

# LAB 12

## Owner's Manual

### suara

*Parallel tubes 2 x 50W Class A Power Amplifier*

[www.lab12.gr](http://www.lab12.gr)

manual v1.3

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## **IT IS YOURS!**

Thank you for selecting Lab12 suara, an audiophile Parallel tube Class A power amplifier. Every component on it is designed to provide smooth and untreated sound. It is a full tube amplifier with 4x NOS Russian driver tubes and 4 x KT150 on power stage. Suara can cooperate gratefully with any preamplifier on the market and it is the perfect match for Lab12 pre1. Suara has the ability to nail you down on your couch and make you listen all your music collection again. 50 Watt of power for any pair of speakers is available but the most remarkable point is that you will receive a fluid, wide and addictive consonant sound with any choice of music style. All components are carefully chosen after hours of listening and testing, while paying great attention to every detail affecting the outcome. As every Lab12 device, suara has an ultra-solid construction with glass blasting anodized finishing and retro analogue V/U meters.

Do not forget that your suara is totally handcrafted with perfectly matched parts of the finest selections. In order to reach the optimal performance, your suara needs at least 200 hours of listening. In this time all components go from “burn in” period to stable.

Before setting up your new suara, we encourage you to thoroughly read this manual to properly acquaint yourself with its features. We love music and audio devices and we have built your new device with emotion and personal treatment.

The information contained in this manual is subject to change without notice. The most current version of this manual is available on our official website at <http://www.lab12.gr>

## **Unpacking**

Suara should be removed from its box with care. Remove all the foam protective pieces of the box before you unpack suara. Unpack suara with your hands on both sides of the device.

## **Warnings**

No user serviceable parts are included inside. Do not unscrew the cover; high voltages remain after disconnecting from mains. In case your device requires any kind of service or upgrade, please ship or take your equipment directly to Lab12 or to one of our authorized dealers or other qualified personnel.

Always use same type of fuse for replacement.

## Features

- 6550, KT88 compatible (KT150 from factory)
- 4x KT150 matched tubes
- Easy Manual Bias Adjustment on the back plate
- Triode / Ultra Linear selector switch
- Handcrafted custom audio grade transformers
- No feedback design
- Special audio grade matched parts in every stage
- SRSG<sup>®</sup> implementation
- Fine symmetry<sup>®</sup> implementation
- Analog retro Nissei VU meters
- 5mm Aluminum face panel
- Five Years Guarantee

## Installation & Placement

**Lab12 suara** should be placed on a solid, flat surface.

You should avoid placing it near a heat source as this could compromise suara's performance and reliability.

Carefully put the tubes in dedicated sockets. Make sure that tubes are perfectly snapped into sockets. See bellow page.

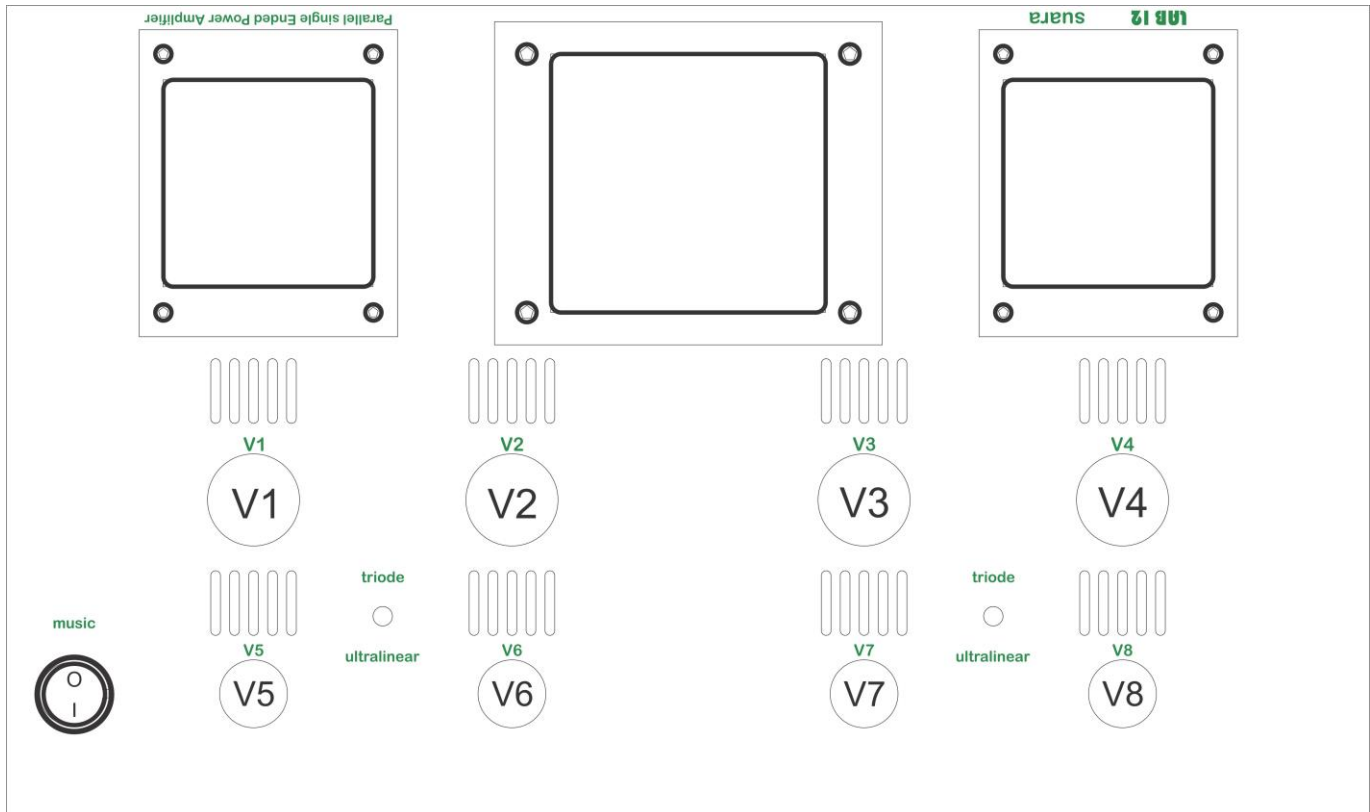
Due to high power tubes design, suara's chassis could be hot so you should never place another hot component directly near this device. **Make sure that the device has enough space to ventilate.**

**Tubes will be hot, this is normal. Be careful not to touch the tubes during the operation to avoid any injuries.**

Take care of the glass blasting anodized finish of front panel with a soft cloth. No need to use any sprays or polishes. Never use cleaners containing abrasives, as this will damage the surface.

## Suara Tubes Positions

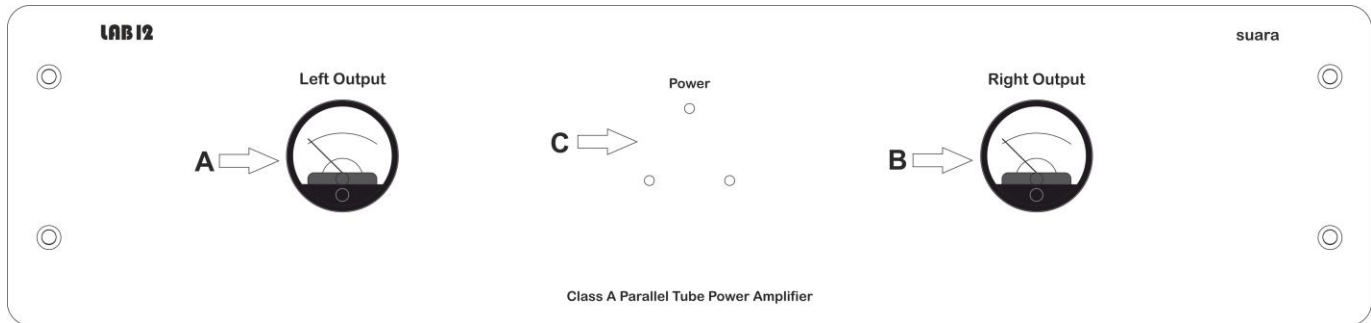
Insert the tubes carefully in each position. All of the tubes are marked with the position number was placed during calibration and factory burn in of suara. All in box tubes are perfectly matched during calibration to achieve a perfect balanced operation.



Suara Top

<b>V1</b> : KT150	<b>V5</b> : 6n2p
<b>V2</b> : KT150	<b>V6</b> : 6n1p
<b>V3</b> : KT150	<b>V7</b> : 6n1p
<b>V4</b> : KT150	<b>V8</b> : 6n2p

## Front Panel



### Suara Front panel

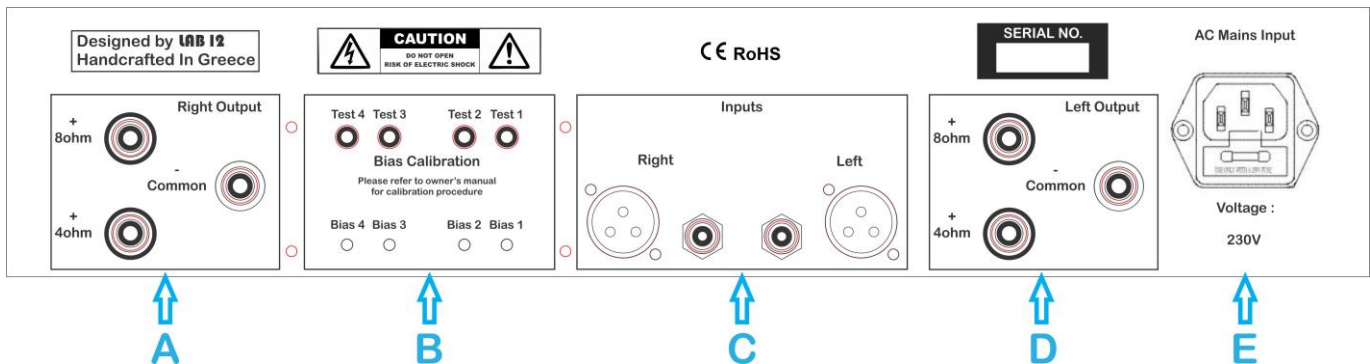
In the front panel you will see three indication LEDs and two VU meters.

The three LEDs **(C)** indicate that the device is powered on.

To the left of the 3 LEDs you will see a retro analog VU meter **(A)**. You can accurately monitor the output level of left channel on dB scale.

To the right of the 3 LEDs you will see a retro analog VU meter **(B)**. You can accurately monitor the output level of right channel on dB scale.

## Rear Panel



SUARA Rear panel

In rear panel you will find the connection inputs and outputs.

To the right side you will find an **IEC AC input** including a main fuse holder **(E)**.

A pair of RCA and XLR connectors for each channel **(C)** are the inputs of signal from your preamplifier.

Speaker outputs for each channel **(A & D)** giving you the choice of 4 or 8 ohm output for perfect matching with your speaker impedance.

Bias setting and check can easily be achieved from the back panel **(B)**. Please find the bias procedure on page 9.

## Main connections

Connect a High-Grade Power cable to the IEC input and to your wall socket. Make sure that your wall socket provides a good ground before connecting the power cable. (Every **suara** is tuned and calibrated using the **Lab12 Knack mk2 Power Cable**. We strongly suggest using this cable).

## Connect to your Preamplifier

Connect the preamplifier analog output to the analog line level input (RCA or XLR cables) of your suara Power Amplifier. Make sure about the correct channel connections. We suggest you use a good quality interconnect cable pair.

## Connect your Speakers

Connect your speakers to the additional output of suara (connect speakers from 2 to 4 ohm at **4ohm** positive bind, speakers from 6 to 16 ohm at **8ohm** bind). Make sure about the phase and polarity of speakers, always connect "plus" (red) bind of suara to "plus" (red) bind of speaker and same with black.

## Triode / Ultra Linear

You can choose the operation of suara between Triode or Ultra Linear pentode mode, to tune the sound closest to your taste.

This can be done through two toggle switches on the top cover. Position both switches towards to transformers for Triode mode or towards to tubes for Ultra Linear pentode mode.

**Always do this selection with your amplifier turned off.**

## Notes:

Suara is fully compatible with the best octal tubes (6550, KT88, KT120). You can use any of these three types of tubes with no problem. **Please always set correct bias immediately after any tube change, always use matched pairs of tubes (contact lab12).**



## **Bias Setting**

**Please contact with a qualified person or your local dealer if you are not sure about this procedure.**

You can easily set the bias of each tube from the back panel of the amplifier.

You must use a DC multimeter. Please set multimeter in 5VDC range.

Turn on the amplifier (with connected speakers at outputs and connected inputs without signal).

Connect minus (black) terminal of multimeter at any minus (black) speaker bind. Connect plus (red) terminal of multimeter at test point of tube you need to bias.

Use trimming screwdriver to set the voltage at 950mV DC (KT150 setting) from corresponding trimmer.

Follow the same procedure for each tube.

**Wrong bias will destroy your tubes and possibly your amplifier. Always adjust new tubes bias current immediately after turning on.**

**Repeat bias procedure at least 3 times the first 5 hours of using.**

## **For the safety of your equipment**

**! Make sure that all your equipment is turned off before any connection.**

**! To avoid damaging your speakers you have to turn on suara some seconds after turning on your preamplifier and turn it off some seconds before turning off your preamplifier.**

**! Never turn on suara without connected speakers or preamplifier on it. It is possible to damage tubes or even output transformers.**

## Specifications

- Power: 230VAC 50Hz (115VAC 60Hz)
- Power consumption: 350 VA max
- Output power: 50 Watt per channel (KT 150)
- Frequency response: 20 Hz-25 KHz (-0.9dB)
- Input impedance: 100 Kohm
- Recommended speakers: 4-8 ohm
- Tube complement: 4x dual triodes, 4x KT-150 Power Pentodes
- Input sensitivity: 1.8V triode mode / 1.5V Ultra Linear mode
- Inputs: 1x line unbalanced stereo (RCA and XLR connectors)
- Available Colors: Matt Black, Frozen Silver
- Dimensions (WxHxD): 43x19x29 cm
- Weight: 20.5Kg

## Warranty

This device has 5 years warranty for all parts (or 90-Day Limited Warranty for vacuum tubes) from the day of purchase.