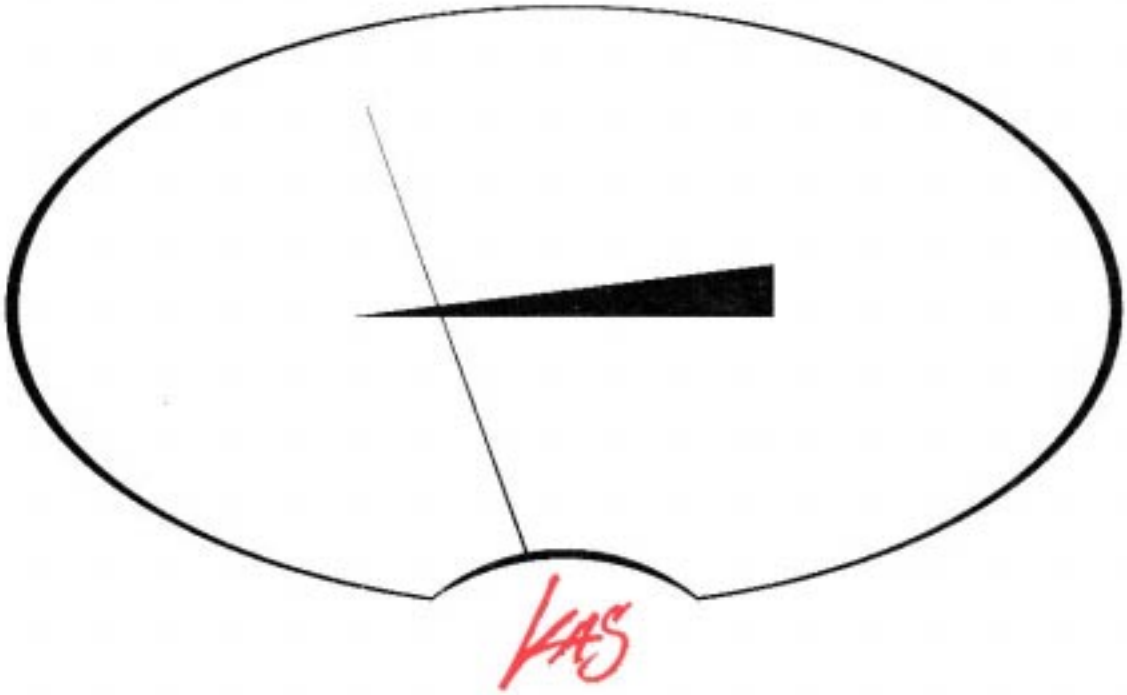
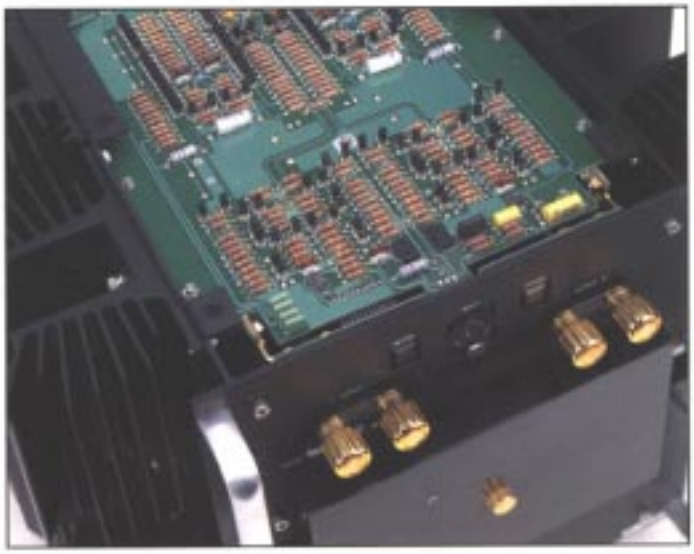
K R E L L A U D I O S T A N D A R D



THE STANDARD...

Acknowledged criteria to which all others are compared.

Establishment of new performance standards are most difficult to attain in any field. An intensive mix of experimentation, inspiration and excruciating attention to detail are required just to make the attempt. Results are never guaranteed.



An internal view of the KAS amplifier chassis reveals its meticulous design and construction. The multi-pin connector carries information between various amplifier circuits to the meter subassembly.

DESIGN CONSIDERATIONS

The Audio Standard was conceived from several sets of conflicting goals. Two objectives in apparent opposition were the requirements for large amounts of Class A power with minimum heat and AC power consumption. Enter *Sustained Plateau Biasing*. This technology insures the Audio Standard will always deliver the Class A power required by the music, but eliminates most of the heat and continuous power use.

The Audio Standard has five bias levels of 10, 50, 125, 250 and 400 watts. Each level is the equivalent to a Class A amplifier of the associated power. The amplifier constantly monitors the input signal and determines the bias required to maintain pure Class A operation of the output stages, regardless of load. For instance, if a given input requires 35 watts output, the 50 watt bias level will be activated. When a peak occurs requiring 90 watts, the 125 watt bias level will engage. The 125 watt level will be maintained as long as output in excess of 50 watts is needed. The amplifier will not shift down from the 125 watt level until the program needs under 50 watts for more than 90 seconds. In this manner, the Audio Standard will change and sustain its bias plateaus in response to the audio signal. The available Class A power will always be in excess of the requirement.

The KAS Remote switches the amplifier between Stand-by and Operate modes, and cycles through the seven meter functions.

The 10 watt level is the idle condition of the Audio Standard. In this state, little heat is generated or power consumed. It can sit for hours without heating up the room, yet be ready to instantly shift to full power, or any intermediate level. Once into the four higher bias levels, heat will be dissipated and power consumed, but only as required by the music.

A second conflict arose from the need for bias plateau changes to be completed prior to output demand. Various sonic problems occur if bias shifts lag behind the music, as with sliding bias designs. Krell developed the *Anticipator* circuit to address the problem and control plateau bias selection. The *Anticipator* circuit is many times faster than the program and is able to complete bias changes in advance of the need. Peaks cannot get to the outputs in advance of plateau bias correction.

THE KRELL REGULATED POWER SUPPLY

The Audio Standard is the first Krell amplifier with a regulated power supply. However, the Krell definition of a regulated supply is drastically different from any other. To deliver adequate power, the regulator must be of equal size to the amplifier. If not, a condition similar to filling a fire hose with a garden hose exists. This explains why the amplifier and supply chassis are identical in dimension. Where the amplifier has 60 output transistors, the supply has 60 regulator transistors. The amplifier is simply not capable of generating more output power than the supply can provide. The regulator also has feedback. It can respond to changes in the load as necessary. To illustrate the point: the Audio Standard supply rails change only 1/10th of 1 volt between 8 and 1 ohms, at full power!

Regulated amplifiers have great advantages over unregulated designs. Constant current and voltage for input and output stages yields tremendous sonic stability under the most dynamic conditions. There is one disadvantage—another design conflict. A regulated amplifier cannot produce the instantaneous, short duration, peak power so critical to realistic music reproduction. Without this ability, a regulated amplifier can sound restricted and dull.

To overcome this, a second function of the *Anticipator* circuit is used. When the normal regulated supply voltage is not sufficient to accommodate a musical peak, the *Anticipator* circuit triggers the supply to actually increase its voltage. This condition lasts for 7 seconds, enabling the amplifier to capture the full duration of the peak, including the smallest musical nuances.

IN CONCLUSION

Dan D'Agostino and the Krell Engineering staff invested over 18 months developing the Audio Standard amplifier. Countless ideas were explored and discarded. Many near-complete versions were evaluated in home listening sessions, only to be sent back to the lab for disassembly and re-engineering, some for minute flaws. Ultimately, the obstacles were overcome and the Audio Standard came into focus. Although many predictable statements might be made regarding its virtues, this can be said with certainty: the product validates its name.
Krell Audio Standard Amplifier.

The dramatic visual presence of the Audio Standard compliments its superb musical expression.

THE KAS...

Hard at Work

The KAS is audio jewelry. Custom machined parts abound, designed for perfect function and longevity.

DIMENSIONS

Per channel:

18"	*wide*
13.25"	*high*
25"	*deep*

WARRANTY

5 years limited and transferable

The KAS hard at work. Bias level LEDs show the third, or 250 watt, bias level engaged. The EXT light indicates the supply is delivering voltage above the normal regulated voltages, in response to a demanding transient. The meter function LEDs at left show the meter operating in full scale, 0 to 100 amps output current, in peak mode. Protection circuit and temperature status indicators are to the right.

For comprehensive information on the Audio Standard, please send $10 to Krell Industries, 35 Higgins Drive, Milford, CT, 06460, or contact your local dealer.