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Caution: To prevent fire or shock hazard, do not expose this unit to rain or moisture.

## INTRODUCTION

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Welcome to the world of SUMO. ULYSSES is the culmination of many years of audio amplifier research. It contains some of the most sophisticated circuitry offered to the audio community in recent years, and delivers a level of performance in sheer musical terms that promises to change your concept of reproduced music.

An electronic component as sophisticated as ULYSSES places certain demands on its owner. Please read this operating manual carefully, so that you may come to realize the highest level of performance ULYSSES is capable of.

## UNPACKING

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

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

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

## PRECAUTIONS

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ULYSSES is a wide-band amplifier with substantial power output capability. Certain precautions must be taken to ensure that the amplifier is operating safely.

1. Be careful when lifting ULYSSES. The unit weighs more than 25 lbs.
2. Never expose ULYSSES to moisture.
3. Never plug an input cable into the amplifier while the power is on. This may cause extensive damage to loudspeakers.
4. Never apply the "thumb test" (touching the hot lead of the input cable with your finger) to the tip of the input cable or input jack of the amplifier. RF rectification and/or hum will almost surely damage your speakers. Also, you may blow one or more of the replaceable fuses.



Please note: SUMO is not responsible for damage to loudspeakers due to improper use of ULYSSES.

5. Take care to see that a short circuit is not connected to the output of the amplifier.
6. Avoid restricting the airflow around the amplifier. Air circulation is necessary for proper operation.
7. Do not plug ULYSSES's AC power cord into a preamplifier's convenience outlet, since it is likely the current demands of ULYSSES will exceed the outlet's capability.
8. Avoid rocking ULYSSES's power switch on and off repeatedly within a short period of time, since doing so may damage the power supply.
9. Make sure that any speakers used with your amplifier can comfortably handle its power at the corresponding impedance. ULYSSES's warranty does not cover damage to loudspeakers caused by abuse or misuse.

## INSTALLATION

Although ULYSSES contains a substantial heat dissipating area, cooling can be severely reduced should the air flow to the chassis be restricted. Avoid locating the amplifier in cabinetry which might choke the air flow. Provide adequate vents or ports below and above the amplifier. Care should be taken to see that ULYSSES is not installed near hot air vents, nor stacked on other heat generating components.

In the event that ULYSSES overheats as a result of inadequate air flow, an internal thermal breaker will trip and interrupt operation. After cooling, ULYSSES will automatically become operable. If thermal shutdown occurs, relocate ULYSSES, or reconfigure the set up.

When installing ULYSSES into a standard 19" component rack, we recommend that you isolate the chassis and metalwork from the rack so as to ensure no electrical contact between the two. If this precaution is not observed ground loops may occur resulting in audible hum.

## ELECTRICAL CONNECTIONS

ULYSSES is supplied with a standard heavy duty power cord. All connections should be made with the AC power cord unplugged and the amplifier's

power switch in the off position. Under no circumstances should you attempt to make any input or output connections while the power is on.

## INPUT CONNECTIONS

One pair of high quality shielded audio cables will be required for the input connection to ULYSSES. Simply connect the preamp's left and right channel outputs to ULYSSES's left and right channel inputs.

The input jacks on the ULYSSES have been gold plated to provide low contact resistance, long life, and minimal susceptibility to corrosion. Be sure to use only high quality, shielded cable with standard RCA type pin jacks to connect your preamplifier to ULYSSES.

## OUTPUT CONNECTIONS

Output connections on ULYSSES are made via 5-way gold plated binding posts. They accept most high quality terminations, including those accepted by audiophiles as providing best connections, for example, spade lugs, banana jacks, pins, bare wire, etc.

## PROTECTION

ULYSSES has no internal protection circuitry or current limiting of any kind. The elimination of this restrictive and invasive circuitry is an important reason the amplifier sounds as good as it does.

ULYSSES is protected, however, by external power supply fuses found on the back panel. There are two protection fuses per channel. Should the amplifier inadvertently be operated into a shorted speaker lead, or drastically overdriven into a low impedance load, one or more of the fuses will blow, shutting the amplifier down. In the event that operation ceases on one channel, first turn ULYSSES off. Look for an obvious cause, and where possible remedy it. Unplug the amplifier. Locate the fuses and examine for possible discontinuities. Replace defective fuse(s) with a like value 3 Amp fast blow fuse. Reverse the process: plug the amplifier in; and turn it on. It should function properly again.



In the event that a problem persists, contact your local dealer, or SUMO Customer Service, for further assistance. For SUMO Customer Service, phone 1-800-722-0500 from outside California; or 1-800-682-5300 from within California.

## **SPEAKER PHASING**

To obtain proper stereo reproduction it is important that your left and right stereo speakers be connected in phase. Proper connection will ensure that the speakers work together, rather than in opposition. Connecting a system out of phase will not result in damage, just poor sound reproduction and especially loss of bass response.

To connect your system in phase, observe the speaker cable being used, and note any indication (typically a groove, ridge, or perhaps simply a marking) that differentiates one lead from the other. Whatever the method employed, identify the lead which is attached to the (-) terminal on the amplifier. Connect the other end of this same lead to the (-) terminal of the loudspeaker system. Similarly connect the (+) terminal on the amplifier to the (+) terminal on the loudspeaker. Follow the same procedure on the second channel. Once this has been done, your speakers should be properly connected and in phase.

Verification of proper phasing is achieved by noting a unity of sound when solo vocalists perform during stereo operation. A more obvious verification can be observed by setting the preamplifier for monaural operation (left and right channels blended) and playing a mono recording. A precise center image should exist, with vocalists and instruments fixed in space midway between the two speakers. Poor imaging and loss of bass response are indications that you have connected your speakers out of phase.

## **OPERATION**

Other than caution concerning the power output capabilities of this amplifier, there are no special notes on operation. It is recommended that when powering your system up you turn your other components on first. After waiting a few seconds then turn ULYSSES on. A great many pieces of associated equipment emit large transients at turn-on and continue to do so several seconds afterwards. Therefore, protect your speakers by the proper sequencing. The reverse procedure applies when turning off the system-- always turn

the amplifier off first, waiting at least 15 seconds for the power supply to discharge. Then turn off the rest of the system.

## **POWER LINE FUSE**

For 120v operation, replace only with a 4 Amp slow-blow type; or a 2 Amp slow-blow for 220 or 240v operation. Using a higher than recommended fuse will void the warranty and risk damage to the amplifier.

## **BRIDGING ULYSSES FOR MONO OPERATION**

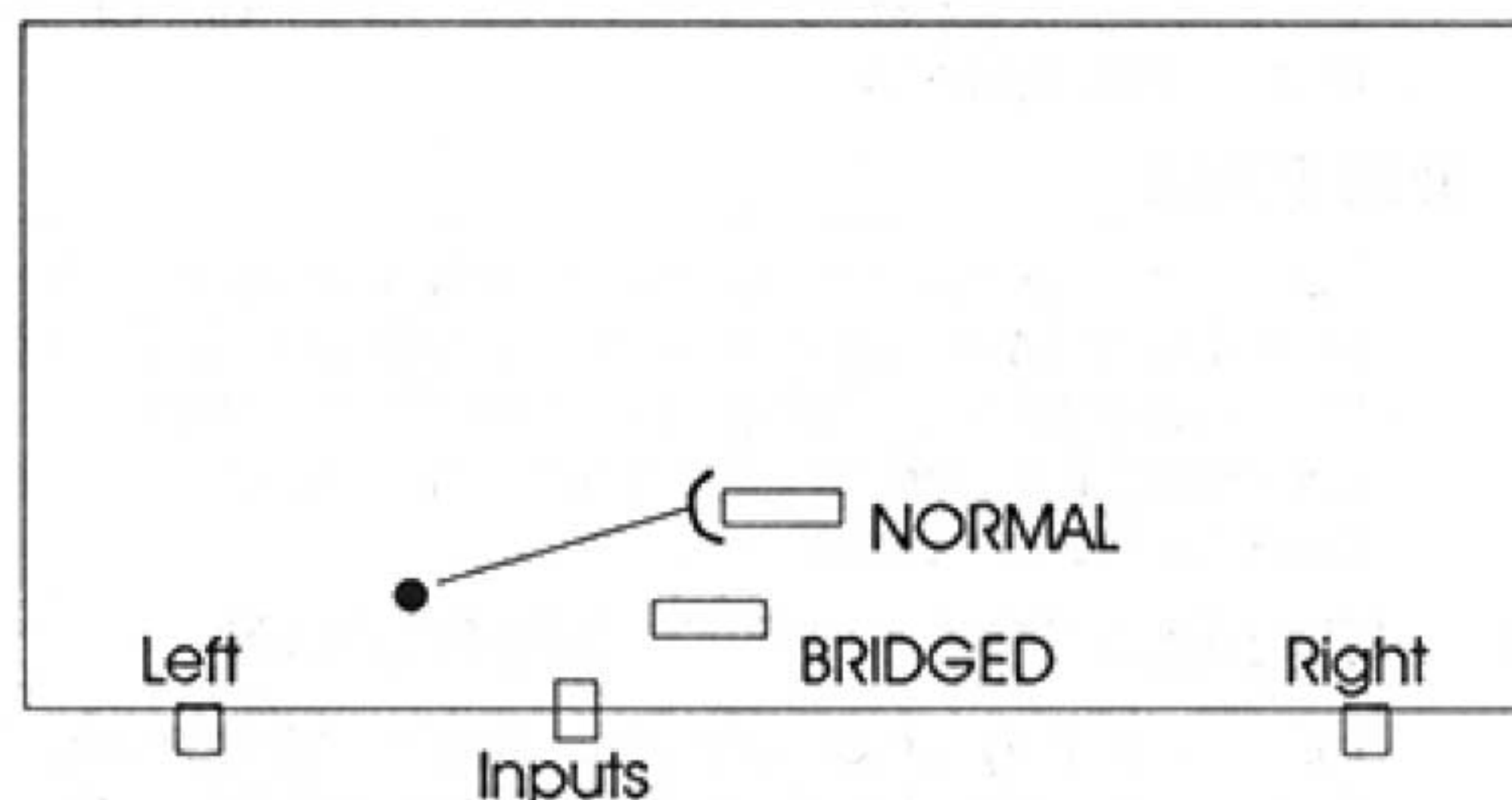
ULYSSES is fully capable of bridged operation. It can be bridged in either of two ways into an amplifier that delivers 180 Watts mono into 8 Ohms. First, this can be accomplished by utilizing an external bridging circuit, such as that found at the low frequency output(s) of DELILAH, SUMO's electronic crossover. In this particular instance, ULYSSES is bridged by connecting the pair of inverted signals from DELILAH's output for use as a subwoofer amplifier. This is accomplished without removing the top cover; simply by following the instructions in DELILAH's owner's manual.

The second method of converting ULYSSES to a bridged mono amplifier is via a simple internal adjustment. To accomplish this, first turn the amplifier off and unplug it from the wall. Remove the top cover by unscrewing the top two Phillips head screws from the left and right side of the chassis. Then lift the top cover carefully from the chassis, exposing the main printed circuit board. On the rear portion of the main board, in the proximity of the input jacks, you will find a orange wire terminated with a slip-on connector. As supplied from the factory, and for normal stereo operation, this wire is attached to a tab on the board labeled "NORMAL." To bridge ULYSSES, simply move this connector to the tab nearby labeled "BRIDGED." (See diagram A).

Insert a shorting plug (supplied) into the right channel (-) input on ULYSSES's rear panel. Then connect the input from the preamp to the left channel (+) input. To invert phase, simply reverse these connections.

Your loudspeaker should then be connected between ULYSSES's two red speaker terminals. For normal phase, connect the loudspeaker's red (+) terminal to ULYSSES's left channel red output, and the loudspeaker's black (-) terminal to ULYSSES's





Dia A. ULYSSES CIRCUIT BOARD

right channel red output. To invert phase, reverse these connections.

FOR BRIDGED OPERATION, YOUR SPEAKER SHOULD BE CONNECTED TO ULYSSES'S RED OUTPUT TERMINALS ONLY. IN THIS MODE, NOTHING SHOULD BE CONNECTED TO THE ULYSSES'S BLACK OUTPUT TERMINALS.

## CIRCUIT DESCRIPTION

The circuit topology of ULYSSES benefits from two inherent design advantages. First, as with all SUMO amplifiers, ULYSSES is designed to operate sympathetically with modern loudspeakers. Amplifier and speaker influence each other to a greater extent than any other two components in an audio system. It has been the focus of SUMO engineering to ensure that our amplifiers perform as well under real life conditions as they do on a test bench.

Second, the rapid advancement of semi-conductor technology has quite recently developed into a watershed, resulting in solid-state devices of truly outstanding capability. ULYSSES takes advantage of the very latest advances in Mosfet (Metal oxide Field-effect transistor) technology, and utilizes individually measured and matched output devices in complementary pairs. They are driven by two buffered pure Class A gain stages, then immersed in a proprietary linearizing circuit that reduces crossover notch distortion to test equipment residuals.

As a single-ended building block in Andromeda II's balanced configuration, ULYSSES utilizes identical topology and shares common parts with the more

powerful Andromeda II. Up to rated power the two amplifiers are virtually indistinguishable. ULYSSES is also capable of 50 Amperes of peak current. It is stable into low impedances and reactive loads.

## GENERAL MAINTENANCE AND SERVICE

Great care has been taken by SUMO to ensure that ULYSSES 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 and a mild cleaning solution such as Windex. Under no circumstances should a lye cleaning solution or any abrasive cleanser be used on any part of the unit.

In the event that the unit must be returned to the factory, an authorization number must be requested from SUMO before the unit is returned. Under no circumstances should the unit be shipped to SUMO without prior authorization. Please contact:

SUMO Customer Service  
21300 Superior Street  
Chatsworth, CA 91311  
(818) 407-2427  
(800) 722-0500  
(800) 682-5300 in CA



## PERFORMANCE SPECIFICATIONS

Power output: 60 Watts per channel into 8 Ohms both channels driven from 20Hz to 20kHz with less than 0.05% THD.

SMPTE IM distortion: Less than 0.05%  
(.25W to 60W at 8 Ohms).

TIM: Unmeasurable.

Hum and noise: 105dB below rated power.  
90dB below 1 Watt.

Frequency response:  $\pm 0.1$  dB from 20Hz to 20kHz.  
-3dB from 0.1Hz to 400kHz.

Input sensitivity at rated output: 1.8 volts RMS.  
Input sensitivity at 1 Watt: 130 mv RMS.

Input impedance: 47k Ohms.

Damping factor: Greater than 500.

Rise time: Less than 2 microseconds.

Separation: Greater than 80dB.

Dimensions: 19" W x 7" H x 16 3/4" D.  
48cm H x 18cm H x 43cm D.

Shipping weight: 25 lbs.  
12 kg.

## SUMO 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 is three years covering both parts and labor excluding fuses and transportation charges to the factory.
6. Warranty of 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. Warranty is valid from date of purchase for the required warranty period for purchases made by returning overseas U.S. service personnel.

Except as specifically provided for in this limited warranty there are no other warranties, express or implied at law or otherwise, including any implied warranty of merchantability or any implied warranty of fitness for a particular purpose.