KRELL,

THE LEADER IN AUDIO ENGINNERING

KSA – 150 / 250 OWNER'S MANUAL

INTRODUCTION

Thank you for your purchase of the new Krell KSA-150 or KSA-250 Power amplifier. The KSA-150 and 250 represent the absolute latest evolution in amplifier technology. They have many innovative design features in addition to Krell refined Class A power and direct-coupled circuitry from input to output.

There are several aspects of the KSA-150 and KSA-250's operation that require your special attention before installation. Because of the high level of performance capabilities of the KSA-150 and 250, careful placement and installation are crucial. Your thorough understanding of the operation and interrelation of your new amplifier with your audio system will ensure its maximum performance and long life.

ABOUT THE OWNER'S MANUAL

The Owner's Manual is divided into various groups of information. The purpose of the manual is to familiarize you with the product and guide you through its set-up, installation and operation in a logical progression.

TABLE OF CONTENTS

A. GENERAL INFORMATION

The latest generation of high-resolution source components and speakers places new demands on the power amplifier. The Krell KSA 150 and KSA-250 meet these challenges with fresh design sophistication and long-term value. Both products can drive any speaker with an effortless quality that makes their power seem endless. Extreme clarity is maintained at all power levels. They both utilize Krell refined high-bias Class A and direct-coupled circuitry from input to output. Their power supplies and output stages are massive. High voltage rails with extensive regulation are provided for the input circuitry. All materials and electronic components are of the finest quality and operate within their optimum performance ranges. Virtually all hand wiring has been eliminated, resulting in a dramatic improvement in sonic clarity.

The KSA-150 and KSA-250 both utilize Class A circuitry throughout the audio and power supply regulation stages. Class A gain stages deliver excellent sonic performance under diverse conditions because all active components are turned on at all times. This allows each component to operate in its most linear and precise regions. The amplifiers are able to respond to the full range of input signals with equal accuracy.

The KSA-150 and the KSA-250 are conservatively rated at 150 and 250 watts per channel into 8 ohms, respectively. The 150 will actually generate 220 watts into 8 ohms, and the 250 will generate 320 watts into 8 ohms. The 8-ohm power ratings do not account for the amplifiers superb sonic performance nor describe their maximum power. The Krell definition of power and the ability to drive low impedances is that the output must double into successively low impedances. The immense power supplies in both products allow them to double their power into one ohm.

There are many advances in thermal construction and control circuitry in the KSA -150 and KSA -250. All heat bearing structural components and external heat sinks have been designed in-house to improve thermal tracking and cooling. This construction provides very low thermal resistance between the output transistors and the heat sinks, resulting in superior thermal tracking. It also results in a considerable reduction in overall size. Greater amplifier life expectancy is an added design benefit.

Automatic self-adjusting bias and DC offset control circuitry have been developed for the KSA-150 and the KSA-250. These circuits compel the amplifiers to conform to their intended operational parameters under all AC mains conditions. A variation of approximately 10% in the AC can generally be accommodated, guaranteeing consistent performance in all environments.

The KSA-150 and KSA-250 are protected by a series of opto-coupled, non-intrusive circuits that constantly evaluate the amplifiers operation. Appropriate

protective action exists for a wide range of problematic conditions. Collectively, the protection circuitry is designed to avoid damage caused by other defective components, faulty wiring, mishandling of the system or amplifier failure.

Krell is committed to balanced operation in all products. Balanced systems have long been standard in professional audio applications and the same advantages apply to home audio equipment. There is a 6dB increase in gain without an increase in noise and there is a decrease in overall system noise caused by stray AC and RF fields. Sonic performance is drastically improved, particularly in dynamic and soundstage presentation.

B. POWER CONSIDERATIONS

The KSA-150 is rated as delivering 150 watts per channel into 8 ohms. The amount of Class A power is adjusted for the finest sonic performance with a minimum of generated heat and energy consumption. The amplifier's maximum power into 8 ohms is 220 watts per channel. The KSA-250 is rated as delivering 250 watts per channel into 8 ohms. The amplifier's maximum power into 8 ohms is 320 watts per channel.

That every Krell product uses Class A circuitry in all gain and supply stages is a foundation of our design philosophy. A second design commitment that relates to amplifiers is that every unit be capable of doubling its output into successively lower impedances. The KSA-150 will deliver 300 watts per channel into 4 ohms, 600 watts per channel into 2 ohms and 1,200 watts per channel into 1 ohm. The KSA-150 is fully capable of driving impedances below 1 ohm. The KSA-250 will deliver 500 watts per channel into 4 ohms, 1,000 watts per channel into 2 ohms and 2,000 watts per channel into 1 ohm. The KSA-250 is capable of driving impedances below 1 ohm.

Given the above, the AC power supplied to the amplifier is crucial to getting maximum performance. The KSA-150 will operate at its peak with a dedicated 20- amp line, although this is not a requirement. Additionally, the KSA-150 should only be operated with the power cord supplied with the unit. Use of other power cords may damage the amplifier and void its warranty. The KSA-250 requires a dedicated 20-amp line. It too, should only be operated with the power cord supplied with the unit.
Please consult Krell or your dealer before using any devices designed to alter or stabilize the AC power for the KSA-150 or KSA-250.

C. UNPACKING

Remove the unit, power cord and accessories from the shipping container. Store all packing materials in a cool, dry place for future use. Inspect the unit for shipping damage. If any damage is evident, contact your dealer immediately. If the unit is in proper condition, proceed with the installation.

D. INSTALLATION

1. *CAUTIONS: These are important points of which you should always be aware.*

- ***Do not connect the power cord into the AC mains before completing the entire installation.***
- ***The unit must always be turned off while making connections.***
- ***Krell XLR and custom RCA connectors are made to very exacting standards. Connectors of lesser quality may damage the amplifiers or cause poor connections. Please check with your dealer or Krell about the use of any other connectors.***

2. UNIT LOCATION GUIDELINES

With the power cord disconnected from the AC mains, lay out the pre-amp to power amplifier interconnect and speaker cables to best determine the placement for the amplifier. As mentioned earlier, the KSA-150 operates at its peak with a dedicated 20-amp line and the KSA-250 requires a dedicated 20-amp line. Consult a licensed electrician for installation of a dedicated line.

Amplifiers dissipate in heat much of the power they consume. The KSA-150 or KSA-250 must be installed in a location that provides unobstructed ventilation. If the units will be installed on shelving or in a cabinet, extra ventilation is necessary. This can be accomplished with the use of 'whisper'-type fans in a variety of ways. Consult your dealer for assistance. Generally, with the front and rear of the installation shelving or cabinetry open, 8 inches of clearance on the sides and top of the amplifies should provide adequate ventilation.

The dimensions of the KSA-150 are: 19" wide X 16.75" deep x 8.5" high. Add 2.5" of depth for front and rear handles. The unit weighs 90 pounds. Shipping weight is 105 pounds. The dimensions of the KSA-250 are: 19" wide x 21.5" deep x 8.5" high. Add 2.5" of depth for front and rear handles. The unit weighs 140 pounds. Shipping weight is 144 pounds.

3. CONNECTION OF INPUTS AND SPEAKERS

Note: The KSA-250's AC power cord may be connected to the amplifier at this time, but do not yet connect the power cord to the AC mains.

The KSA-150 and KSA-250 have both balanced and single-ended inputs. The balanced inputs use 3-pin XLR connectors and single-ended inputs use RCA connectors. The pin assignments for the XLRS are: pin 1 = signal ground: pin 2 = non-inverting input: pin 3 = inverting input. The RCA connector is wired in parallel with pin 2, the non-inverted input. **Only one of these inputs should be connected to the preamplifier.**

The input that is not connected to the preamplifier may be used as an output to a second amplifier for power bi-amp applications. Before proceeding with such an installation, you should consult your dealer or Krell.

The KSA-150 and KSA-250 are shipped with shorting pins in the XLR inputs. These pins must remain in the XLR inputs if the units are to operate in the single-ended mode. These pins must be removed to connect either unit for balanced operation. The shorting pin connects pins 1 and 3 and grounds the inverted input.

The wiring to and from the amplifier, and all components in general, should be arranged in a neat, organized manner. Specifically, AC wires should be separated from audio wire. This insures the avoidance of hum or the introduction of other unwanted noise into the system.

It is always preferable to run long interconnect cables to the amplifier and to keep speaker cable length to a minimum. Speaker cable does add impedance between the speakers and the amplifier, regardless of the wire gauge. All Krell amplifiers will drive the lowest impedances with ease. When impedance is added in any significant amount, (for instance with excessive cable length) amplifier power is literally wasted in driving the cable, thereby reducing the maximum power that can be delivered to the speakers.

The feet on the KSA-150 or KSA-250 can be used three different ways. They are made from machined Delrin and are supplied with separate rubber bottoms and mounting screws. The rubber bottom can be screwed into the Delrin for the protection of fragile surfaces such as hardwood floors or furniture. For use on rugs or carpeting, using the feet without the rubber bottoms is recommended. You may purchase, from your authorized dealer, a set of Acoustic Mass Dampers (AMDs). AMDs are custom-machined stainless steel feet fitted with a threaded insert and a washer made from acoustically absorbent material. When threaded into the Delrin feet, the AMS will decouple the amplifier from vibrations present on the surface where the unit is installed.

Once the amplifier is in place, ***and turned off,*** you can begin to connect the interconnect and speaker cables. The preamplifier should be off, with the level fully attenuated (turned down). All other sources should be off. The two sets of 5-way binding posts for each channel's output are wired in parallel to allow easy bi wiring.

You may now connect the AC.

E. OPERATION

Activate the system by turning on the source components and preamplifier with the volume fully attenuated (turned down). The amplifier must always be turned on last. Just after turn-on, a soft click will be heard. This is the main power relay

closing. At this pint the amplifier's outputs are not connected to the speakers. After the protection circuits detect that the unit has completely stabilized, the speaker relays will engage. Another click will be heard at this point. The amplifier is now ready to use. The amplifier will be at temperature and sound its best after approximately 15 minutes.

Operation of the amplifier is simple. It is important to note that care must be taken in the operation of the whole system in relation to the significant power output of either amplifier. Mistakes, such as switching between active sources without muting the preamplifier output or bumping/miscuing a phonograph cartridge, can generate large transients at low frequencies. When this type of transient activity occurs, the amplifiers can generate enough power-surge to damage most loudspeakers. All switching of sources should be done with the preamplifier level either muted or fully attenuated (turned down). Inputs to the amplifier should never be changed while the amplifier is on.

Care must be taken when setting high playback levels. Because of their tremendous reserve of clean power, Krell amplifiers safely drive speakers to higher sound pressure levels than other amplifiers. This often results in driving the speakers to their limit. Always turn the volume level down at the first sign of distortion.

When turning off the system, the amplifier should always be first. This avoids the possibility of a turn-off transient occurrence from some other component to the speakers.

F. PROTECTION CIRCUITRY

The KSA-150 and KSA-250 have a sophisticated series of circuits that protect them from dangerous input signals or loads on the output. These circuits also analyze various amplifier functions to prevent speaker damage that may be caused if the amplifier fails to function properly.

There are two protection modes: Input and Output. When the Input Protection is engaged the amplifier will remain on, with the front panel LED illuminated, but it will not pass a signal. This indicates a problem with the input signal caused by the preamplifier or source component. This is most often a DC condition. The amplifier will resume passing signal when the problem is resolved.

When the Output Protection is engaged the amplifier will turn off, with the front panel LED turning off as well. This usually indicates a problem with the speaker wires, their connection, or the speakers themselves. Once the problem is located and resolved the amplifier will turn on normally with activation of the front panel switch. The Output Protection will also engage if the amplifier fails. If the amplifier will not turn on with all inputs and outputs disconnected, please contact your dealer or Krell Service.

IMPORTANT NOTES REGARDING PROTECTION CIRCUITRY

1. *When the Output Protection circuitry has been engaged, allow at least 20 seconds before turning on the amplifier again. Repeated fast cycling of the On/Off switch can damage the amplifier and void the warranty.*
2. *If the amplifier does not come on following the procedure above, please contact your dealer.*
3. *There is a circuit breaker on the amplifier real panel. This breaker protects the amplifier in the event of catastrophic failure. If the circuit breaker engages, contact your dealer or the Krell Service Department. Do not attempt to reset the circuit breaker.*

G. WARRANTY AND SERVICE INFORMATION

There are no fuses or user-serviceable parts in the KSA-150 or KSA-250. Both amplifiers have a limited warranty of five years from the date of purchase for parts and labor. Return freight is included in the warranty. Please return the warranty car immediately after successful installation and operation are completed.

The warranty for Krell products is valid only in the country to which they were shipped and at the Krell factory in Orange, Connecticut, USA. If there are problems with any of your Krell products, please contact your authorized Krell dealer or the Krell Service Department.

Please do not return any unit to Krell without first having contacted the Krell Service Department and receiving a Return Authorization Number. Units should be shipped in Krell packing. Packing materials may be purchased through the Krell Service Department. Freight charges to the factory or distributor are the responsibility of the customer. Krell or the dealer/distributor will pay return freight charges on warranty repairs.