



L I N E A R T U B E A U D I O

ZOTL10 MK.II

USER GUIDE: ZOTL10 Mk.II

Linear Tube Audio
301-448-1534

Takoma Park, MD, USA
hifi@lineartubeaudio.com

WARNING: For safety, the cover of this amplifier should be secured at all times.

This amplifier contains extremely high voltages and the user should not attempt to service the amplifier. Furthermore, this amplifier generates radio-frequency energy that can interfere with communications equipment.

Introduction

The ZOTL10 is a Class AB tube amplifier utilizing ZOTL (Zero-hysteresis Output Transformer-Less) technology. It is designed as a power amplifier, but has a volume control in order to be used directly from high-output sources.

Limited Two-Year Warranty

1. Your new product is covered by a limited two-year warranty against defects in material and workmanship. Any repairs required will be made at no charge within the first two years after purchase as a new unit. This warranty is transferable to new owners within the original warranty period.

2. Any units returned for warranty repair must be shipped prepaid after receiving return authorization*. If possible, the unit should be shipped in its original packaging. If such is not possible, the unit should be well packed with particular attention paid to protection of all corners and avoidance of any looseness in the carton.

**Handling and shipping costs are the responsibility of customers outside the United States.*

3. This warranty does not apply to damage resulting from physical abuse or unauthorized alterations or repairs, or from tube rolling or adapter use, or from the use of third-party components, or damage to exterior finish after delivery.

4. The warranty is void if the serial number has been removed, altered, or defaced.

5. This warranty is void if improper voltage is applied to any input or output.

6. If Linear Tube Audio determines after receiving the unit that damage was misrepresented and has been caused by something not covered by the warranty, the customer must pay for any necessary repairs before the unit is returned to the customer.

7. Linear Tube Audio reserves the right to improve or change its products without obligation to modify previously manufactured units.

Service Note

ZOTL amplifiers use a unique circuit and technicians familiar with other tube amplifiers may not know how to correctly work on LTA products. Please contact us before attempting any alteration or repair, whether you are concerned about the warranty or not.

Specifications

Circuit Type:	Push-Pull Class AB
Power Output:	12W (4 Ohm), 10W (8 Ohm)
Input Sensitivity:	1.2V RMS for full output
Input Impedance:	50K
Output impedance:	1.2 Ohms
Preamp Output Impedance:	50 Ohms
Gain:	18dB (8 Ohm load)
Noise:	-94dB
Frequency Response:	+0, -0.5dB, 6Hz-60kHz (8 Ohm Load)
THD:	0.5%
Input Voltage	110/220 Selectable
Tube Complement:	(2x) 12AU7, (2x) 12AT7, (4x) EL84
Size:	Amplifier: W: 9" (23cm), H: 8.5" (22cm), D: 18" (46cm)
Shipping Weight:	14 lbs (6.4kg)

Quick Start

Remove amplifier, power supply, and included cables from the box.

Attach the AC umbilical cable to the power supply and amplifier. Be sure to tighten the cable's locking connectors.

Check that the **Stereo-Mono** and **Direct-W/Vol** switches (see **Operating Modes** for more information) on the back are in the correct position for your setup, and that your interconnects and speaker cables are hooked up to the appropriate connectors. Only one source should be connected at a time.

Attach the power cable to the IEC connector on the power supply, and plug into an outlet. Above the IEC outlet on the power supply there is a window showing the selected AC input voltage. Be sure that it is set correctly for your country's voltage. If it does not match, or if you would like to change it, contact us for instruction.

Hook up your preamp (or other source) and speakers.

Once your system is set up and everything is plugged in, turn your system on.

Operating Modes

DIRECT: RCA inputs go directly to the amplifier, bypassing the volume control.

W/VOL: RCA inputs go through a volume control, adjustable via the front panel knob.

Stereo/Mono Switch: Two ZOTL10 amplifiers can be operated as mono-blocks, which deliver approximately 1.7x the power into 8 Ohms. To operate in the mono mode:

1. Set the Stereo/Mono switch to Mono.
2. Use the left input of either the DIRECT or W/VOL pairs of RCAs, depending on which you plan to use.
3. Using jumper cables, bridge the two positive (red) speaker terminals together and bridge the two negative (black) speaker terminals together. **DO NOT CONNECT** the red and black speaker output terminals together, as this shorts the amplifier. Once bridged, either positive terminal and either negative terminal can be used to connect your speaker.

Protection Circuit

The amplifier is DC-coupled and has a protection circuit that will shut down the amplifier internally if certain parameters are sensed. The protection circuit can also be triggered by over-driving the amplifier. If the amplifier goes into protection, which is signaled by the amplifier being turned on but not playing music (be sure to check that it is the amplifier causing the problem and not another component), simply turn it off, wait a few minutes, and turn the amplifier back on. If the amplifier does not reset successfully, try waiting an hour before turning back on. If the amp is still unresponsive, or if the protection circuit is continuously triggered, contact us.

Fuses

There are two 5x20mm 4A Slow Blow fuses in the IEC inlet of the Power Supply.

Tubes

The ZOTL10 Mk.II is supplied with selected vintage tubes. The tubes operate at low current, which allows them to have an extended life.

Changing tubes:

EL84: The power tubes are self-biasing and do not need to be matched for gain.

12AT7: The 12AT7s should be a matched pair.

12AU7: The 12AU7s should be a matched pair and each individual tube should have both of its triode sections matched as well.

The sockets are tight, so gently rock the tube pins until you are able to remove the tubes. We use high-quality ceramic tube sockets with gold pins which are designed in such a way that the white ceramic part may shift slightly. This is an intentional design; the tube socket is very secure.

Before changing tubes, turn off the amplifier and wait at least 10 minutes to allow the stored power to discharge. Avoid touching any of the components on the circuit board, especially the vertical circuit boards.

Note on using 7062 tubes:

The 7062 is often used as a replacement for the 12AT7. This is usually not a problem, but they do require slightly more heater current than a standard 12AT7, which in turn requires slightly less current than a standard 12AU7. If you want to use 7062 tubes, you'll need to replace both the 12AT7s and the 12AU7s with 7062s in order to ensure that all tubes receive adequate heater current.

**For more information and FAQs, please visit
www.lineartubeaudio.com or contact us at
hifi@lineartubeaudio.com.**

