

miniwatt

miniwatt N3

The logo for miniwatt, featuring the word "miniwatt" in a white, lowercase, sans-serif font centered within a dark gray rectangular background.

Congratulations and thank you for choosing miniwatt!

miniwatt N3

You are now the owner of one of the world's most innovative and reliable tube amplifiers. Device with good care can provide you many years of listening pleasure.

We're going to change your perceptions on vacuum tube amplifier with our product – MiniWatt. Traditionally tube amplifier is bulky and pricy. With our self-developed advanced power supply technology, we create MiniWatt in the size of your hand, and also further boost up the performance of a standard tube amplifier circuitry. MiniWatt excels detail and transparent midrange while the top registers are silky sweet.

Here's wishing you many happy hours of musical pleasure!

Derek Shek

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1. DESCRIPTION OF THE MiniWatt N3

The new MiniWatt N3 is a single-ended pentode integrated amplifier with line stage preamp section and 2 x 3.5 W RMS output power (into 8 Ohm loads). As with all MiniWatt models, our products are tested thoroughly before sending to you.

N3 is an integrated amplifier with one pair of RCA inputs and a well-renowned tube combination ECC83 (12AX7) twin triode feeding a single EL84 (6BQ5) per channel used in pentode mode A1 for a 3.5 watts output. On the valve rolling front, there are quite a few brands of new or new-old-stock (NOS) EL84s and 12AX7s on the market at relatively reasonable prices, so enjoy!

With our self-developed switching power supply, it operates at >100Khz and provides a stable and hum-free voltage to 12AX7 and EL84. Together with our output transformers, it delivers a silky high and deep basses in this little MiniWatt N3.

Bias:

N3 is self-biased with constant current loading, all you need is a matched pair of EL84. Plug them in and enjoy the music.

Input:

Just 1 pair of RCA.

Output:

8/6/4 Ohm speaker terminals (banana jacks).

Power Management:

MiniWatt N3 input and output tube heaters as well as its high-voltage rails are logic controlled to ensure that the conduction of the output tubes and input stage voltages are constantly monitored and controlled by the Power Management System to protect the vital internal parts against excessive turn-on current. This increases the lifetime not only of the tubes, but also the caps, while all power related components derive benefit from this system.



2. SAFETY INSTRUCTIONS

Before using the MINIWATT N3 for the first time, check and make sure all the tubes stand upstraight!

In case of emergency: unplug the unit from the wall outlet
Never use an amplifier that is damaged or faulty. Make sure that no one can use it until it has been repaired by a qualified service engineer. Make sure that there is easy access to the IEC socket and power cord.

Do not open the case
There are dangerously high voltages and hot tubes inside this equipment. To avoid a burn or the risk of electric shock, never allow anyone except qualified personnel to open the case.

Servicing and maintenance
For reasons of safety, please ensure that servicing, repairs and other modifications to MiniWatt equipment are carried out only by a qualified technician. Always get an engineer to replace blown fuses with ones of the same type and rating. If your amplifier requires servicing, please ship or take your equipment directly to MiniWatt or to one of our authorized dealers/distributers.

Modifications to MiniWatt equipment
Use "audio grade" fuses and other power cables at your own risk. The use of such devices will invalidate the warranty. This also applies to the use of contact fluids on the tube sockets.

Explanation of the warning symbols:



	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated 'dangerous voltages' within the product's enclosure that may be sufficient to constitute a risk of electric shock to persons
	The exclamation point within an equilateral triangle is intended to alert the user to important operating and maintenance instructions

Before connecting up
Make sure that the voltage of your amplifier matches your electricity supply voltage.



Grounding

This amplifier is a protection class I device (with an earth conductor). To exclude the risk of electric shock in the event of a fault, the unit must be grounded.

2.1. Placement

2.1.1. Location

MiniWatt equipment is designed strictly for use in a dry domestic environment. Do not use it outdoors or in humid environments!

Never place plants or liquid-filled containers on your MiniWatt equipment. Avoid dropping objects or spilling liquids into the case. Should this happen, remove the mains plug immediately and have your amplifier checked by a qualified service technician.

Condensation may form if the amplifier is taken from a cold environment into a warm one. If you do this, wait until the amplifier has reached room temperature and is dry before switching it on.

Avoid installing the unit close to sources of heat such as radiators or anywhere that may be in direct sunlight.

Do not operate the unit near flammable materials, gases or vapours. Avoid areas where there may be heavy accumulations of dust or where the unit may be subject to mechanical vibration.

Place your MiniWatt amplifier on a stable, even surface.

2.1.2. Ventilation

Make sure that your amplifier has a good flow of air around it. If you intend to install your equipment in a cupboard or a shelf unit, ensure that there is at least ten centimeters gap between the ventilation slots and the walls all around the amplifier. The rear panel of cupboards should have ventilation holes to prevent heat build up. Do not rest the equipment on a soft surface such as carpet or foam sheeting.

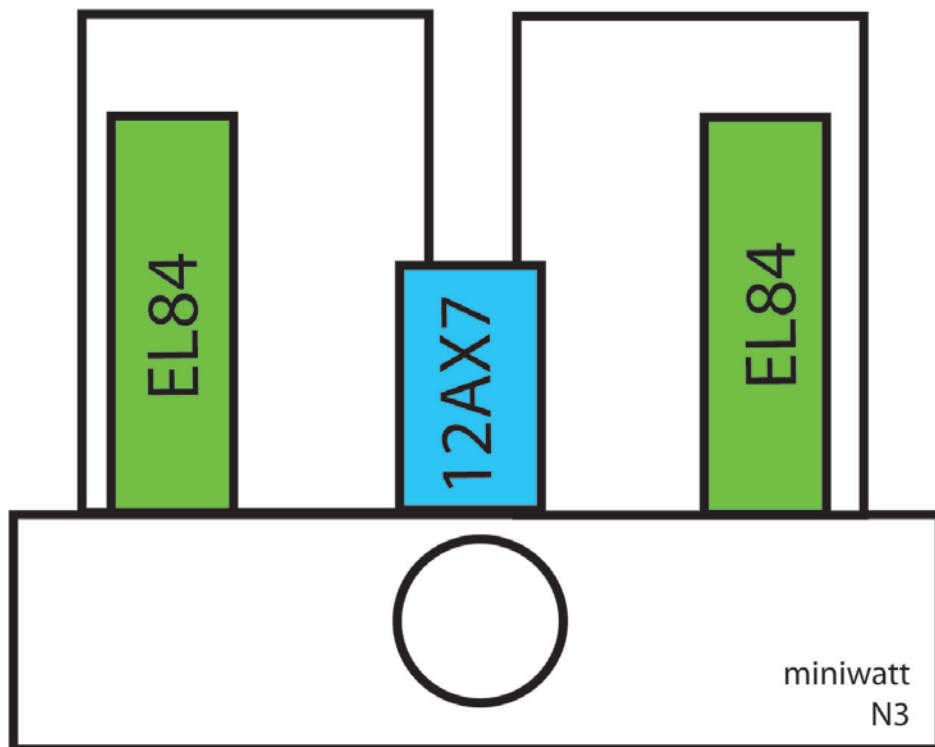
2.2. Warranty

MiniWatt can only guarantee the safety, reliability and performance of this unit if modifications and repairs are carried out by specialized personnel and when the amplifier is operated in accordance with the instructions contained in this manual

3. GETTING STARTED

3.1. Checking the tubes

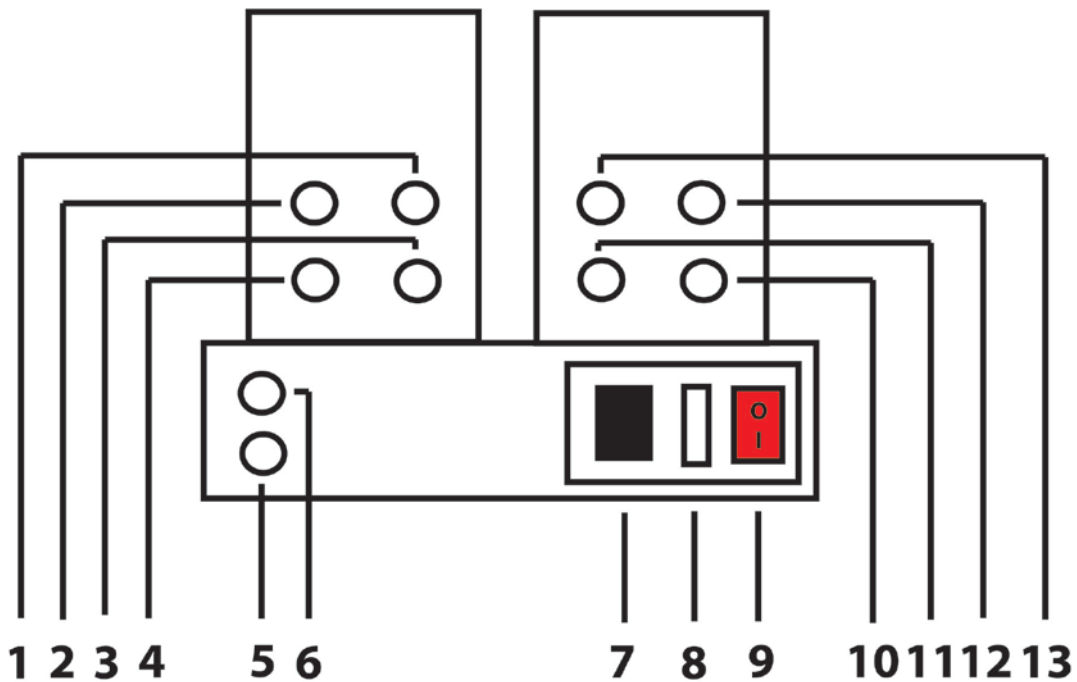
12AX7 tube is the input tube. EL84 tubes are matched pairs for the left and right channel. It is allowed to mix the pair.



3.2. Switching on for the first time

- Make sure the speakers are connected to the speaker terminals!
- Connect the other components in your system to the appropriate sockets on the rear of the N3.
- Switch the N3 on using the on/off switch and wait until all the tubes lights up. You can now play some music.

4. CONNECTIONS – the rear panel



1	Right Speaker out (4 ohms)	Red = positive terminal, Black = negative terminal The speaker negative terminal is connected to ground
2	Right Speaker out (6 ohms)	
3	Right Speaker Ground	
4	Right Speaker out (8 ohms)	
5	Right RCA input	Input for front R + L channels
6	Left RCA input	Input for front R + L channels
7	AC supply socket	IEC socket with integrated fuseholder The fuse is located in a pullout compartment underneath the socket. You can open the fuse compartment after removing the plug.
8	Fuse	For 230/240V: 1 A slow-blow H (5 x 20mm) For 115/120V: 2 A slow-blow H (5 x 20mm) For 100V: 3 A slow-blow H (5 x 20mm)
9	Power switch	0 = off; 1 = on.
10	Left Speaker out (8 ohms)	Speaker connection terminals. Red = positive terminal, Black = negative terminal The speaker negative terminal is connected to ground
11	Left Speaker Ground	
12	Left Speaker out (6 ohms)	
13	Left Speaker out (4 ohms)	

5. FAQ

5.1. Replacing the tubes

Driver and Output tubes

Replacement driver tubes require no adjustment, as long as the output tubes are matched pair.

5.2. Running in

All MiniWatt equipment is subject to a 48-hour soak test at the factory to burn in the tubes. The tubes are preselected for use in each particular model.

New tubes can take up to three months to run in and start sounding their best. Daily use is beneficial in speeding up this process but is not mandatory. Continuous operation does very little help to reduce the running-in time and is therefore *not* recommended.

5.3. Tube service life

Thanks to the protection circuits and soft-start electronics, the output tubes in your amplifier should achieve a service life of up to 5 years. Driver tubes can be used for 10 years or even longer.

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6. SPECIFICATIONS AND DIMENSIONS

- Power Output: 3.5W+3.5W @ 8 ohms
- Frequency Response: 30-40Khz (+-1db)
- Input Sensitivity: 500mV
- Signal-to-Noise Ratio: -80dB / 3.5W
- Residual Noise < 1mVac
- Input AC Voltage: 100-250Vac
- Power Consumption: 38W
- Input Impedance: 50K ohms
- Output Impedance: 8/6/4 ohms (Japan Z11-EI48*24 Output Transformers)
- Dimensions: 130mm (w) x 130mm (d) x 130mm (h)
- Weight: 2.6kg
- Input: RCA Jacks
- Output: Banana Jacks
- AC: Standard IEC Jack with Fuse protection (2A Fuse)

We reserve the rights to alter and improve the specifications in pursuit of better sound.

MiniWatt is a subsidiary of Legato Group Limited.