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# WOO AUDIO WA6-SE

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Single-Ended Class-A Stereo Headphone Amplifier



## OWNER'S MANUAL

**Please review this manual before operating your WOO AUDIO™ product.**

# Important Safety Information



**CAUTION:** These amplifiers are shipped without the vacuum tubes installed. It is necessary to install the tubes first. The tubes must be installed correctly or *serious damage that is not covered by the warranty will result.*



**Turn off immediately in the event of malfunction**  
Should you notice smoke or an unusual smell coming from the equipments, turn it off immediately. Continued operation could result in injury.



**Do not disassemble**  
High voltage circuit. Touching the product's internal parts could result in injury. In the event of malfunction, the product should be repaired only by a qualified technician.



**Keep out of children**  
Failure to observe this precaution could result in injury



**WARNING:** Failure to follow these instructions could result in fire, electric shock, or other injury or damage.

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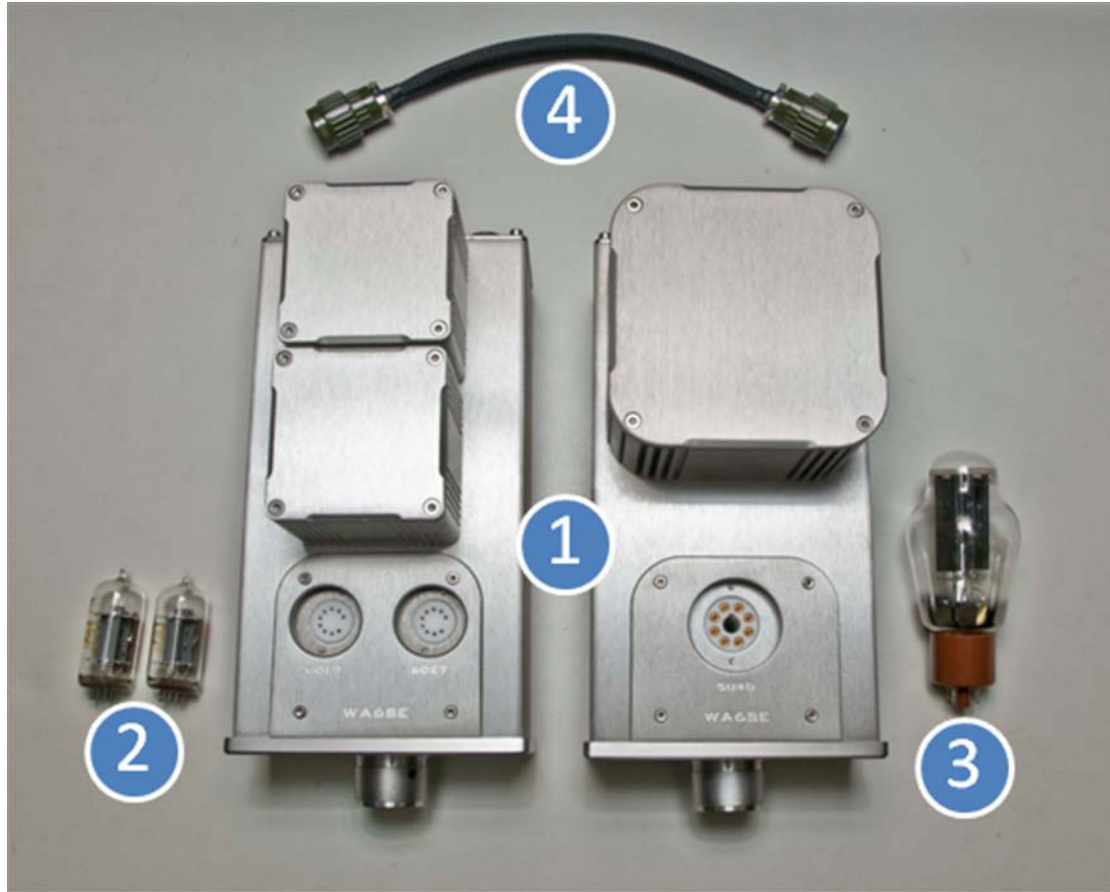
# Overview

Thank you for choosing a Woo Audio product. The WA6-SE is a finely hand-crafted amplifier that delivers uncompromised performance and superior listening experience.

- ❖ Point-to-Point wiring
- ❖ One 5U4G rectifier tube
- ❖ Two 6DE7 / 6EW7 drive/power tubes
- ❖ Pseudo-dual power supply
- ❖ All tubes. No semi-conductors in the entire signal circuitry
- ❖ High and low impedance headphones outputs
- ❖ 1/4" or 6.3mm headphone jack
- ❖ 2 RCA inputs with a input source switch
- ❖ Individual filter choke per channel
- ❖ 80 watts specially made toroidal power transformer.
- ❖ Full aluminum die-cast chassis, anodized finish
- ❖ Whole aluminum volume knob and power switch button
- ❖ Gold-plate RCA
- ❖ Alps potentiometer and power switch
- ❖ Dale and Vishay high precision resistors
- ❖ Silver coated Teflon tube hook-up wires

# Quick Installation

## What's in the box?



① Amplifier (left) unit and power supply (right) unit

② One matched pair of 6DE7 power tubes

③ One 5U4G rectifier tube

④ DC cord that connect the PSU and AMP.

- ❖ The actual tubes may look different.
- ❖ Compatible tubes may be included instead of the ones illustrated above.
- ❖ Power cord and interconnection cable are not included.

## Installing the rectifier tube:

Note: avoid oil or smudge on the tube glass, clean hands before installation.

1. Find the correct tube for the socket. There is a label below each tube socket that indicates a standard tube for the amplifier. For example, a 5U4G or a compatible tube should install on the “5U4G” labeling socket. You **MUST** use the compatible tube or serious damage may occur to the amplifier. See Compatible Tubes section for all the approved direct substitute tubes.
2. Align the tube guide pin to the socket as below.



Tube socket guide pin indicator



Guide pin shows on the bottom of a tube.

3. Hold the tube base firmly then squeeze it into the socket slowly. Be sure to apply force perpendicular to the tube socket, never insert the tube at an angle. Apply slight rocking motion for the tube, which is harder to insert; never apply circular motion. Apply pressure from the top of the tube if needed.



Do no insert a tube at an angle

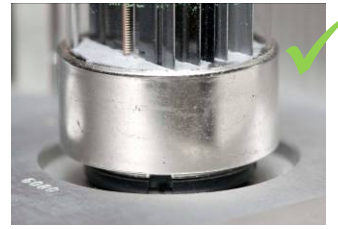


Insert a tube perpendicular to the socket.

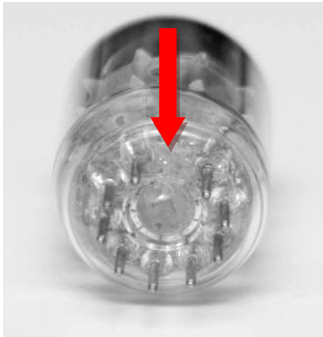


Hold base firmly.

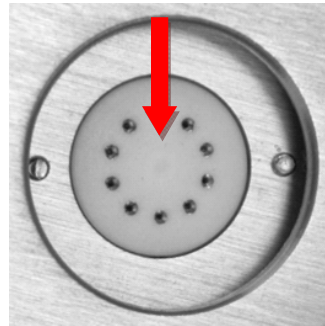
4. Check installation. The tube pins should be inserted fully into the tube socket receptacles.



### Installing the driver/power tube:



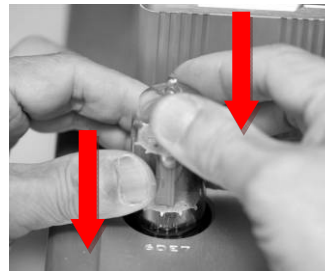
Opening gap indication on the bottom of the tube



Align the tube to the tube socket



Insert the tube perpendicularly to the tube socket



Use both hands if the tube is hard to install

### Selecting AC voltage:

WARNING: failure to select the correct voltage will result in damage of the amp.



Switch to label "115" for AC100 to 125V voltage.



Switch to label "230" for AC210 to 240V voltage.

## Installing the power cord:

Plug the power cord into the AC inlet. See ② in the below diagram. The AC inlet socket is a standard IEC type. You will need to obtain the correct type for your region.



U.S.

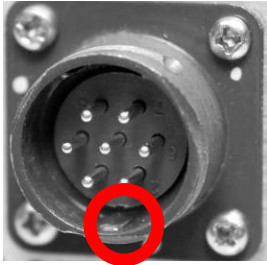


European

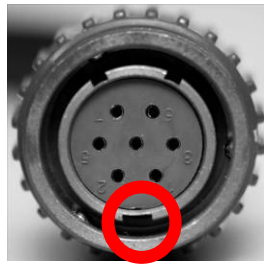


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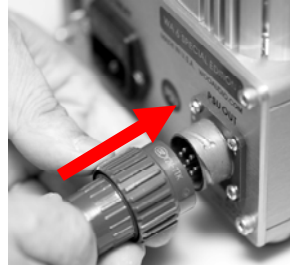
## Installing the DC cord:



Align the mark on the socket



Align the mark on the DC cord plug



Slightly push the plug toward the socket



Turn the ring clockwise until you hear a clicking sound

## Installing the source input:

Plug the RCA interconnection cable into the RCA connectors, see ⑤ in the below diagram. Or,

## Back panel diagram:



- ① Voltage selection switch
- ② AC Inlet
- ③ DC output
- ④ DC input
- ⑤ RCA
- ⑥ Input selector



# Operation

## DO NOT

- Turn on the amp before properly installing **ALL** tubes.
- Use tubes that are not approved by Woo Audio.
- Turn on the equipment without checking the correct AC voltage setting.
- Remove any tubes or the DC cord while the amp is operating
- Touch tubes (**extremely hot**) after warm-up.
- Leave the amps running unattended. To use the amps safely, please allow it to cool down for every 8 hours of continuous play time.

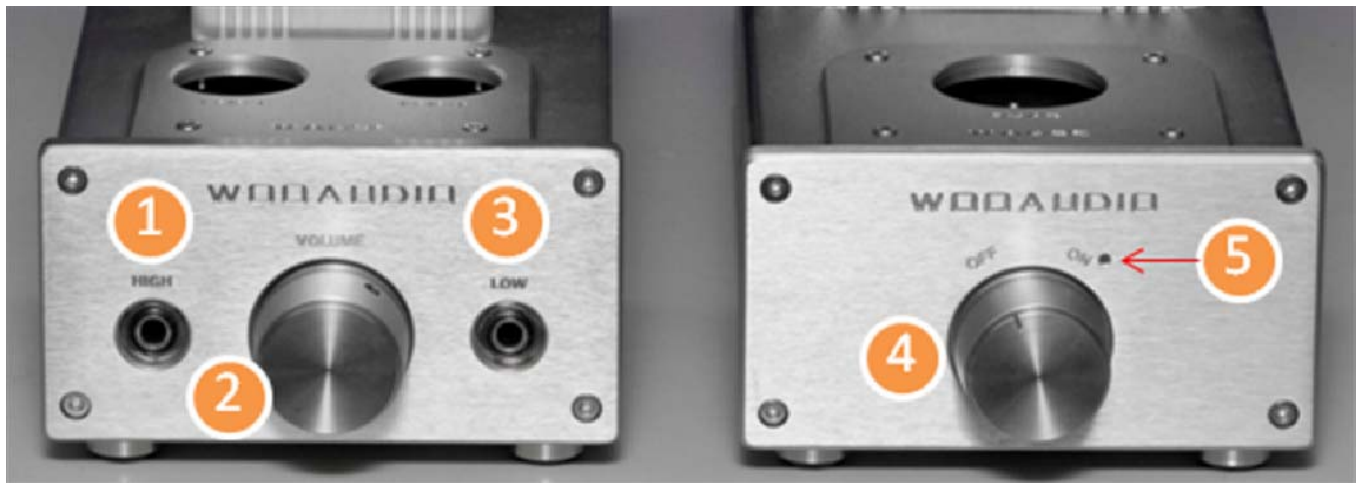
## DO

- Place the amp away from any wireless or frequency-emitting devices such as mobile phones, PDAs and radios, to avoid noise interference.
- Keep away from water or excessive moisture.
- Turn off the amp if its sound is abnormal.
- Allow a minimum of 2 inches of air clearance for heat dissipation.
- Allow approximately 5 minutes of warm-up.
- Allow the tubes to cool down before replacing them.

## Turning the amplifier on:

1. Turn the volume knob to the lowest position.
2. Insert a headphone into either HIGH or LOW impedance output.
3. Turn the power switch knob ④ from left to right until you hear a click sound. The LED ⑤ will light.
4. Observe that all tubes light gradually.
5. Let the tubes warm up for at least 1 minute before turning up the volume.

### Front panel diagram:



- ① High impedance headphone output
- ② Volume control
- ③ Low impedance headphone output
- ④ Power switch
- ⑤ Power LED indicator

### Break-in period:

It is recommended to allow the amplifier to operate 150+ hours so that peak performance can be realized. An effective way to break-in the amp is to run the amp normally with music playing. Please do not leave the amp running continuously.

# Compatible Tubes

	Model#	Adapter	Comment
Driver/Power	6DE7	No	
	6CY7	No	WA6-SE shipped prior April 17, 2010 is not compatible.
	6EW7	No	
	6EM7	Yes	A 8-pin to 9-pin adapter is needed.
	6DR7	No	WA6-SE shipped prior April 17, 2010 is not compatible.
	6DN7	Yes	A 8-pin to 9-pin adapter is needed.
	6FD7	No	WA6-SE shipped prior April 17, 2010 is not compatible.
	6SN7	Yes	For WA6 only. A 8-pin to 9-pin adapter is needed.
	5692	Yes	For WA6 only. A 8-pin to 9-pin adapter is needed.
Rectifier	5U4G	No	Directly Heated
	274A	Yes	Directly Heated, a 4-pin to 8-pin adapter is needed.
	274B	No	Directly Heated
	53KU	No	Directly Heated
	5AR4	No	Indirectly Heated
	5AS4	No	Directly Heated
	5Z4	No	Indirectly Heated
	5R4	No	Directly Heated
	5U3C	No	Directly Heated
	5V4 /G /GA	No	Directly Heated
	5Y3	No	Directly Heated
	5Z3	Yes	Directly Heated, a 8-pin to 8-pin adapter is needed.
	GZ30	No	Indirectly Heated
	GZ32	No	Indirectly Heated
	GZ33	No	Indirectly Heated
	GZ34	No	Indirectly Heated
	GZ37	No	Indirectly Heated
	CV378	No	Indirectly Heated
	U52	No	Indirectly Heated
	U54	No	Directly Heated

\* The most current chart can be found in this document:

<http://tinyurl.com/4wbv5qn>

# FAQ - Frequently Asked Questions

## **Can I plug in 2 or more headphones at the same time?**

Yes, there is no harm to the amp. However, sound quality may be degraded.

## **Do I have to use the correct impedance setting for my headphone?**

No, you can use any setting for any headphone as long as you feel the output sounds the best for you. Impedance matching provides the amp to work at the highest efficiency.

## **There is abnormal sound right after turning on the amplifier.**

This is normal from a cold start as the tubes are warming up to get into the proper working state. The noise will disappear gradually.

## **Can I change headphone while the amplifier is on?**

Yes, but you must first minimize the volume.

## **No sound is coming out of the headphone.**

- Check that all tubes are properly installed.
- Check that the source is properly installed and is working fine.
- Check that the source switch is on the correct position.
- Check headphone connection.

## **There is noticeable noise coming from the headphone.**

- Remove all sources from the amp to check if the noise disappears.
- Place the amp away from other electronic devices to check whether those equipments are causing the noise.
- Place the amp in a different location to check if the noise is coming from the AC line.
- Remove all tubes, clean tube pins, and then reinstall them again.
- Replace some or all tubes.

## **The sound is abnormal or distorted.**

Replace tubes to see if they have deteriorated.

## **The LED and the tubes do not light.**

Check if the fuse is burnt. See the following on how to replace a fuse. The fuse type is 2 or 3A, slow-blow.



Insert a small flat screwdriver into the fuse door which located on the AC inlet.



Release the fuse door by pulling it out.



The fuse holder is released from the AC inlet.



The fuse is held by a clip.

Woo Audio warrants this product free from defects in materials and workmanship for 1 year from the original date of purchase. The tubes are warranted for 30 days unless otherwise stated. In the event that your Woo Audio product requires servicing, please contact us directly to get a return instruction. If the equipment needs to be shipped back, please use the original packaging and include a copy of the sales purchase along with a detailed explanation of the problem(s).

Send service inquiry to [wooaudio@gmail.com](mailto:wooaudio@gmail.com)

**Any modification not authorized by WOO AUDIO will void this warranty.**

## Reviews

*“For a roughly \$1,600 total investment (including Sennheiser HD600s, upgrade cable, Sophia 274B, and some spare tubes), we were getting sound and emotion equivalent to spending \$90,000 on an Ongaku along with the kind of speakers you'd normally pair it with.” – GalibierDesign*

*“If you want valves through and through, with admirable performance to boot, this system's well worth considering.” – Crave*

*“The WA6SE packs a punch. It just screams power. It displayed excellent dynamics and a very deep and tight bass.” –Orcin@Head-Fi*

*“Affordable ultra high-end headphone amplifier. The Woo Audio WA6 Special Edition headphone amp is built to Ferrari levels of quality and performance.” – Audiophilia  
CNET*

*“First, the HD650 does not have a veil. Second, dynamic range has suddenly gone to nuclear-powered levels. Third, instrument locations are now incredibly precise. Fourth, bass has now acquired an effortless quality of power. Fifth, I no longer feel the need to crank the volume to hear details. Finally, there is a musicality to this WA6SE-HD650 combination that has got me rocking to recordings that I had lost sight of why I bought in the first place. This is the good stuff for sure.” – rangen@Head-Fi*

*“The excellent resolution and fabulous midrange that is characteristic of the amp, as well as precise and stable imaging were all present and accounted for, so you couldn't say the sound was broken, and it might even be exactly your cup of tea.” –  
Carl@Head-Fi*

# Product Specification

Model:	WA6-SE
Headphones Impedance:	8-600 Ohms
Input Impedance:	100 Kilo-Ohms
Frequency Response:	15 Hz - 40 KHz, -3dB
Power Output:	2000mW @32Ω 1900mW @60Ω 1800mW @120Ω 1300mW @300Ω 800mW @600Ω (with 6CY7 tube)
Signal/Noise:	93 dB
THD:	<= 0.3%
Voltage:	AC 110/220 - 240V, 50/60 Hz, switchable
External Dimension, end to end measurement, same for both units:	6" (H) x 5.5 (W) x 13" (D)
Weight (AMP & PSU):	22 pounds or 10 kg

**Woo Audio is committed to continuously improve its products. We reserve the right to improve the design without notice.**