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Vandersteen Model Five



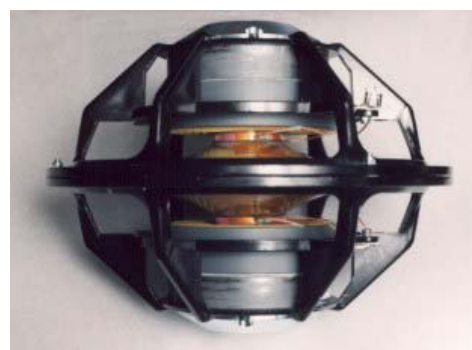
The Model Five combines the superior openness of the Vandersteen boxless design with the powerful, extended bass of an amplified subwoofer in a compact, elegant loudspeaker. With trend-setting technology, the best components, and painstaking attention to detail, the Model Five is the ultimate embodiment of advanced Vandersteen design principles.

COMPONENTS

The Model Five uses the proven Vandersteen Aligned Dynamic Design to optimize the dispersion and transient accuracy of the drivers while maintaining the input signal's time and phase integrity. The drivers, their positioning and their mounting baffles were developed with the aid of FFT computer analysis to minimize diffraction, cone break-up, multi-driver interference and out-of-band phase irregularities. The construction, alignment, and positioning of the drivers allow a point-source wave front, maximize the phase coherence of the

loudspeaker at the listening position, and minimize time smear. Mounted horizontally in the bottom of each Model Five's lower section is the most

advanced subwoofer driver ever built. Shown to the right, this massive 12" proprietary Vandersteen driver is a push-pull design with a powerful motor on either side of the curvilinear aluminum cone. Each motor uses a precision-formed magnet assembly with copper rings to provide more than an inch of perfectly linear excursion. The dual magnet assemblies are supported by a rugged die-cast basket engineered for absolute rigidity. The driver's two voice coils are wound on either end of the single common former that runs through the driver from motor to motor. Each Model Five contains a 400-watt amplifier like the one shown to the left to power the subwoofer driver. This internal amplifier reduces the demands on the main full-range amplifier and insures ample power for the most demanding music or sound effects.



formed magnet assembly with copper rings for absolutely linear excursion and a heavy-duty die-cast basket for rigidity. The unique surround supporting its curvilinear poly/Kevlar composite cone is made of a highly absorbent material molded into a distinctive, performance enhancing shape.

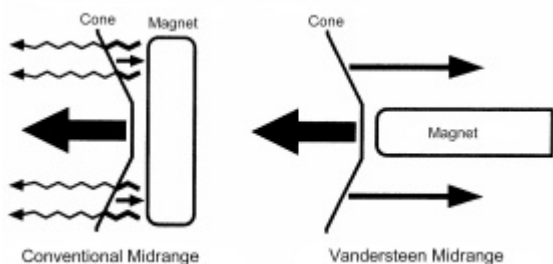
The front-firing drivers are shown in the picture below. The large driver to the right is the 7" woofer which is mounted just above the subwoofer enclosure in a resistively loaded transmission line. Like the subwoofer driver, it uses a precision-



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The far left driver is the patented 4 1/2" open basket Vandersteen midrange driver that is also found in our Model 3.

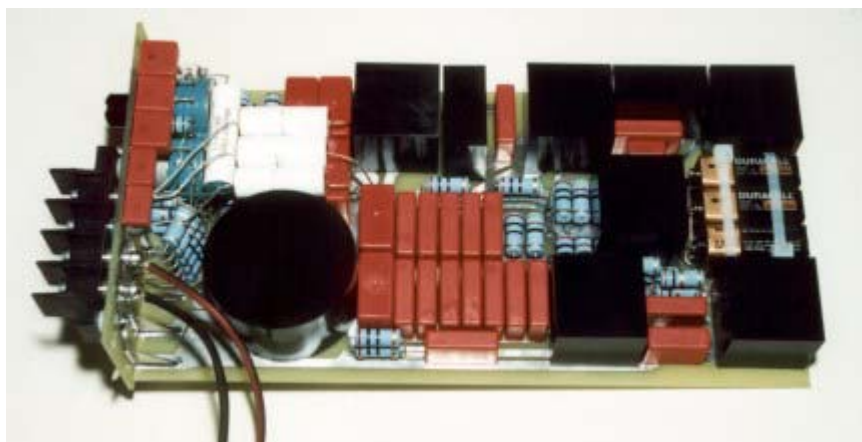


This state-of-the-art proprietary driver uses advanced materials and construction techniques to minimize the frontal areas of the die-cast basket and alnico magnet assembly and reduce internal diffraction. As shown in the illustration to the left, the open-basket driver and transmission-line enclosure combine to eliminate rear-wave reflections. Energy from the back of the cone is absorbed and dissipated rather than reflected back through the cone into the room as time-smear distortion. After evaluating numerous cone materials from common (*treated paper*), to esoteric (*metal alloy & Kevlar*), to exotic (*ceramic*),

mineral-filled polymer was selected for its superior transparency and linearity through the midrange frequencies.

The driver in the center of the picture is the 1" metal-alloy dome tweeter. It is a dual-chamber, transmission-line loaded design to improve range and linearity. Critical acoustic dampening extends the high frequencies past audibility without the excessive ringing associated with open or underdamped metal dome tweeters. The specific alloy used for the dome was chosen for its superior strength and resistance to break-up compared to common dome materials. Not shown in the picture is the rear mounted 3/4" dome tweeter that can be adjusted to tailor the Model Five's treble response to different rooms or listener preferences.

The Model Five's innovative crossover is shown in the picture to the right. Comprised of transient-perfect, first-order networks designed to preserve the critical phase integrity of the original sound, it is compensated to allow the drivers to operate in absolute phase with each other. Custom high-purity silver internal wire is used to maximize signal transfer to the drivers.



Featuring leading-edge technology, the most advanced materials, and the highest quality components, the Model Five is a true state-of-the-art loudspeaker. With its unique upgradable modules, it is guaranteed to remain state-of-the-art well into the third millennium.

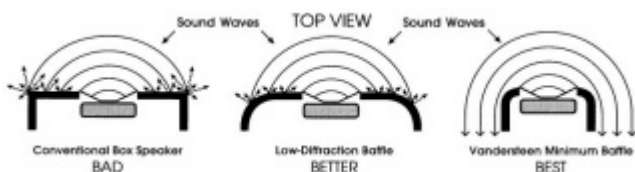
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CONSTRUCTION

As you can see in the picture to the right of an unfinished Model Five, the head is constructed of 22 layers of 3/4" MDF permanently bonded together with a special anti-resonant adhesive. Separate one inch thick driver mounts for the woofer, midrange, and tweeter are bolted to the layered head. These removable driver mounts are made of high-pressure epoxy

laminates, an incredibly dense and inert material that provides



absolutely rigid coupling between the drivers and the head. The lower picture to the right shows how the baffles holding the drivers on the Model Five are as small as possible to eliminate virtually all of the early reflections that affect dynamic speakers with conventional flat or low diffraction baffles. Reducing both early reflections and edge diffraction improves the imaging and enhances the openness and transparency of the speaker. The graph to the left demonstrates the significant advantages of the Vandersteen minimum baffles.



The lower section of the Model Five containing the dual-motor subwoofer driver and 400-watt amplifier is constructed of an advanced 1-inch to 2-inch thick constrained-layer-damped material. The picture to the left shows the inside of the subwoofer enclosure of an unfinished speaker. As you can see in the picture, the internal construction features elaborate heavy bracing and reinforcing for superior resonance control.

ROOM COMPENSATION

While conventional speakers must be perfectly positioned in the room to maximize their low-frequency performance, the Model Fives can be positioned in a convenient location and then tuned to the requirements of that particular placement. The subwoofer amplifier incorporates multiple unique adjustments that allow the speaker's low frequencies to be matched to its environment and the preferences of its owner. Model Five owners can adjust the sensitivity of the subwoofer section and contour the subwoofer's response. The sensitivity adjustment increases or decreases the overall level of the bass without changing its character. The low frequency contour control adjusts the Q of the subwoofer to accommodate different rooms, listening tastes, or system modes. In subwoofer engineering terms, system Q is the product of a complex mathematical equation derived from driver, electrical, and enclosure

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parameters. In practical terms, it relates to the character of the bass response. A low Q subwoofer sounds very tight and controlled. A high Q subwoofer produces a full, warm bass with more energy in the most audible bass range.

Each speaker also has eleven, dealer-adjustable compensation controls that modify the subwoofer's response to precisely counter room and placement induced nonlinearities. When the speakers are initially set up in the owner's home, the dealer uses a low frequency analyzer to set the compensation controls for the most linear bass response at the listening position. Once the dealer sets these controls, they will not need to be readjusted unless the speaker placement or listening position changes significantly.

With these innovative and versatile adjustments, Model Fives can be matched to almost any environment or placement. They will work as well in a small room as in a large room. The family entertainment system is a part of the room rather than the room being forced to be a part of the entertainment system.

UPGRADEABLE MODULES

To fully protect your investment, the Model Five is a totally modular design. The drivers, crossover, baffles, and amplifier modules can be changed in the field using only a screwdriver and soldering pencil. As better materials or technologies evolve, reasonably priced updates will be available to incorporate the improvements into existing speakers. This insures that every pair of Model Fives, regardless of age, will continue to represent the leading edge of loudspeaker design, technology, and performance.

AESTHETICS

While it uses the same boxless design as other Vandersteen loudspeakers, the Model Five presents a very different external appearance. The lower two thirds of the speaker is covered with wood veneer while the head is enclosed by a removable grille structure. The Model Five is available in standard Vandersteen oak and walnut finishes with exotic woods and/or finishes available at additional cost. Owners can also supply their own high-pressure laminates to insure that their speakers are compatible with their existing home decor. In surprising contrast to its enormous full-range sonic capabilities, the Model Five is not a large speaker. With the grille and floor coupling cones installed, it is only 14" wide by 20" deep at the base with the front and sides tapering inward toward its 44" height. The moderate sized Model Five provides a high-performance solution to situations where larger, placement-sensitive speakers would not be aesthetically or domestically acceptable.

QUALITY CONTROL

Each Model Five undergoes rigorous testing and retesting during each phase of construction. The drivers and crossover components are individually tested and matched into complementary sets. The completed crossover assemblies are computer tested against a reference circuit, then potted to insure that they will not be affected by vibration. Each finished speaker is high-power sweep tested for structural integrity and FFT computer analyzed for correct response and performance compared to the model reference. This intense commitment to product quality and reliability is unsurpassed in the audio industry.

DIMENSIONAL PURITY

Music is pure in its dimensions. Time smear (multi-path) distortions from reflections and diffraction destroy this purity just like the multipath ghost images that ruin a television picture. All the Model Five's components, construction, and engineering are designed to preserve the music's original dimensions. By minimizing internal and external diffraction, maintaining phase and frequency linearity, using a single driver for each frequency range, and

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controlling vibration and resonances, the Model Fives eliminate time smear distortion and accurately convey the composition, timing, and shading that build an involving musical experience. They reveal the power, the authority, the subtlety, and the intimacy of the music.

This dimensional purity is the essence of the Model Fives. It allows them to recreate the music's original scope and passion. You become more involved in the music as its complex inner structure is revealed with increased transparency and realism.

We are pleased to have embodied these qualities that are so fundamental to your enjoyment of your music in a speaker whose elegant, physical presence complements the decor of your listening room. We are dedicated to continue building distinguished loudspeakers, true to both science and music, that make a statement about the importance of music in your life.

DRIVERS

- **SUBWOOFER**
12" dual-motor, push-pull subwoofer with die-cast basket and a curvilinear aluminum cone. Precision-formed magnet assemblies with copper rings provide over 1 full inch of linear excursion. Built-in 400-watt amplifier with user adjustable low frequency contour and multi-band room response compensation.
- **WOOFER**
7" die-cast basket, long excursion woofer with curvilinear poly/kevlar composite cone and a precision formed magnet assembly with copper rings for enhanced linearity. Transmission-line loading.
- **MIDRANGE**
Patented open basket 4 1/2" midrange with a curvilinear filled polycone and proprietary high-performance die-cast basket and alnico magnet assembly to reduce internal driver reflections and improves linearity. Ferrofluid voice coil cooling. Transmission-line loading.
- **TWEETER**
1" critically damped, low-distortion, dual-chamber alloy dome tweeter.
Ferrofluid voice coil cooling. Transmission-line loading.
- **ATS TWEETER**
3/4" critically damped, low-distortion alloy dome tweeter.
Ferrofluid voice coil cooling.

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