

Owner's Manual

MA-2000

MONAURAL POWER AMPLIFIER

Phasemation

Thank you for purchasing Phasemation product.
Read your Owner's Manual thoroughly for proper operation before starting to use your equipment.
Please keep your Owner's Manual with caution.









Table of Contents





Safety Instructions.....	3
Usage Cautions.....	4
Care of Equipment.....	4
Names and Functions.....	5
Mounting or Removing the Vacuum Tubes.....	6, 7
Bias Current Adjustments of the Output Vacuum Tubes.....	8
Connections.....	9
Trouble Shooting Guide.....	10
User Support.....	11
Specifications.....	11

Safety Instructions

Before starting to use

In this owner's manual and on the product, various pictures are used to show our customers how to use Phasemation MA-2000 safely and properly in order to avoid the loss of customer's assets and to protect our customers from harm.

 WARNINGS	<p>■ Do not use the equipment being broken.</p>	 	<p>● In case of using the equipment in an abnormal state, such as seeing smoke, having strange smell, or hearing unusual sounds or noise, this can result in a risk of fire or electric shock. If such an abnormal state occurs, turn the power switch off and then disconnect the AC plug from the outlet. After no smoke is confirmed, ask the dealer for a repair.</p>
	<p>■ Never remodel the equipment.</p>		<p>● Do not disassemble the equipment or remodel it. This can result in a risk of fire.</p>
	<p>■ Never install the equipment near water.</p>	 	<p>● Do not use the equipment in the bathroom. This can result in a risk of fire or electric shock.</p> <p>● The equipment is designed for using indoors. Do not expose the equipment to water. This can result in a risk of failures, fire, and electric shock.</p>
	<p>■ Never put an object filled with water on the equipment.</p>		<p>● Do not put a vase, flower pot, glass or any object filled with skin lotion, chemical, water, or small metal object on the equipment. In case the liquids are spilled or small objects fall inside the equipment, this can result in a risk of fire or electric shock.</p>
	<p>■ Never put an object inside the equipment.</p>		<p>● If a foreign object has fallen inside the equipment, turn the amplifier's power switch off and contact the dealer. To keep using the equipment can result in a risk of fire or electric shock.</p>

 CAUTIONS	<p>■ Cautions of Installation</p>		<p>● Do not install the equipment on unstable tables or unstable places. In case the equipment falls, it can result in a risk of injury of customers.</p> <p>● Pay attention to the wiring of the cord so that a foot is not caught or else the person can stumble or the equipment can fall which is so dangerous.</p> <p>● When moving the equipment, turn the power switch off and endure to disconnect the power plug from the outlet and remove the connecting cord. The cord can be damaged and this can result in a risk of fire and electric shock.</p>
	<p>■ Places which are not suitable for installation</p>		<p>● Do not install the equipment in a humid or dusty environment. This can result in a risk of fire or electric shock.</p>
	<p>■ Connection</p>		<p>● When connecting with other audio equipments or a television set, read the manual of the equipment, turn the power switch off, and connect according to the instructions.</p>

Usage Cautions

Installation place

In order to use the equipment for a long time, follow the instructions shown in below:

- Do not install this equipment near a heat source such as direct sun light, a stove and so on.
- Do not use this equipment at a poorly-ventilated, humid or dusty place.
- Do not install this equipment at an unstable place such as a slope or a vibrating place.
- Do not install this equipment near the window where the equipment can be exposed to rain.
- Do not install this equipment in a high humid environment.
- Avoid using this equipment on an equipment generating heat such as an amplifier.
- Keep this equipment away from a power supply transformer or a motor of another equipment.

Note

Avoid covering the equipment with a cloth or installing it in enclosed space because radiation and air convection from the chassis surface can be hindered.

To prevent external sound pressure and grit / dust from entering the equipment, inspiratory/exhaust ports to radiate the heat are not arranged against the equipment consciously. Radiating the heat from the equipment is done by cooling with air convection in the chassis and with radiation and air convection from the chassis having high thermal conductivity.

Useable AC power supply voltage and frequencies

- AC 230V power supply must be supplied.
- The equipment operates normally in both areas of 50Hz and 60Hz power supply frequencies.

Handling AC power cable

- Do not touch the AC power cable with wet hands.
- Do not pull the cable strongly or do not bend the cable. The cable can be damaged and can result in a risk of fire and electric shock.
- Use the AC power cable of the accessories.

Repair

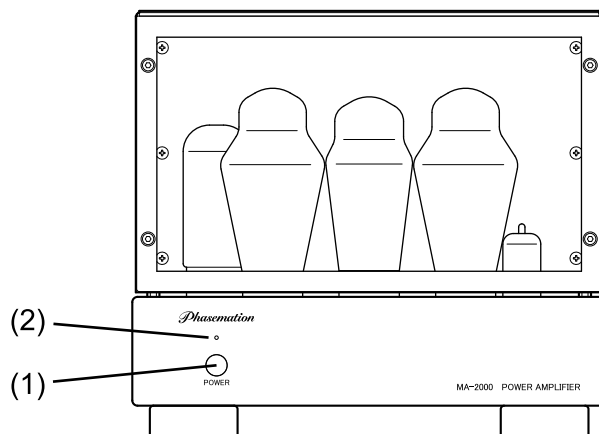
- In case of the equipment failure consult the dealer.

Care of Equipment

- ◎ If the equipment is covered with dust or dirt clean it with a soft cloth.
- ◎ If the equipment is covered with heavy dust put a very thin mild detergent on a soft cloth. Wring the cloth and wipe off the dust and dirt. Then clean with a dry soft cloth.
- ◎ Never use chemical agents such as thinner, naphtha or alcohol when cleaning it. If any of them is attached to the equipment, the silk printing can be flaked or the surface can lose metal luster.

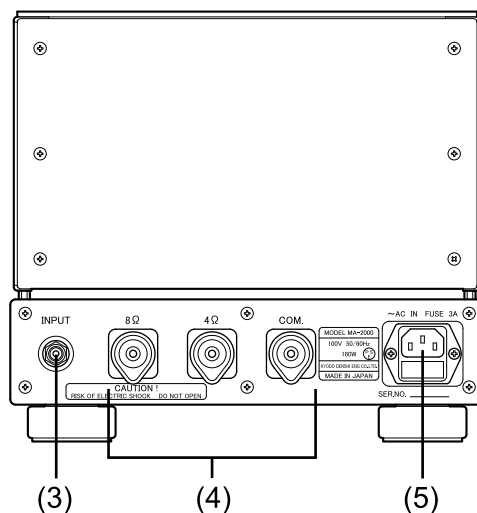
Names and Functions

Front Panel



- (1) POWER switch The power supply can be turned on or off by pressing the POWER switch.
After pressing the POWER switch, (2) POWER indicator lights up.
- (2) POWER indicator The POWER indicator lights up blue when the power supply is supplied.
Right after the power turns on, it lights up red until the internal circuit is stabilized.
No sounds come out while it is lighting red.

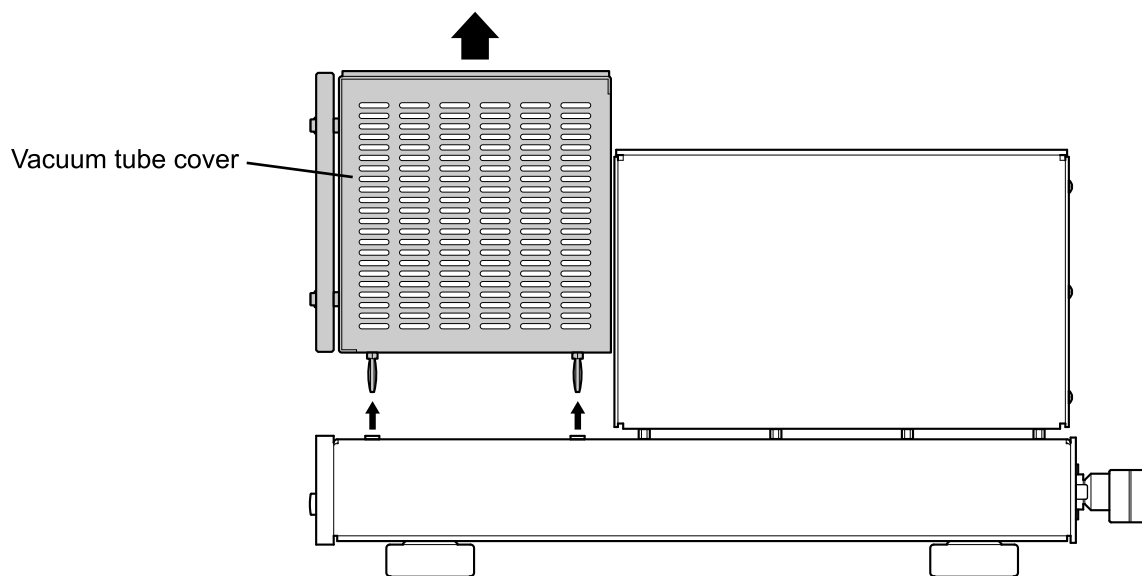
Rear Panel



- (3) Input terminal Connect an output of a pre-amplifier or attenuator.
- (4) Output terminals Connect a speaker.
These terminals can be connected to a 4-ohm speaker or an 8-ohm speaker.
- (5) AC power inlet Connect the AC power cable of accessories between this terminal and an AC outlet.

Mounting or Removing the Vacuum Tubes

Removing the cover

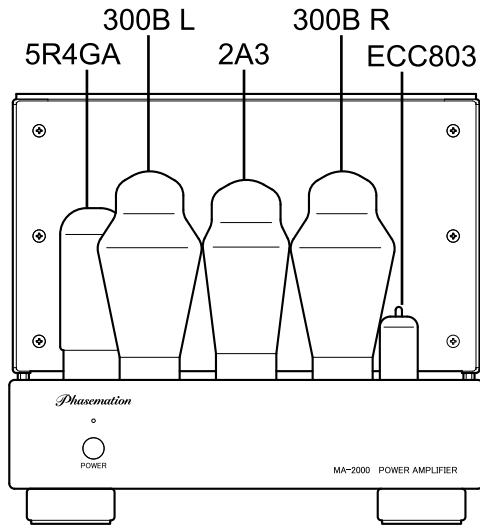


(1) Remove the vacuum tube cover straight up.

Cautions for handling the vacuum tube

- Since the vacuum tubes are made of glass, they can be broken easily so they should be handled carefully.
- After turning the power to OFF and waiting until the vacuum tubes cool well, you can remove them or mount them. In case the vacuum tube does not cool, this can result in a risk of failure, electric shock, or burns.
- We measured the performance of the vacuum tubes of accessories and selected good tubes. In case a vacuum tube except our ones of accessories is used, this can result in a risk of performance deterioration or failure. The vacuum tubes of accessories should be used.
- After mounting the vacuum tubes, the cover must be placed back. For the vacuum tube, a high voltage is applied in the operation and then they turn to a high temperature. In case you touch them or some object hits them, these can result in a risk of burnt injury, electric shock, or fire.
- When an abnormal state occurs for the vacuum tubes, please contact your dealer.

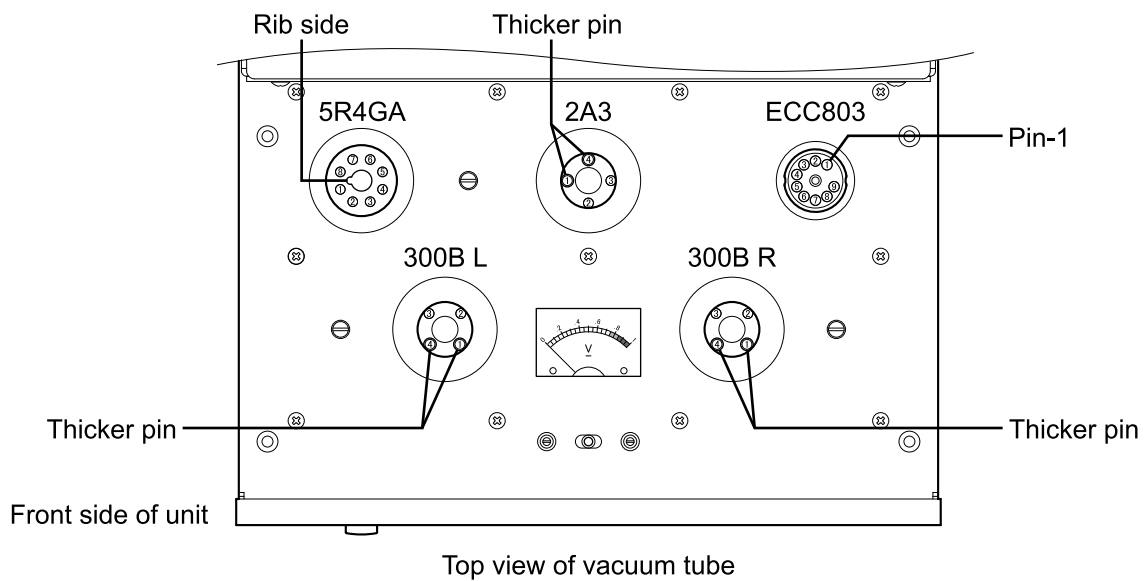
Mounting the vacuum tubes



Caution

For “300B L” and “300B R”, please check the sealed sticker that is on the package box and on the base.

- (1) The vacuum tubes are arranged in order of “300B L”, “300B R” from the left of the front row and “5R4GA”, “2A3”, “ECC803” from the left of the back row.
- (2) Because the vacuum tubes have respective directional properties, mount them in the correct direction shown as follows.

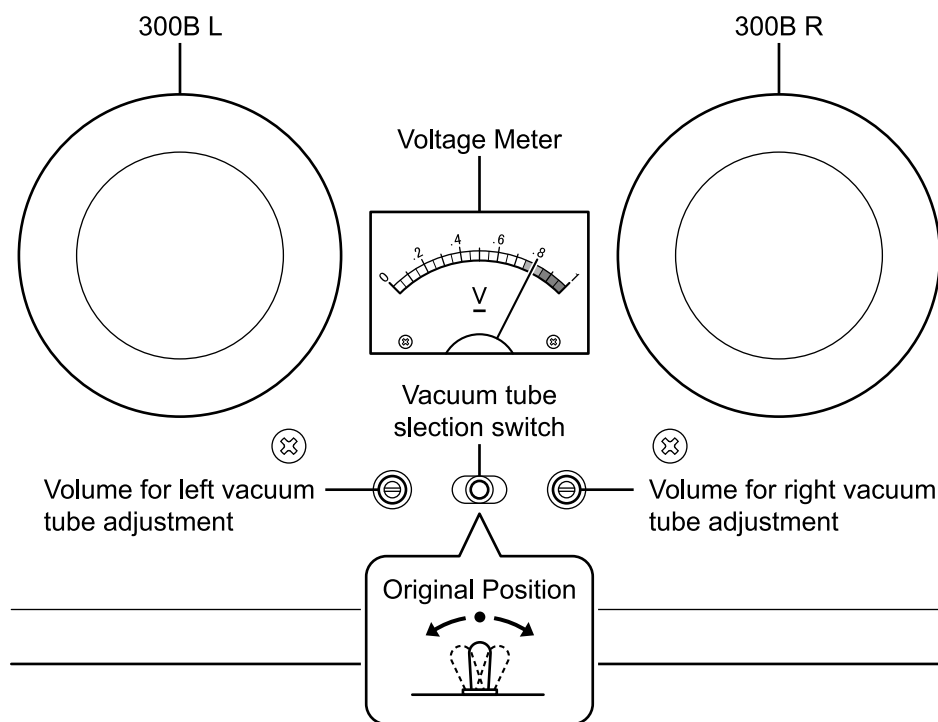


- (3) After mounting all vacuum tubes, attach the vacuum tube cover.

Removing the vacuum tubes

- (1) Remove the vacuum tube cover straight up.
- (2) When removing the vacuum tube, you must hold the resin portion at the root of the vacuum tube and pull it out. In case of holding the glass portion, the vacuum tube may break.

Bias Current Adjustments of the Output Vacuum Tubes



Checking matters when initially assembled

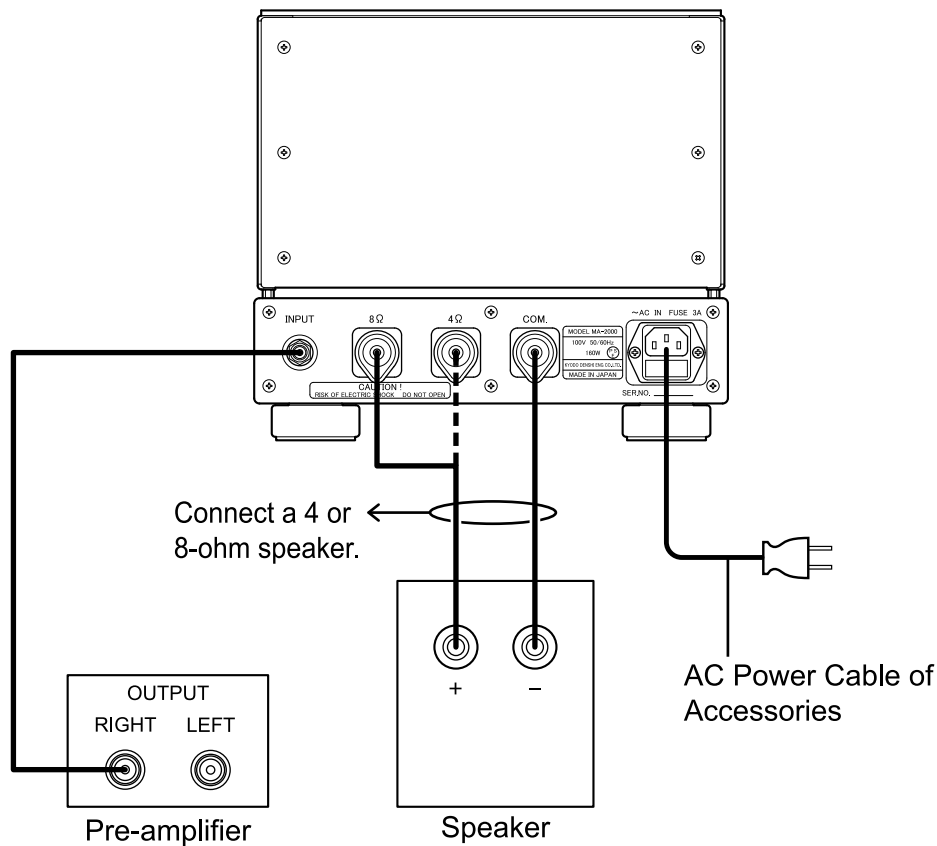
Each adjusting point for this amp is already adjusted before it is shipped but please check the following in order to prevent accidents when electrically running.

1. After the first electric run and the POWER indicator turns blue, pull down the vacuum tube selection switch (near the voltage meter) left and right and check that each vacuum tube bias current does not show up as 0.85V or more (the red area inside the voltage meter). If the voltage meter needle is at 0.85V or more (red area), lower the voltage to the green area as written below.
2. After electrically running for about an hour, again check that the bias adjustment voltage is $0.8V \pm 0.05V$ (green area). If the voltage needle is off, stable the voltage around 0.8V (green area) as instructed below.

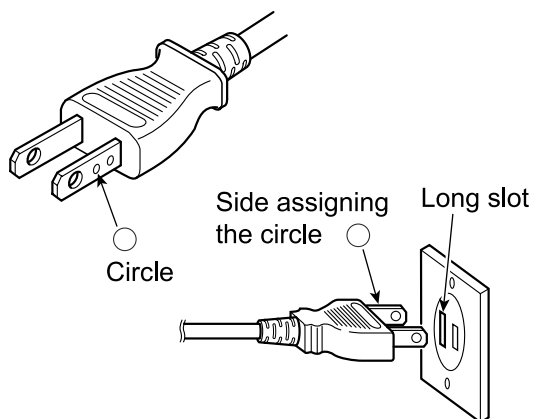
How to adjust the bias current (voltage meter displaying 0.8V=80mA)

- (1) Pull down the switch to the left and adjust the left volume so that the voltage meter needle is at $0.8V \pm 0.05V$ (80mA \pm 5mA).
- (2) Pull down the switch to the right and adjust the right volume so that the voltage meter needle is at $0.8V \pm 0.05V$ (80mA \pm 5mA).
- (3) Repeat (1) and (2) several times and check that the voltage meter needle is settled around 0.8V.
- (4) After the adjustment is finished, return the switch to the center.
(Besides bias-adjusting, the center is the original position)

Connections



Plugging the plug of AC power cable in an outlet



A circle is assigned on one side of the plug of the AC power cable so that better sound quality is reproduced by matching the power supply polarity with another equipment.

This polarity may be different because of house wiring for outlet or because of the power supply condition; however, generally the side assigning the circle should be inserted to the long slot of the outlet.

Trouble Shooting Guide

In case the equipment does not operate properly, check out the followings.

If it does not operate properly even after checking the advised points, endure to disconnect the AC plug from the outlet and then contact the dealer.

Trouble	Causes	Measures
The power is not supplied.	● The plug of AC power cable is not plugged in completely.	● Insert the plug of the AC cable into an outlet firmly. ● Firmly insert the outlet of the AC power cable into the AC inlet of the power equipment.
The sound is not heard.	● The input audio wires are not plugged in completely. ● The speaker wires are not plugged in completely.	● Insert the audio wires completely. ● Insert the speaker wires completely.
Hum noise is heard.	● The input audio wires are not plugged in completely. ● The earth cable from the analogue disc player is not connected. ● A power supply transformer or motor in an other equipment is installed near this equipment.	● Insert the input audio wires completely. ● Connect the earth cable completely. ● Place this equipment apart from the power supply transformer or motor of other equipments.
Sound is not heard immediately after turning the power on.	● Sound is not outputted until the circuits come to stable operation.	● Please wait about 30 seconds.

User Support

As for the unclear matters with regards to the after service, please contact the dealer.

Specifications

Product	300B Parallel Single-ended Monaural Power Amplifier
Maximum output	25W / 8 ohms (T.H.D. 5 %)
Gain	28 dB
Frequency characteristics	10 Hz to 40 kHz (+0, -3 dB)
Input terminal	Unbalanced input terminal (RCA terminal)
Output terminals	For speaker (4 ohms or 8 ohms)
Power consumption	160 W
Max. dimensions (mm)	270 (W) x 245 (H) x 480 (D)
Weight	20 kg

Accessories: AC power cable (x1)
Vacuum tube: PSVANE WE300B (x2)
2A3 (x1)
ECC803S (x1)
5R4GA (x1)
Screwdriver for adjusting (x1)

- The appearance and specifications of this equipment are subject to change without notice in order to improve it.

Phasemation

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Phasemation is the original audio brand of Kyodo Denshi Engineering Co., Ltd.