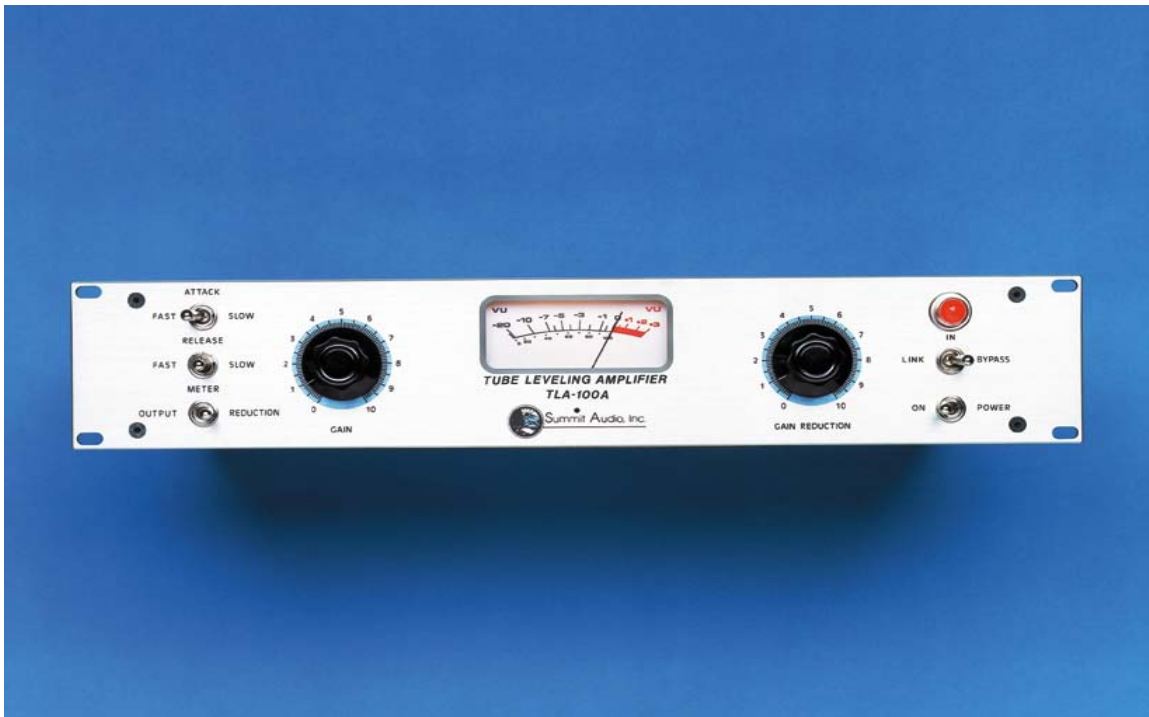




## Summit Audio Model TLA-100A Tube Leveling Amplifier Operating Manual



IMPORTANT!: CAREFULLY READ THE ENTIRE INSTRUCTION MANUAL BEFORE HOOKUP OR OPERATION OF THE TLA-100A

WARNING!: **HIGH VOLTAGE** THIS UNIT CONTAINS NO USER SERVICEABLE PARTS. SERVICING SHOULD ONLY BE DONE BY QUALIFIED SERVICE PERSONNEL OR FACTORY. DO NOT OPERATE THE TLA-100A WITH THE COVERS REMOVED.

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## INTRODUCTION

The Summit Audio Tube Leveling Amplifier is a hybrid of technologies. It contains both vacuum tube and solid state components. This combination of old and new technologies produces an incredibly warm and smooth sounding compression device without the inherent disadvantages of the older designs. Input connections are made using three pin XLR connectors. Features are as follows:

- EASE OF OPERATION
- “SOFT KNEE” CHARACTERISTIC
- SWITCH SELECTABLE ATTACK AND RELEASE SETTINGS
- SIDE CHAIN ACCESS
- STEREO COUPLING CAPABILITY
- BALANCED INPUT
- 990 BALANCED OUTPUT STAGE
- HAND CRAFTED IN THE USA

Having found this manual, carefully unpack the TLA-100A and its power cord. Save the carton and packing material, should it be needed. Before powering the unit read this manual, observing the cautions for HIGH VOLTAGE. Proceed by doing the following :

- Check the line voltage switch.
- Determine the proper fuse size by referring to the specifications.
- Check for meter illumination and the pilot lamp when the unit is powered up.
- Note that this unit is wired PIN 2 HOT.

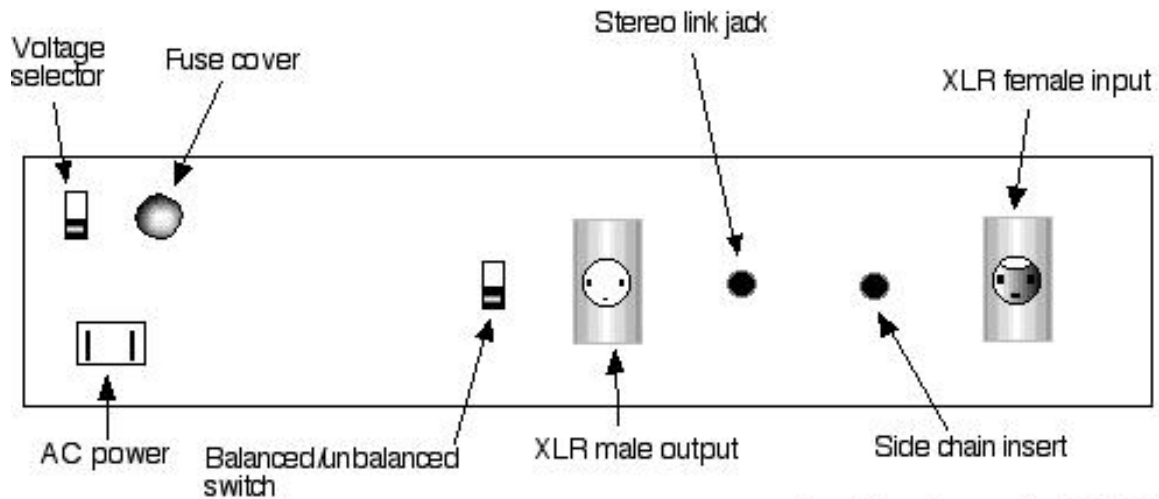
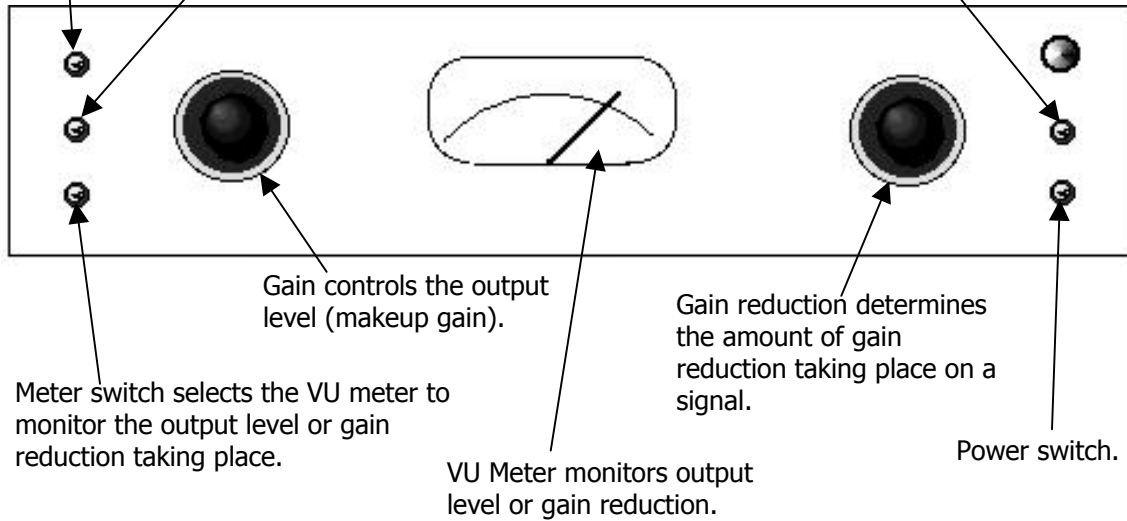
## THE CONTROLS

- ATTACK SWITCH :** A three position switch with fast, medium and slow settings, which controls the time it takes the TLA-100A to respond to the input signal.
- RELEASE SWITCH:** Controls the time it takes the TLA-100A to return to unity again. A three position switch with fast, medium and slow settings. The release time is also effected by the program material. The slower the release time setting, the more the program material determines the release time.
- METER SWITCH:** Allows monitoring the output level of the TLA-100A or the amount of gain reduction taking place.
- BYPASS SWITCH:** This is a three position switch. In the bypass position, the TLA-100A is removed from the audio path. In the middle (or **in**) position, the TLA-100A is switched into the audio path. In the left (or **link**) position, the stereo link signal is connected to its back panel connector. This allows stereo or mono operation of two units by front panel selection.
- GAIN:** Sets the voltage gain of the TLA-100A. It determines the output level, which can be monitored on the meter.
- GAIN REDUCTION:** Sets the amount of gain reduction taking place, and the operating point where gain reduction begins. The higher the gain reduction, the higher the ratio becomes.
- POWER:** A.C. power on and off.
- BAL/UNBAL SWITCH:** A rear panel switch which changes the output and metering circuit for proper operation into balanced or unbalanced loads.

Attack switch changes the time (fast, medium, slow) it takes for the TLA-100A to respond to input signal.

Release switch adjusts the time (fast, medium, slow) it takes for the TLA-100A to return to unity gain.

Link/In/Bypass switch toggles between bypass (no compression), in (compressing) and link mode for stereo linking with another TLA-100A, TLA-50, or MPC-100A.



# TLA-100A

## **TRACKING, LIVE SOUND, MIXING**

Plug the TLA-100A into your mixing console's insert jack or patch bay. The TLA-100A also sounds great if inserted directly in line after the preamplifier.

### **DE-ESSING**

Plug a TRS insert cable into the side chain jack on the back of the TLA-100A. Plug the send (tip) of the insert cable to the input of an EQ, and the return (ring) of the cable to the EQ output. Boost the frequencies on the EQ that you want to compress (de-ess).

### **DUCKING**

Send the output of the "lead" program material into the side chain input after inserting the TLA-100A on the "background" program material. Example: Send the output of a vocal mic into the side chain, with the TLA-100A inserted on the lead guitar track. As the singer uses the vocal mic, the lead guitar will decrease in amplitude.

## **CIRCUIT EXPLANATION**

The TLA-100A features a vacuum tube amplifier driving an electronically balanced 990 output stage. All the signal amplification in the audio path takes place in the tube circuit. The 990 amplifiers provide a low output impedance for driving cables and 600  $\Omega$  loads. The 990 is a high performance op amp made of discrete parts, and then potted for thermal stability.

The input is electronically balanced, and directly feeds the unique compression cell. The SIDE CHAIN allows for stereo coupling, or the insertion of an equalizer. Due to the combination of tube and solid state circuitry long term drift of the compression circuit is minimal and tracking of two TLA-100As stereo linked is within .3dB.

## ELECTRICAL CONNECTIONS

### INPUT:

*(This TLA-100A is wired as a pin 2 hot device. Units made before March 1<sup>st</sup> 2003 come factory wired with pin 3 hot.)*

Unbalanced: 3 pin XLR Connector      Balanced: 3 pin XLR Connector

Pin 1 – Ground

Pin 2 – (+) Signal

Pin 3 – Connect to Pin 1

Pin 1 – Ground

Pin 2 – (+) Signal

Pin 3 – (-) Signal

### OUTPUT:

Unbalanced: 3 pin XLR Connector

Balanced: 3 pin XLR Connector

Pin 1 – Ground

Pin 2 – (+) Signal

Pin 3 – Connect to Pin 1

Pin 1 – Ground

Pin 2 – (+) Signal

Pin 3 – (-) Signal

SIDE CHAIN:      Tip – Signal output (to EQ)  
                         Ring – Signal input (from EQ)  
                         Sleeve - Ground

Set the rear panel switch for the proper position.

STEREO LINK:      Tip – Signal  
                         Sleeve – Ground

Use the shielded patch cord with ¼” plug

Note: When running an unbalanced output it is best to connect pin 3 to pin 1 in the connector that plugs into the TLA-100A.

The TLA-100A contains heat generating devices, ample ventilation needs to be provided. Good ventilation will give long, trouble free operation.

THINK TUBES!!

## SPECIFICATIONS

OUTPUT : +4dBm corresponds to 0 VU. The output is electronically balance or unbalanced using 990 operational amplifiers. Output impedance is 75  $\Omega$ . The recommended output load is 600  $\Omega$  or more. Maximum output is +25dBm.

INPUT: The input is electronically balanced or unbalanced. Input impedance is 20k  $\Omega$ . Maximum input level is +26dBm.

PANEL SIZE: Standard 19" by 3.5" (two units of rack space).

DEPTH BEHIND PANEL: 10.5" in addition to users I/O cabling.

POWER: 35 watts.  
115-230 Volt.  
50 or 60 Hz.  
Fuse size is .5 amp for 115 volt and  
.25 amp for 230 Volt.

COMPONENTS: 1 x 12AX7A Vacuum Tube  
2 x high reliability 990 operational amplifiers  
13 x integrated circuits  
3 x transistors  
1 x compression cell

SHIPPING WEIGHT: 16 Lbs.

To operate this unit on 115 volts, switch the line voltage selector on the back of the unit to read 115 volts and confirm that the external fuse (mounted in chassis) is a [3 AG ½ Amp slow blow].

To operate this unit on 230 volts, switch the line voltage selector on the back of the unit to read 230 volts and confirm that the external fuse (mounted in chassis) is a [3 AG ¼ Amp slow blow].

## OPERATION

The first step in the operation of any device using a vacuum tube is to apply power and let the unit fully warm up (15 minutes). After warm up, set the Gain Reduction control to 0 and adjust the Gain control for 0 VU on the meter. Switch the Attack to slow and the Release to fast. Now adjust for the desired amount of Gain Reduction and recheck the output level.

As the amount of Gain Reduction is increased, the processed audio follows a smooth reduction curve, thereby changing the compression ratio. In this way, compression may be easily controlled.

If a large peak is detected, the unit will automatically increase the compression ratio to keep the audio output controlled. If a low compression ratio is desired, turn the Gain Reduction control until the meter indicates a small amount of Gain Reduction.

If a higher ratio is desired, set the Gain Reduction control so the meter indicates a high amount of Gain Reduction. Try different Attack and Release setting, depending upon the program material and the desired effect.



## **STEREO INTERCONNECT**

Insertion of a cable, with a ¼” plug on each end, into two TLA-100As will operate them in stereo for mastering tapes and compressing other program material. To operate the TLA-100A in stereo, set the Attack and Release switches the same, and set the Gain Reduction control to the same level on both units. The channel with the strongest peak will override both units.

The easiest way to do this is to set the Gain Reduction of each unit before they are stereo linked, then put the Bypass switch on each unit into the link position. To disable the stereo link, only one switch needs to be in the non-linked position.

## **SIDE CHAIN INSERTION**

This connection allows for the insertion of an equalizer in the Side Chain. By doing this, the TLA-100A becomes frequency selective. Program material with large amounts of low frequency may have the low frequencies attenuated in the Side Chain, causing the low frequency content to not affect the Gain Reduction. High frequency response of the Side Chain may be boosted to help prevent high frequency overload; it becomes a “de-esser” in this mode.

Allow the TLA-100A to warm up for at least 15 minutes before using it in your processing chain. The tubes and other circuitry need time to reach an electronic equilibrium before they will operate at optimal specifications. For the longest life, it is recommended that you turn off the unit when it is not in use.

Please mount the unit in your rack, making sure that there is sufficient ventilation, especially on the right and left side of the chassis. The TLA-100A will generate a significant amount of heat; therefore, it is necessary to have good air flow to prevent damage to your TLA-100A or any other pieces of gear housed in the rack with it.

The tubes in your Summit Audio TLA-100A have been intensely screened for desired distortion and gain characteristics. We recommend that you do not replace the tubes with “guitar amp” tubes. Please consult your dealer about availability of appropriate replacement tubes. These can also be ordered directly from Summit Audio.

Please fill out the warranty info at [www.summitaudio.com](http://www.summitaudio.com) for a full three-year warranty on your TLA-100A. If you have any questions about the operation of your TLA-100A, please do not hesitate to call our Customer Service Department at 775-782-8838 or contact us on the internet at: [sound@summitaudio.com](mailto:sound@summitaudio.com).