
WOO AUDIO WA5 / WA5-LE

300B Headphone and Speaker Amplifier
Single-Ended, Class-A



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. It is essential that the tubes are 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.

Table of Contents

IMPORTANT SAFETY INFORMATION	2
TABLE OF CONTENTS	3
OVERVIEW	4
QUICK INSTALLATION	5
OPERATION	10
COMPATIBLE TUBES	13
FAQ - FREQUENTLY ASKED QUESTIONS	14
WARRANTY AND SERVICE	16
RECOMMENDED SETTINGS	19
PRODUCT SPECIFICATION	19

Overview

Thank you for choosing a Woo Audio product. The WA5 / WA5-LE is finely hand-crafted amplifier that delivers uncompromised performance and superior listening experience.

- ❖ Discrete headphone circuit. Discrete speaker circuit (WA5 only)
- ❖ High-end output transformer-coupled design
- ❖ Hand-built with point-to-Point wiring
- ❖ Soft-start protection circuit
- ❖ Audiophile-grade internal parts (WA5 only) available for WA5-LE at extra cost
- ❖ Speaker output selection switch knob (WA5 only)
- ❖ Hi/Lo headphone POWER output
- ❖ Hi/Lo headphone IMPEDANCE
- ❖ Hi/Lo headphone output LEVEL
- ❖ One 1/4" or 6.3mm for dynamic headphones
- ❖ One 4-pin XLR connector for dynamic headphones
- ❖ One 3-pin XLR input
- ❖ One pair of gold-plate WBT Nextgen speaker binding posts (WA5 only)
- ❖ Two RCA inputs, WBT Nextgen (WA5 only)

Quick Installation

What's in the box?



- ① Amplifier unit
- ② Power supply unit
- ③ One matched pair of 300B tubes
- ④ One matched pair of 6SN7 tubes
- ⑤ One matched pair of 5U4G tubes
- ⑥ 1ft. DC cord connecting between the AMP and PSU

- ❖ The actual look and make of the tubes may vary.
- ❖ Compatible tubes may be included instead of the ones mentioned above.
- ❖ AC power cord for your local country and audio cables are not included.

Installing the 6SN7 and 5U4G tubes:

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 6SN7 tube should install on the “6SN7” labeling socket. You **MUST** use the compatible tube or serious damage may occur to the amplifier. See Compatible Tube 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 harder to insert tube, never apply circular motion. Apply pressure from top of the tube of the tube if needed.

Tube to tube



Do no insert a tube at an angle

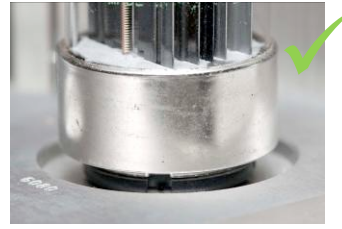
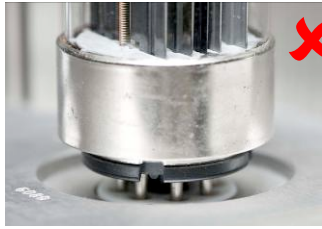


Insert a tube perpendicular to the socket.



Hold base firmly.

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



Installing the 300B tubes:

Be aware that the large pins should be inserted into the large pin receptacles.



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 ① in the below diagram. The AC inlet socket is a standard IEC type. You will need to obtain the correct type for your region.



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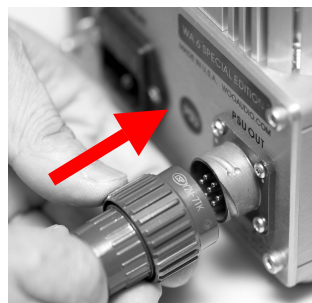
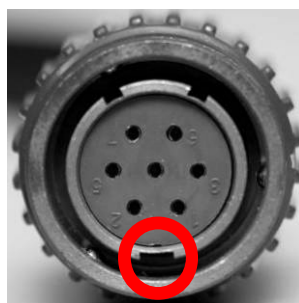
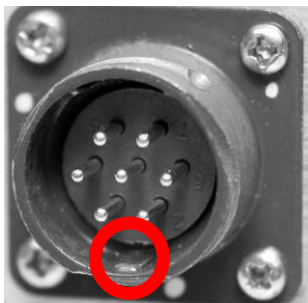
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Installing the DC cord:

The DC cord is non-directional. It can be inserted into either socket.



Back panel diagram:



- ① AC Inlet with fuse box (standard IEC type power cord not supplied)
- ② Voltage selection switch (compatible with 100v-220v)
- ③ DC outlet (use included DC cord)
- ④ DC inlet
- ⑤ Speaker terminals (WA5 only)
- ⑥ RCA and XLR inputs (for source connections e.g. CD player, DAC, Tape, Tuner, Turntable with Phono-stage, etc.)

Operation

DO NOT

- Turn on the amp before properly installing **ALL** tubes.
- Use tubes that are not supplied or approved by Woo Audio.
- Turn on the equipment without checking the correct AC voltage setting.
- Remove any tubes or DC cord while the amp is powered ON or in operation
Touch tubes (**extremely hot**) after warm-up.
- Leave the amps to run unattended. To use the amp safely, please allow the amp to cool down for every 8 hours of continuous playtime.
- Do **NOT** set the functional switch to SPK if speakers are disconnected.
- Do **NOT** Switch to HP (high power) if headphones are disconnected to the 4-pin XLR on the amp. The amplifier requires a “load” when in high power mode.
- Do **NOT** place amplifier in direct sunlight. Extended exposure may cause discoloration to the anodize aluminum.

DO

- Turn off the amp when switching between speaker and headphone. Otherwise, you will hear a small popping sound, but it will not harm your headphones or speakers.
- Set volume to minimum (lowest) before changing amplifier settings
- Place the amp away from any wireless or frequency-emitting devices such as mobile phones, PDA, radios, etc. to avoid noise interference.
- Keep away from water or excessive moisture.
- Turn off the amp if the amp sounds abnormally.
- Allow minimum 2 inches of air clearance for heat dissipation.
- Allow approximate 5 minute of warm-up.
- Allow the tubes to cool down before removing them or transporting the amplifier.

Multi-functional output switch diagram



SPK – Speaker output (WA5 only)*

* **MUST** have speakers connected at all times while in this setting

HI – High power output setting (headphones)*

* **MUST** have headphones connected at all times while in this setting

LO – low power output setting (headphones)

Note: Power OFF amplifier prior to changing power output setting to avoid “POP” sound.

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 amplifier ON while away and unattended.

Warning:

The amplifier **MUST** have a “load” via the headphones or speakers (WA5) when powered ON. Running the amplifier without a “load” could damage to power transformers.

Turning on the amplifier:

1. Set the functional switch to a proper position (disconnect headphones prior to making changes with this switch to avoid “POP” through the headphones)
2. Insert a headphone into the headphone jack, or connect speakers to the amp unit. Turn the volume knob to the lowest position.
3. Turn the power switch knob ⑥ from left to right until you hear a click sound. The power LED on the AMP will light while the LED on the PSU will blink for approx 20 seconds. LED blinking indicates the amp is starting up.
4. Observe that all tubes light gradually and the PSU’s LED becomes solid.
5. Let the tubes to warm up for at least 1 minute before turning up the volume.

Front panel diagram:



- ① 4-pin XLR HP (high power) headphone output
- ② Multi-functional switch (SPK position is not selectable on WA5-LE)
- ③ Volume control
- ④ Source input selector
- ⑤ ¼" stereo TRS (high power) headphone output
- ⑥ Power switch
- ⑦ LED indicator

Compatible Tubes

	Model#	Adapter	Comment
Driver	6SN7 * /GT /WGT	No	
	5692	No	
	6CG7	Yes	A 9-pin to 8-pin adapter is needed.
	6F8G	Yes	A 8-pin to 8-pin adapter with Grid wire is needed.
	7N7	Yes	A 8-pin to 8-pin loctal adapter is needed.
	CV181	No	
	CV1988	No	
	ECC32	No	
	VT231	No	
Rectifier	5U4G * /B	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.
	83	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	
Power	WE 300B *	No	
	EML 300B / XLS	No	
	Treasure 300B	No	
	Sophia 300B	No	
	EAT 300B	No	
	EH 300B	No	
	JJ 300B	No	
	Shuguang 300B	No	
	Svetlana 300B	No	
	Takatsuki 300B	No	

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

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

FAQ - Frequently Asked Questions

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 all tubes are properly installed.
- Check source is properly installed and it is working fine.
- Check 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. If it does, the noise comes from the source.
- Test the amp away from other electronic devices which can introduce noise.
- Test the amp in a different location to check if the noise comes from the AC line.
- Remove all tubes, clean tube pins, then reinstall them again.
- Replace some or all tubes.

The sound is abnormal or distorted.

- Replace tubes to see if they are deteriorated.

There is a constant low frequency hum coming from the headphone.

You can adjust the noise adjustment attenuator, which is located under each handle on the AMP unit. The left attenuator is for the left channel, and right is for the right channel.



The LED and the tubes do not light.

First check if the AC cord is installed. Then, check if the fuse is burnt. See the following instruction on how to replace a fuse. The fuse type is 2-3A, slo-blo.



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.

Warranty and Service

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 detail explanation of the problem(s).

Send service inquiry to info@woaudio.com

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

User Notes

Recommended Settings

Headphones	Low Power	High Power	Low Impedance	High Impedance	Low Level	High Level
Abyss AB-1266		O	O			O
AKG K1000		O		O		O
Audeze EL Series	O		O		O	
Audeze LCD Series	O		O		O	
Audio Technica ATH-W5000	O		O		O	
Audio Technica ATH-AD2000X	O		O		O	
Audio Technica ATH-W1000	O		O		O	
Beyerdynamic 600 Ohm models		O		O	O	
Beyerdynamic 250 Ohm Models	O			O	O	
Beyerdynamic 32 Ohm Models	O		O		O	
Denon D7000/7100	O		O		O	
Denon D5000	O		O		O	
Fostex TH-900/600/500	O		O		O	
Focal Sprit Series	O		O		O	
Grado PS1000/GS1000	O		O		O	
Grado RS Series	O		O		O	
HiFiMan HE-1000		O	O			O
HiFiMan HE-560		O	O			O
MrSpeakers ETHER + C	O		O		O	
Sennheiser HD800/700	O			O	O	
Sennheiser HD600/650	O		O		O	

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Product Specification

Model:	WA5 / WA5-LE
Headphones Impedance:	8-800 Ohms
Input Impedance:	100 Kilo-Ohms
Frequency Response:	10 Hz - 60 KHz, -2dB
Power Output:	640mW @32Ω 630mW @60Ω 1000mW @120Ω 850mW @300Ω 580mW @600Ω 8W @120 Ω HP (high power) via 4-pin XLR and ¼" TRS output SPK 8W @8 Ω(WA5 only)
Signal/Noise:	95 dB
THD:	<= 0.08%, 1Khz
Voltage:	AC 110/220 - 240V, 50/60 Hz, switchable
External Dimension, end to end measurement, same for both units:	8.5" (H) x 9 (W) x 17" (D)
Weight (AMP & PSU):	70 pounds

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