.
2. Rotate the crate so that the WATCH Dog is upright.
3. While one person holds the crate, another person should gently roll the WATCH Dog out of the crate. Be careful not to scratch the sides of the painted enclosure.
4. Move the WATCH Dog into the desired location. It is recommended that you leave the casters attached to the bottom of the WATCH Dog during the positioning process.

Note: Be careful not to touch the driver element when you are moving your WATCH Dog!

SECTION 3 - IN YOUR ROOM



Section 3.1 - The Wilson Audio Setup Procedure

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

Final Listening Room Setup (Voicing)

For a subwoofer its size, the Passive WATCH Dog is unmatched in its ability to reproduce the musical event. It 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 Dog, 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. What follows is an outline of the Wilson Audio Setup Procedure (WASP). When carefully followed, the process has shown to be the most effective method for setting up Wilson loudspeakers.

Zone of Neutrality

The “Zone of Neutrality” is an area in your room where the speakers will sound most natural. This location is where the speakers interact the least with adjacent room boundaries. It is important to have a clear working space while determining the Zone of Neutrality.

The following is a simple method to locate the Zone of Neutrality within your listening environment:

1. Stand against the wall BEHIND the location where you intend to position your WATCH Dog. 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 sidewall. 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 to 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 procedure as above, begin moving into the room toward the opposite

sidewall, 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.

Theoretically, the Zone of Neutrality for any room runs like a path, parallel to the walls all around the room. Adjacent to very large windows and open doors, the outer edge of the Zone of Neutrality moves closer to the wall and becomes wider. If you were to extend the inner and outer boundaries of the Zone for the sidewalls and the front wall (behind the speakers), they would intersect. After you complete this procedure for the other loudspeaker, you will now have two rectangles, one on the floor on either side of the room.

Section 3.2 - Room Acoustics

Note: The following section contains general information on room acoustics and loudspeaker/room interaction. The concepts outlined below are equally relevant when dealing with multi-channel audio or home theater. The careful application of these concepts, as you evaluate the acoustical characteristics of your own room configuration, will allow you to optimize the performance of your WATCH Dog Passive Subwoofer.

Slap Echo

Probably the most obnoxious form of reflection is called “slap echo.” With slap-echo, primarily midrange 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 midrange. Slap echo destroys the sound quality of a stereo system in two ways:

- It adds harshness to the upper midrange and treble by storing time-domain smearing energy.
- It destroys the delicate phase relationships, which help to establish an accurate soundstage.

Slap echo (see Figure 3) is a common acoustical problem in the typical domestic listening room because most of these rooms have walls with a hard, reflective nature, only occasionally interrupted by curtains, wall art, or drapes. The best (but least practical) solution to eliminate slap echo is nonparallel walls. This is because, rather than support slap-echo, nonparallel walls allow the sound to diffuse. This approach can be accounted for during the construction process. For existing rooms, slap echo can also be controlled entirely by the application of absorptive materials to the hard surfaces. These are absorptive materials that can be used to ameliorate slap echo:

- Illbruck Sonex®
- Air duct board
- Cork panels
- Large ceiling to floor drapes
- Carpeting to wall surfaces

In many domestic listening environments, heavy stuffed furnishings reduce slap echo somewhat. Unfortunately, their effectiveness is not predictable. Diffusers are sometimes also used to very good subjective effect, particularly in quite large rooms.

Sound absorbent materials such as described above will alter the tonal characteristic of the room by making it sound “deader,” less “bright and alive,” and “quieter.” These changes usually make the room more pleasant for conversation, but sometimes render it too dull in the high frequencies to be musically involving. Soundtrack effects will be more localized. However, over-damping the room can render reproduced sound that is lacking in musical involvement and “aliveness.”

Diffusers, on the other hand, do not affect the tonal balance characteristic of the room as much. Placed properly, diffusers create a smoother and more open sound. Some diffusers, due to their construction, create narrow midrange peaks and suck out the warmth region. Do not use diffusers on the wall behind the speakers or on the sidewalls directly beside the speakers. It is our experience that all of these room treatment devices should be used judiciously.

Standing Waves

Another type of reflection phenomenon is “standing waves.” Standing waves cause the unnatural boosting or accentuation of certain frequencies, typically in the bass, to be found at certain discreet locations in the room. These locations differ according to room dimension and size. A room generating severe standing waves creates difficulty in setup. In these rooms, the speaker will sound radically different as it is moved around. The effects of standing waves on a loudspeaker’s performance are primarily in the areas listed.

- Tonal balance
- Resolution of low-level detail
- Soundstaging

Standing waves are more difficult to correct than slap echo because they tend to occur at a lower frequency. Absorbent materials, such as Illbruck Sonex®, are ineffective at controlling reflections in the bass region. Moving speakers about slightly in the room is, for most people, their only control over standing waves. Sometimes a change of placement of as little as two or three inches can dramatically alter the tonal balance of a small system.

Fortunately, minor low frequency standing waves are well controlled by positioning ASC Tube Traps™ in the corners of the room. Very serious low frequency accentuation usually requires a custom-designed bass trap system.

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

In general, placement of the speaker in a corner will excite the maximal number of standing waves in a room and is to be avoided for most direct radiator, full-range loudspeaker systems. Some benefit is achieved by placing the stereo pair of loudspeakers slightly asymmetrically in the listening room. This is so 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

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

Acoustical comb filtering occurs when sound from a single source, such as a loudspeaker, is directed toward a microphone or listener from a distance. The first sound to reach the microphone is the direct sound, followed by a delayed, reflected sound. At certain frequencies, cancellation occurs because the reflected sound lags in phase relative to the direct sound. This cancellation is most apparent where the two frequen-

cies are 180 degrees out of phase. Further, there is augmentation at other frequencies where the direct and the reflected sounds arrive in phase. Because it is a function of wavelength, the comb filter effect will notch out portions of the audio spectrum at linearly spaced intervals. Subjectively, comb filter effect evidences itself as follows:

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

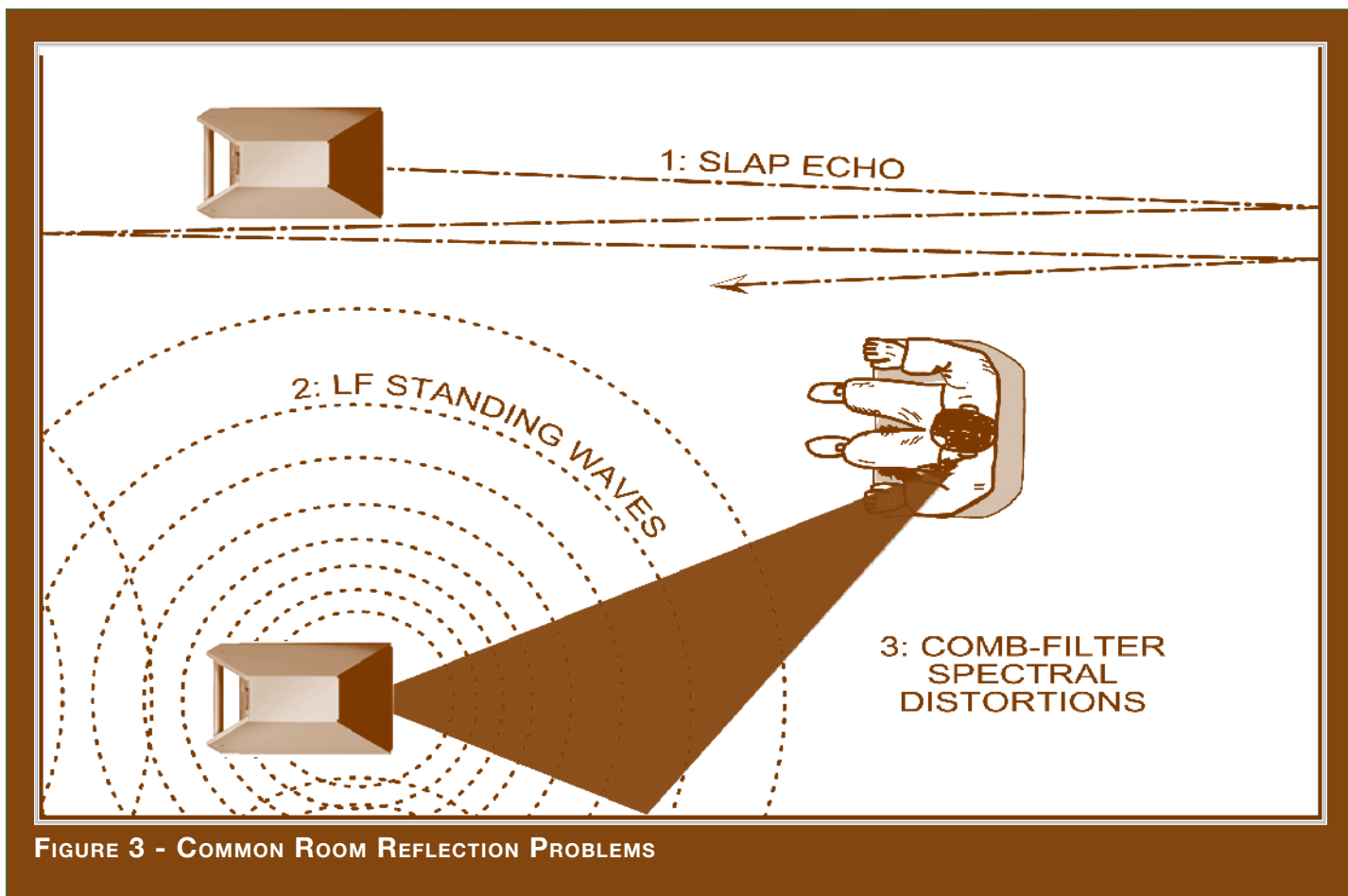


FIGURE 3 - COMMON ROOM REFLECTION PROBLEMS

Comb filter effects are often caused by side wall reflections. They are best con-

trolled by very careful speaker placement and by the judicious placement of Illbruck Sonex® or air duct panels applied to that part of the wall where the reflection occurs.

Section 3.3 - Resonances

Resonance in listening rooms is generally caused by two sources:

- Structures within the listening room.
- The volume of air itself within 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 palm of your hand or stomping on the floor. Most rooms exhibit mid-bass “boom” when struck. The loudspeaker playing in the room also excites these resonances. 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 a false fullness to the tonal balance. They, too, are more prominent at louder levels, but their contribution to the sound of the speaker is more progressive. Rattling windows, picture frames, lamp shades, etc., can generally be silenced with small pieces of caulk or with blocks of felt. However, short of actually adding additional layers of sheet rock to flimsy walls, there is little that can be done to eliminate wall resonances.

Volume Resonance

The physical dimensions and volume of air in a room will also support standing wave modes and resonances at frequencies determined by the size of that room. Larger

rooms will resonate at a lower frequency and have more complex (better) modal distributions than will smaller rooms. Volume resonances, wall panel resonances, and low frequency standing waves 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. Careful placement of loudspeakers in the room can dramatically reduce the speakers' destructive interaction with low frequency modes. ASC Tube Traps™ are effective in reducing some of this low frequency room coloration. Custom designed bass traps, such as perforated Helmholtz resonators, provide the greatest degree of low frequency control.

Section 3.4 - 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

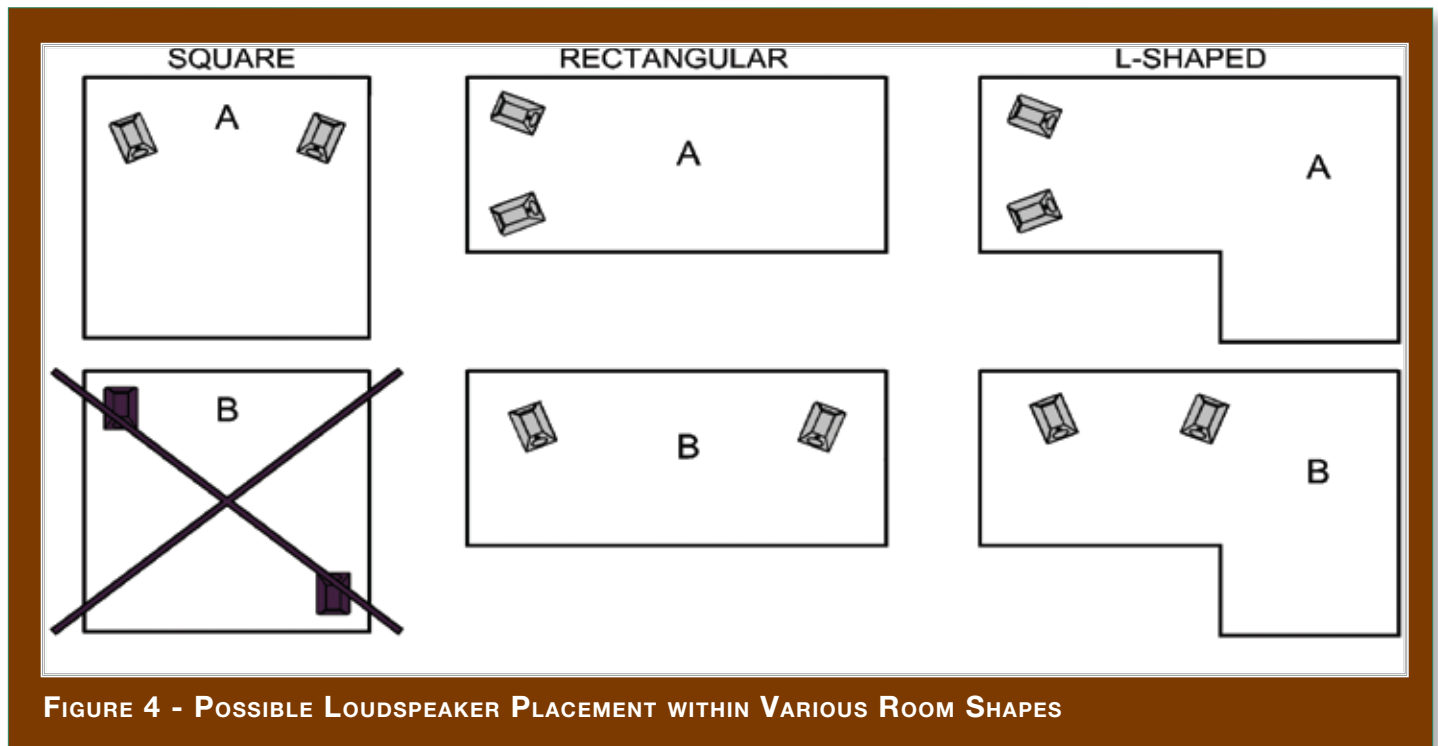


FIGURE 4 - POSSIBLE LOUDSPEAKER PLACEMENT WITHIN VARIOUS ROOM SHAPES

will have different standing wave frequency exaggerations depending on where you are sitting. Additionally, these long rooms are often quite lean in the bass near the center of the room. Rectangular rooms are still preferred to square rooms because, by having two sets of dissimilar length walls, standing waves are not as strongly reinforced and will dissipate more quickly than in a square room. In these rooms, the preferred speaker position for spatial placement and midrange resolution would be on the longer walls. Bass response would be reinforced by speaker placement on the short walls.

In many cases, L-shaped rooms (see Figure 4) 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 Dog Passive Subwoofer 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 Wilson Audio loudspeakers. 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. The Wilson Audio Setup Procedure (Section 3.1) is the best method with which to position your loudspeakers. Start 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.

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 en-

countered 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 WATCH Dog is shipped with casters installed on the bottom of the cabinet. Leave the casters on the Dog as you move it to its desired location.

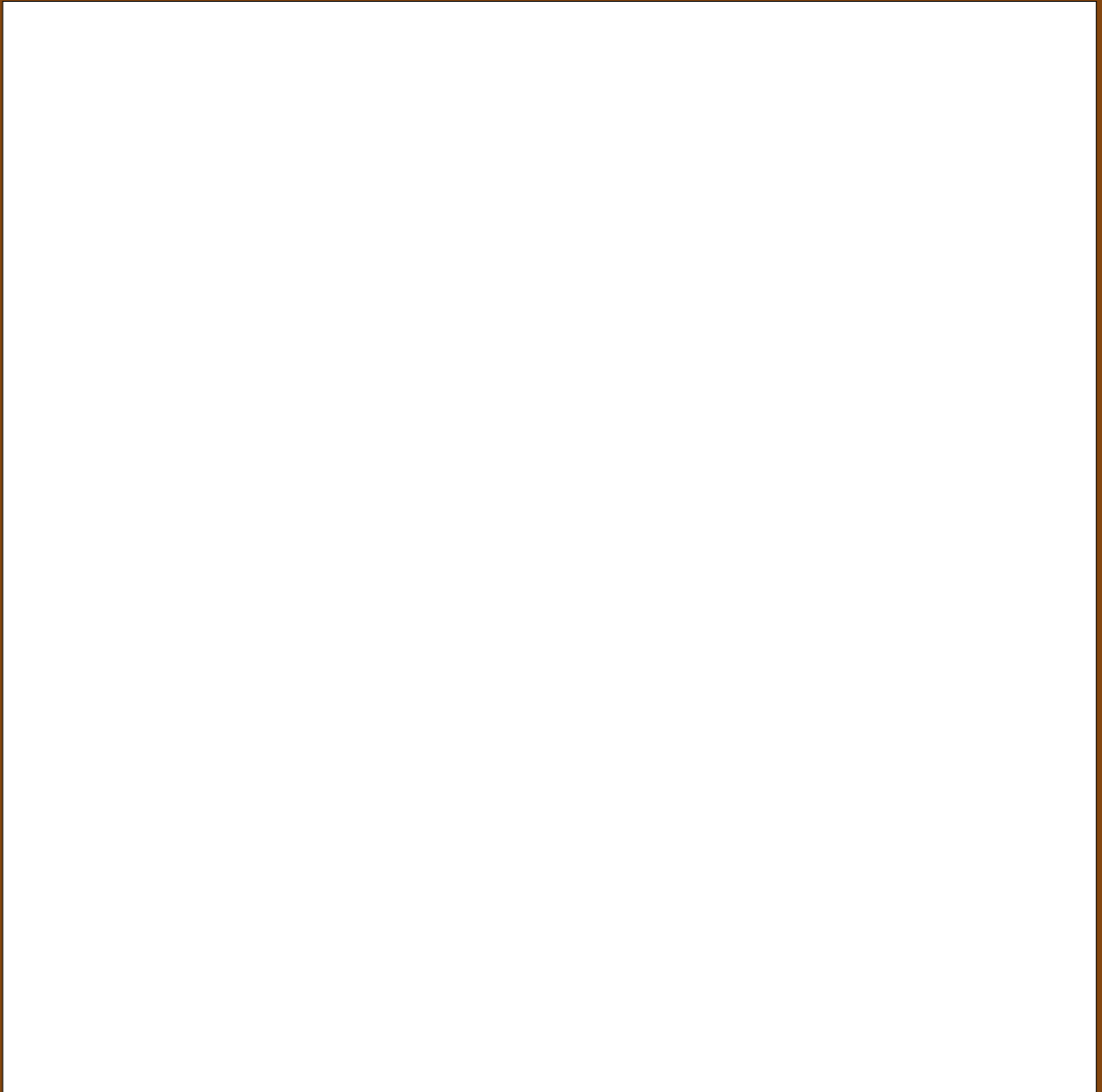
The ideal position of the WATCH Dog subwoofer is somewhat dependent on its primary use. In home theaters, where the WATCH Dog is used as the Low Frequency Effects (LFE) Channel, it may be located in a variety of positions, depending on architectural considerations. In general, the lower frequency range 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 (via the Wilson Controller) 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 Controller (see Controller owner's manual).

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## SECTION 4 - SETUP OF YOUR WATCH DOG





## Section 4.1 - WATCH Dog Setup in a Music System

For best results, it is recommended that the WATCH Dog be used in conjunction with the Wilson Controller in music systems.

The WATCH Dog subwoofer was designed in conjunction with all Wilson Audio loudspeakers. All Wilson Audio loudspeakers are designed to be audibly phase and time coherent. When in conjunction with the Wilson Controller, the WATCH Dog subwoofer is 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 Wilson Controller allows the WATCH Dog to be optimized in the time domain within the listening environment. Correct Phase setup of the WATCH Dog (see Controller owner's manual) 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.

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



FIGURE 5 - WILSON CONTROLLER FRONT PANEL



**FIGURE 6 - WILSON CONTROLLER REAR PANEL**

be minimized with the WATCH Dog Controller's unique Bass Equalization Control. See Controller owner's manual for detailed information on critical setup.

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 Controller. 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. See Controller owner's manual for detailed information on critical setup.

## **Section 4.2 - Connecting The WATCH Dog - Home Theater**

The WATCH Dog can be connected in a variety of ways depending on your system needs. It can be used as the LFE (Low Frequency Effects) channel for a dedicated home theater system, or it can be used to extend the bass in a two-channel music system. In systems where it is desirable to use the WATCH Dog with both surround modes and two-channel music mode, you can switch between the two via the Wilson Controller (see Controller owner's manual).

The WATCH Dog is also capable of accepting either balanced (XLR) or single ended (RCA) cable connection from your preamplifier or surround processor. Your choice will depend on the configuration of your particular preamp or surround processor.

### **Connection With a Surround Processor**

You must use a dedicated amplifier to power your Passive WATCH Dog. The Dog subwoofer can be used in conjunction with your surround processor without the need of an additional crossovers. In those systems where the WATCH Dog is being used as the point one channel in a surround system, the subwoofer is connected through the sub output of the surround processor. Connect this output to the input of the Dog's amplifier and, in turn, connect the amplifier output to the input of the Passive WATCH Dog.

In systems where it is desirable to use the subwoofer in both the surround mode and to augment the main speakers when listening to music, the following connection strategy employing the Wilson Controller is recommended (see also the Controller owner's manual for further details).

### **Bypassing The High Pass Filter**

In systems where the main speakers are full range, the WATCH Dog can be configured more successfully without the use of the High Pass Filter. There is a normal bass roll-off that occurs naturally in your listening room. This effect acts like a six dB per octave low pass filter. By carefully using the Controller's Low Pass filter controls, along with the Bass Equalization and Phase controls (discussed in detail in the Controller owner's manual), you can successfully integrate the main loudspeakers in your system with the WATCH Dog without the use of the High Pass Filter (see also the Controller owner's manual for connection details).

### **Utilizing The High Pass Filter**

The WATCH Controller employs a high quality High Pass Filter as a part of its crossover design. The High Pass Filter can be used to filter bass from the main loudspeakers. This can be desirable in systems where the main loudspeakers have limited

bass dynamics or if the main power amplifier is low power. (See the Controller owner's manual for connection details).

### Section 4.3 - Initial Setup Summary

When used in a home theater system as the LFE channel, the WATCH Dog can be positioned in a variety of areas within the room successfully. Room boundaries and corners enhance low frequency coupling with the room, but care is required in attending to resulting upper bass colorations.

When used in a music system, the subwoofer integrates more consistently with the main speakers when placed behind the plane of the speakers or in a corner of the room behind the main speakers. If you are using your Passive Dog in conjunction with a Wilson Controller, careful setup using the Phase control and the Low and High Pass filters (see Controller owner's manual) is necessary to optimize low bass performance and to ensure proper integration with the main loudspeakers.

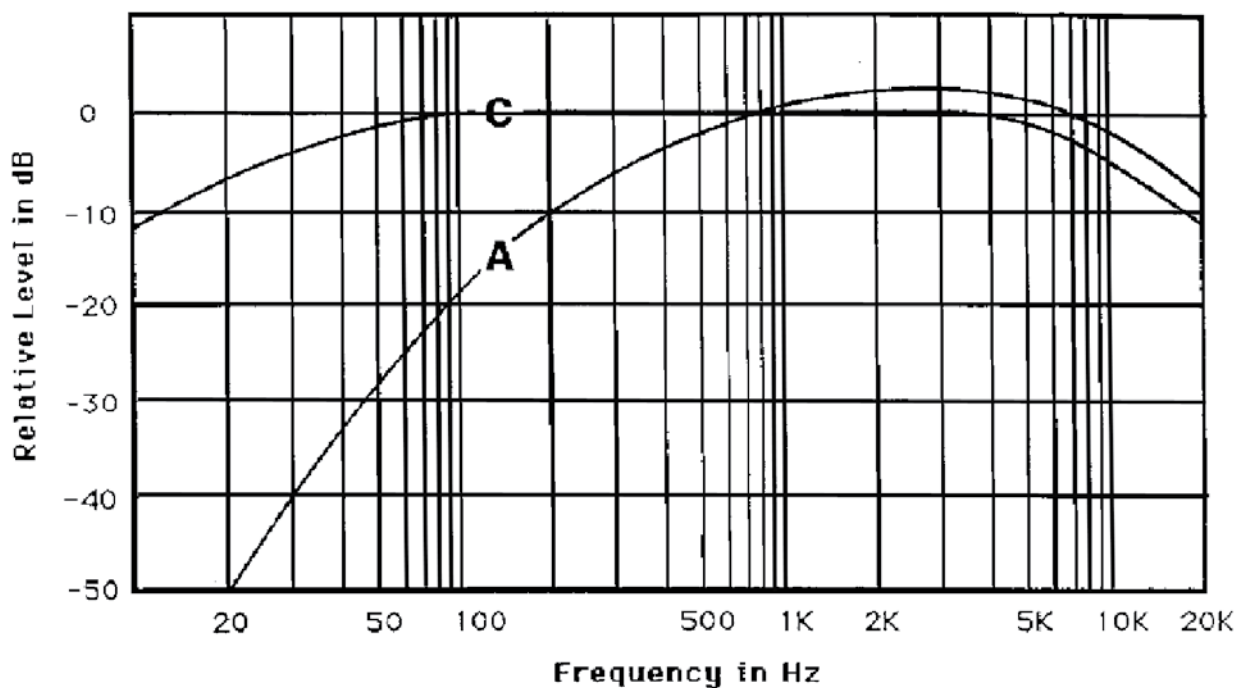


FIGURE 7 - WEIGHTED FILTER: A VS. C WEIGHTING



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**Note:** If you are using a meter to measure bass output from your Dog, please be aware of the following regarding the interpretation of measurements:

- A.** Use “slow” meter response ballistics to help average out the reading... and to keep from going crazy trying to read it!
- B.** Ears and meters are not directly interchangeable. They neither sample nor process the sound in a completely analogous manner (see Figure 7).

### Summary

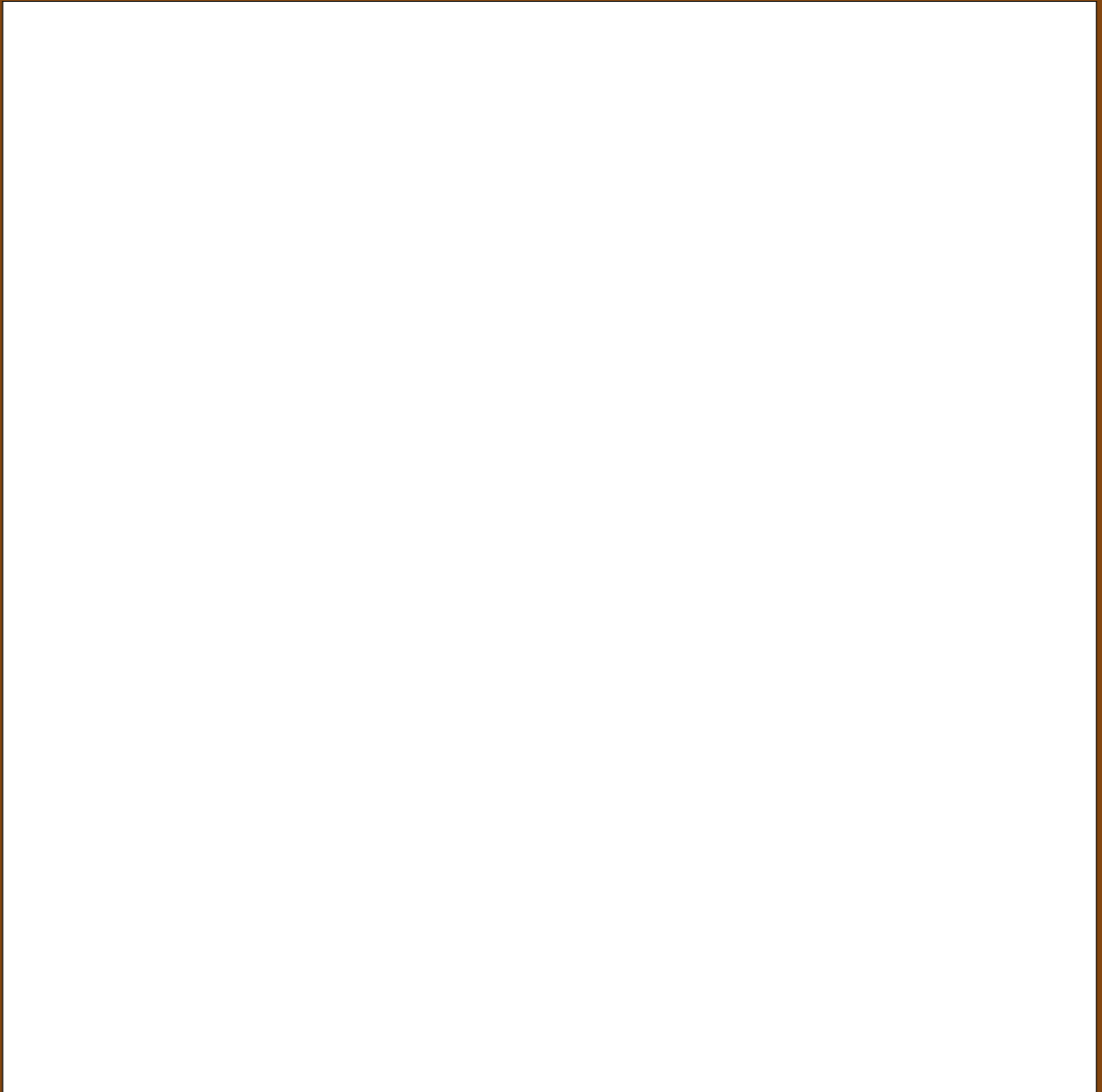
In summary, for optimal tonal balance accuracy, resolution of low level detail, and soundstaging performance, the WATCH Dog Passive Subwoofer should be positioned as outlined in this section. By following the guidelines in this manual, your new WATCH Dog Passive Subwoofer can provide you with a lifetime of pure music reproduction.



**FIGURE 8 - HIGH PASS FILTER CONTROLS**



**SECTION 5 - SPIKING THE WATCH DOG**





## Section 5.1 - WATCH Dog Spikes

The WATCH Dog comes with a set of heavy duty spikes that provide acoustical isolation as well as optimal height placement for your WATCH Dog. Brass disks that fit beneath the spikes are included for installations where spikes might damage the floor surface (such as wood floors).

After determining the WATCH Dog's position, assemble the spikes as follows:

### Assembly

1. Insert threaded bolts in the bolt holes in the front of the subwoofer until they are flush with the inner surface visible through the acoustic port. Make sure the Allen key end is facing downward.
2. Screw the acoustical diode onto the bolt until it fits snugly against the bottom of the WATCH Dog. Do not overtighten.
4. Screw the spike (with nut) all the way in until it just touches the bolt. Do not tighten the nut at this time.
5. Repeat steps 1 through 4 with the other spikes.
6. Using a bubble level, adjust the spikes so that the WATCH Dog is level and so that all of the spikes are making equal contact with the hard surface beneath.

The spikes, installed properly, decouple the WATCH Dog from the floor, reducing resonances within the room. They also provide a stable platform for the WATCH Dog to launch bass energy into the room. The result is cleaner, faster, more dynamic bass, with improved extension and linearity.



SECTION 6 - CARE OF THE FINISH







## Section 6.1 – Care of the Finish

The WATCH Dog loudspeakers are hand painted with WilsonGloss™ paint and hand polished to a high luster. While the finish seems quite dry to the touch, final curing and complete hardening takes place over a period of several weeks.

### Dusting the WATCH Dog

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

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

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

### Care of the Grilles

Periodically, you will want to clean the WATCH Dog's grilles. This is best done

by using the round brush attachment on a vacuum cleaner hose. Gently vacuum the front surface of the grille. Be careful not to apply too much pressure. Do not use a hard plastic attachment against the grille. The grille cloth is stretched tightly over the grille frame. Too much pressure or use of a hard plastic attachment could cause the grille material to tear, especially in the corners.

Often Wilson speaker owners desire to change the look of their listening room by changing the color of their speaker grilles. In addition to basic black, Wilson Audio offers a variety of grille colors to match most WilsonGloss finishes. Contact your local dealer for grille cloth samples or to order replacement grilles for your WATCH Dog.

### **Break-in Period**

All audio equipment will sound best after its components have been broken in for some period of use. Wilson Audio breaks in all woofers and mid-range drivers for approximately 12 hours. 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 at normal listening levels. 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 6.2 – Enclosure Technology**

### **Materials**

Wilson Audio has conducted many hours of research on the impact of materials on speaker enclosure performance. Through this effort, Wilson pioneered the use of non-resonant materials, first with the use of mineral-filled acrylic in the WATT and continuing with the further development of proprietary materials for X-1 Grand SLAMM and WATCH Dog. Even the best materials are not suited to all aspects of enclosure construction. Therefore, like all Wilson loudspeakers, the WATCH Dog is constructed

of several exotic materials chosen for their specific performance attributes relevant to different portions of the enclosure.

The WATCH Dog is constructed using non-resonant, high-density, composites which are then cross-braced to further reduce cabinet resonance. Each of these composites meets and exceeds the highest of ANSI test standards for its use, while offering very tight tolerances, high hardness, uniform density, and dimensional stability.

### **Adhesive**

Wilson Audio has conducted exhaustive research into the best adhesives to permanently bond our speaker enclosures. This is often an overlooked element crucial to the proper performance of a loudspeaker. Correct modulus of elasticity, coefficient of thermal expansion, and natural frequency response are just a few of the important elements of adhesives.

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

### **Section 6.3 – Depth of Design**

WATCH Dog's compellingly authentic performance and lasting value are achieved through careful implementation of cutting edge design and engineering and then executed using the highest performance materials. Wilson Audio's use of proprietary enclosure materials and adhesives are employed to achieve truly exceptional speaker cabinet performance. The use of these materials in the WATCH Dog results in an enclosure that is inherently inert and non-resonant. All of these structural aspects are combined, allowing Wilson Audio to deliver a product that maintains the strictest structural tolerances, durability, and reliability. This also means that the WATCH Dogs will have consistent, repeatable performance, unaffected by the climatic conditions, anywhere in

the world. Finally, like all Wilson products, the WATCH Dog is hand-crafted with meticulous attention to detail, with an unwavering commitment to excellence. Thus, the WATCH Dog will impart to her owner beauty and pleasure for many years to come.

SECTION 7 - SPECIFICATIONS





## Passive Dog Specifications

**Enclosure Type Passive Dog:** Front Ported

**Woofers:** 12.5 inch, dual spider

**Nominal Impedance:** 8 ohms

**Sensitivity:** 89 dB @ 1 watt (2.83v at one meter)

**Overall Dimensions:** Height: 26 7/8" (68.26 cm) with spike

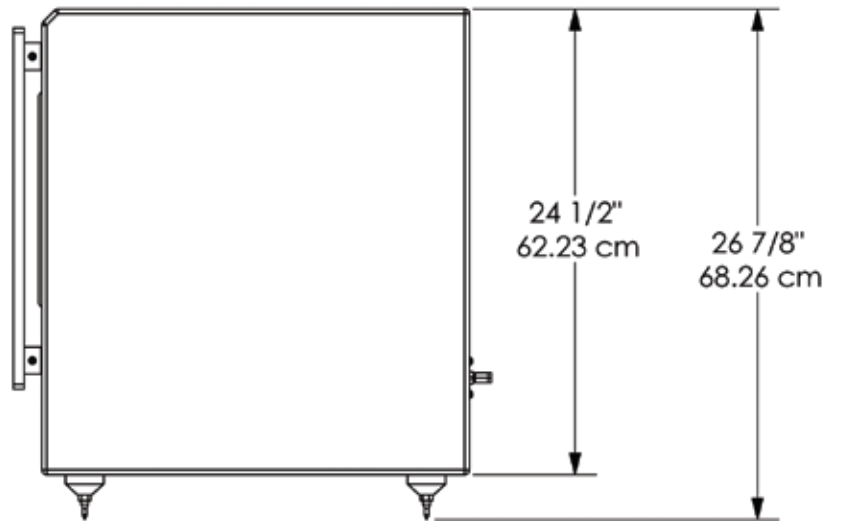
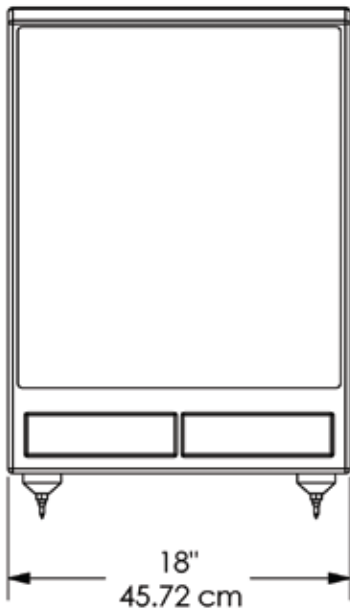
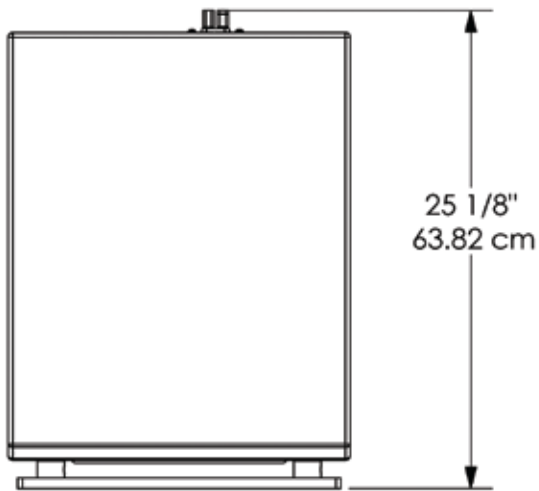
Depth: 25 1/8" (63.82 cm)

Width: 18" (42.72 cm)

**Weight:** 211 lbs (95.7 Kg)

281 crated (127.5 Kg)

### Passive WATCH Dog Dimensions





**SECTION 8 – WARRANTY INFORMATION**





## Section 8.1 – Warranty Information

### Limited Warranty

Subject to the conditions set forth herein, Wilson Audio warrants its electronics 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 customer must have returned the Warranty Registration Form 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 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.**

