

## LIMITED WARRANTY

THIS PRODUCT IS WARRANTED UNDER THE FOLLOWING CONDITIONS:

1. PRODUCT IS PURCHASED THROUGH AN AUTHORIZED SUMO DEALER.
2. WARRANTY COVERS NORMAL OPERATING CONDITIONS OF HOME USE.
3. WARRANTY PERIOD BEGINS AS OF DATE OF SALE PROVIDED IT IS REGISTERED BY THE AUTHORIZED SUMO DEALER WHERE THE PRODUCT WAS PURCHASED. REGISTRY PERIOD IS 20 DAYS.
4. DELIBERATE MISUSE, MISHANDLING, FAILURE TO REPORT RECEIVING DAMAGED MERCHANDISE, OR UNAUTHORIZED TAMPERING WITH OR MODIFYING OF THIS MERCHANDISE AUTOMATICALLY VOIDS ALL WARRANTIES.
5. WARRANTY PERIOD FOR ALL SUMO FACTORY WIRED PRODUCTS (EXCLUDING FUSES) IS 3 YEARS COVERING BOTH PARTS AND LABOR. TRANSPORTATION CHARGES TO AND FROM THE DEALER OR FACTORY ARE EXCLUDED.
6. WARRANTY ON ALL SUMO PRODUCTS USED IN ANY OTHER FASHION THAN STATED ABOVE SHALL REDUCE THE WARRANTY TIME PERIOD AND OTHER CONDITIONS TO NEGOTIATIONS BETWEEN SUMO AND PROSPECTIVE USER.
7. THIS WARRANTY SHALL EXTEND TO EACH SUCCESSIVE OWNER, PROVIDED SUMO IS NOTIFIED BY REGISTERED MAIL WITHIN 20 DAYS OF RESALE BY INITIAL OR PRESENT OWNER. THIS NOTIFICATION SHALL CONSIST OF DATE OF SALE, NAME AND ADDRESS OF NEW OWNER.
8. SUMO GUARANTEES THAT ITS PRODUCTS ARE FREE FROM DEFECTS IN MATERIALS AND/OR WORKMANSHIP FOR THE REQUIRED WARRANTY PERIOD.
9. THIS WARRANTY IS NOT VALID UNLESS ACCOMPANIED BY SALES SLIP VALIDATION OR PROPERLY STATED INVOICE (COPY).
10. THIS WARRANTY IS VALID ONLY IN THE UNITED STATES. SERVICE IN OTHER COUNTRIES WILL BE PROVIDED BY THE EXCLUSIVE SUMO REPRESENTATIVE OR HIS AGENTS. BECAUSE OF VARYING GOVERNMENTAL REGULATIONS AND CONDITIONS, THE SERVICE PERIOD MAY DIFFER FROM COUNTRY TO COUNTRY. HOWEVER, IN EVERY INSTANCE, THE SERVICE AGREEMENT CAN BE HONORED ONLY IN THE COUNTRY WHERE THE UNIT WAS PURCHASED.

If your unit requires service, contact your nearest authorized SUMO dealer or factory service department. DO NOT send the unit for warranty service without obtaining factory RETURN AUTHORIZATION.

Shipping Address: 81800 Superior Street, Chatsworth, CA 91311

Telephone (818) 407-2425

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**ATHENA**

**SUMO**

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## INTRODUCTION

Welcome to the world of SUMO. ATHENA is the culmination of many years of research, development, and careful listening. It is the definitive expression of SUMO's quality and attention to detail.

In many ways ATHENA is a stunning achievement; particularly in the areas of speed, symmetry, and freedom from overload. At the same time, ATHENA reproduces music with a warmth and inner detail that must be experienced to be appreciated.

Despite its sophistication, ATHENA is not difficult to set up properly. The brief instructions that follow will help you realize its full potential.

## UNPACKING

Immediately upon receiving ATHENA, inspect the carton for evidence of mishandling during shipment. Then, carefully unpack the preamplifier and inspect it for any sign of damage that might have occurred.

Please save the shipping carton and all associated packing material for later use. The shipping materials have been carefully designed to transport your preamp with a minimum of disturbance.

NOTE: In the event that you discover some damage that has occurred in shipping, please contact your dealer immediately.

## PRECAUTIONS

Always turn the level control to minimum between program or source selections, and when turning the power on or off.

Do not change any rear panel connections while ATHENA is turned on.

## OUTPUT CONNECTIONS

Two stereo pairs of audio output jacks are provided for connection to power amplifiers or electronic crossovers. These jacks are labeled PRE OUT 1 and 2. They are electrically connected in parallel and can be used for installations requiring multiple amplifiers or crossovers. Please be careful to fully engage cable contacts so that no loss of circuit ground occurs. A very loud hum or buzz will be heard if this condition exists.

The source impedance of the two preamp outputs is 75 ohms each, low enough to permit the use of shielded cables up to 100 feet in length.

Two pairs of tape output jacks are also provided on the rear panel for connection to any tape recorder having a load impedance of 6.5k ohms

or higher. Unlike the main preamplifier outputs, the tape output signals are independent of balance and volume settings, and are at a level that is a function of the source input level. These tape outputs are labeled TAPE PLAY (1 and 2).

#### INPUT CONNECTIONS

There are five high level inputs on ATHENA's rear panel; labeled CD, TUNER, VIDEO, TAPE REC 1, and TAPE REC 2. These inputs are identical in input sensitivity and impedance; and can be used interchangeably for high level sources as required.

NOTE: as a result of ATHENA's circuit design, the high level inputs cannot be overloaded by any normal signal source.

ATHENA has both moving-coil and moving magnet phono capability. Utilizing one set of phono inputs, moving-coil/moving magnet selection is made via an internal switch located on the printed circuit board adjacent to the phono input. It is set at the factory for moving magnet sensitivity; therefore moving-coil selection must be made by the user before connecting a low level moving-coil cartridge.

As a precaution, ATHENA should be turned off and unplugged when switching the phono input from moving magnet to moving-coil. With power off, remove the top cover which is held in place by 4 phillips head screws on each side of the unit. Locate the two position horizontal switch adjacent to the phono input on ATHENA's circuit board, and simply move the switch mechanism to the position labeled "MOVING-COIL."

Any moving-coil cartridge except high output types may be used with this input. The input impedance is 100 ohms, set by plug-in resistors at the phono input; and may be adjusted by your dealer and optimized for ANY moving-coil cartridge. Contact your local dealer or SUMO Customer Service for further information or assistance in this matter.

SUMO Customer Service, 21300 Superior Street, Chatsworth, CA 91311.  
Tel. 818 407-2427.

NOTE: Do not connect a moving magnet cartridge to the MC input. While no damage will occur to ATHENA, the large amount of gain in the MC stage may send a signal high enough to damage the power amplifier or, especially, the loudspeakers.

When set for moving magnet cartridge sensitivity, the phono input is optimized for all conventional magnetic cartridges, high output moving-coils, and other types which require RIAA playback equalization. The input impedance is 47k ohms (100 pF shunt capacitance), which is standard for magnetic cartridges. The overload capability is 165 mV at 1k Hz.

Well shielded cable is recommended for connection of the cartridge to the phono input. It is usually supplied with the turntable or tonearm. It is not recommended that phono cable length exceed five feet or audible degradation of high frequencies may occur.

Ordinarily, an additional grounding wire is provided with the turntable which should be connected to the grounding post on the rear panel of ATHENA. In some systems it might be found that this connection actually creates hum. In this instance, no ground connection should be made. Be careful to keep all large transformers (such as those found in power amplifiers) away from the phono cartridge to prevent magnetically-induced hum.

#### SPECIAL NOTES ON HUM REDUCTION

Unfortunately, some components are more prone to hum than others, and no cable made is entirely immune to it. Therefore, all cables in the system must be oriented for the lowest hum level.

The connecting cables from the tonearm are more susceptible to hum than any other source. These cables must be oriented for maximum hum cancellation. All wires carrying AC power should be located as far away from the turntable and preamp input as is physically possible. Under no circumstances should you ground the turntable or preamp ground to a water pipe or other such ground.

Hum can also be introduced by a poor connection from the outer grounding shell of the audio cable plug to the audio input jacks. Be certain that the outer shells of the RCA type phono plugs are squeezed together sufficiently so that a solid ground connection results. Try rotating the plugs one half of a turn to obtain a solid ground.

#### OPERATION

The POWER SWITCH turns ATHENA on. A green pilot light above and near the power switch confirms that it is on; although sound will not be heard immediately. The preamp is muted while the power supply slowly comes up; a delay that may be as long as fifteen seconds (and perfectly normal). It is always a good practice to set the volume control to minimum before turning ATHENA on.

ATHENA sounds decidedly better after it has been on for some time. You will notice a smoothing out after about twenty minutes of operation, and subtle (but audible) improvement with more time. It is our recommendation that where possible the preamp be left on at all times and not turned off.

The VOLUME CONTROL is a laser trimmed, detented potentiometer of superior quality. It maintains channel balance within one half dB at all settings, each of which is a fixed resistance. The volume control has no effect

on the signal at the TAPE REC output jacks.

The BALANCE CONTROL is concentrically ganged to the volume knob. It controls the ratio of loudness between the left and right channels (yet does not effect the signal at the TAPE REC output jacks). The center of the control is detented.

TAPE COPY selects the source to be recorded. PHONO, CD, TUNER, or VIDEO selections appear at both TAPE REC 1 and 2 outputs, which provides the capability of recording two tape machines simultaneously. The remaining tape copy selections specifically route the recording signal from tape 1 to 2, OR 2 to 1. All tape copy functions are independent of mode selection; and, as such, allow the taping of any one source while listening to any other.

The MODE select rotary knob determines what source is heard. In the case of both TAPE COPY and MODE selections, LED indicators adjacent to the rotary knobs indicate what source has been selected.

The MONO switch converts all signals to monaural. This L + R signal provides a useful framework for evaluating such things as stereo separation, system imaging, and proper phasing. An LED indicator above and near the switch illuminates when it has been engaged.

The LF FILTER has been provided to reduce acoustic feedback and other unwanted frequencies generated by record warp, subsonic resonances, etc. This filter will gently attenuate response below 70 Hz with a phase linear first order slope. It is designed to minimally affect sonic performance, and is particularly useful when reproducing records at high levels.

The BYPASS function allows the listener to totally remove the high level section of the preamp from the signal path. When selected, this provides both direct line-drive for high level sources (such as a CD player), as well as direct phono out. If your source has sufficient output to drive the power amplifier to comfortable levels, you may in fact leave the BYPASS switch engaged at all times.

#### GENERAL MAINTENANCE

Great care has been taken by SUMO to ensure that ATHENA is as flawless in appearance as it is in performance. The front panel is finished with a high grade anodizing process for durability as well as beauty. It can best be cleaned with a soft cloth dampened with a solution of LIQUID detergent and water. Under no circumstances should a lye solution or any abrasive cleaner be used on any part of the unit.

#### SERVICE

Should your preamplifier require service, return it to the SUMO dealer from whom it was purchased. If this is impractical, write or call the

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SUMO Customer Service Department describing the problem in detail. Products returned to the factory should be shipped freight prepaid to the SUMO Customer Department, 21300 Superior St., Chatsworth, CA 91311. Tel. 818 407-2427. Products should not be returned without prior authorization.

#### DESIGN CONSIDERATIONS

ATHENA represents the culmination of a major effort at SUMO. As such, it sets new standards for dynamic headroom and freedom from overload. Utilizing high voltage power supply rails, passively linearized circuitry, and a high current toroidal transformer, ATHENA can faithfully reproduce music at levels far in excess of the peak output of signal sources. As a result, compact discs and audiophile analog recordings deliver lifelike dynamic bursts without the electronic strain so commonly associated with hi fi reproduction. Similarly, complex orchestral pieces come through intact and unstrained.

Sonic purity is enhanced in ATHENA both by careful component selection and the exclusive use of pure Class A circuitry. Low noise 1% metal film resistors and metalized polypropylene capacitors are used throughout. Components are mounted on a military grade glass epoxy printed circuit board; and all external connections are made via the highest quality input and output jacks.

The bypass function allows the purist to totally eliminate the high level section of the preamp from the signal path.

ATHENA is unquestionably one of the finest preamplifiers available in audio; and a component that promises years of musical enjoyment.

#### PERFORMANCE SPECIFICATIONS

Frequency Response	20 - 20k Hz	plus or minus 0.1dB	
	1.5 - 500k Hz	plus or minus 1.5dB	
RIAA Deviation MC/MM	20 - 20k Hz	plus or minus 0.25dB	
	MC	MM	High Level
	Sensitivity	115 micro V	2.3 mV
S/N Ratio (below 3 V)	80 dB	85 dB	100 dB
THD & IM (below 18 V)	>0.01%	>0.01%	>0.1%
Overload (1 kHz)	8 mV	165 mV	Infinity
Dimensions	19"W x 8.75"D x 1.75"H		
	48 cm x 22 cm x 4 cm		

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