

Owner's Manual

EA-2000

PHONO 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 care.

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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 EA-2000 safely and properly in order to avoid the loss of our customer's assets and to protect our customers from harm.

SAFETY PRECAUTIONS

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		
	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.	
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.	
<p>WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.</p>		

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings.
Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/accessories specified by the manufacturer.
11. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.



▪ DECLARATION OF CONFORMITY

We declare under our sole responsibility that this product, to which this declaration relates, is in conformity with the following standards:

EN60065, EN55032, EN55020, EN61000-3-2 and EN61000-3-3.

Following the provisions of Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU

Usage Cautions

CAUTION:

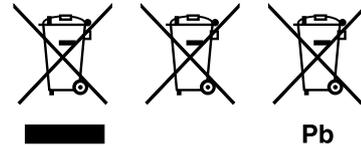
To completely disconnect this product from the mains, disconnect the plug from the wall socket outlet. The mains plug is used to completely interrupt the power supply to the unit and must be within easy access by the user.

A NOTE ABOUT RECYCLING:

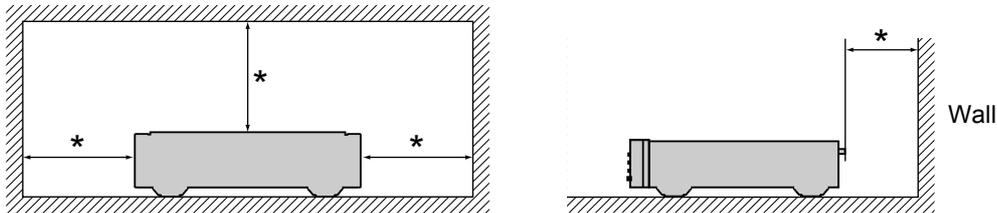
This product's packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with the local recycling regulations.

When discarding the unit, comply with local rules or regulations.

This product and the supplied accessories constitute the applicable product according to the WEEE directive.



Cautions on installation



* For proper heat dispersal, do not install this unit in a confined space, such as a bookcase or similar enclosure.

- More than 0.1 m is recommended.
- Do not place any other equipment on this unit.

NOTE ON USE

WARNINGS

- Avoid high temperatures. Allow for sufficient heat dispersion when installed in a rack.
- Handle the power cord carefully. Hold the plug when unplugging the cord.
- Keep the unit free from moisture, water, and dust.
- Unplug the power cord when not using the unit for long periods of time.
- Do not obstruct the ventilation holes.
- Do not let foreign objects into the unit.
- Do not let insecticides, benzene, and thinner come in contact with the unit.
- Never disassemble or modify the unit in any way.
- Ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, tablecloths or curtains.
- Naked flame sources such as lighted candles should not be placed on the unit.
- Observe and follow local regulations regarding battery disposal.
- Do not expose the unit to dripping or splashing fluids.
- Do not place objects filled with liquids, such as vases, on the unit.
- Do not handle the mains cord with wet hands.
- The equipment shall be installed near the power supply so that the power supply is easily accessible.
- Do not keep the battery in a place exposed to direct sunlight or in places with extremely high temperatures, such as near a heater.

Care of Equipment

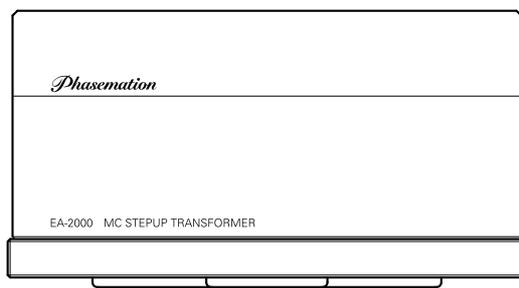
- ⊙ If the equipment is covered with dust or dirt, clean it with a soft cloth.
- ⊙ If the equipment is very dirty, put detergent which is thinned very well with water on a soft cloth. Wring the cloth and wipe off the dust and dirt. Then clean with a dry soft cloth.
- ⊙ Never use chemical agents such 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

EA-2000T MC Step-Up Transformer

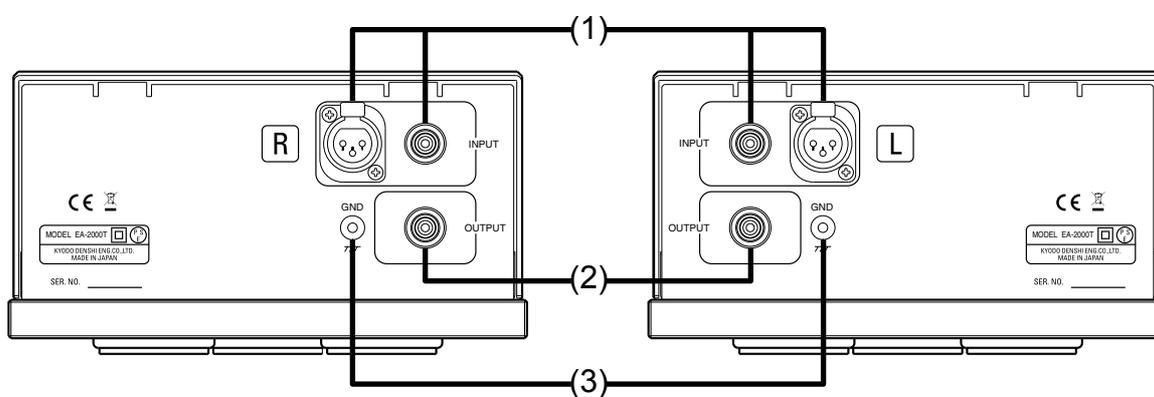
Front Panel

*The left and right of the front panel are in common



Rear Panel (Right)

Rear Panel (Left)



(1) Phono Input Terminal

Connect each signal line from your analog disc player to L and R. There are the RCA terminal (unbalanced) and the XLR terminal (balanced) and if they are connected at the same time, it will be the cause of noises and losing the sound quality.

* A supported phono cable is needed for a balanced connection of an XLR terminal.

* For the XLR terminal, no.1 is GND, no.2 is HOT, and no.3 is COLD

Caution

- Do not connect the RCA and XLR terminals at the same time to the input.
- Do not apply testers to the input/output terminals. The transformer's performance will deteriorate.
- This unit is designed for a balanced connection due to a 2-core shield line. Therefore when doing an unbalanced connection due to a 1-core shield line, it is susceptible to noise effects. Caution is needed especially for high impedance cartridges.

(2) Phono Output Terminal

Connect to the MM input terminal of the phono amplifier EA-2000EQ

(3) GND Terminal

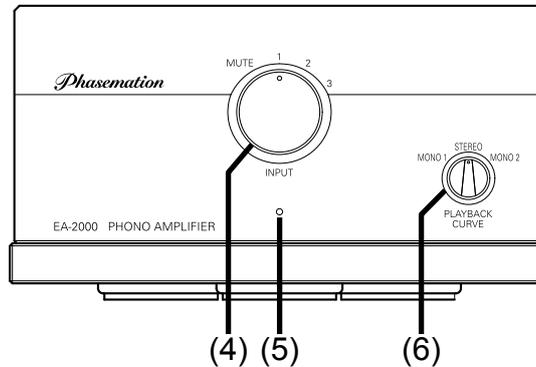
Connect either the L or R of the earth line coming from the analog disc player to the GND terminal. Follow the connections diagram for wiring the GND connection cable (from accessories).

Names and Functions

EA-2000EQ Phono Equalizer

Front Panel

*The left and right of the front panel are in common



(4) INPUT Switch

This switch is for changing the MM input channels and MUTE

(5) POWER & MUTE Indicator

Red: When the power turns on, it lights up red with no sounds coming out until the inner circuit is stable.

Blue: When the inner circuit is stable, it lights up blue and sounds will come out.

Purple: When the inner circuit is stable and the input switch is at MUTE, it lights up purple with no sounds coming out.

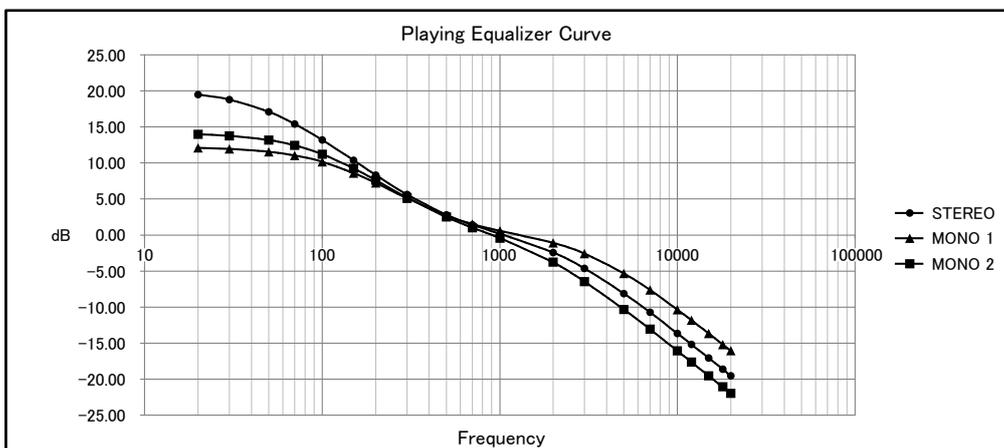
(6) PLAYBACK CURVE Switch

This switch is for changing the played equalizer characteristic. The following three types of playing curves are contained. Change according to the type of audio record.

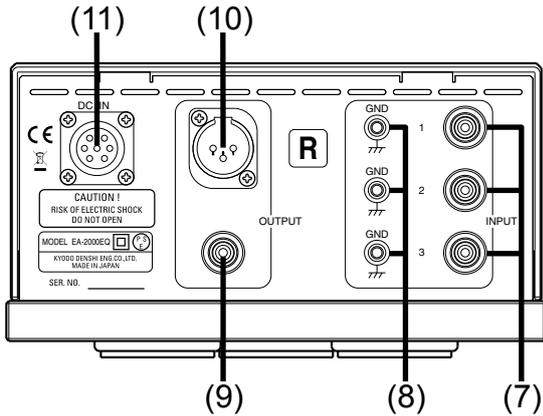
- STEREO: RIAA curve for stereo LP playing
- MONO 1: Curve 1 for monaural LP playing (Used for DECCA lables and so forth: FFRR)
- MONO 2: Curve 2 for monaural LP playing (Used for Columbia lables and so forth)

Electric Characteristics of the Playing Equalizer Curve

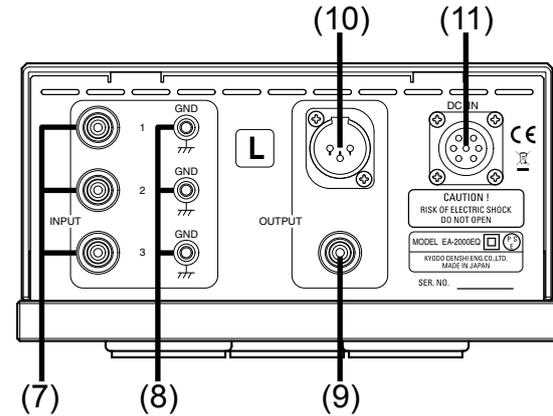
Curve	Turnover/Low limit	Roll off
STEREO	500Hz/50Hz(+20dB)	75 μ s-2120Hz(-13.75dB at 10kHz)
MONO 1	500Hz/125Hz(+12-12.5dB)	50 μ s-3000Hz(-10.5dB at 10kHz)
MONO 2	500Hz/100Hz(+14dB)	100 μ s-1590Hz(-16dB at 10kHz)



Rear Panel (Right)



Rear Panel (Left)



(7) MM INPUT 1, 2, 3 (RCA) Terminal

Input terminal (RCA) for EA-2000T (MC step-up transformer) and MM cartridge.

(8) GND Terminal

Follow the connections diagram for wiring the attached GND cable.

(9) OUTPUT (RCA) Terminal

This is an unbalanced equalizer output (RCA) terminal. It connects to the RCA input terminal of the line level (150–250mV) such as AUX terminals of a preamplifier.

(10) OUTPUT (XLR) Terminal

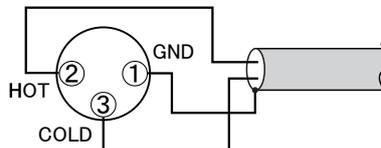
This is a balanced equalizer output (XLR) terminal. It connects to the XLR input terminal of the line level (150-250mV) such as AUX terminals of a preamplifier.

Caution

Do not connect to a phono input terminal of a preamplifier that has a phono amplifier inside. It may go to maximum input and distort the sounds.

Notice

An XLR connector is adopted on the OUTPUT for this unit (balanced connection)
The pins are set as shown in the diagram pin①= GND pin②= HOT pin③= COLD.



Some pre-amplifiers are set as pin①= GND pin②= COLD pin③= HOT
and in this case the input signal and output signal are played as an anti-phase.

In order to correct the phase, change the connection so that the wiring of the XLR connector pin② and pin③ at one side of the balanced cable are inverted.

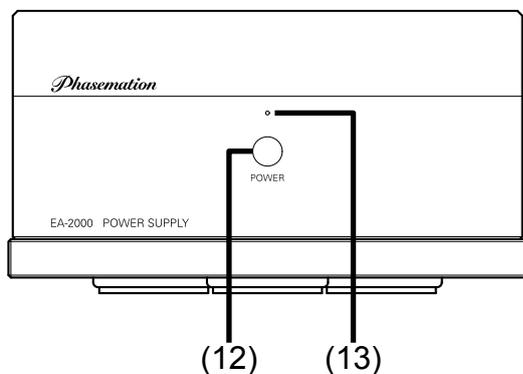
(11) DC IN Connector

The DC power relay cable (from accessories) connects to the power supply.

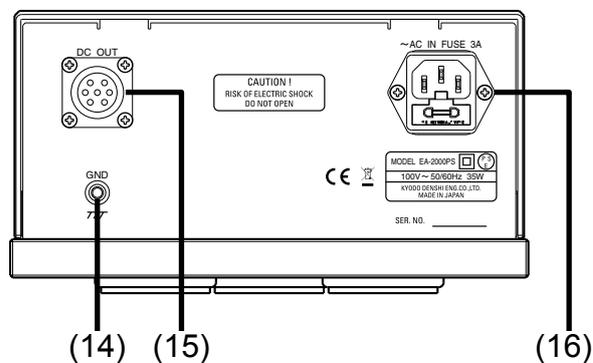
Names and Functions

EA-2000PS Power Supply

Front Panel



Rear Panel



(12) POWER Switch

This switches the power on and off.

(13) POWER Indicator

This lights up blue when the power is on.

(14) GND Terminal

Usually this does not need to be connected somewhere.

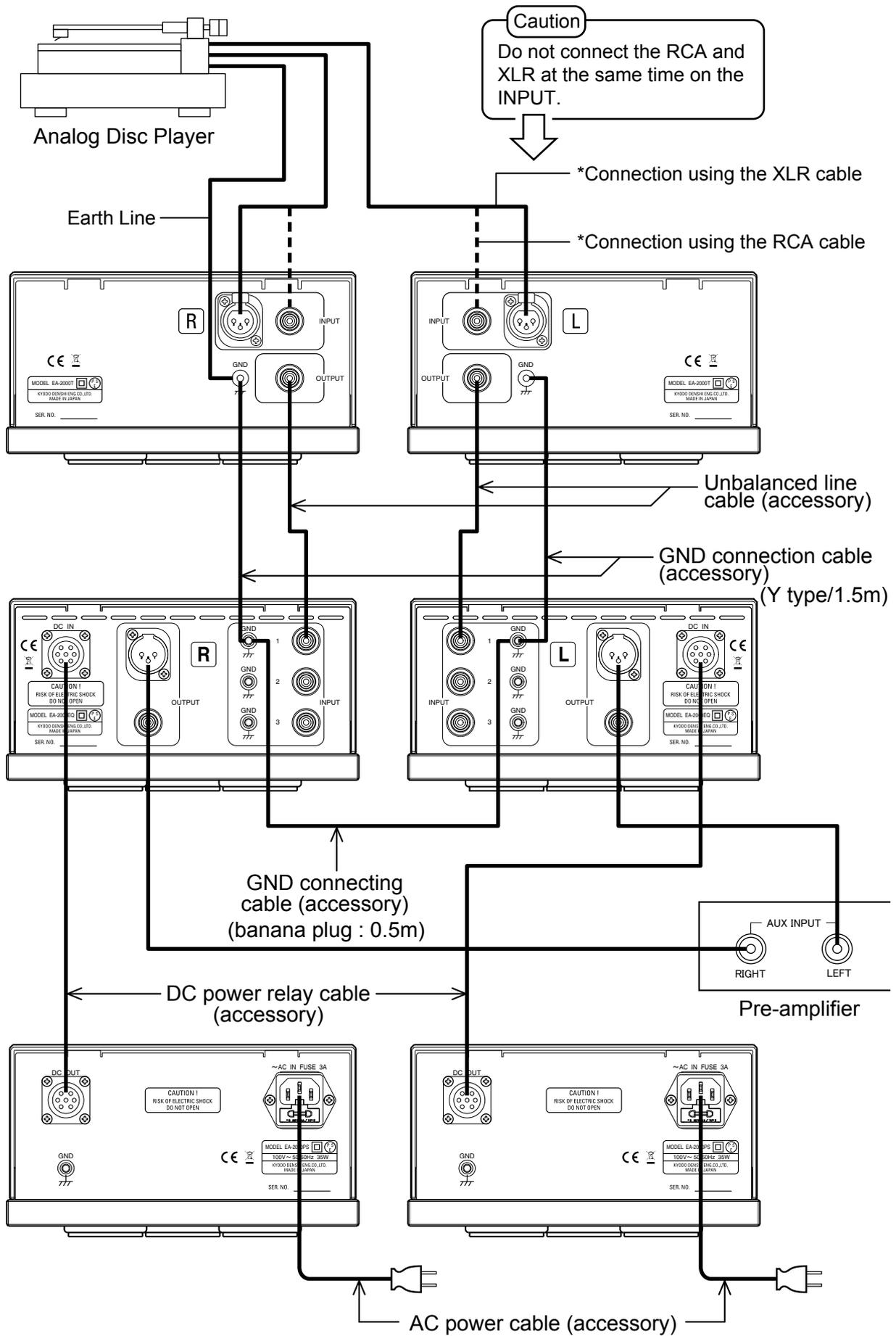
(15) DC OUT

This is an output connector that supplies DC power to the phono equalizer. This connects to the phono equalizer with the DC power relay cable (from accessories). There is no designation of L or R.

(16) AC IN

The power inlet terminal is connected to the power outlet with the AC power cable (from accessories).

Connections



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, then remove the electric plug from the socket outlet and contact the dealer.

Trouble	Causes	Measures
The power does not turn on	<ul style="list-style-type: none"> ● The electric plug is not entirely inserted. 	<ul style="list-style-type: none"> ● Properly insert the electric plug to the socket outlet. ● Properly insert the AC power cable to the power inlet of this unit.
No sounds come out	<ul style="list-style-type: none"> ● The signal wire is not entirely inserted. 	<ul style="list-style-type: none"> ● Insert the signal wire properly.
Cannot play sounds at high bands	<ul style="list-style-type: none"> ● An MM cartridge is used. 	<ul style="list-style-type: none"> ● Directly connect to the MM INPUT.
Sounds warp	<ul style="list-style-type: none"> ● This unit's output is connected to the phono amplifier input terminal of the pre-amplifier. 	<ul style="list-style-type: none"> ● Connect to the line level input terminal (such as AUX) of the pre-amplifier
When the INPUT switch is operated, it makes a clicking noise	<ul style="list-style-type: none"> ● Due to the principle of switching, it makes a clicking noise to a certain level. 	<ul style="list-style-type: none"> ● Turn the power switch on this unit off or operate after using up all the amplifier's volume control.
A hum noise is heard	<ul style="list-style-type: none"> ● The signal wire is not entirely inserted. ● The analog disc player and earth line are disconnected. ● There is a power transformer or a motor of another device nearby ● Both the XLR and RCA are connected to the input terminal. ● The phono amp and earth line are disconnected ● The RCA cable connected to the output terminal is a shield floating type. ● The input is an unbalanced connection. 	<ul style="list-style-type: none"> ● Properly insert the signal wire ● Properly connect the earth line ● Place it away from the power transformer and/or the motor. ● Connect either one to the input terminal ● Properly connect the earth line. Try GND connecting between the phono amplifier and pre-amplifier although it is not necessary in general. ● Cables that are shield floated may induce noises. For ones with an earth line, if the earth line is connected, there are times when improvements are made. If there is no earth line, use another cable and connect. ● Try the phono cable for a balanced connection.
Sounds do not come out right after the power is on.	<ul style="list-style-type: none"> ● This unit uses a vacuum tube. Sounds do not come out right away until the inner circuit is stable. 	<ul style="list-style-type: none"> ● Wait for 1 minute after turning the power on.

User Support

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

Specifications

Product	Tube Type LCR Non-Feedback Phono Amplifier	
Input Form	MM	MC
Input Sensitivity	2mV	0.1mV
Suitable Cartridge Output Impedance	47k Ω or less	1.5 – 40 Ω
Gain	40dB	66dB
Input Equivalent S/N Ratio	-121dBV	-147dBV
Rated Output Voltage	200mV (1kHz)	
Deviation from RIAA Curve	\pm 0.5dB (20 to 20kHz)	
Power Consumption	35W (120VAC 60Hz) for each ch (USA) 35W (230VAC 50/60Hz) for each ch (Europe)	
Dimensions (mm)	Transformer 214(W) \times 118(H) \times 265(D) x2 Amplifier 214(W) \times 118(H) \times 368(D) x2 Power Supply 214(W) \times 118(H) \times 352(D) x2	
Weight	Transformer 4.5kg, Amplifier 6.1kg, Power Supply 7.8kg / x2	

<Accessories>

- Unbalanced line cable x 2
- AC power cable x2, DC power relay cable x2
- GND connecting cable (Y-type 1.5m x2, banana plug 0.5m x1)

- The specifications and appearance of this equipment are subject to change without notice due to improvements.

Phasemation

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