

WATCH CONTROLLER OWNERS MANUAL



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CE

SAFETY PRECAUTIONS AND ELECTRICAL REQUIREMENTS

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT USE THIS APPLIANCE NEAR WATER OR EXPOSE IT TO RAIN OR OTHER MOISTURE. DO NOT HANDLE THE POWER SUPPLY OR POWER CABLES WITH WET HANDS.

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO YOUR LOCAL WILSON AUDIO DEALER ONLY.

WARNING: DO NOT PERMIT FINGERS TO TOUCH THE TERMINALS OF POWER PLUGS WHEN INSTALLING OR REMOVING THE PLUG TO OR FROM A POWER SOURCE.

IMPORTANT SAFEGUARDS

- 1. Read instructions** - All the safety and operating instructions should be read before operating the WATCH Controller.
- 2. Retain instructions** - The safety instruction and owner's manual should be retained for future reference.
- 3. Heed Warnings** - All warnings on the WATCH Controller and in the owner's manual should be adhered to.
- 4. Follow Instructions** - All operating and use instructions should be followed.
- 5. Ventilation** - Allow adequate space for ventilation around the unit.
- 6. Cleaning** - Unplug the WATCH Controller from the power source before cleaning and use the cloth provided by Wilson Audio. Do not use liquid or aerosol cleaners.
- 7. Power Sources** - This WATCH Controller should be operated only from the type of power source indicated on the marking label.
- 8. Power Plug** - Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 9. Power-Cord Protection** - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords and plugs, convenience receptacles, and the point at which the cords exit the WATCH Controller.
- 10. Lightning or extended non-use** - For added protection for the WATCH Controller during a lightning storm or when the unit is not in use for an extended period of time such as a vacation, unplug its power supply from any wall outlets. This will prevent damage to the WATCH Controller due to lightning or power line surges.
- 11. Servicing** - Do not attempt to service this WATCH Controller yourself as opening or removing covers will expose you to dangerous voltage and other hazards. Refer all servicing to a qualified Wilson Audio dealer.
- 12. Damage Requiring Service** - Unplug the WATCH Controller from the power source and refer servicing to a qualified Wilson Audio dealer under the following conditions:
 - a. If the power supply cord or plug is damaged.
 - b. If liquid has spilled on or objects have fallen into the WATCH Controller.
 - c. If the WATCH Controller has been exposed to rain or water or any amount of liquid.
 - d. If the WATCH Controller does not operate normally after following the operating instructions in the owner's manual.
 - e. If the WATCH Controller has been dropped or the chase has been damaged.
 - f. If the WATCH Controller exhibits a distinct change in performance.
- 13. Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by Wilson Audio. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- 14. Safety Check** - Upon completion of any service or repairs to this WATCH Controller, ask the service technician to perform safety checks to determine that the product is in safe operating condition.

ENVIRONMENT

Operating Temperature: 10°C to 40°C (50°F to 104°F)

- **WARNING: This apparatus must be connected to the AC MAINS with a 3-prong or earth grounded plug.**
- **WARNING: To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.**



- This apparatus should not be disposed of as household refuse.
- Do not move the apparatus by holding the power supply cord.
- If the apparatus is not in use for an extended period of time, please turn it off and unplug it.
- Do not disconnect the apparatus with wet hands.
- This apparatus is not intended for use by children. Children should only operate the apparatus under the direct supervision of an adult.

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SECTION 1 - INITIAL SETUP



Section 1.1 – Connecting the WATCH Controller – Home Theater

The WATCH Controller can be connected in a variety of ways depending on your system needs. It can be used in conjunction with a LFE (Low Frequency Effects) channel for a dedicated home theater system, or it can be used in conjunction with a subwoofer to extend the bass in a two-channel music system. In systems where it is desirable to use the WATCH Controller with both the surround processor in a theater system and in the two-channel music system via the preamp (bypassing the surround processor), you can switch between the two sources via the WATCH Controller's front panel's Line/Processor switch. This enables you to optimize the Controller for the surround mode and music mode separately.

The WATCH Controller is also capable of accepting either balanced (XLR) or single-ended (RCA) cable connectors 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

Make sure the WATCH Controller power is "off" and the Level control on the front panel is in the "Min" position during the connecting process. Locate the "Input" section of the WATCH Controller on the rear of the unit (See Figure 1). The Processor Input of the WATCH Controller is designated for use with the LFE (Low Frequency Effects) outputs of a surround processor. Balanced (XLR) or single-ended (RCA) connecting cables may be used, depending on the connector type used on your surround processor. Connect the LFE output of your surround processor to the WATCH Controller via the input labeled "PROCESSOR IN."

On the WATCH Controller front panel, locate the switch labeled "BAL/SINGLE." Select "BAL" for use with balanced cables or "SINGLE" for use with single-ended cables. In the same section of the front panel, locate the switch labeled "PROCESSOR,"

“REM,” and “LINE.” Select the “PROCESSOR” input. On the front panel, locate the switch labeled “HP IN” and “HP OUT.” Select “HP OUT” (See Figure 3). On the front panel, locate the switch labeled “LP IN” and “LP OUT.” Select “LP OUT” (See Figure 4).



FIGURE 1 - LINE AND PROCESSOR INPUTS

Proceed to Section 2,

“Setup and Final Tuning,” to continue the setup of your unit.

Wilson Audio has engineered very flexible high and low pass crossover filters for the WATCH Controller. Wilson has paid particular attention to the sound quality of the High Pass filter section. Setup and configuration of these filters is discussed in Section 2 entitled “Setup and Final Tuning.”

Section 1.2 – Connecting the Controller – Two-Channel System

Connect the Controller to the Subwoofer Amplifier

The “LOW PASS OUT” connectors labeled “1” and “2” are the output signal connectors for the subwoofer amplifier (See Figure 2). The Controller sums the left and right channels so both “1” and “2” outputs contain identical signals. There is a single-ended and a balanced connector for each output. If you are using one subwoofer, connect the amplifier driving the subwoofer to the Controller’s “LOW PASS OUT” via the “1” output. Choose either the balanced cable or single-ended output to match the input configuration of the amplifier.

If you are using two subwoofers with separate amplifiers, connect the second amplifier channel to the “2” output. By using “Y” connectors (contact your Wilson dealer for details), you can connect the controller to more than two subwoofer amplifiers.

Bypassing the High Pass Filter

In systems where the main speakers are full-range, the subwoofer used with the controller 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 and rolls off the bass from your main speakers. In most systems it is not necessary or desirable to use the High Pass filter. The WATCH Controller’s Low Pass filter controls in conjunction with the Bass Equalization and Phase controls (discussed in Section 2) will allow you to successfully integrate the main loudspeakers with the subwoofer without the use of the High Pass filter.

Make sure the WATCH Controller power is off during the connecting process. Locate the input section of the WATCH Controller on the rear of the unit (See Figure 1). The WATCH Controller inputs are configured for both balanced (XLR) and single-ended (RCA) cables.

When connecting the WATCH Controller without the use of the High Pass Filter, a second output from your preamplifier is required. If your preamplifier does not have two sets of outputs, consult with your Wilson dealer about using high quality “Y” con-

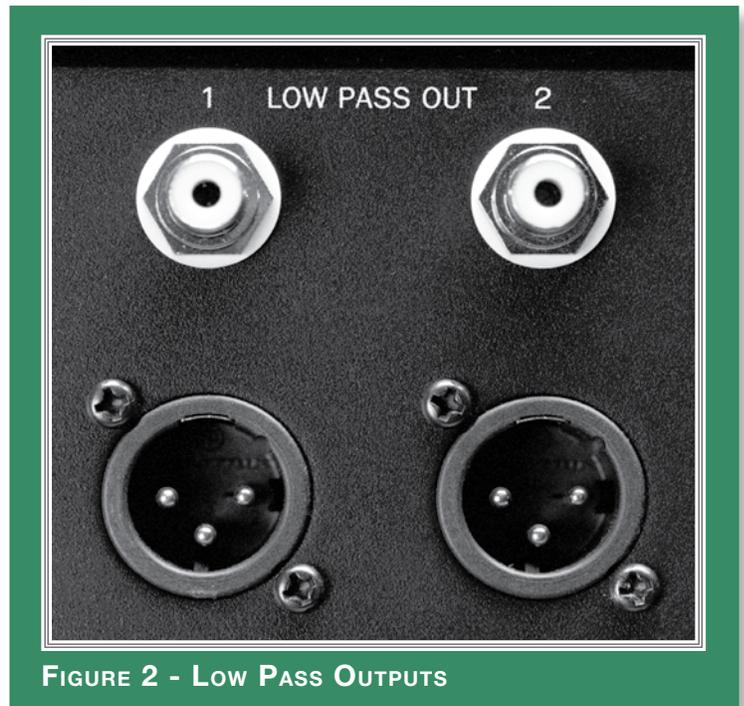


FIGURE 2 - LOW PASS OUTPUTS

nectors to facilitate connecting your unit. From one of the preamp outputs, connect your preamp directly to your main amplifier. From a second set of preamp outputs, connect both left and right channels to the Line Level Input of the WATCH Controller. The WATCH Controller automatically sums the information from the left



FIGURE 3 - HIGH PASS FILTER CONTROLS

and right channels when the controller is used with stereo inputs. The controller directs the summed stereo channels to a single subwoofer or to multiple subwoofers used in conjunction with the controller.

On the WATCH Controller front panel, locate the switch labeled “BAL,” and “SINGLE.” Select “BAL” for use with balanced cables or “SINGLE” for use with single-ended cables. In the same section of the front panel, locate the switch labeled “PROCESSOR,” “REM,” and “LINE.” Select the “LINE” input. On the front panel, locate the switch label “HP IN,” “REM,” and “HP OUT” (see Figure 3). Select “HP OUT.” On the front panel, locate the switch labeled “LP IN,” “REM,” and “LP OUT” (See Figure 4). Select “LP IN.”

Proceed to Section 2, “Front Panel Setup and Final Tuning,” to continue the setup of your unit.

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.

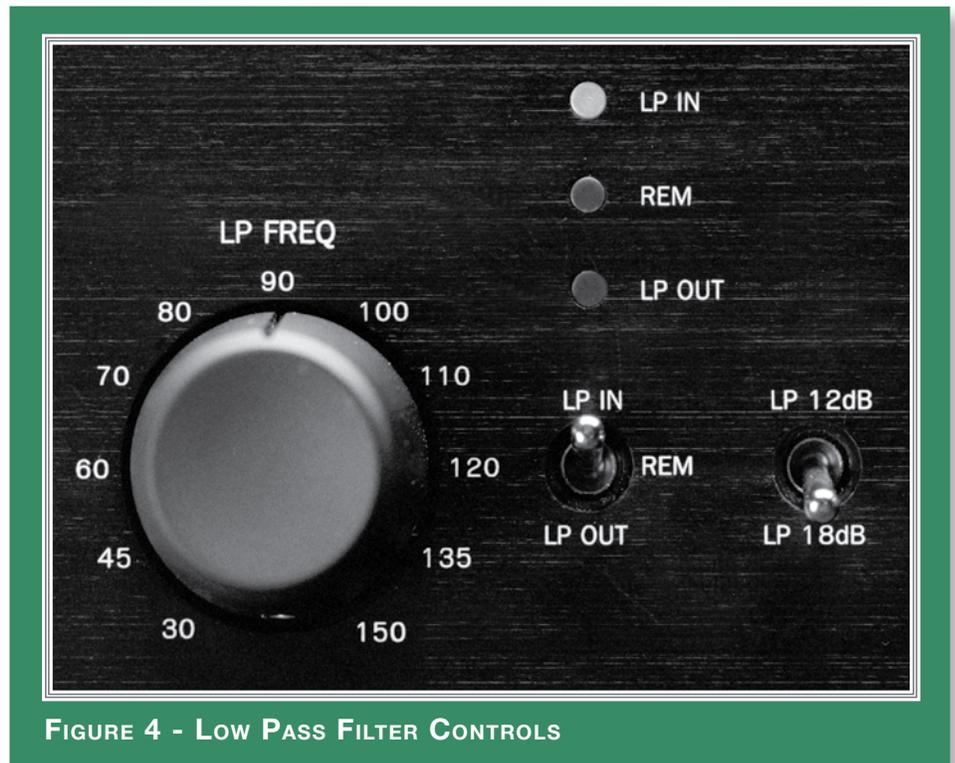


FIGURE 4 - LOW PASS FILTER CONTROLS

Make sure the WATCH Controller power is off during the connecting process. On the rear of the unit, locate the Line Level inputs of the WATCH Controller. Connect the preamplifier output, left and right, to the Line Level input of the WATCH Controller (See Figure 1). Use the XLR inputs for balanced cables or the RCA inputs for single-ended cables.

Locate the Line High Pass Output (See Figure 5) on the rear of the Controller. These connectors pass the high pass section of the signal to your main amplifier for your loudspeakers. Connect the Line HP Output, left and right, of the WATCH Controller to the inputs of your power amplifier. Use the XLR inputs for balanced cables or the RCA inputs for single-ended cables.

On the WATCH Controller front panel, locate the switch labeled “BAL,” and “SINGLE.” Select “BAL” for use with balanced cables, or “SINGLE” for use with single-ended cables. In the same section of the front panel, locate the switch labeled “PROCESSOR,” “REM,” and “LINE.” Select the “LINE” input.

Locate the switch on the front panel labeled “HP IN” and “HP OUT” (See Figure

4). This switch defeats or alternatively engages the high pass filter. Turn the switch to the HP IN position.

Locate the switch on the front panel labeled "HP 6 dB" and "HP 12 dB" (See Figure 3). This switch changes the slope of the high pass filter to either 6 decibels per octave or 12 decibels per octave. The position of this switch will be set in its final position in the final tuning stages of the WATCH Controller. For now, set the switch to the 6 dB per octave position.

Proceed to Section 2, "Front Panel Setup and Final Tuning," to continue the setup of your unit.

Note: Before proceeding with the Front Panel setup and configuration, please connect your system as outlined in Section 2, which contains valuable information needed before proceeding further.



FIGURE 5 - HIGH PASS FILTER OUTPUT

SECTION 2 - SETUP AND FINAL TUNING



Section 2.0 - Front Panel Setup and Final Tuning

Preparation

In order to realize the full potential of your WATCH Controller, we recommend that you have a trained Wilson Audio Specialist install and perform the final adjustment and setup of your WATCH Controller. Wilson dealers are trained in the art of WATCH Controller setup. If you choose to do the installation yourself, here are some guidelines to assist you. These guidelines come from many years of experience and should be followed closely to ensure the best possible result from your WATCH Controller.

You will need the following items:

- Supplied WATCH Controller Setup CD
- RadioShack® dB Meter
- Pen and paper to make notes

Double check the switch control settings to ensure that they are in the proper positions as outlined in Section 1. In this section, you will be adjusting and fine tuning the WATCH Controller front panel.

Locate the main power switch on the front of the WATCH Controller (See



Figure 6). Depress the switch to the “on” position. This powers the WATCH Controller into the “standby” mode and can be left on. Locate the STAND BY switch on the front of the WATCH Controller. Depress the switch and check to see that the front panel LED is illuminated. This brings the Controller from standby to full power on. Generally, the Controller can be left in the standby off mode when not in use.

Note: We recommend that you turn the main power switch to the off position and disconnect the power cord during lightning storms or when you are away.

Section 2.1 - Notes From David A. Wilson on the Test CD

Wilson Audio has provided a test CD to aid you in the setup of your WATCH Controller. The following comments and recommendations refer most precisely to the use of the WATCH Controller in conjunction with a subwoofer in a two-channel music system. However, these procedures can also be used to optimize the WATCH Controller to the left and the right channels of a multi-channel home theater system.

Subwoofer Placement

The WATCH Controller possesses sophisticated low pass filter control features as well as the ability to continuously vary phase angle. As a result, placement of the subwoofer is not as critical when used with the WATCH Controller. The subwoofer can be successfully placed between and slightly behind the left and right speakers. However, because of the Controller’s setup flexibility, the subwoofer can be equally successfully placed in a variety of locations in the listening room - such as on a side wall or behind the listener.

Filtering of LF to the Left & Right Speakers

With two-channel music systems in moderate sized rooms, where high volumes are not required, the left and right speakers are often run full-range. This is particularly true when Wilson Audio speakers are used, as a result of their low distortion and ro-

bust power-handling capabilities. The usual rationale for this approach is that the “full-range” signal will lose some of its midrange and high frequency transparency going through the active high-pass crossover. While this is theoretically true, what is more important is the complex low frequency room interaction that will occur between the subwoofer’s output and the full range output of the L and R channels. This LF interaction is greatly reduced if LF to the L & R speakers is filtered out. For the greatest finesse in music reproduction, you should experiment with both approaches.

Initial Placement of the L & R Speakers

If both the subwoofer and the main speakers are new to the system, we recommend that the main speaker positions be carefully optimized for overall sound quality before introducing the subwoofer. To prevent equipment damage and facilitate movement, keep the subwoofer out of the listening area during the two-channel setup phase.

The WATCH Controller CD contains a variety of test tones to aid you with the setup of your Controller.

1. If your playback electronics have signal level metering facilities, use track 1 (1 kHz tone) to assure equal signal levels to both left and right loudspeakers. The Controller’s output level should be turned all the way down.
2. Assure that the left and right loudspeakers are in phase by using track 4, (BLN - bandwidth limited noise). The noise should appear to come from exactly between your left and right loudspeakers.
3. If you have either a spectrum analyzer or a sound pressure level (SPL) meter, you should measure and document the in-room response of your L & R loudspeakers, running full-range, without subwoofer contribution. This will give you a baseline measurement. While you can measure each channel individually, it is more expedient to measure both simultaneously using the (Mono) test signals. Measurement locations for the microphone should include one at ear height at the main listening location. Addi-

tional locations could include: two meters on either side of the primary listening position; halfway between the listening position and the back wall. These readings must be averaged together. Expect measurements taken close to walls to show substantially more low frequency energy than those taken near the center of the room. Use the dB-C weighting, or better yet, if available, the "Flat"/ non-weighted scale of your instrument. See Figure 7, which compares dB-A & dB-C weighting. The more commonly used dB-A scale, on the other hand, is intended to correspond to the ear's "frequency response" at low SPL and should never be used to calibrate low frequency levels. Please note that, even at 50 Hz, the dB-C scale is still down approximately 2 dB relative to 800 Hz. Don't be disappointed, therefore, if your dB-C scale measurements show a gradual roll off in the bass. If your measurements follow the profiled roll off, it indicates a very linear speaker/room response. Use track 2, (pink noise), for spectrum analysis measurements. For measurements using a SPL meter, use tracks 6 through 16, (1/3 octave BLN beginning at 200 Hz and going down to 20 Hz). Document your measured results.

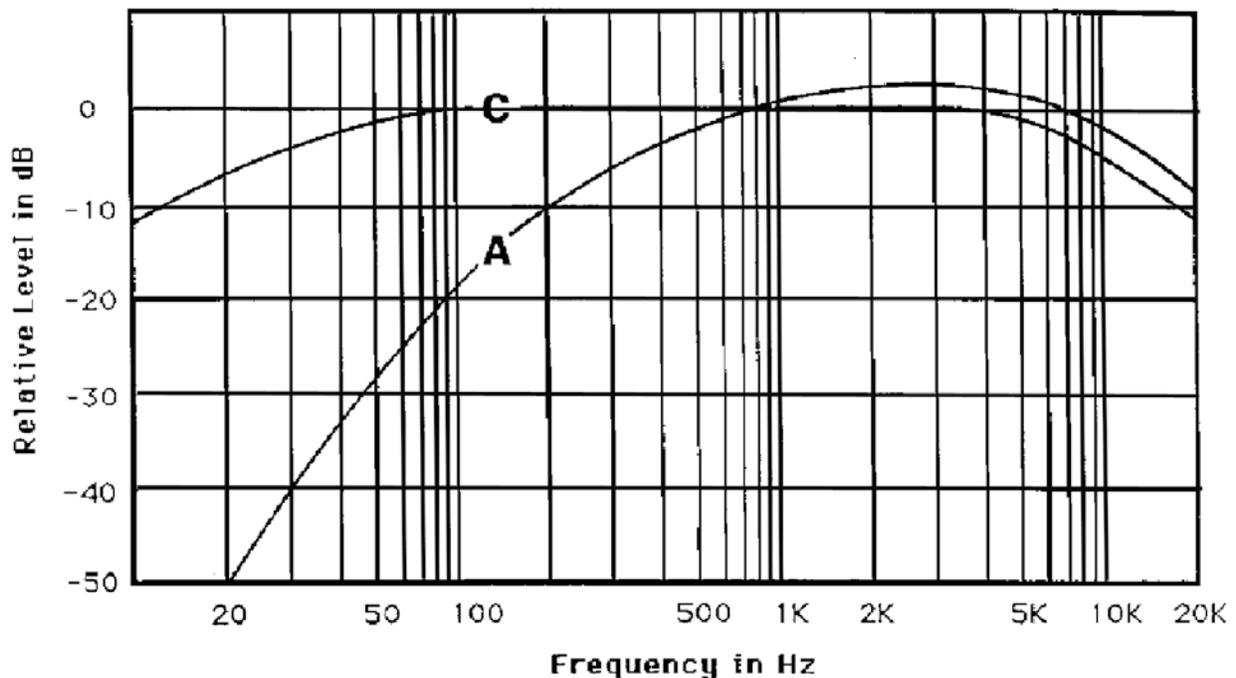


FIGURE 7 - WEIGHTED FILTER: A vs. C WEIGHTING

Warning: Tracks 17 through 27 are sine wave tones at the 1/3-octave center frequencies. These should not be used to perform in-room frequency response estimates due to gross inaccuracies which will be created by standing waves. Pure tones are included to scan for mechanical resonances and other distortions.

Notes 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.**

4. If you choose to use the high pass section of the WATCH Controller to roll off bass to your main speakers, you can use your measured data to select a low pass (LP) frequency. The suggested setting for the high pass frequency is at the point where the measured frequency curve begins to “roll off,” specifically at the frequency that is minus three to minus six dB (relative to the average level of the full-range response). If specific measurements are not available, I like to start at 50 Hz with an 18-dB/octave LP slope. I believe that the vast majority of loudspeakers with which your subwoofer will likely be partnered should have enough clean output and power handling in the 40-50 Hz region to allow this approach. However, some rooms exhibit so much loss in the LF that the L & R speakers may have difficulty in that region and need help from the subwoofer up to 60-80 Hz. Another scenario might include problematic room acoustics, with a significant upper bass peak. In such a case, correction may be achieved by running the WATCH Controller up to 120-140 Hz and using its EQ to notch out the room peak. This is one area where acoustical measurements, as described above, are of great benefit.

Introduction of the WATCH Controller into Your System

5. Check to see that the L & R loudspeaker power amps are “Off” or on “Standby.”
6. Ensure that all system cabling is correct and secure. At this point in the set up process, the input switches should be configured properly, accord-

ing to instructions elsewhere in this manual. It is now time to optimize Level, Phase, and EQ settings.

7. If you are filtering the bass to your L & R speakers, select "HP In," and set the high pass frequency according to the acoustical measurements you have taken. Start with HP 12 dB/octave slope.
8. Initially select the low pass frequency 10% lower than the setting for the high pass frequency.
9. Select "LP In" and LP 18-dB/octave slope.
10. Initially set the Phase control at 90°.
11. Select "EQ Out" at this point in the calibration.
12. The output level control should be in the "Min" position.
13. Turn on the program source components and pre-amplification.
14. After two minutes of stabilization time, turn on your WATCH Controller.
15. After two additional minutes of stabilization time, turn on your L & R channel power amplifiers.
16. Using track 2 (pink noise), turn the L & R speakers up to 75 dB-C; note the level setting.
17. While the L & R speakers are playing the pink noise, slowly advance the output



- level control on the WATCH Controller until the low frequencies seem to be in balance with the rest of the spectrum. If you have a spectrum analyzer, adjust the output level for greatest linearity and extension.
18. Note the output level setting.
 19. Next, slowly rotate the Phase control counter clockwise from 90° to 0° and notice how LF levels will change; note the position between 0° & 90° where the LF output is greatest.
 20. Repeat this process from 90° to 180° , again noting the position where LF output is greatest. These two settings become your “semifinalists.”
 21. Go to track 28 (drum and guitar music) and compare the sound of your two Phase “semifinalists.” Listen for cleaner LF attack and greater weight to select your “winner.” Note the winning setting.
 22. Use two tracks, 29 and 32, to establish the WATCH Controller’s upper frequency limit with the LP frequency control setting. What you are looking for is a setting that is low enough to keep from adding artificial chestiness to the male voice in track 32, yet high enough to provide convincing, linear low frequency continuity in track 29. Note the setting.
 23. Using the same tracks (29 & 32) and similar listening-judgment criteria, optimize the setting of HP frequency control, which establishes the low frequency limit of your L & R speakers. Note the setting.
 24. At this point in the process, it is instructive to measure the acoustic response of the combined L & R system a second time, but this time with the addition of the subwoofer. Compare the results of this measurement with your prior measurements made without the subwoofer. Document these new measurements. You should now clearly observe more output below 40 Hz as well as good linearity.
 25. Now is a good time to experiment with different filter slopes. Simply follow the same procedures as above, being careful to note all settings. This

second experiment can then be compared with the first, using music and measurements. Pick the approach that gives the most satisfying musical results.

To EQ Or Not To EQ

Using equalization (EQ) in order to optimize the performance of a loudspeaker is somewhat like a medicine that, while useful, has serious potential side effects. Carefully and minimally used, it can moderate some serious acoustical problems, with little or no down side. However, applied injudiciously, it will cause more problems than it will cure.

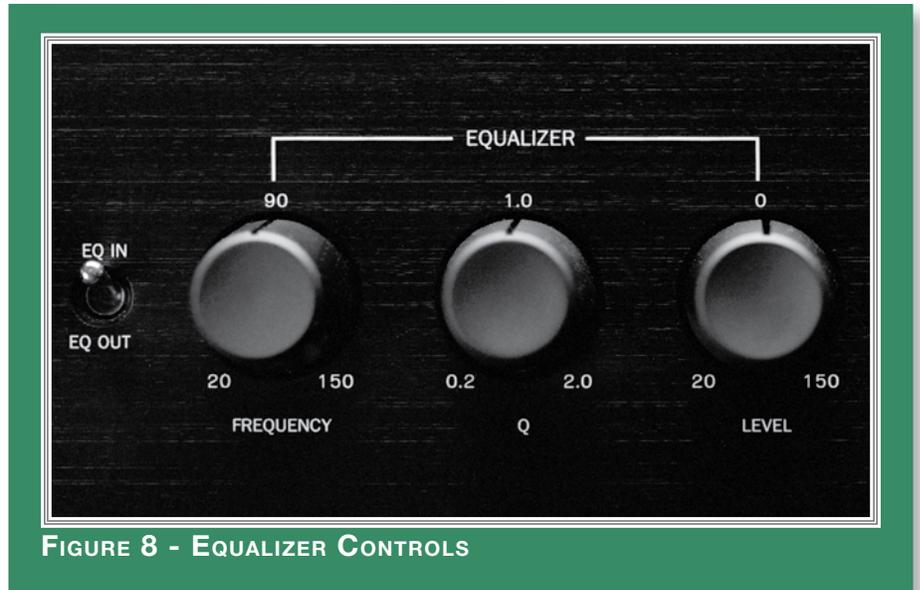


FIGURE 8 - EQUALIZER CONTROLS

The EQ circuitry in the WATCH Controller operates only in the Low Pass (LP) function; i.e., it only EQ's the WATCH Controller. Therefore, it will have no direct effect on the L & R (or other channel) loudspeakers.

Indications for the use of the WATCH Controller EQ would include the following:

- A. A large LF peak caused by compounded room modes or interaction with a nearby boundary. Corner placement of the subwoofer is more likely to excite modes than a placement at least one meter from a corner.
- B. A significant narrow dip in LF response caused by acoustical losses in the room. These bass dips can be caused by tall ceilings, openings such as windows and doors (particularly near corners or at the middle of a long wall), or a small, non-load-bearing wall, which acts as a panel resonator bass trap.

These anomalies would show up in the measurements that you have taken above.

26. Set the EQ level control at its “12:00” position, indicating zero gain.
27. Set the switch to “EQ In.”
28. Set the “EQ Freq” to correspond with where you believe the problem frequency is.
29. Set the “Q” control at its “12:00” position.

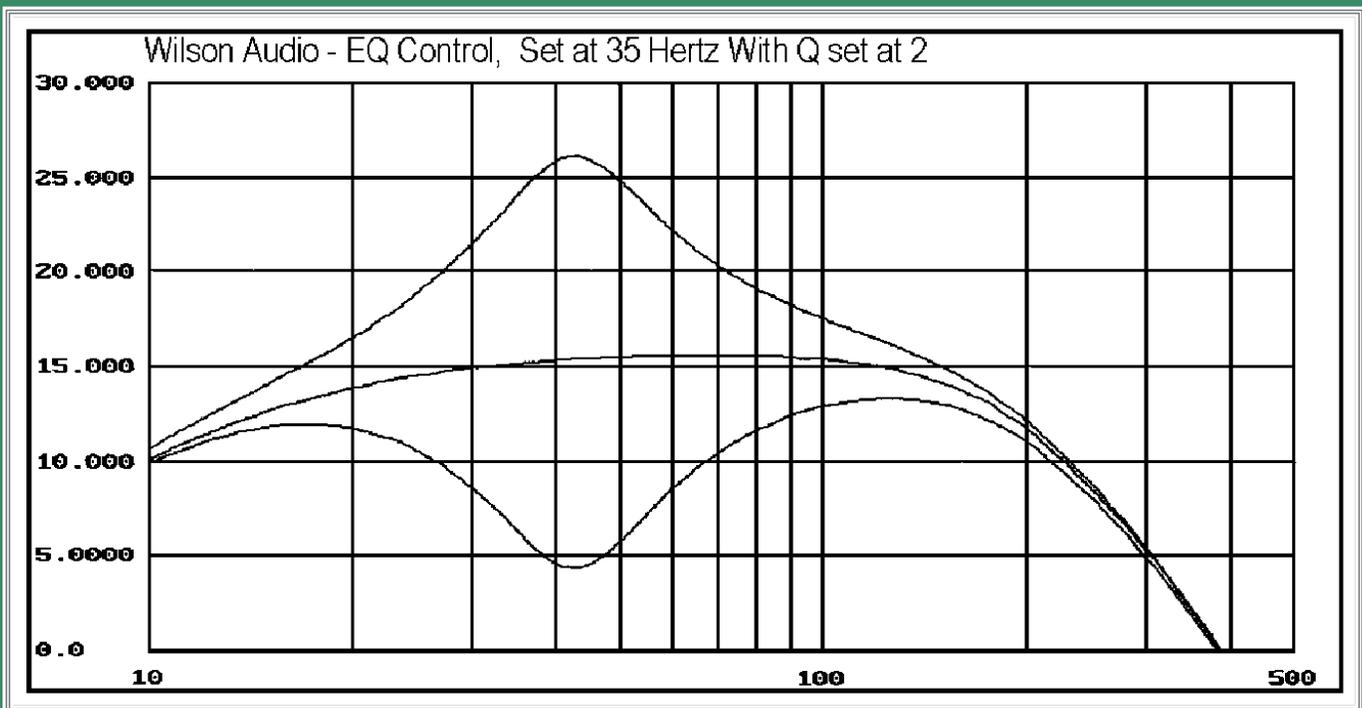


FIGURE 9 - EQ CONTROL GRAPH

30. Depending on whether the acoustical anomaly is a LF response peak or a dip, either cut or boost the EQ with the EQ level control. If you use track 2 (pink noise) and a spectrum analyzer, you can make these adjustments and see (as well as hear) the results in real time. If you do not have a spectrum analyzer, you can still listen to the changes in pink noise. Adjust for greatest smoothness, then measure and document your results.

It has been my experience that making adjustments in an attempt to achieve perfect flatness of response is misguided. Possibly this is because the test signal (i.e., pink noise) causes a relatively continuous excitation of resonances. This allows the amplitude to build up, appearing in measurements as a large deviation from optimum. A great deal of music, because of its more transient nature, may not cause these non-linearities to build up as much. Hence, the tendency to overcorrect relative to what the musical signal really requires. Therefore, I suggest correcting about half the amplitude of the peak or dip, documenting your results, then listening to see if it makes more musical sense. Apply corrections only as needed. To quote J. Gordon Holt, "If it measures good, but sounds bad... It is bad."

Advancing the EQ "Q" control located on the front panel allows you to narrow and sharpen the EQ boost or cut. At the maximum Q setting of 2, the equalization is pretty specific, but can also alter harmonic structures. Turning the "Q" control counter clockwise to 0.2 results in a very broad, less frequency-selective adjustment, which usually will not provide enough specific correction.

Section 2.2 – Break-in Period

All audio equipment will sound its best after the components have been broken-in for some period of use. While it should sound quite good out of the box, the WATCH Controller will sound its best after approximately fifty hours of playtime.

SECTION 3 - TWELVE-VOLT TRIGGERS



Section 3.1 - Twelve-volt Trigger Controls

Certain features of the WATCH Controller are controllable via a series of twelve-volt triggers. This allows remote control access of these features by outside control systems, Audio/Video Controllers, etc. This provides more convenient and seamless operation of the WATCH Controller within home theaters and complex audio systems.

The twelve-volt triggers are connected via standard DC ports located adjacent to the audio inputs on the rear of the WATCH Controller. The following features can be switched between two states: On/Off (Stand By); Line/Processor; High Pass Filter In/Out; Low Pass Filter In/Out.

To access control of one of these four features via its twelve-volt trigger, move the switch corresponding to that function to the “Rem” position. The switches for Line/Processor, High Pass Filter In/Out, and Low Pass Filter In/Out are three position toggles located on the front control panel. If you wish to control any of these features via the twelve-volt trigger, move the corresponding switch to the center position labeled “Rem.” The switch for the Stand By On/Off control is located on the right hand side of the front panel. Leave this switch undepressed when controlling this function via the twelve-volt trigger.

Please Note: Only the switches relevant to the features to be remote controlled should be switched to the “Rem” position. Tog-

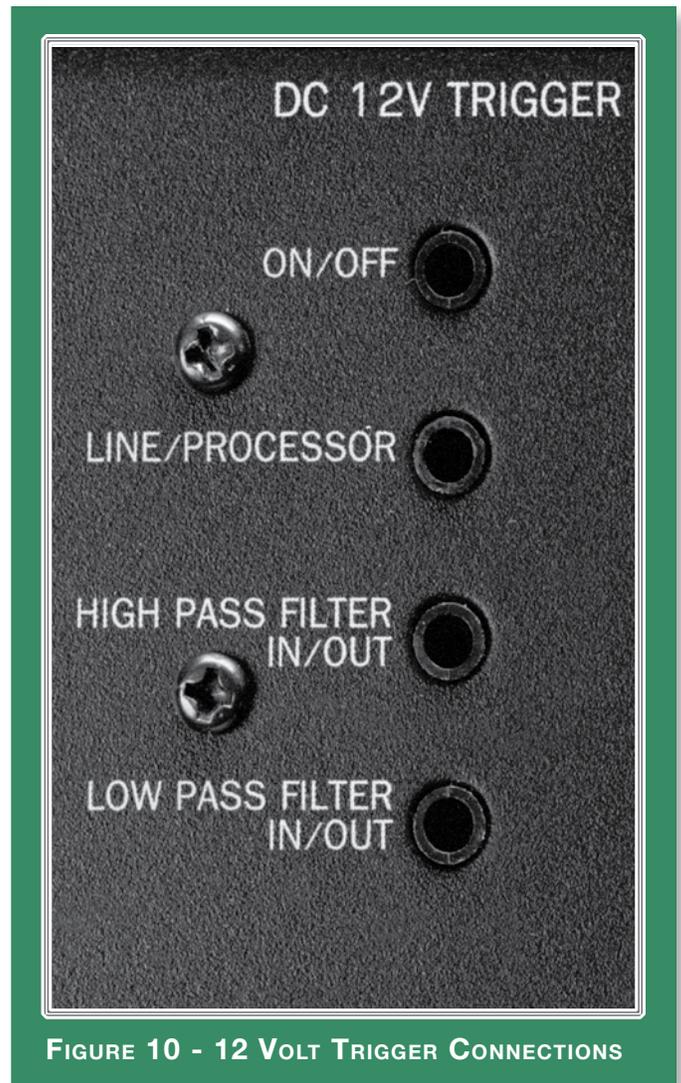


FIGURE 10 - 12 VOLT TRIGGER CONNECTIONS

gling the switch to the remote position without a twelve-volt trigger connected to that switch will potentially result in your WATCH Controller being improperly configured. The trigger switch defaults to the zero-volt position with nothing connected.

The trigger is designed to be attached to two-state, relay switches which toggle between zero volts and twelve volts. Several Audio/Video controllers feature twelve-volt relay triggers, the status of which are associated with selected modes. These can be used in conjunction with the WATCH Controller relay switches to configure your crossover ideally for those corresponding modes. Similarly, control systems such as Crestron, AMX, and others have the option for interfacing with controllable devices via twelve-volt relay triggers. Consult your audio specialist or installer for more details.

The twelve-volt triggers are two-state switches: the presence of zero volts (no voltage) on the input of the trigger switches to one state and the presence of twelve volts on the input, the other. The following table outlines the trigger state of the controllable features of the WATCH Controller:

Twelve-volt Trigger Switch Table

Feature	Zero Volts	Twelve Volts
On/Off (Stand By)	Stand By Mode	On
Line/Processor Input	Processor	Line
High Pass In/Out	High Pass Engaged	High Pass Bypassed
Low Pass In/Out	Low Pass Engaged	Low Pass Bypassed



SECTION 4 - SYSTEM SPECIFICATIONS



Controller Specifications

Input Impedance: 56k ohms single-ended, 4k ohms bal.

Inputs: Balanced and single-ended, Processor

Outputs: High-pass, balanced and single-ended, 2 stereo

Low-pass, balanced and single-ended, 2 mono

Low Pass Filter: Level & Frequency (30 to 150 Hz)

Adjustable, 12 dB or 18 dB/Octave

High Pass Filter: Level & Frequency (30 to 150 Hz)

Adjustable, 6 dB or 12 dB/Octave

Phase: 0 - 180 degrees, continuously variable

EQ: Variable Frequency (30 to 150 Hz)

Level (+/- 10 dB), and Q (.2 to 2)

Dimensions: Width: 19" (482mm)

Height: 4 1/2" (144mm) - Includes feet

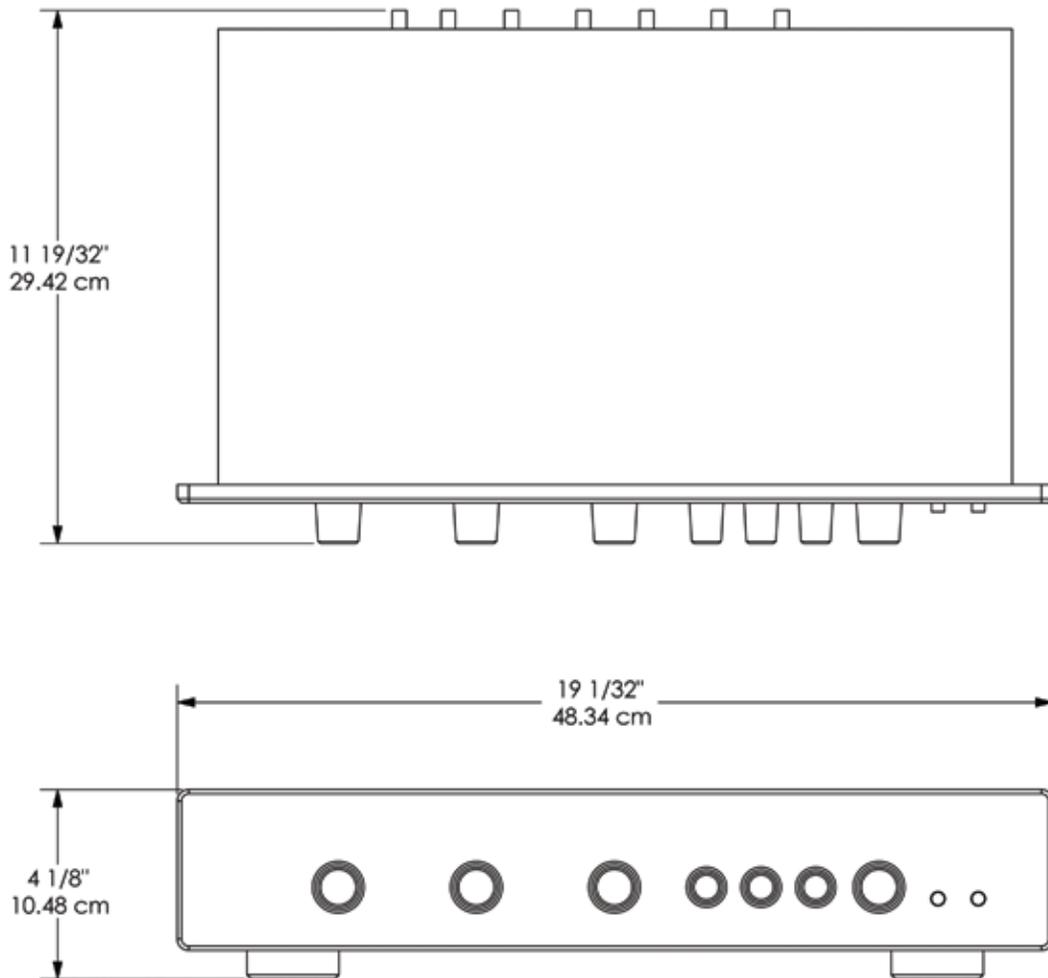
Depth: 11 1/2" (292mm) - Includes knobs

Weight: Net - 16.75 lbs (7.6 kg)

Approx. Shipping - 18.95 lbs. (8.6kg)

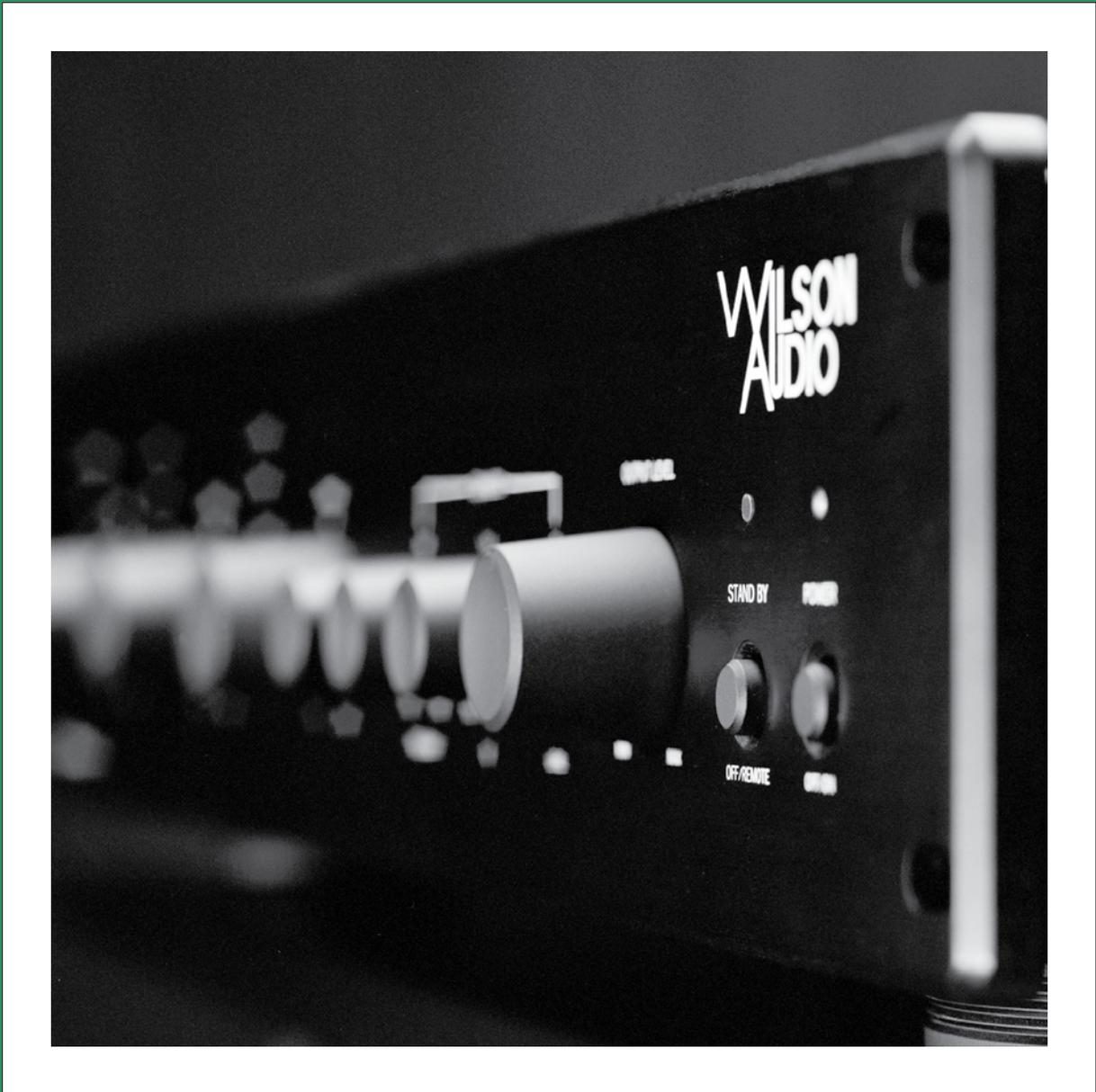
Controller Dimensions

FIGURE 11





SECTION 5 - WARRANTY INFORMATION



Section 5.0 – 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.

