



## BAT VK-43SE PREAMPLIFIER



### A NEW SOLID-STATE BENCHMARK

Designed to anchor the world's best systems, VK-43SE constitutes a new benchmark in solid-state preamplifier design. Transformer-coupled outputs, a symmetrical N-Channel Unistage gain block, and more than 55,000uF of power-supply capacitance handle the most demanding audio requirements.

### SECOND-GENERATION OIL-FILLED CAPACITORS

VK-43SE employs the same second-generation oil-filled capacitors utilized in BAT's flagship REX II preamplifier. They increase the high-quality filtering capacity, dramatically lowering the noise floor and presenting a grain-free, textured, and exquisitely refined portrayal of harmonics.

### MATCHLESS CONTROL, ULTIMATE SOUND

A proprietary shunt volume control that offers 140 steps of 0.5dB resolution, simple user interface, and convenient customizability give listeners peerless control. Tube-like coherence, textural liquidity, sought-after warmth, and immersive transparency give their music the ultimate sound.

### SPECIFICATIONS

Inputs	3x XLR + 2x RCA	Main Outputs	2x XLR
Tape Outputs	1x RCA	Maximum Gain	20dB
Global Feedback	None	Volume Control Resolution	.5dB
Volume Control Steps	140	Frequency Response	2Hz to 200kHz
Input Impedance	100 kΩ minimum each phase	Output Impedance	200Ω each phase
Noise	-100dB unweighted	Dimensions	19" x 5.75" x 15.5"
Maximum Output Signal	20V	Weight	40 lb.
Power Consumption	60VA	Absolute Polarity	Switchable
Distortion at 2V Output	0.01%		

Combining BAT's trademark high-current Unistage™ topology with the transformer-coupled outputs anchoring all Balanced Audio Technology Special Edition preamplifiers, VK-43SE establishes a new benchmark in solid-state preamplifier design. The output transformers work in conjunction with a symmetrical N-Channel Unistage™ gain block (biased at an extraordinary 250ma) to deliver BAT's hallmark high-current operation. Dual-mono construction and more than 55,000uF of power-supply capacitance yield instantaneous response to the most demanding signal requirements. Second-generation oil-filled capacitors provide increased purity to the elegant Unistage™ circuit.

## TRANSFORMER-COUPLED OUTPUTS SUPERIOR TO CAPACITOR-COUPLED APPROACH

Exchanging BAT's venerable Six-Pak of output capacitors with custom-designed output transformers, VK-43SE joins every BAT SE preamplifier in featuring transformer-coupled outputs. This change is rooted in solid engineering fundamentals.

All devices have inherent imperfections. While both capacitors and transformers can perform the same task of DC decoupling, in many cases, the transformer can be designed closer to the ideal. This benefit does not come easily. Executing a linear and close-to-ideal transformer is a highly involved process. Also, some applications are more suitable for transformers than others. Plus, the highest-quality transformers are higher in cost. For these reasons, good transformers remain relatively uncommon in high-end audio.

In order to achieve our "transformational" goal, BAT spent years prototyping and testing various alternative output transformer designs. That's why our new transformer-coupled output stage proves substantially superior to any capacitor-coupled output stage in maintaining a purity of signal transmission. Electrically, these custom transformers significantly elevate VK-43SE's ability to drive low-impedance loads. Sonically, they offer improvements in every area of musical reproduction.

## SIMPLICITY OF DESIGN REFLECTED IN UNISTAGETM TOPOLOGY

Simplicity of design, especially in the direct signal path, continues to be a hallmark of Balanced Audio Technology's purist approach to circuit topology. Some advocates of the technique like to talk about a "direct wire with gain" as being the ideal circuit. VK-43SE deftly meets this simple design criterion. The signal in VK-43SE is transmitted through only one gain stage. This design is free from the negative artifacts attributable to both extremes of modern preamplifier design—passive preamplifiers on one end of the spectrum, and multi-stage buffered active circuits on the other.

The leading benefit of the Unistage™ circuit relates to the sheer simplicity of amplifying the incoming signal only once, and using no global feedback to double-back on the signal's straight-through integrity. Imagine telling a joke to friends and saying, "pass it on." Pass it on enough times, and you won't recognize the joke. Pass the music through too many gain stages, and you'll no longer recognize the genius and beauty of your favorite recordings.

## SECOND-GENERATION SUPERPAK

The revised power supply of VK-43SE incorporates the same second-generation oil-filled capacitors used in BAT's flagship REX II preamplifier. They increase the high-quality filtering capacity by an order of magnitude over the first-generation oil parts, dramatically lowering VK-43SE's noise floor and presenting a grain-free, textured, and more refined portrayal of musical harmonics.

## HIGH-CURRENT N-CHANNEL MOSFET CIRCUIT ENSURES IDEAL AUDIO SYMMETRY

The VK-43SE circuit is based entirely on N-Channel MOSFET devices. In solid-state design, it is customary to use complementary N- and P-Channel devices in the gain stage. Such configurations are easier to build, but they all suffer from an important drawback: P-Channel devices are inherently inferior to their N-Channel brethren in that the former are simply much slower. Pairing faster N-channel devices with slower P-channel devices constitutes a mismatch on par with placing a stock engine in a Lamborghini. You will never get a perfect symmetry when using devices with such wide speed discrepancy. In VK-43SE, identical devices—in identical circuit configuration—handle both sides of the waveform and ensure ultimate symmetry of the resulting signal.

## FULLY BALANCED IS BETTER

Naturally, VK-43SE is balanced. Balanced Audio Technology staked its reputation on this principal of circuit design from day one. Today, it isn't hard to find many followers. Why do we believe that balanced is better? Balanced topology simply provides a complete signal representation. Something magical happens when you free yourself from the limitations of the single-ended structure and its associated half-signal processing. If a one-handed craftsman is very good, imagine what he could do with two hands.

It is fairly common to associate the benefits of balanced design with improved signal integrity when dealing with long interconnects, for example. However, the true benefits of a balanced approach to circuit design go much further than signal transmission. Advantages include such fundamental aspects of design as the interaction between the power supply and its associated gain stage. Common wisdom holds

that the power supply should be considered a part of the signal path. However, whereas the sonic contribution of the power supply can be overwhelming in a single-ended design, it is much less of a concern in a balanced circuit. As the circuit becomes more symmetrical, the residual effect of the power supply becomes less intrusive. In effect, the demand on the power supply is reduced, making it easier to design a balanced circuit that conforms more closely to the engineering ideal. For added convenience, VK-43SE incorporates a mix of balanced and single-ended inputs and outputs.

## SHUNT VOLUME CONTROL FOR UNBEATABLE CONTROL

VK-43SE employs a proprietary electronic shunt volume attenuator that offers 140 steps of 0.5dB resolution. Just a single Vishay bulk foil resistor per phase—the most precise and thermally stable resistor available—is in the signal path. Discrete metal film resistors bleed the unused signal to ground. Hence, with this circuit, only the highest-quality Vishay resistor is in series with the signal. In addition, the 140 steps give precise repeatable volume settings that sound continuous to the human ear. With VK-43SE, you can always get the volume just right!

## CUSTOMIZABLE OPTIONS INCLUDE STELLAR-SOUNDING VK-P20 PHONO MODULE

Simple to use right out of the box, VK-43SE is just as easy to customize. You can dim the display from the comfort of your chair by using the BAT remote. Fade music at the touch of a button. Switch phase to see if a recording is made in reverse absolute polarity. Even name your sources. For example, name your home-theater playback input "THTR." Then, fix the volume for your THTR input to control your home-theater system from your pre/pro remote. VK-43SE can also be ordered with the outstanding VK-P20, a solid-state phono module designed to compete with external phonostages twice its price. It offers switch-selectable moving-magnet or moving-coil gain settings, and provides a convenient, high-performance, single-box solution for vinyl aficionados.

## SUMMARY

BAT's flagship solid-state preamplifier, VK-43SE features new transformer-coupled outputs and a high-current MOSFET gain stage to deliver world-class performance. Defying the clinical sound associated with most solid-state preamplifiers, VK-43SE combines tube-like coherence and textural liquidity with cutting-edge transparency in the reproduction of music's finest details. Available with an optional phono module, VK-43SE stands at the ready to anchor the finest reference systems, and perfectly complements BAT's flagship VK-655SE solid-state power amplifier.