



"The delicacy of tubes.
The authority of transistors."

Sonogy Black Knight™ Power Amplifier Owner's Manual

Operation, installation, and **safety** information
serial nos. A9596101 through A9596212

Thank you!

Thank you for purchasing your Sonogy Black Knight power amplifier. This manual will help you enjoy your amplifier for many years to come. If you have any questions about operation or maintenance, please contact your dealer. Sonogy dealers are true professionals, and have a wealth of experience with our products and in designing excellent audio systems.

A Description of the Black Knight Amplifier

Sonogy amplifiers and preamplifiers offer the harmonic richness that distinguishes live music from reproduced music. Often associated with the best in tube amplifiers, the Black Knight combines natural, rich harmonics with the traditional virtues of solid-state circuitry.

Like other truly fine amplifiers, your Black Knight is designed with *real world* performance in mind rather than incomplete and artificial specifications. As a result, the Black Knight is very powerful, and drives even difficult loudspeaker loads with ease. Output is 37 volts r.m.s. per channel, and the generous power supplies provide sufficient drive current to handle demanding speaker loads. More importantly, the Black Knight/500 is unconditionally stable into capacitive, inductive and other dynamic loads.

The Black Knight can be used either as a 175W stereo amplifier or in pairs as 500W balanced monoblocks. No modifications are necessary to use a Black Knight as a balanced monoblock; you need only have two amplifiers and a balanced preamp output to drive each. If your preamplifier does not offer balanced outputs, Sonogy offers the Duette™ balancing module, which creates balanced outputs from unbalanced ones.

Set-Up and Electrical Connections

Your Black Knight should be located on a solid platform, or on the floor, where it receives good ventilation and is away from flammable items, such as curtains or paper.

Connections are required for speakers, preamp input(s), and for 117VAC or 230VAC power. These are clearly marked on the rear panel of your Black Knight. All signal connections should be made with the amplifier off, to prevent possible speaker damage. If the amplifier is left on while preamp connections are made, it could amplify the resulting transient and damage your speakers.

Two pairs of 5-way binding posts are provided for speaker connections. These will accept bare wires, standard banana plugs, or spade lugs. A good **clean** connection is important for consistently good sound. Clean any connectors used, and insure that all connections are tight. Do not allow the "hot" and ground connections to short together. If spade lugs are used, you may wish to *lightly* tighten the binding posts with a socket or nut driver; be sure not to crack the plastic binding post or strip the soft brass threads (we use a high copper alloy for best sound). If you are interested in maintaining absolute phase, your Black Knight does not invert phase. Please note that connections are made differently for stereo vs. monoblock operation.

Balanced and unbalanced inputs are provided for both left and right channels. In addition, a single XLR jack is provided to drive your Sonogy amplifier as a fully-balanced monoblock. Balanced monoblock operation requires two amplifiers for stereo.

Finally, a single IEC modular power jack and line cord is provided. The 15A power cord provided is suitable for all applications.

Dual-Mono Balanced Operation

Two standard Black Knights may be operated, without modification, as 500W balanced monoblocks. Each balanced monoblock (one per channel) must be driven by a preamplifier with balanced outputs, or by Sonogy's Duette Balancing Module. If you connect your Black Knight as a balanced monoblock, be sure to connect the speaker across the left and right red ("hot") binding posts. Ground is not used to carry signal in a balanced configuration. Your authorized Sonogy dealer can explain fully how to connect a balanced preamplifier to a pair of Black Knight monoblocks.

Balanced monoblock operation offers many sonic and technical advantages. Most obviously, this guarantees the power to reproduce high volume and explosive dynamics with a greater sense of realism. Many subtle advantages are offered as well. True dual mono operation generally enhances the three dimensional stereo image. Furthermore, balanced operation has technical advantages, derived from distributing the speaker's load evenly within the amplifier, which result in better fidelity, depth of image, smoothness, and realism, even at lower levels which might not appear to need the awesome power of two 500 watt monoblock amplifiers.

Warm-Up

Contrary to popular belief, even solid-state (transistorized) equipment benefits from a warm-up period. While your Black Knight will operate properly and safely as soon as it is turned on, most listeners find that the sound improves substantially during 20-30 minutes of use, and continues to improve over the next few hours of continual operation. *NOTE: Your Black Knight will not sound its best until it has been in standby mode (see below) for at least 24 hours.*

Break-in

New amplifiers break-in over a period of 1-2 weeks. The tonal balance and smoothness will improve.

Standby Mode

Most of this amplifier's low-power circuitry is not switched on and off. Once your Black Knight is plugged in, these circuits operate in standby mode. The Black Knight will not perform optimally until these circuits have warmed up for at least 24 hours with the Black Knight plugged into a live AC outlet. Standby mode is indicated by the front-panel Amber LED.

CAUTION!!! Wait before turning on . . .

When the Black Knight is first plugged in (or subsequently plugged in after moving), always be sure that the power switch is off, and wait 2 minutes for the bias circuits to stabilize. This will avoid an unusual turn-on surge, blown fuses, and unnecessary strain on the amplifier.

Ventilation and Heat

Your Black Knight is expected to run warm, but not hot. Since the Black Knight relies on convection cooling, it is important to allow space around the amplifier and particularly important not to obstruct the cooling fins. Do not stack a preamplifier or any other equipment directly above the Black Knight. Leave at least 6 inches of space on all sides, as well as a dissipation path for warm air. If possible, raise the amplifier off any rugs by 1-3" to improve airflow and cooling. *Do not enclose in a cabinet. Never operate the Black Knight in such a way that its heatsinks become hot to the touch.*

On/Off Switch

The On/Off switch controls only the high-current output stages. The rest of the circuitry is in standby mode whenever your Black Knight is plugged in. The amp is "ON" when the switch is flipped up, and OFF when down. The green LED indicates that the Black Knight is fully "on".

Grounding Switch

On the bottom of the amplifier (rear panel on some models) is a toggle switch which options the Black Knight between two grounding configurations. This switch can eliminate ground loops and noise in different systems. Choose the position that provides the lowest hum and buzz. One position should be clearly superior to the other.

High Output Current:

The Black Knight is a very high current design, capable of driving low impedance and reactive loads while maintaining sonic purity. Each channel's output stage can deliver peak current of 40 amperes (<100mS) and the Black Knight can deliver 800 watt peaks (<100mS) without strain.

A high current option, which increases the constant-current capability into low-impedance loads is available at additional cost. This option does not increase peak current nor does it make the Black Knight more stable. For the vast majority of applications we do not feel that this option is necessary.

D.C. Offset

Your Black Knight is equipped with circuitry which monitors the presence of DC voltage at the output. A DC servo constantly adjusts amplifier operation for low DC at the speaker terminals. If you notice any unusual operation, or measure more than 100mV of DC at the outputs, turn your Black Knight off immediately and contact your dealer for service.

Power Requirements

For safety reasons, the Black Knight **must** be plugged into a **3-prong grounded** 110/120 volt (AC) outlet¹. While on, the amplifier may be expected to draw 150-200 watts at all times, and up to 600 watts momentarily, and therefore should be plugged directly into a wall outlet rated for at least 10A². If you have an unusual requirement, contact your dealer or a qualified electrician.

Fuses

The high power output stage power supplies and lower power standby circuitry power supplies are fused independently. The output stage of all 117V (USA) models is fused with a 3A slo-blo type fuse (located on the back panel)³. The circuit cards are fused with a 1/4 A slo-blo type fuse inside the amplifier. *Always unplug the amplifier before attempting to replace an internal fuse! Never replace a fuse with one of higher value as serious damage could occur in the case of failure!!* No fuses are in the audio path.

Maintenance

Your Black Knight requires no regular electrical maintenance, and in any event service should be performed only by Sonogy, Ltd.

Limited Warranty

For warranty information, please see your dealer or refer to the enclosed warranty form.

Repairs

All repairs must be performed by Sonogy, Ltd or an authorized service provider. Service or modifications performed by any other person or establishment will automatically void your warranty.

Thank You!

Thank you again for your confidence in Sonogy, Ltd.

¹230V/50Hz and 100V/50-60Hz models also available.

²For 230V operation, the circuit should be 5A minimum.

³230V models are fused with a 2A slow-blow fuse.

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If you have any suggestions that might improve our products or our service, or if we may assist you in any way, please do not hesitate to call or write us at the address below. Happy listening from the entire staff!

Technical Specifications:

Voltage Output:	37.0 Volts 74.0 Volts mono
Current Capability:	40A peak (<100mSec) 10A continuous
Stereo Power	175 W/ch (8Ω)
Monoblock Power	500 watts (8Ω)
Active Devices:	Junction FETS, Bipolar Transistors
Input impedance:	30k-Ω unbalanced 60k-Ω balanced
Output impedance:	< .3Ω
Sensitivity:	1.6V (175 W / 37V) 60 mV (1 watt)
Gain:	26dB
Phase Inversion:	no
Shipping Weight:	50 lbs./ 23 Kg
Dimensions:	6.25" x 18" x21"
Feedback:	0 dB (no feedback loops)
Power Consump.:	175W continuous idle 600W maximum draw
SMPTE I.M.:	<.1%
DC Offset:	<10mV
Freq. Response:	5Hz-20kHz +/- <0.25dB
Class of Operation:	very high bias A/AB
Gain stage :	pure class A
AC Coupled:	Yes
Fuses (110V-120V models):	
internal	1/4A slo-blow/250VAC
external	3A slo-blow/250VAC
Fuses (220-230V models):	
internal	1/8A slo-blow/250VAC
external	2A slo-blow/250VAC
Heat dissipation	175 watts at idle