

*Luxman*

HEADPHONE AMPLIFIER

**P-750u**

*Owner's Manual*



## Contents

Precautions .....	1
Features of This Unit.....	3
Names and Functions.....	5
Connections .....	9
Block Diagram.....	11
Specifications .....	12
Before Asking for Repair Service.....	13

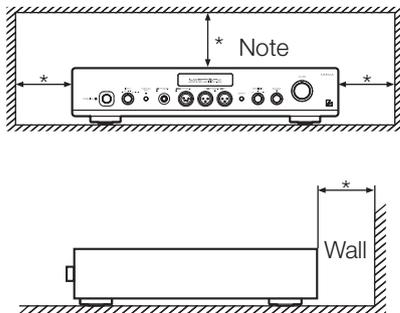
# Precautions

## Installation place

Install this unit in a location where good ventilation and heat radiation are assured. Especially, the installation of this unit where the direct sunlight is present, where the temperature rises excessively high such as close to a heater, or where it is humid or dusty may cause a malfunction even if heat is efficiently released. Therefore, do not install this unit in such places.

### Note:

For heat dispersal, do not install this equipment in a confined space such as a book case or similar unit.



## Precautions in connecting with input devices

When connecting this product to input devices such as a CD player, be sure to turn off the operation switches of this product and all other connected devices. Failure to observe this may generate a large noise and accordingly cause hearing impairment. The RCA plugs connecting input devices should be firmly pushed into the input terminals. Likewise, firmly push connectors into the output terminals of any input device, such as a CD player. Inadequately connections may compromise grounding and lead to noise and hum and seriously affect the S/N ratio.

## Protection circuit

This product is equipped with a protection circuit that is activated upon the detection of overcurrent, abnormally high temperature, and DC output to protect the amplifier and headphones. When the protection circuit is activated, the output to the headphones is shut off and the operation indicator blinks to show that this unit is in the muting state. When the cause to activate the protection circuit is eliminated, the blue operation indicator light comes back on and the operating state resumes. If the protection circuit is frequently activated after a lapse of a certain time and turning on the power again, please consult your dealer.

## Timed mute circuit

This product is equipped with a timed mute circuit to delay the output to connected headphones. No sound will be generated immediately after turning on the power.

ATTENTION: increasing the output volume or input volume from a connected device while the unit is muted may result in damage to headphones. With the output level set to a low level, wait a short time for mute cancelation and then increase the output level slowly to the desired listening volume.

## Connecting / Disconnecting headphones

Connecting or disconnecting an unbalanced headphone jack causes a brief short circuit between the left and right channels. This is due to the structure of the unbalanced headphone socket. If the volume of this unit is turned up at this time, a short circuit will be detected and the over-current detection circuit in the headphone amplifier output stage will be activated, causing the unit to go into a muted state or may even lead to a malfunction.

ATTENTION: plugging or unplugging headphones should be done with the output volume set to zero and when there is no input signal from connected input devices.

## Repair and adjustment

When repairs or adjustments are needed, please ask the dealer where you bought the unit.

## Cleaning

For cleaning, use a piece of soft cloth to wipe the unit such as cleaning cloth. When the dirt is hard to remove, use a small amount of neutral detergent to wipe, and then wipe the unit with dry cloth. Do not use a solvent like benzine or thinner because such a substance can damage the exterior.

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## Caution when using headphones

If the headphones are used for a long time at a high sound volume level, your hearing may be damaged.

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# Features of This Unit

## 3-stage Darlington output configuration

This product has 3-stage Darlington structure with bipolar transistor. Rated output: balanced; 8 W + 8 W (16Ω), unbalanced; 4 W + 4 W (8Ω)

## High grade headphone amplifier, supporting balanced and unbalanced headphones

This product is equipped with four independent identical quality, discrete amplifier channels, which support balanced headphones via the connection. There is also a balanced input/output straight transmission feature. Two paralleled amplifier channels support the left and right of the unbalanced headphone connection and allows for straight transmission and develop powerful driving ability. The following conversions are also supported: balanced input→unbalanced headphones, unbalanced input→balanced headphones.

## LECUA equipped volume control

This product features LECUA, which stands for LUXMAN Electronically Controlled Ultimate Attenuator. This is a computerized combined resistance attenuator which offers fine, accurate volume adjustment from -87dB to 0dB with no deterioration of the sound quality. LECUA also allows accurate left/right balance control and reduces the tracking errors of normal phase/reversed phase operation.

## ODNF – Only Distortion Negative Feedback –

The output section features LUXMAN's original distortion-only negative feedback system which allows for a high speed primary slew rate and ultra-wide audio bandwidth. Only distortion generated in the amplification process is fed back for cancellation. This maintains pure, high quality sound reproduction in the main amplifier section.

The latest version, ODNF 4.0 has achieved low impedance and a high signal to noise ratio for the transmission circuits thanks to the paralleled first stage and Darlington equipped second stage amplification circuits. Also the input stage error detection circuits are triple-paralleled to moderate frequency characteristics and noise.

## Highly stable power supply

This unit features a highly enhanced and stable power supply featuring a large capacity OI core power transformer, two custom 10,000μF blocking capacitors for the amplifier stage and two 3,000μF capacitors for the driver stage.

## Parallel speaker relays

This product is equipped with two large, low resistance paralleled speaker relays which are also used in our integrated amplifiers. These help to reduce the impedance of the headphone output stages.

## Beeline construction

LUXMAN's "Beeline" construction ensures that the audio signal path takes the optimum shortest route from input to headphone output.

## Selector relay

A high sound quality selector relay is used to enhance separation and crosstalk performance, a key point of any LUXMAN amplifier.

## Schottky barrier diodes

By using Schottky barrier diodes, manufactured by Nihon Inter Electronics Corporation, this unit achieves higher DC conversion efficiency in the rectifier circuit and much less switching noise.

## Original LUXMAN's OFC wiring

Our original un-plated OFC wiring with spirally wrapped shielding is used for all internal connections to ensure smooth, pure signal transmission.

## Non-angled circuitry

After careful consideration of the delicate nature of audio signal flow, non-angled circuit board tracking has been adopted to achieve smooth signal transmission.

## Sensitivity selector

A HIGH/MID/LOW sensitivity selector has been provided for adjustment according to the efficiency of your headphones.

## Through output switch

This control allows the line input to be fed directly to the output terminals and can be set to on or off.

## Loopless chassis structure

This unit features a loop-less chassis, independently constructed to eliminate increases in ground impedance caused by chassis current.

## 18 mm RCA terminal

We have used 18mm pitch RCA terminals to facilitate the use of high grade signal cables with large connectors.

## Balanced headphone output

High quality, non-locking XLR sockets have been utilized for safety and reliability. Three XLR outputs are located on the front panel, two separated L/R 3-pin XLR terminals and an integrated L/R 4-pin XLR terminal.

## Unbalanced headphone output

The unit is equipped with LUXMAN's standard high grade headphone jack output socket.

## Cast-iron insulator

For stability and support, this product features cast iron feet with vibration reducing density gradient.

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### \* About balanced headphone connections

- Balanced headphones are driven by the amplifier output section with normal phase (HOT) and reversed phase (COLD) and support 4-core connections where the left and right ground wire (COLD side) is separated. Generally 3-pin XLR, with left and right channels separated, or 4-pin XLR, with left and right channels integrated, are used. In the case of 4-pin XLR connections, there is no ground wire for left and right channels and the cold signals are separated. There is no influence from the grounding of connected input devices and playback with excellent separation is achieved.
- LUXMAN's approach to balanced headphone operation is to drive normal phase (HOT) and reversed phase (COLD) with independent amplifier circuits for each of the left and right channels. Small, low level signals up to high, large level signals are driven powerfully without current flowing into the ground wire. The pin assignment for these two types of connection are as follows:

#### 3-pin XLR (PHONES-3)

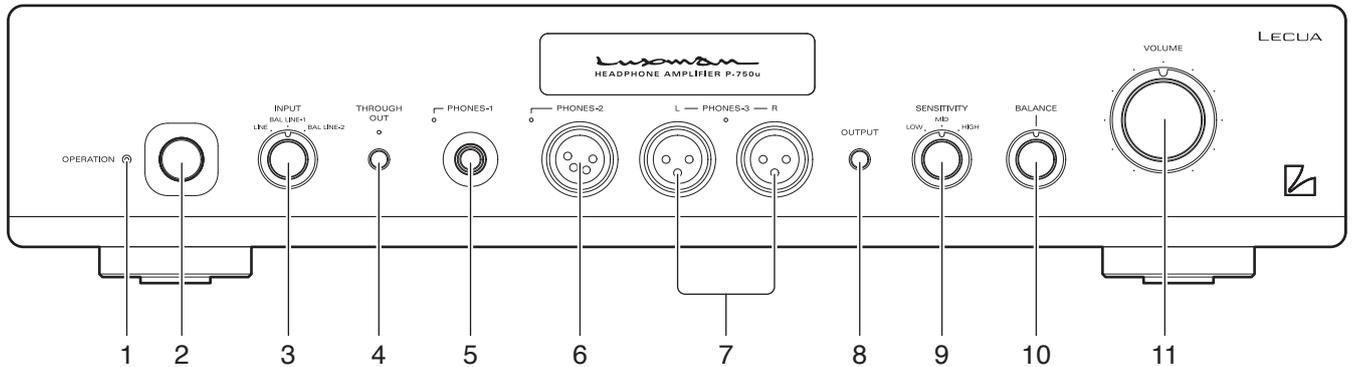
- ① GROUND
- ② HOT (positive phase)
- ③ COLD (reverse phase)

#### 4-pin XLR (PHONES-2)

- ① Lch HOT (positive phase)
  - ② Lch COLD (reverse phase)
  - ③ Rch HOT (positive phase)
  - ④ Rch COLD (reverse phase)
-

# Names and Functions

## Front panel



### 1. Operation indicator (OPERATION)

This blue indicator blinks for a short time to show that the system is in preparation immediately after the operation switch is turned on. No sound will be generated during this period. The indicator will light up steadily when the timed mute mode is cancelled and operation mode is activated.

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If a short circuit or over-current is detected, DC voltage is generated or the unit experiences an abnormally high operating temperature, the indicator will blink to indicate that mute mode has been activated. After resolving the cause of the fault, the blue indicator should light up steadily, indicating normal operation mode has been activated again. If this indicator continues to blink after resolving the fault, please contact your country's official LUXMAN distributor for a repair or service.

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### 2. Operation switch (OPERATION)

This switch turns on and off the power.

ATTENTION: when connecting input devices or connecting the output to other audio equipment ensure that the power is switched off.

- ON: Turns on this unit's power. The blue operation indicator light will blink and then light up steadily.
- OFF: Turns this unit's power off.

### 3. Input selection switch (INPUT)

This switch toggles between the unbalanced line input (LINE), balanced line 1 input (BAL LINE-1), and balanced line 2 input (BAL LINE-2) which are located on the rear panel of the unit.

### 4. Through output switch (THROUGH OUT)

This switch enables the user connect the line input of the unit directly to the through output terminals, for example a CD player connected to the line input may be directly connected to an output destination device such as an amplifier. Set to on, this switch enables the direct through output connection and the orange indicator will light up. Selecting off disconnects the signal to the through output.

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When the power to this unit is switched off, the line input signal IS ALWAYS connected to the through output terminals, regardless of this switch setting. Signals from devices connected to the balanced line inputs are not outputted from the through output terminals.

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## 5. Unbalanced headphone jack socket (PHONES-1)

This socket accepts a standard 1/4 inch stereo headphone jack plug. Use headphones with an impedance of 8Ω or more.

## 6. 4-pin balanced headphone output terminal (PHONES-2)

This connection accepts a 4-pin XLR connector for balanced type headphones. Use headphones with an impedance of 16Ω or more. The pin assignment for this 4-pin XLR output is as follows:

- ① Lch HOT
- ② Lch COLD
- ③ Rch HOT
- ④ Rch COLD

## 7. 3-pin balanced headphone output terminals (PHONES-3)

These connections accept 3-pin XLR connectors for balanced type headphones with separate left (L) and right (R) connectors. Use headphones with an impedance of 16Ω or more. The pin assignment for each of the left and right 3-pin XLR outputs are as follows:

- ① GROUND
- ② HOT
- ③ COLD

## 8. Headphone output selector switch (OUTPUT)

This switch is an output selector which toggles between the three available headphone outputs, unbalanced output (PHONES-1), balanced 4-pin XLR output (PHONES-2) and balanced 3-pin XLR outputs (PHONES-3). Each time this button is pressed, the output selection changes and the corresponding output will be identified by an orange indicator light.

## 9. Sensitivity selector switch (SENSITIVITY)

This control can select between HIGH, MID and LOW in accordance with the efficiency of the headphones being used. If low efficiency headphones are used and the volume is insufficient, even after turning up the volume control, select HIGH. If high efficiency headphones are used and the volume is hardly controllable, select LOW. The sensitivity of this unit is set to the following:

- HIGH : 0 dB
- MID : -6 dB
- LOW : -12 dB

## 10. Balance control (BALANCE)

This control allows the listener to adjust the relative volume level of the left and right channels.

Rotating the control counter-clockwise gradually cuts the volume of the right channel, rotating the control clockwise gradually cuts the volume of the left channel.

Under normal conditions, this control should be set to the center position and then adjusted as necessary. The maximum adjustable value for left/right balance is down to -12dB.

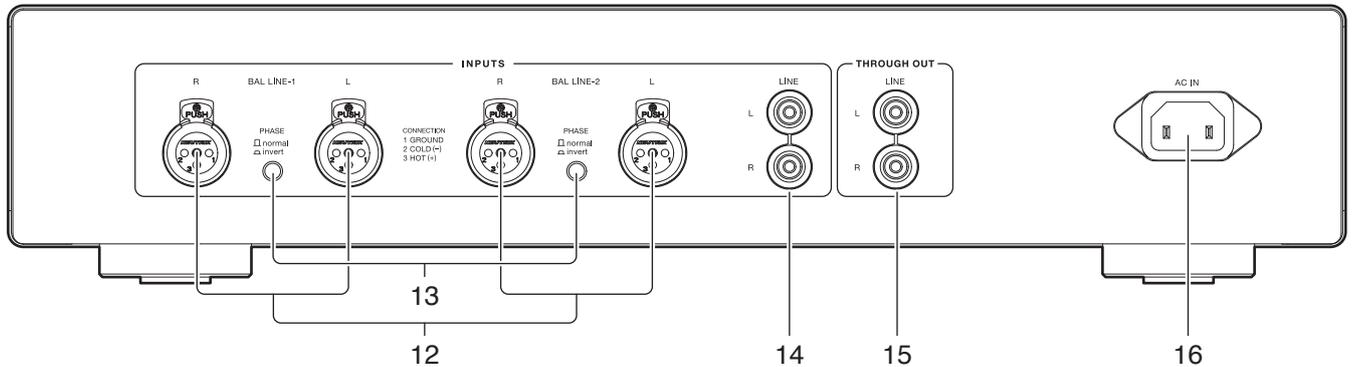
## 11. Volume control (VOLUME)

This control adjusts the headphone output level. At first, the volume control should be rotated fully counter-clockwise, setting the level to zero. Gradually rotate the control clockwise to adjust the volume of the headphone output to the desired level.

ATTENTION: connecting or disconnecting headphones should only be done with the volume control set fully counter-clockwise, with the output level set to zero.

# Names and Functions

## Rear panel



### 12. Balanced input connections - INPUTS (BAL LINE-1, BAL LINE-2)

These four XLR input terminals are for two line level balanced stereo inputs. Connect these inputs to the balanced XLR outputs of any input device, such as a CD player, using balanced XLR cables.

### 13. Balanced input phase selector switches (PHASE)

Use these switches to reverse the phase of the balanced input signals by 180 degrees. In the normal position, input signals will be normal and in phase, with these switches set to the invert position, the input signals will be phase reversed as shown in the table below.

<input type="checkbox"/> normal position .....	① GROUND
	② COLD
	③ HOT
<input type="checkbox"/> invert position.....	① GROUND
	② HOT
	③ COLD

### 14. Unbalanced line input connections - INPUTS (LINE)

These two RCA line input terminals are for an unbalanced stereo line input. Connect these inputs to the unbalanced outputs of any input device, such as a CD player, using RCA cables.

### 15. Through output connections (THROUGH OUT)

These RCA output terminals are for connection to another audio device, such as an amplifier, and allow the user to directly connect the line input to an external device using the through output.

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**Audio signals fed to the through output are not affected by the volume control of this unit.**

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### 16. AC power inlet (AC IN)

Connect the supplied AC power cable to this socket to power the unit from a household AC power socket.

## Memory

This unit stores the following items when the power is off:

Item	Default
THROUGH OUT	on/off
OUTPUT	PHONES-1/-2/-3

## Memory reset procedure

The following operations restore all the settings to the factory defaults.

- (1) Turn off the power of this unit. (Wait for 5 seconds or more.)
- (2) Press the OPERATION switch while holding down the headphone output selector button (OUTPUT) to power on the unit.
- (3) All of the headphone output indicator lights for PHONES-1, PHONES-2 and PHONES-3 will light up in 5 seconds.
- (4) Immediately after these indicator lights come on as described above, press the through output switch (THROUGH OUT) once, while still holding down the headphone output selector button (OUTPUT), and the through output indicator will light up.
- (5) Release the headphone output selector button (OUTPUT).
- (6) The power is turned on and the unit will go into normal operation mode with all settings restored to the factory defaults.

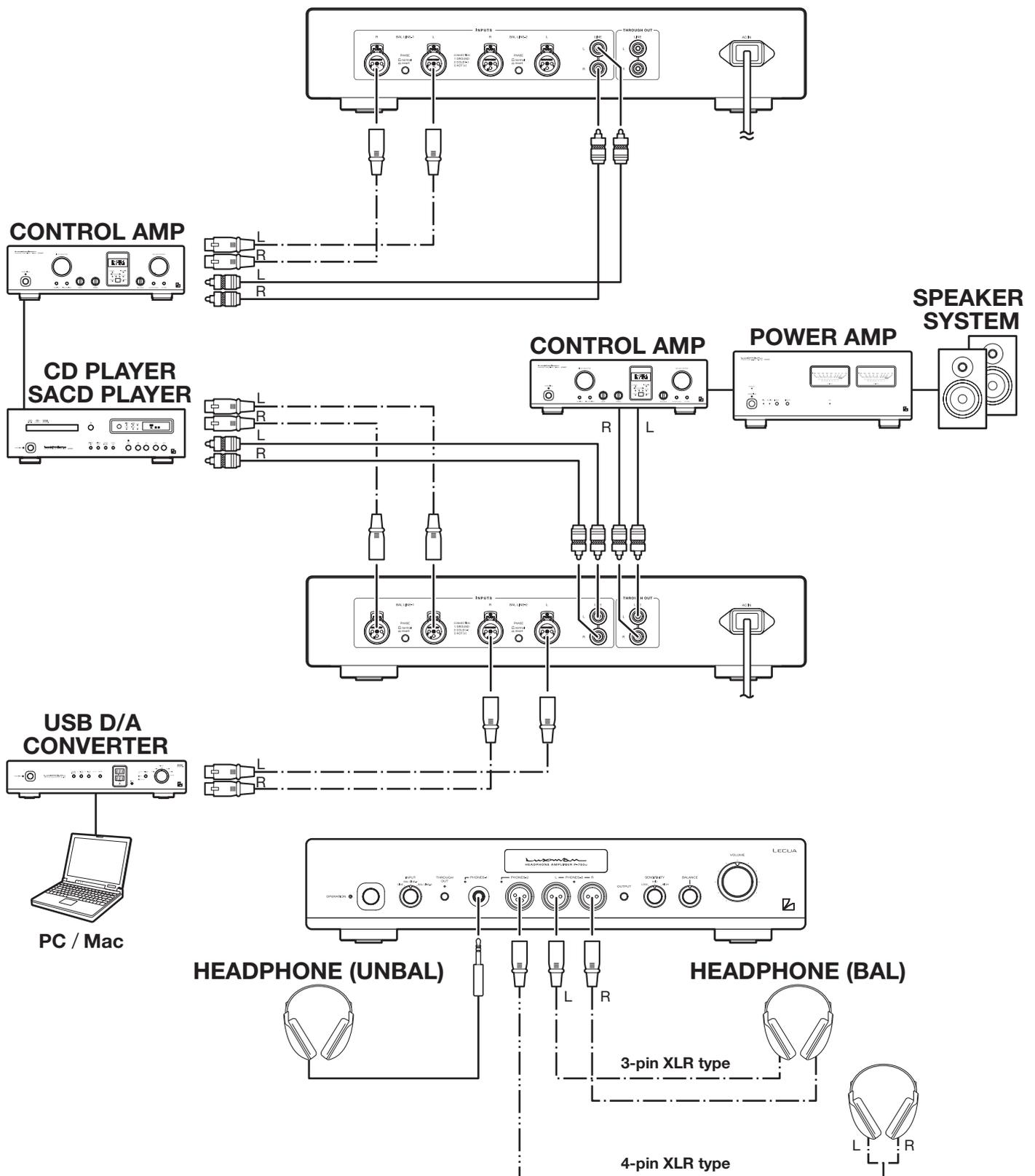
The memory reset procedure is complete.

If any abnormality is detected by this unit upon powering up, all of the indicators will blink. If such a condition is encountered, turn off the power to the unit at once. Turn the power back on and wait to see if normal operation mode is activated. If the system is normal, the memory is reset and the system will be activated in a factory default state. If the abnormality persists, power off the unit and please contact your country's official LUXMAN distributor for a repair or service.

Factory default

Item	Default
THROUGH OUT	off
OUTPUT	PHONES-1

# Connections



## Before connecting

Before connecting this unit to any other input/output devices, ensure that the IEC connector of the supplied AC power cable is firmly connected to the AC power inlet on the back of the unit.

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**Before making any connections, turn off the operation switch to power off the unit and ensure all other input and output devices are also powered off to avoid any unexpected accidents or problems resulting from noise.**

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## How to connect the AC power supply

Use the supplied AC power cable to connect the AC power inlet to an AC power socket on the wall of your listening area.

## How to connect input devices

Connect the input terminals of this unit to the output terminals of input devices such as a CD player, SACD player or the record output of a control amplifier. Connect the RCA unbalanced line inputs of this product to the RCA output terminals of an input device using RCA cables. Connect the balanced XLR input terminals of this device to the balanced XLR output terminals of input devices using XLR cables.

Use the input selector switch to select an input device, set to LINE to select input devices connected to the unbalanced line input (LINE) or set to BAL LINE-1 or BAL LINE-2 to select input devices connected to the two balanced line inputs.

## How to connect balanced headphones

With the volume control turned fully counter-clockwise to set the volume level to zero, insert the XLR connector(s) of your balanced headphones into the terminals on the front panel of the unit. If the connector is a 4-pin XLR, connect it to the PHONES-2 terminal, if your headphones have two 3-pin XLR connectors, connect them to the PHONES-3 terminals, paying attention to the left (L) and right (R) configuration. You may now adjust the volume control to the desired level.

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**The applicable impedance range of this unit is 16Ω to 600Ω for balanced headphones.**

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## How to connect unbalanced headphones

With the volume control turned fully counter-clockwise to set the volume level to zero, insert the 1/4 inch stereo jack plug of your unbalanced headphones into the stereo jack socket PHONES-1 on the front panel of this unit. You may now adjust the volume control to the desired level.

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**The applicable impedance range of this unit is 8Ω to 600Ω for unbalanced headphones.**

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**CAUTION:** Attention must be paid to the volume level because this product is capable of high powered output levels. Be sure to rotate the volume control fully counter-clockwise to reduce the volume to zero before turning the power on or off or before connecting or disconnecting headphone connector(s) to prevent any damage to headphones or hearing.

## How to connect the through output

The through output (THROUGH OUT) on the rear panel of this product may be used when an input device connected to the line inputs (LINE) of this unit only has one stereo pair of outputs. It is possible to connect the through output of this unit to the input of a control amplifier or integrated amplifier. To enjoy listening on headphones, set the through output to off. When not using headphones, turn the volume control fully counter-clockwise to set the volume to zero and set the through output to on. The signal from an input device connected to the line inputs will be directly connected to the through output and can be reproduced via a connected amplifier and speakers.

When this unit is powered off, the line input is automatically connected to the through output regardless of the through output selector switch position (on or off).

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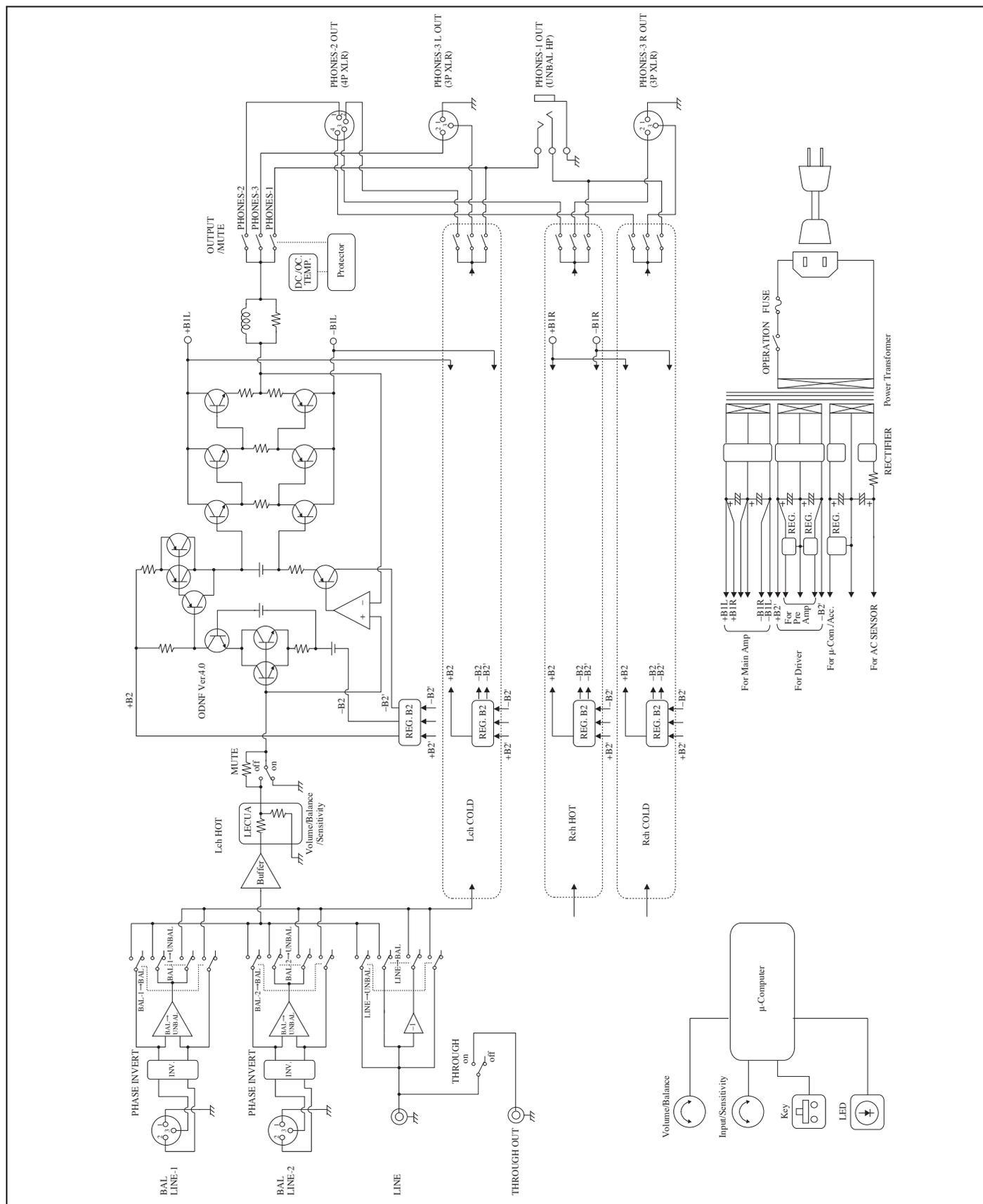
**In a situation where the output impedance of an input device is high and the input impedance of a device connected to the through output is low, this product's headphone output level will be reduced**

**CAUTION:** Whenever the power to this unit is switched on or off, ensure that the volume control of the amplifier connected to the through output of this unit is set to zero. Failure to observe this may generate unwanted noise and lead to possible damage of the output amplifier and speakers.

It is recommended that you set the through output control switch to off when listening using headphones.

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# Block Diagram



# Specifications

  
HEADPHONE AMPLIFIER P-750u

<b>Rated output</b>	UNBAL : 4 W + 4 W (8 Ω), 1 W + 1 W (32 Ω) BAL : 8 W + 8 W (16 Ω), 4 W + 4 W (32 Ω) [UNBAL: PHONES-1 output, BAL: PHONES-2 output, PHONES-3 output,]
<b>Input sensitivity</b>	LINE → UNBAL : 1 V (SENSITIVITY HIGH) BAL LINE → BAL : 2 V (SENSITIVITY HIGH) LINE → BAL : 2 V (SENSITIVITY HIGH) BAL LINE → UNBAL : 1 V (SENSITIVITY HIGH)
<b>Input impedance</b>	LINE : 15 kΩ (THROUGH OUT OFF) BAL LINE : 40 kΩ
<b>Total harmonic distortion</b>	LINE → UNBAL : 0.003 % (8 Ω, 1 kHz, 1 W, both CHs simultaneous drive) BAL LINE → BAL : 0.002 % (16 Ω, 1 kHz, 1 W, both CHs simultaneous drive)
<b>S/N ratio</b>	LINE → UNBAL : 113 dB or more (IHF-A weighted, input short) BAL LINE → BAL : 116 dB or more (IHF-A weighted, input short)
<b>Frequency response</b>	LINE → UNBAL : 20 Hz to 20,000 Hz (+0, -0.1dB) 10 Hz to 170,000 Hz (+0, within -3 dB) BAL LINE → BAL : 20 Hz to 20,000 Hz (+0, -0.1dB) 10 Hz to 170,000 Hz (+0, within -3 dB)
<b>Supplied functions</b>	<ul style="list-style-type: none"><li>• Balance control</li><li>• Headphone output selection</li><li>• Input selection</li><li>• Unbalanced headphone jack (PHONES-1) ×1 line</li><li>• 4-pin XLR balanced headphone output (PHONES-2) ×1 line</li><li>• 3-pin XLR balanced headphone output (PHONES-3) ×1 line</li><li>• Sensitivity selection</li><li>• Through output selection</li></ul>
<b>Accessories</b>	<ul style="list-style-type: none"><li>• Owner's Manual (This document)</li><li>• Safety cautions</li><li>• Power cable</li></ul>
<b>Power supply</b>	230 V ~ (50 Hz)
<b>Power consumption</b>	40 W 27 W (at no input)
<b>Max. external dimensions</b>	440 (W) × 92 (H) × 400 (D) mm (front side knob of 14 mm and rear side terminal of 6 mm included in depth)
<b>Weight</b>	13.3 kg (main unit)

\* Specifications and appearance are subject to change without notice.

# Before Asking for Repair Service

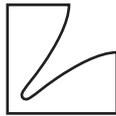
While in use, this unit may display phenomena which may be confused as malfunctions. Before contacting your country's official LUXMAN distributor for repair services, please read the operating instructions and operating instructions for any connected input and through output devices and check the troubleshooting table below. If the cause of the malfunction cannot be identified, please contact your dealer. After LUXMAN's representatives have accepted your request for repair services, inspection fees and transportation expenses may be claimed, even though the unit may be found to be operating normally.

Problem	Cause	Solution
No power is supplied even though the operation switch is pressed.	• The AC plug is disconnected from the wall outlet, or it is not completely inserted.	• Insert the AC plug in the wall outlet completely.
	• The power cable is disconnected from the AC inlet, or it is not inserted completely.	• Securely insert the power cable in the AC inlet completely.
No sound is generated.	• The volume control is set to the minimum level.	• Adjust the volume control.
	• Connection is not securely made.	• Make cable connections securely.
	• RCA cables and balanced cables are incorrectly matched.	• Match the cable type to be used with the setting of the input selector switch.
	• The selected item of the input selection switch of the control amplifier is not appropriate.	• Properly adjust the input selector of the control amplifier.
	• The volume control of the input device such as a control amplifier is set to a lower level.	• Adjust the volume control of the input device such as a control amplifier.
	• The REC OUT output of the input device such as a control amplifier is set to off.	• Set the REC OUT output to on.
No sound comes out from one side.	• The balance volume of the input device leans to one side, right or left.	• Set the balance volume to the center or your favorite balance.
	• The connecting cable is not connected on one side only.	• Connect the cable correctly.
No signal comes from the through output.	• The through switch is set to off.	• Set the through switch to on.
Protection mode is activated when connecting or disconnecting headphones.	• The volume control is largely rotated clockwise.	• Rotate the volume control fully counter-clockwise, setting the volume level to zero when connecting or disconnecting headphones.
Humming sound (boon or zzz noise) is generated.	• The grounding side of the connection cable has no contact with the terminal.	• Make cable connections securely.
	• Induction noise is picked up from a power transformer of another device.	• Install the unit away from other devices and sources of induction.
	• The headphone cable is too close to the power cable.	• Keep the headphone cable away from the power cable.



# MEMO





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