
Monaural Power Amplifier 212PAM2

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Thank you for purchasing our products.

We hope that this product will enhance your music and provide you with a richer musical life.

5-year quality warranty

All products will be repaired free of charge for five years if they fail under normal use in accordance with the user's manual. (excluding consumables).

The following parts are consumables and are not covered by warranty.

- Vacuum tube 212E

Product Contents

- Monaural Power Amplifier 212PAM2
- AC cord
- User's Manual



Please be sure to remove the vacuum tube cushioning material for transportation before use.

Please read this User's Manual carefully before using the product to ensure safe operation.

1. Safety Precautions



Warning

If the power cable is not handled properly, there is a danger of fire or electric shock.

- Do not use power cables other than attached.
- Do not touch the power plug with a wet hand.
- Do not place anything on the power cable.

The vacuum tube and glass tube become very hot.

- Do not place any objects on top of the unit, as this may cause a fire or failure.
- For heat dissipation, keep a sufficient distance from other equipment and walls, especially the top part, at least 30 cm.
- Do not touch the vacuum tube as it may cause burns.

Please be sure to remove the vacuum tube cushioning material for transportation before use.

- If the power is turned on without removing it, the cushioning material will melt due to the heat of the vacuum tube, which is very dangerous.

Do not remove the top plate, bottom plate, and side cover.

- There is a risk of electric shock and serious injury because of the high voltage of 1,400V inside.

Stop using immediately in the following cases.

- If water or chemicals flow into the unit.
- If there are metal or flammable items inside.
- If it seems a malfunction or an abnormality.
- If there is odor or smoke.

Turn off the power, unplug the power cable, and contact your dealer or our Service Department.

Do not disassemble, repair, or modify the product in any way.

- If you need repair, please contact your dealer or our service department.

2. Precautions for use



Caution

Do not install the product in the following places

- Humid or dusty place
- Enclosed area
- Unstable place with vibration or inclination

When connecting the power cable, keep the following in mind.

- Plug the power cable securely into a robust electrical outlet.
- Make sure there are no unreasonable bends in the cable.

Connect the audio input/output cables securely without loosening them.

For daily cleaning, wipe with water and then wipe with a dry cloth.

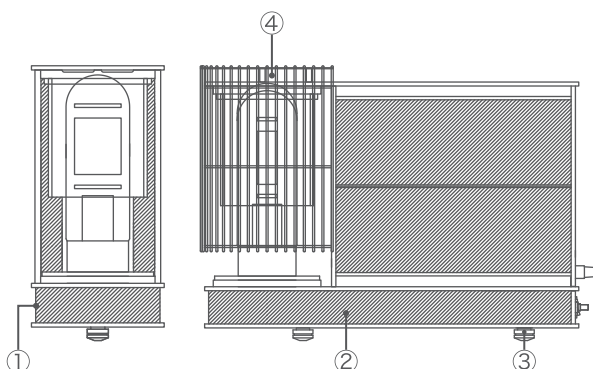
- Do not use solvents such as thinner.

The input impedance of this unit is 1.5 k Ω .

- Please use a equipment with an output impedance of 300 Ω or less.

3. Names of parts and their functions

Front and side



Be sure to remove the vacuum tube cushioning material for transportation.

① 212E plate current measurement terminal

② 212E plate current adjustment volume

When the vacuum tube is replaced or aged, insert a tester lead into the current measurement terminal and turn the volume to set the voltage to 130mV.

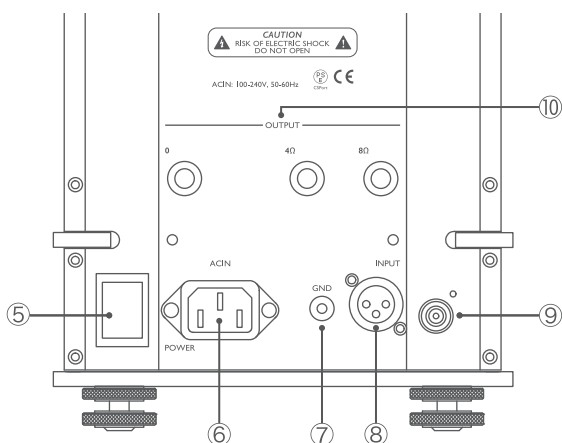
③ Legs

Adjust the height of the unit with the three legs. Loosen the lock nut on the upper section, and turn the lower section to adjust.

④ Vacuum tube protection cage

The cage to protect the tube from high temperature. Use a screwdriver to remove and install.

Back



The safety ground of this unit is connected with the ground terminal of the AC cord. Please use an outlet with a ground wire connected. Failure to ground the unit may result in electric shock.

⑤ Main power switch

Turn on the switch to light the 212E filament, and after 30 seconds, the high voltage power comes on and the amplifier is ready for operation.

⑥ AC input terminal

Used to connect AC power source. Be sure to use the supplied AC cord.

⑦ Ground terminal

Used to connect to the ground of other equipment.

⑧ Audio input terminal [Balanced]

⑨ Audio input terminal [Unbalanced]

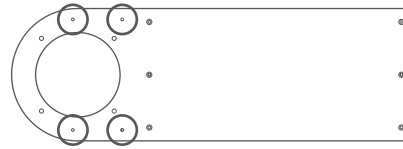
⑩ Speaker output terminal

The speaker impedance of 2-6 Ω is connected to the 4 Ω terminal. The speaker impedance of 6-12 Ω is connected to the 8 Ω terminal.

4. Installation and Connection

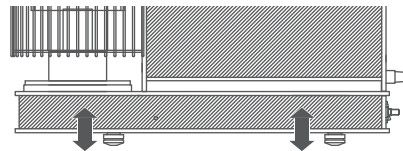
1. Remove the vacuum tube cushioning material

- Using a screwdriver, remove the four screws on both sides of the vacuum tube protection cage and pull up the cage. After removing the vacuum tube cushioning material, put the cage back and tighten the screws.



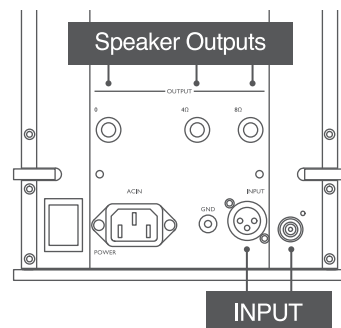
2. Adjust height

- Adjust the height with the three legs on the bottom. Loosen the lock nut of the upper section, and turn the lower section to adjust. After adjustment, tighten the lock nut to secure it.



3. Connect the audio input cable and speaker cable

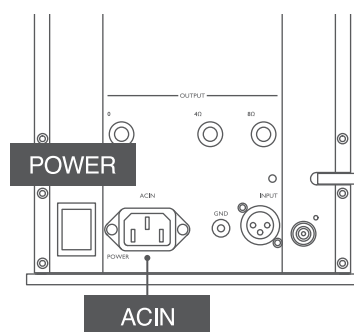
- Connect the audio input cable to the terminals on the rear panel with the main power turned off.
- Turn the terminal knob on the rear panel to loosen it, and insert the speaker cable core wire. After insertion, turn the knob to tighten it. The speaker impedance of 2-6 Ω is connected to the 4 Ω terminal, 6-12 Ω is connected to the 8 Ω terminal.



4. Connect the AC cord

- Plug the AC cord into the AC input terminal and connect it to an outlet.

This completes the setup. Turn on the switch to light the 212E filament, and after 30 seconds, the high voltage power comes on and the amplifier is ready for operation.



About the life of vacuum tubes

The life of a typical vacuum tube is about 15,000 hours for the signal tube and 10,000 hours for the output tube, and is affected by the following factors

- The filament becomes thin due to self-heating and evaporation. The heat concentrates there, and the wire breaks.
- The filament becomes thin due to the collision and breakage of cations. The heat concentrates there, and the wire breaks.
- The gas is generated by the high temperature of each electrode. The absorption of that gas exceeds the limit of the getter, causing the vacuum to drop.

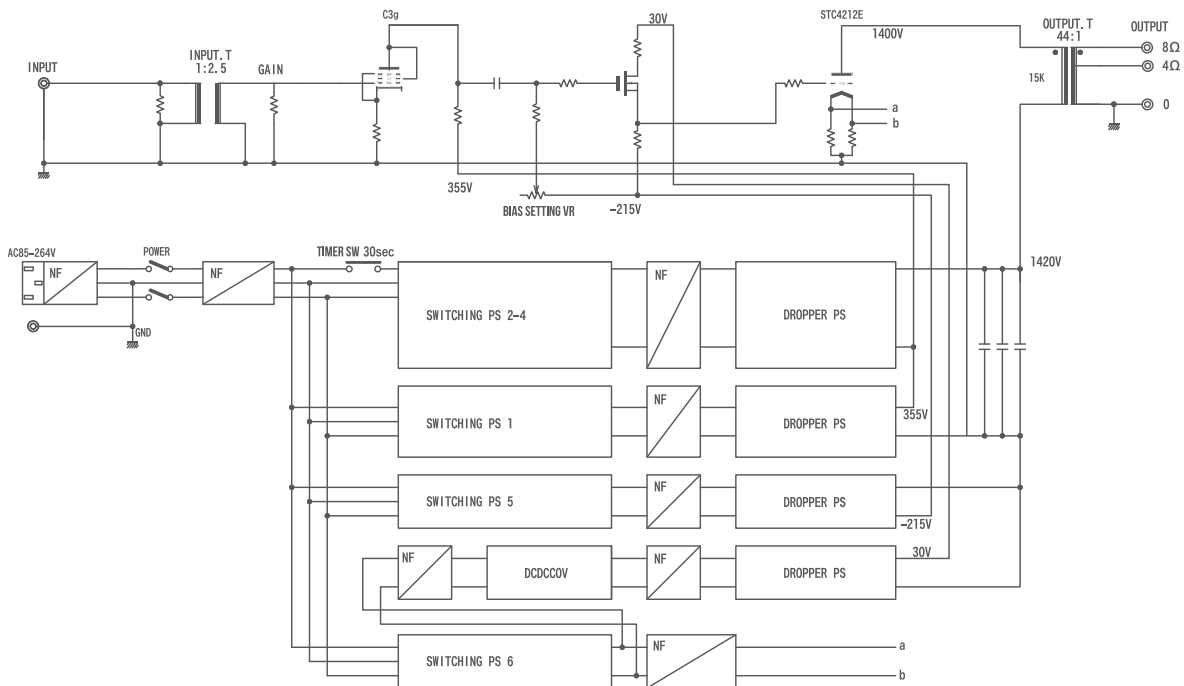
In the 212PAM2, the following measures have been taken to improve the life of the vacuum tube to over 20,000 hours.

- Ultra-long life signal tube C3g heater voltage lowered to 30% of rated plate loss for use at low temperatures
- Output tube 212E filament voltage lowered to 66% of rated plate loss for use at low temperatures
- The 212E is equipped with an overcurrent protection circuit that uses a switching power supply. The filament inrush current of the 212E is limited when the power is turned on.
- The 212E uses a sequence that applies high voltage after 30 seconds. When the power is turned on, only the filament is energized, preventing the phenomenon of breakage.

5. Product Specifications

Model	212PAM2
Type	Class-A Vacuum tube monaural power amplifier
Output Power	50 W (4 Ω , 8 Ω)
Frequency Response	20-40 kHz -3 dB/20 W
THD	5%/50 W 1 kHz, 1%/10 W 1kHz
NFB	None
Signal to Noise Ratio	90 dB/10 W (8 Ω)
Input Sensitivity	1.2 V/50 W
Gain	25 dB (8 Ω)
Input Terminal	Balanced x1, Unbalanced x1
Input Impedance	1.5 k Ω
Volume Adjustment	None
Dumping Factor	5 or more
Power Supply	AC100/120/200/240 V, 50/60 Hz
Power Consumption	400 W
Dimensions	188W×385H×563D mm
Weight	24.5 kg
Finishing	Anodic oxide coating, Rosewood plates

6. Block Diagram



7. Troubleshooting

Check the following when you think it may be a malfunction. If the problem persists even after these measures are taken, or if the problem is not listed, contact your dealer or our service department.

212PAM2 not turning on

- Check that the power cable is plugged in.

Sound is not output properly.

- Check that the audio input/output cable is properly connected.

Low sound level.

- Check that the impedance of the speakers is appropriate.
- Check if the input equipment is high impedance.

8. After-sales Service

5-year quality warranty

All products will be repaired free of charge for five years if they fail under normal use in accordance with the user's manual. (excluding consumables). Please note that even within the warranty period, repair may be charged depending on the circumstances of the failure.

After expiration of warranty period

If repair is possible, the product will be repaired for a fee upon request. Repair parts will be available for 8 years after the end of production. If the product has been in use for a considerable period of time, please contact our service department in advance.

Others

The following failures will be repaired for a fee. Please note that you will be responsible for the actual cost of parts, technical fees, shipping, and travel expenses.

- If the failure is caused by improper use or usage that does not follow the user's manual.
- If the failure is caused by a device other than our product you purchased.
- If the failure is damaged by fire, earthquake, flood, lightning, rodent damage, salt damage, other pollution, or abnormal voltage.
- The product has been repaired by someone other than us.

Please note that we are unable to repair any product that has been altered.

We do not warrant any incidental damage resulting from product failure.

Second User Registration

Customers who have acquired our products as used products can take over the remaining warranty period as a second user. If you have acquired a used product, please register from the "Support" section of our website.

Contact Us

If you have any questions about the product, please contact your dealer or our service department. When requesting repair, please inform us of the serial number attached to the back of the unit and the status of the failure.

Please keep the packing materials as they will be needed for transportation of the repair.



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