

Thank-you for choosing the Vandersteen Model VSM-1 video surface-mount speaker system. With proper care, your new speakers will provide many years of trouble free, high-quality sonic enjoyment.

The Vandersteen VSM-1 is a high-technology product. We recommend that you carefully read this entire manual prior to mounting, connecting or using your new speakers.

Vandersteen Audio

The Vandersteen VSM-1 is a high-performance surface-mount loudspeaker developed and refined by twenty years of advanced research into dynamic loudspeaker design. Its innovative engineering, exceptional materials and quality construction have resulted in a true high-fidelity speaker unmatched by conventional in-wall or on-wall speakers.

With its superior capabilities, the VSM-1 excels as a surround speaker in a high-fidelity A/V system. Like all Vandersteen speakers, the VSM-1 is phase-correct with both its woofer and tweeter wired in positive phase through transient-perfect, first-order crossover networks. In combination with phase-correct main and

center speakers, the VSM-1 allows you to realize the significant spatial and sonic benefits of a totally phase coherent A/V system.

The VSM-1's moderate size and versatile on-wall placement allow it to be easily integrated into almost any decor or environment. Its aligned, coaxial design guarantees consistent superior performance throughout the listening area regardless of its height or position on the wall. The contour control allows you to tailor its high frequency balance to your specific system and environment.

The Vandersteen Audio VSM-1 is designed and built in the United States of America.

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VSM-1

SURFACE-MOUNT LOUDSPEAKER

OPERATION MANUAL

If you are uncomfortable positioning and installing the VSM-1s yourself, you should have your dealer position and install them for you.

POSITIONING

The VSM-1s can be mounted at any height or lateral position on the rear or side walls where they will work with your particular room layout and the recommendations or requirements of your surround processor. Before you begin positioning and installing your speakers, you should review your processor's manual, consider your seating arrangements and note where windows, bookcases or other obstacles will preclude placement of an on-wall speaker. To insure soundfield stability, the two speakers should be mounted at the same height in locations where plants, furniture or other objects will not obstruct their sound from the reaching the listening area.

Many listeners find that placing the speakers where their coaxial drivers are 12 inches or more above ear level helps create a more expansive and natural soundfield. Since the center of the driver is 6 inches below the top of the speaker, mounting the VSM-1s where their bottoms are at or above your shoulder level when you are seated in the listening position will place their drivers at least 12 inches above your ear level.

When you are exactly equidistant from the surround speakers, they can act like giant headphones and place the surround effects in the middle of your head instead of out in the room. Some processors have built in decorrelation between the surround channels to avoid this phenomenon. If your processor does not decorrelate the surround channels, it is important that you position the VSM-1s where one is at least six inches farther away from you than the other. This slight offset will help maintain the film's proper spatial characteristics.

Some processors specify four surround speakers, two on the side walls and two on the rear wall, for certain modes. This configuration obviously requires two pair of VSM-1s, but does not otherwise affect the applicability of this manual's information.

PHASE

Like all Vandersteen speakers, VSM-1s are phase-correct with their tweeters and woofers connected in positive polarity through transient-perfect, first-order crossover networks. When they are used with Vandersteen or other phase-correct front speakers, the VSM-1s should be connected in positive polarity. (Amp + to speaker +, amp - to speaker -.)

(The only rare exception would be when the surround amplifier or the main amplifier inverts phase. If you believe that one of your amplifiers inverts phase, contact the amplifier's manufacturer for verification. Most modern amplifiers do not invert phase.)

When the VSM-1s are used with mixed phase front speakers, they should be tried both in-phase and

out-of-phase to determine which polarity provides better integration into the system. If you have difficulty determining the best polarity for the VSM-1s in a mixed-phase system, your dealer should be able to help you. *(Please do not call the factory with phase questions about a mixed-phase system. There is nothing regarding the proper connections for the VSM-1s in this type of system that can be determined over the phone. Someone from your dealer will need to come to your home and evaluate the possible configurations with their trained ears.)*

SETTING-UP THE SYSTEM

To achieve a realistic soundfield, all the speakers in the system must be level matched. It is impossible to properly balance the levels by ear so your surround processor has a built-in noise generator that is used in combination with a sound pressure level (SPL) meter to set the volume level of each of the speakers. In a surround system, an SPL meter is not an option or a toy. It is an indispensable tool required to correctly set-up the system. If you do not have a SPL meter, an accurate, inexpensive unit is available from Radio Shack. Once the levels of the speakers in the system have been balanced, they should not need to be readjusted unless the system components are changed or the listening area or speakers are moved.

To insure that listeners perceive the primary source of the film's sound as the front of the room where the picture is rather than the side or rear of the room, surround processors slightly delay the signal that is sent to the surround speakers. A widely accepted method for determining the optimum amount of delay in most situations is to measure the distance from the front speakers to the surround speakers and set the delay for 1ms per foot of distance plus 10. So, if the distance from the front speakers to the surround speakers is 15 feet, you would set the delay for 25ms (15 + 10). If the distance is 20 feet, you would set the delay for 30ms (20 + 10). When the setting determined by this method falls in between two possible settings on your processor, the setting that provides more delay will usually be preferable.

FULL-RANGE SURROUND

Unlike earlier matrixed surround modes that limited the bass that was sent to the surround channels, multi-channel discrete modes send full-range information to the surround channels and require full-range surround speakers for optimum performance. The VSM-1s can become full-range speakers with the addition of subwoofers to augment their deep bass response. The low frequency roll-off of wall mounted speakers is very linear and predictable so it is easy to achieve a smooth transition between the VSM-1s and

the subwoofers.

When you add subwoofers to the VSM-1s, you should follow the subwoofers' instructions regarding their placement, connections and system interface. If you are using Vandersteen subwoofers throughout the system, you should also follow their instructions on proper polarity. With other brands or a mix of brands, the subwoofers should be tried both in-phase and out-of-phase to find the polarity that provides the most bass in your system. If you have difficulty determining the best polarity for the subwoofers, your dealer should be able to help you.

(Please do not call the factory with questions about subwoofer polarity. There is nothing regarding the proper polarity for a subwoofer that can be determined over the phone. Someone from your dealer will need to come to your home and evaluate the bass levels of the different polarities with their trained ears.)

With the VSM-1s and subwoofers as full-range

INSTALLING THE WALL BRACKETS

When you have determined where the speakers will be mounted, you will need to install the wall brackets onto the walls. Note the required clearances in Illustration # 1 to the right.

Use the template on page 7 to determine where the wall anchors must be installed into the wall.

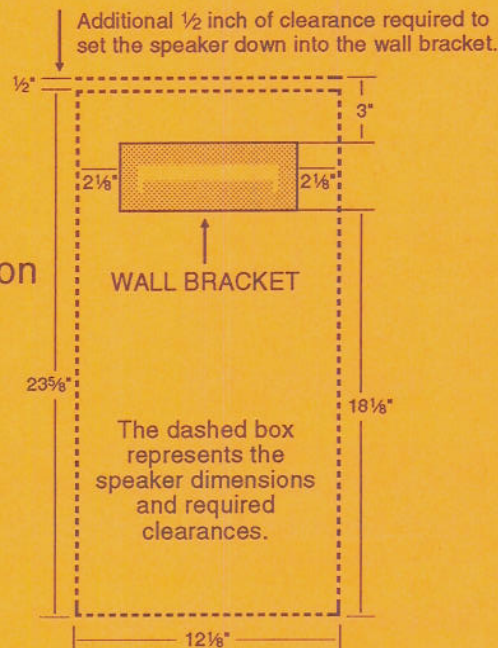
1. Hold the template against the wall and verify that the required clearances exist to safely mount the speaker.
2. Use a bubble level to verify that the wall bracket illustrated on the template is level.
3. Push the point of a pencil through the center of each of the three mounting point locations to mark the wall.
4. Remove the template and fully insert and lock a wall anchor into each of the three marked locations as shown in steps 1, 2 and 3 of Illustration # 2.
5. Hold the wall bracket against the wall with its angled section facing up, insert the three screws through the appropriate holes and tighten the bracket to the wall as shown in step 4 of Illustration # 2.

surround speakers, your system can easily handle the additional demands of the multi-channel discrete modes as well as any other advanced processor formats that may be developed in the future.

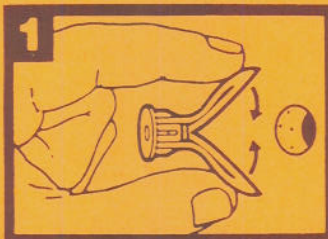
VSM-1s As MAIN SPEAKERS

If your domestic situation or living environment precludes the use of floorstanding or bookshelf front speakers, VSM-1s in combination with subwoofers can be used as main speakers and will provide much better performance than in-wall speakers. When VSM-1s are used as front speakers in an audio/video system, they should be mounted on the front wall on either side of the TV in locations where plants, furniture or other objects will not obstruct their sound from reaching the listening area. Although they are magnetically shielded and will not affect the TV's picture, you should try to place them far enough apart to provide a satisfying soundfield with good image width.

Illustration # 1

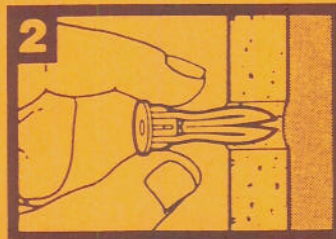


Before you install the wall anchors, you must locate and avoid hidden wiring, ducts and plumbing pipes. Do not install the wall anchors near electrical outlets.

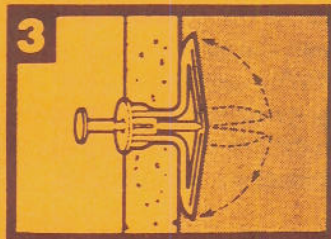


Make a 5/16" hole.

You can use a screwdriver to make the hole in drywall.

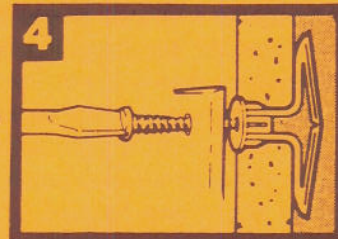


Push flush.



Toggle open with key.

Except in solid material or material over toggle range.



Drive screw flush.

Illustration # 2

CONNECTIONS

The VSM-1's barrier strip provides superior gas-tight connections that do not deteriorate with time. The cables should be connected to the VSM-1s as follows:

1. Crimp and solder spade lugs to the speaker ends of the cables for your surround channels as shown in Illustration # 3. With a pair of pliers, slightly bend the spade lugs' blades so that the body of the spade lug will be held away from the input plate once the wires are connected as shown in Illustration # 4.
2. Connect the surround channel cables to the VSM-1s as shown in Illustration # 5. The input screws should be snug, but should not be overtightened.

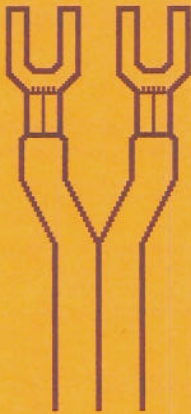


Illustration # 3



Illustration # 4

The input screws should be snug, but should not be overtightened.

The speaker wires or spade lugs should never touch the aluminum input plate while the amplifier is on. Amplifier damage could result.

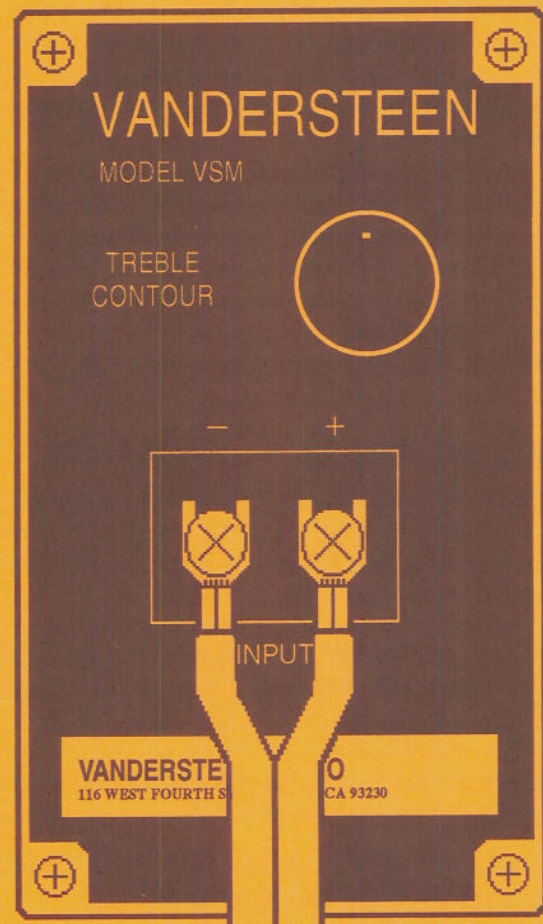


Illustration # 5

MOUNTING THE SPEAKERS

The VSM-1's innovative mounting system uses the speaker's own weight to hold it securely against the wall for proper coupling and stability.

1. Hold the VSM-1 against the wall with the angled section of its mounting bracket slightly above the angled section of the wall bracket as shown in Illustration # 6. Verify that the speaker cable is in the recessed channel on the back of the speaker so that it does not get caught between the wall and the speaker. Slowly lower the VSM-1 until the angled sections of the brackets engage as shown in Illustration # 7. As its weight is transferred to the brackets, the speaker will be drawn toward the wall until its feet are in firm contact.
2. Before you rely on the mounting system to support the speaker, gently move the speaker from side-to-side to insure that the brackets are completely and properly engaged.

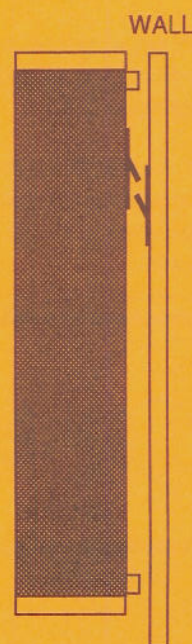


Illustration # 6

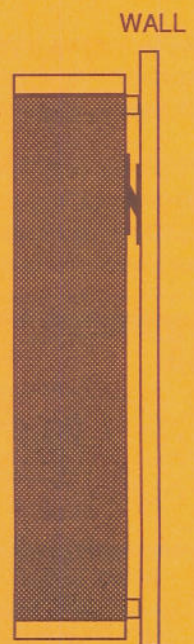


Illustration # 7

The VSM-1 contains protection circuitry that tracks voice coil temperatures and reduces the current to one or more of the driver elements if excessive temperatures are detected. When this happens, the sound of the speaker will change and warning lights behind the grille may illuminate. If this occurs, immediately reduce the volume level to allow the speaker components to cool down. Please remember that no protection circuitry is 100% effective and that repeated activation could cause the circuits themselves to fail.

AMPLIFICATION

The VSM-1 is designed for use with amplifiers rated between 30 to 100 watts per channel into 8 ohms. Amplifiers with more than 100 watts per channel must be used with some caution due to the increased potential for speaker damage if they are misused or an accident occurs.

When the VSM-1s are used as surround speakers, you should review the recommendations in your

processor's manual with regard to power requirements for the surround positions relative to front channel power. You should also consider that the new discrete multi-channel surround modes place additional demands on the surround speakers and may require more power for the surround positions than the modes in your current processor.

THE TREBLE CONTOUR CONTROL

The treble contour control on the aluminum input plate is used to tailor the VSM-1's high-frequency response to best suit your particular system, environment and listening tastes. Because of its unique incorporation into the crossover circuitry, changes to the contour control only affect the VSM-1's amplitude response. The changes do not affect the speakers' detail or phase performance.

The control is on the rear of the speaker so the speaker must be lifted up until the mounting brackets are disengaged and then pulled away from the wall to

change the control's setting. Turning the control clockwise will increase the speaker's treble energy while turning it counterclockwise will decrease the treble energy. After the control is changed, the mounting brackets should be securely reengaged according to the instructions on page 4 of this manual before you release the speaker.

For best performance, we recommend that you do not set the contour control against its rotation stops at either the full on or full off position.

SERVICE

If you believe a VSM-1 requires service, please follow these procedures.

1. Verify that the problem is in the speaker by physically switching the two VSM-1s. If the problem follows the speaker, it is in the speaker. If the problem does not follow the speaker, it is in the system ahead of the speaker and the VSM-1 does not need service.
2. When you have verified that the problem is in the speaker, contact Vandersteen Audio, describe the problem and the steps you have taken to isolate the problem to the VSM-1. A Return Authorization Form will be sent to you.
3. When you receive the Return Authorization Form, return the damaged or defective VSM-1 to Vandersteen Audio packed in its original box. Each individual VSM-1 box is suitable for shipping. When you are shipping only one speaker, it does not need to be placed in the double-pack master carton. Include the filled-out Return Authorization Form with the VSM-1.
4. Vandersteen Audio will repair the VSM-1 and return it to you according to the return shipping information you provided on the Return Authorization Form.

If you do not have the original box and packing, please notify Vandersteen Audio when you request the Return Authorization Form and a new box and packing will be sent to you for a nominal charge.

MAINTENANCE

The appearance of the VSM-1 can be preserved by performing some simple maintenance and observing a few precautions. The VSM-1's grille cloth can be vacuumed using a brush attachment that will not snag the cloth. The top should be treated as a piece of fine furniture. The wood veneers are oiled at the factory and can be maintained with an occasional

light application of Danish Finishing Oil or a similar product.

Do not place heavy objects that could stress the mounting system or anything that could mar the finish on top of the speaker. Do not expose the speaker to excessive heat, sunlight or moisture, which can damage the fit and finish of the veneer.

PACKING

Please retain all packing materials for possible future use. In the event of loss, replacement packing materials are available from Vandersteen Audio for a nominal charge.

To prevent physical or cosmetic damage, always

pack the VSM-1s in their original boxes and master carton prior to transportation or shipment. Each individual VSM-1 box is suitable for shipping. When you are shipping only one speaker, it does not need to be placed in the double-pack master carton.

INFORMATION AND NOTES

Serial Numbers: _____

Notes: _____

Purchase Date: _____

Dealer: _____

Dealer Phone # : _____

Dealer Contact: _____

SPECIFICATIONS

Driver: Magnetically-shielded coaxial design combining a 6½" die-cast basket polycone woofer with a 1" critically-damped, fabric dome tweeter.

Crossover: 3500Hz. First-order, 6dB per octave.

Phase: The woofer and tweeter are both connected in positive phase.

Enclosure: MDF.

Impedance: 8 ohms nominal.

Efficiency: 86dB at 1 meter with a 2.83 volt input.

Response: 60Hz to 21,000Hz.

Amplification: 30 to 100 watts per channel into 8 ohms.

Size: 12½" wide, 23½" high, 5" deep.

Weight: 31# net each, 68# gross per pair.

Specifications and design are subject to change without notice due to our continuous research and development program.

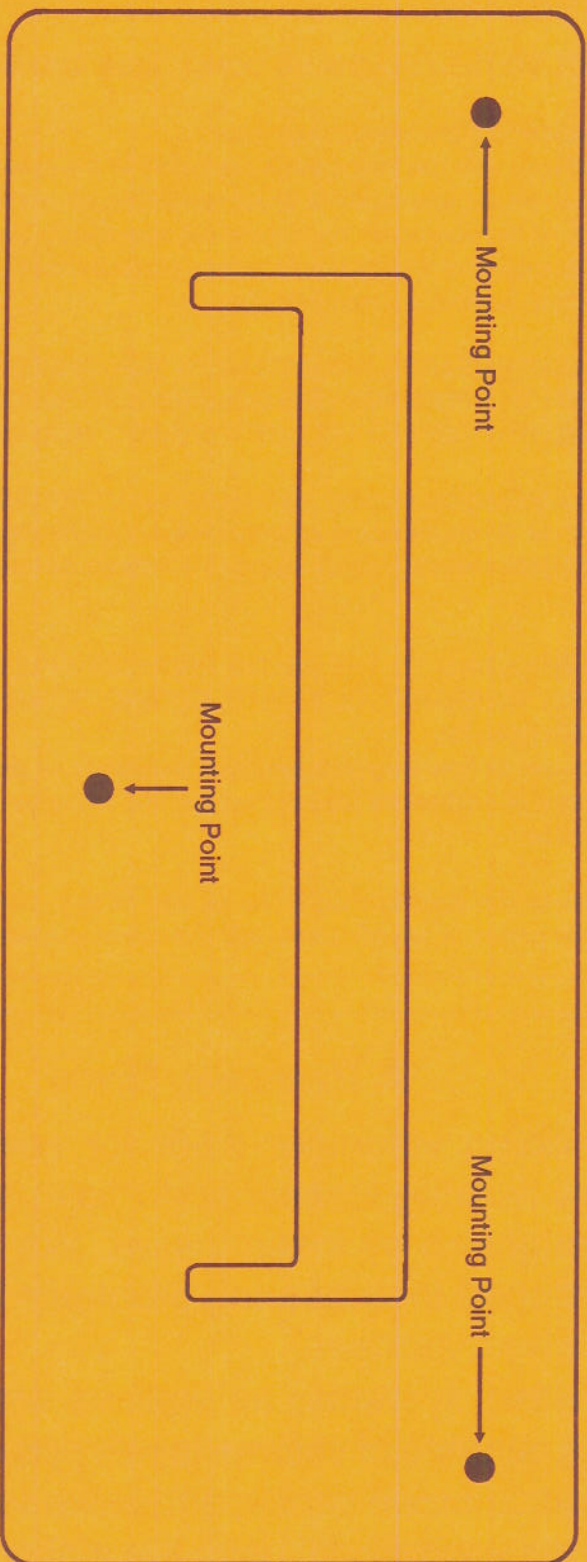
VANDERSTEEN AUDIO

116 West Fourth St.
Hanford, CA 93230
(559) 582-0324
www.vandersteen.com

The top of the speaker will be approximately where the top of this page is. Remember that you need at least an additional 0.5 inches of clearance above the speaker to engage the mounting brackets.

The side of the speaker will be approximately 0.5 inches past the side of this page.

The side of the speaker will be approximately 0.5 inches past the side of this page.



INSTALLING THE WALL BRACKETS

When you have determined where the speakers will be mounted, you will need to install the wall brackets onto the walls. Note the required clearances in Illustration # 1 on page 3.

1. Hold the template against the wall and verify that the required clearances exist to safely mount the speaker.
2. Use a bubble level to verify that the wall bracket illustrated on the template is level.
3. Push the point of a pencil through the center of each of the three mounting point locations to mark the wall.
4. Remove the template and fully insert and lock a wall anchor into each of the three marked locations as shown in steps 1, 2 and 3 of Illustration # 2 on page 3.
5. Hold the wall bracket against the wall with its angled section facing up, insert the three screws through the appropriate holes and tighten the bracket to the wall as shown in step 4 of Illustration # 2 on page 3.

LIMITED ONE YEAR WARRANTY

VANDERSTEEN AUDIO loudspeakers are warranted to the original purchaser be free from defects in materials or workmanship, SUBJECT TO THE FOLLOWING CONDITIONS, for one (1) year from the date of purchase from an authorized VANDERSTEEN AUDIO dealer.

THIS WARRANTY IS SUBJECT TO THE FOLLOWING CONDITIONS AND LIMITATIONS:

This warranty is void and inapplicable if the loudspeaker has:

- a. not been used in accordance with the instructions contained in the operation manual.
- b. been subject to misuse or abuse, examples of which would be burned voice coils and/or burned crossover parts.
- c. been modified, repaired, or tampered with by anyone not specifically authorized to do so by Vandersteen Audio.
- d. been subject to inputs in excess of the maximum rating, or inputs from an unstable or clipped amplifier.
- e. been damaged by accident, neglect or transportation.

IF A VANDERSTEEN AUDIO LOUDSPEAKER FAILS TO MEET THE ABOVE WARRANTY AND THE ABOVE CONDITIONS HAVE BEEN MET, THEN THE PURCHASER'S SOLE REMEDY SHALL BE TO RETURN THE PRODUCT TO VANDERSTEEN AUDIO WHERE THE DEFECT WILL BE REPAIRED WITHOUT CHARGE FOR PARTS OR LABOR.

The speaker must be packed in the original packing and returned to VANDERSTEEN AUDIO via insured freight by the customer at his or her own expense. A returned product must be accompanied by a Return Authorization Form, (available from VANDERSTEEN AUDIO upon request) which includes a written description of the defect and return shipping information.

ANY IMPLIED WARRANTIES RELATING TO THE ABOVE PRODUCT SHALL BE LIMITED TO THE DURATION OF THE ABOVE WARRANTY. THIS WARRANTY DOES NOT EXTEND TO ANY INCIDENTAL OR CONSEQUENTIAL COSTS OR DAMAGES TO PURCHASER.

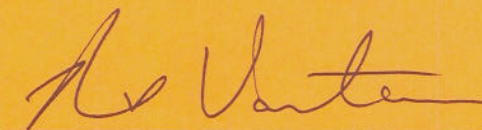
Some states do not allow limitations on how long an implied warranty lasts, or an exclusion of incidental or consequential damages so the above limitations or exclusions may not apply. This warranty gives you specific legal rights, you may also have other rights in your state.

VANDERSTEEN AUDIO reserves the right to modify the design of any product without any obligation to previous purchasers and/or to change the prices or specifications without notice or obligation to anyone.

A PERSONAL NOTE

I have been doing volunteer work for several years with elderly people with severe hearing losses, and I have seen the frustration and anger that are brought on by these losses. We now know that many of these people developed their hearing problems because of exposure to high noise levels when younger.

Many audio/video systems, as well as home, portable and auto stereo systems are capable of volume levels potentially damaging to your hearing. Please use common sense, and listen to your movies and music at safe levels now so you will still have the ability to hear and enjoy them in the future.



Richard Vandersteen

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