Luxman

HEADPHONE AMPLIFIER

P-100 CENTENNIAL

Owner's Manual

Contents

Precautions

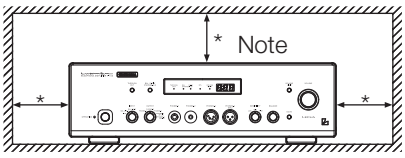
Installation place

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 when connecting to other components

When connecting this unit to other input devices, such as a CD player, SACD player, D/A converter or tuner, be sure to take off the headphone and turn off the power to this unit and all other connected devices first. Failure to observe this may generate a dangerous noise shock resulting in headphone damage and may cause malfunctions. The connectors to each input terminal of this unit must be pushed in firmly. If the grounding terminal is inadequately connected, noise or hum, may be generated, resulting in an adverse S/N ratio.

Protection circuit

This product is equipped with a protection circuit that is activated upon detecting overcurrent, abnormally high temperatures and DC output to protect the amplifier and headphone. When the protection circuit is activated, the output to the headphone terminals will be shut off and the operation indicator will blink to show that this unit is muted. When the cause of the operated protective circuit disappears, the operation indicator lights up blue again to indicate that the unit is back in operation. If the protection circuit operates frequently, please consult your dealer.

Sound is not generated shortly after the power supply is turned on.

This unit is equipped with a timed muting circuit to interrupt the output to the headphone output terminal. Therefore, no sound will be generated for a short time after the power supply is turned on.

If the volume control of this unit or the volume control of an input device such as a CD player is set to a high level during muting, a loud sound will be generated suddenly when the time muting is released and this unit is in operation. Set the volume control to a low level first and then adjust it after you hear the sound from the headphone.

Plugging and unplugging the headphone plug

Due to the structure of the headphone jack (unbalanced), the L and R channel outputs are temporarily shorted while the headphone is plugged or unplugged.

If the volume control is turned too far to the right, an excessive current will flow to the headphone amplifier outputs, causing the overcurrent detection circuit to activate, which may cause muting state and malfunctions. When plugging or unplugging the headphone plug, turn the volume control all the way to the left or turn off the input signal with no signal state.

Repair and adjustment

When repairs or adjustments are needed, please consult the dealer who sold you the unit.

Cleaning

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

Precautions for using headphones

Prolonged use of headphones at loud, ear-irritating volumes may damage your hearing.

Safety caution

Caution

This unit is heavy. Be careful when unpacking, carrying, and installing it.

Features of This Unit

LECUA-EX — Luxman Electronically Controlled Ultimate Attenuator-Excellent eXperience —

Our unique sound volume adjustment mechanism LECUA, that is the integrated electronic control of a high precision attenuator and an amplifier circuitry, is now integrated with a heavy rotation mechanism which offers excellent control feeling and employed here as LECUA-EX.

Fine sound volume is adjustable by 0.5 dB steps from 0 dB through –99.5 dB is possible with no deterioration in sound quality.

LIFES — Luxman Integrated Feedback Engine System —

ODNF, Luxman's original amplification feedback circuitry, has been renewed, and LIFES, our newly developed feedback engine, is incorporated right at the heart of this amplifier, developing a richer sound quality.

Through adopting a dual FET into the input section of the sub amplifier, which detects the distortion of the sound signal, and adopting a dual transistor in the cascode circuit and current mirror circuit, sound quality has been improved throughout the amplification circuit with straightforward sound quality that seems to be created with a non-feedback amplifier and excellent high frequency characteristics thanks to the NFB.

High-quality balanced/unbalanced headphone amplifier supporting for balanced headphones

Equipping with independent 4-channel discrete amplifiers of the same quality, enables to support balanced headphone connections. Including the straight transmission of the balanced inputs and outputs, the unbalanced inputs and outputs are supported for straight transmission with parallel connection of 2 channel amplifiers each for L/R. This configuration provides powerful driving force.

It also supports conversion from balanced input to unbalanced headphones and from unbalanced input to balanced headphones.

Independent L/R transformers

Separation has been improved by equipping the L and R channels with independent power transformers dedicated to their respective amplifier circuits.

In addition, a transformer dedicated to accessory circuits for relay switching, etc. is also provided.

Highly stable power supply

The highly stable power supply circuitry is further enhanced by combining a high-capacity OI-core type power transformer and custom-specification block capacitors of 10,000 µF x 2 for the L and R channel power amplifier stages and 3,300 µF x 2 for the driver stages.

Parallel speaker relays

Large speaker relays with low resistance values, which are also used for our integrated amplifiers, are mounted in a 2-parallel configuration to reduce the impedance of the headphone output line.

(except when PHONES-2 or 3 G-DIV is set)

Beeline construction

This ensures that the audio signal path takes the optimum shortest route from input to headphone output.

Selector relay

A selector relay with high sound quality is used in the key point of the LUXMAN amplifier, which enhances the separation and crosstalk performance.

Schottky barrier diodes

By using Schottky diodes, manufactured by KYOCERA Corporation, this unit achieves very high DC conversion efficiency in the power rectifier circuitry and much less switching noise.

LUXMAN's original OFC wiring

Our original OFC cable, with non-plated core wire, is used for internal wiring to achieve smooth signal transmission.

Non-angled circuitry

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

Sensitivity selector

The sensitivity can be switched between HIGH, MID, and LOW in accordance with the efficiency of the headphones to be used.

Through output button

The output of the line (LINE) input signal to the through output terminal can be turned ON, OFF.

18 mm pitch RCA terminals

We have used 18 mm pitch RCA input/output terminals (all RCA terminals) to support high quality audio cables with large plugs.

BTL connection mode (PHONES-4)

The BTL connection mode with 2 units of this unit has achieved a high-quality and monaural balanced amplifier configuration with two channels each connected in parallel to HOT/COLD of each unit.

Balanced headphone output terminal (PHONES-3)

High-quality XLR terminal of non-locking type are used for safety as well as reliability. Equipped with 4-Pin XLR terminal for integrated L/R.

Balanced headphone output terminal (PHONES-2)

Equipped with ø4.4 mm balanced headphone terminal.

Cast-iron insulators

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

---

* Balanced headphone and headphone amplifier

- Balanced headphones are headphones that drive the headphone driver unit with positive-phase (HOT) and reverse-phase (COLD) signals and are compatible with a 4-core system that is separated L/R ground (COLD side). Generally, a 3-Pin XLR (L/R separate) or 4-Pin XLR (L/R integrated) type balanced connector or ø4.4 mm (L/R integrated) type balanced plug is used. Since there is no L/R grounding and the L/R COLD signal is separated, playback with good separation is possible without being affected by the grounding of the connected equipment.
- Similarly, the balanced headphone amplifier has independent positive-phase (HOT) and reverse-phase (COLD) amplifiers for each L/R channel, so that the drive current of the headphones does not flow to ground, and the headphones are driven powerfully from small signals to large signals. The balanced headphone terminals of this unit have the following signal arrangement.

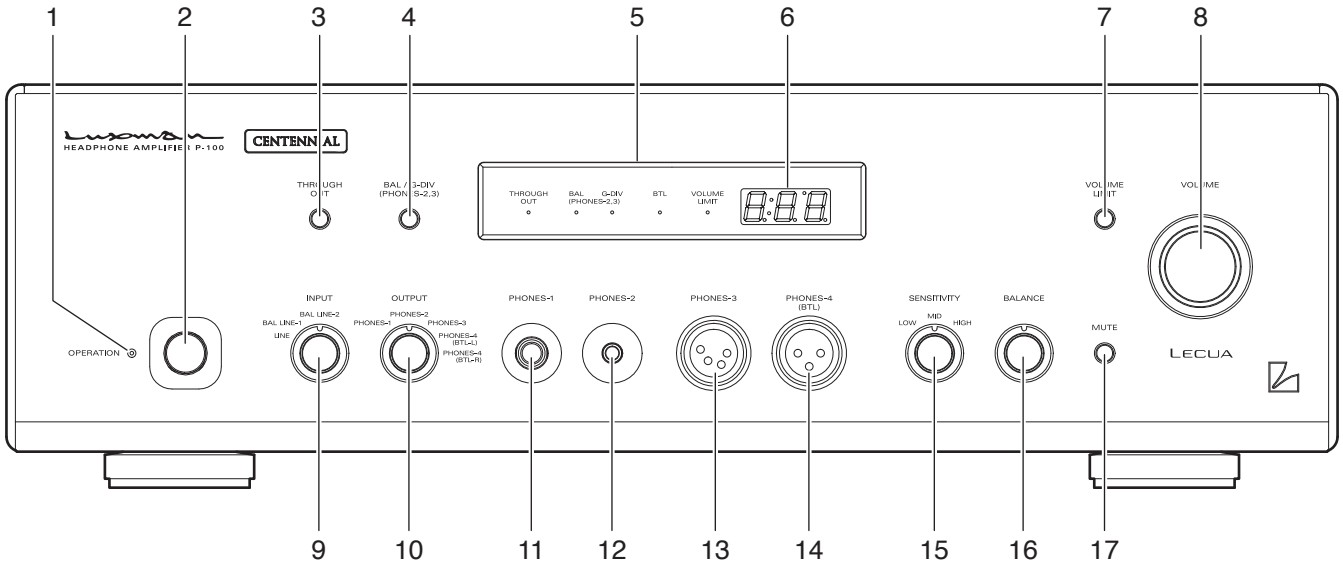
4.4 mm jack (PHONES-2)
① Lch HOT (Positive-phase)
② Lch COLD (Reverse-phase)
③ Rch HOT (Positive-phase)
④ Rch COLD (Reverse-phase)

4-Pin XLR (PHONES-3)
① Lch HOT (Positive-phase)
② Lch COLD (Reverse-phase)
③ Rch HOT (Positive-phase)
④ Rch COLD (Reverse-phase)

3-Pin XLR (PHONES-4)
① GROUND
② HOT (Positive-phase)
③ COLD (Reverse-phase)

Names and Functions

Front panel



1. Operation indicator (OPERATION)

The blue light blinks for a certain period of time immediately after the operation button is turned on during preparation (no sound is generated during this time).

When the time muting is cancelled and the unit is ready for operation, the light turns on.

If an overcurrent is applied to the headphone output, DC voltage is generated, or this unit becomes abnormally hot, this indicator will blink blue to indicate that this unit is in muting condition. When the cause is removed, the indicator will light up blue again to indicate that this unit is in operation. If this indicator blinks blue frequently during operation, please consult your dealer.

---

2. Operation button (OPERATION)

Toggles the power on and off.

When wiring or connection is performed, be sure to turn off this button.

⏍ ON: This unit is turned on.
The operation indicator lights up when this unit is turned on.

⏍ OFF: This unit is turned off.

3. Through output button (THROUGH OUT)

This button is used to select ON or OFF for outputting the input signal of a CD player or other device connected to the line input terminal of this unit to the through output terminal. When the button is turned on, the line input signal is output to the through output terminal. When the button is turned off, the line input signal is not output to the through output terminal. This button toggles the through output on and off. When the through output is on, the THROUGH OUT indicator in the display window lights orange.

In a state where the power is off, line input signals will always be output from the through output terminals regardless of whether this button is on or off.

The input signals connected to the balanced line input will not be output from the through output terminals.

---

4. BAL/G-DIV output selector button (BAL/G-DIV)

This button switches the output setting between BAL and G-DIV (UNBAL) when PHONES-2 or 3 is selected.

The selected indicator lights up in the display window.

Use depending on your preference.

BAL: This is a balanced output mode in which the positive phase (HOT) and reverse phase (COLD) of each L/R channel are output by independent amplifiers.

G-DIV (GROUND DIVIDE):

This is an unbalanced output mode in which the positive phase (HOT) terminals of each L/R channel of the balanced headphones are output through parallel connections of two channel amplifiers to improve driving force. In this mode, the reverse phase (COLD) terminals are connected to the ground line of the L/R channels separately and independently.

5. Display window

Displays the operation status of this unit.

This display is composed of 5 indicators and sound volume indicator.

6. Sound volume indicator

Indicates the amount of volume attenuation in –dB.

7. Volume limit button (VOLUME LIMIT)

This button sets an upper limit to the volume level to protect your ears from excessive sound pressure. The VOLUME LIMIT indicator lights up in the display window when the button is enabled. This button toggles on and off. The volume limit is initially set at –10 dB.

8. Volume control (VOLUME)

Adjusts the sound volume.

Since a rotary encoder is employed and the knob is a full-rotation type, adjust the sound volume while monitoring the sound volume indicator of 6 above.

Sound will be muted (––– display) when this control is rotated fully counterclockwise and reached the end. Volume will gradually increase as the control is rotated clockwise as follows: mute → –99.5 dB → –99.0 dB → ... → 0 dB in steps of 0.5 dB.

When plugging in or unplugging the headphone plug, turn the volume control in the state of minimum position.

9. Input selector (INPUT)

Selects the line input terminal (LINE) or balanced line input terminal (BAL LINE-1, BAL LINE-2), both of which are located on the rear panel.

10. Headphone selector (OUTPUT)

This is an output selector for headphone output terminals PHONES-1 (ø6.3 standard jack), PHONES-2 (ø4.4 balanced jack), PHONES-3 (4-Pin XLR), PHONES-4 (BTL-L) (3-Pin XLR for L channel), PHONES-4 (BTL-R) (3-Pin XLR for R channel).

PHONES-4 is for BTL only and is selected when two units of the main unit are used as monaural balanced amplifiers, one for the left (BTL-L) channel and the other for the right (BTL-R) channel.

When PHONES-4 (BTL-L) or (BTL-R) is selected, the BTL indicator lights up on the display window.

11. Unbalanced headphone jack (PHONES-1)

Insert the headphone plugs of the headphones to be used.

Use headphones with an impedance of 8 Ω or higher.

12. ø4.4 mm balanced headphone jack (PHONES-2)

Insert ø4.4 mm headphone plugs of the headphones to be used.

When BAL output is selected with the BAL/G-DIV output selector button, use headphones with an impedance of 16 Ω or higher.

When G-DIV (UNBAL) is selected, headphones with an impedance of 8 Ω or higher can be used.

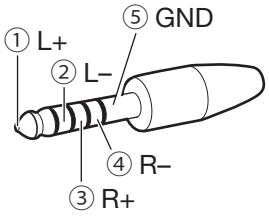
The ø4.4 mm jack output terminal of this unit outputs signals as shown in the figure below.

When BAL output is selected

① Lch HOT
② Lch COLD
③ Rch HOT
④ Rch COLD
⑤ Connect GND via capacitor

When G-DIV(UNBAL) is selected

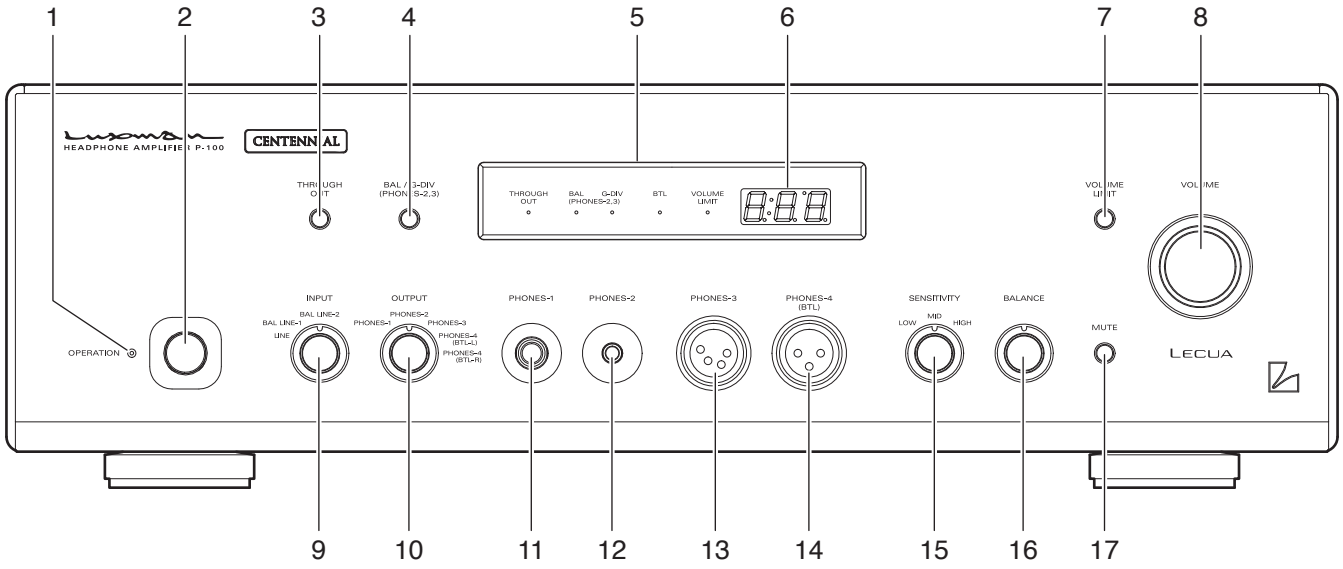
① Lch Output
② Lch GROUND
③ Rch Output
④ Rch GROUND
⑤ Connect GND via capacitor



4.4 mm Headphone plug

Names and Functions

Front panel



13. 4-Pin XLR balanced headphone output terminal (PHONES-3)

Insert 4-Pin XLR balanced headphone connector of the headphones to be used.

When BAL output is selected with the BAL/G-DIV output selector button, use headphones with an impedance of 16 Ω or higher. When G-DIV (UNBAL) is selected, headphones with an impedance of 8 Ω or higher can be used.

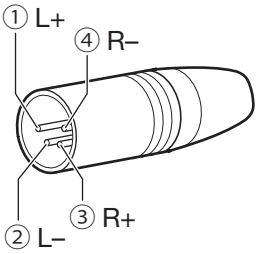
The 4-Pin XLR output terminal of this unit outputs signals as shown in the figure below.

When BAL output is selected

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

When G-DIV(UNBAL) is selected

① Lch Output
② Lch GROUND
③ Rch Output
④ Rch GROUND



4-Pin XLR connector

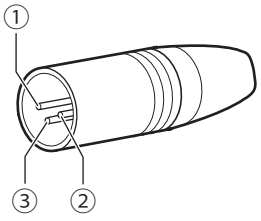
14. 3-Pin XLR balanced headphone output terminal (PHONES-4(BTL))

PHONES-4 is used when using two units of this unit as a monaural balanced amplifier with BTL only.

Insert left and right side of 3-Pin XLR balanced headphone connector of the headphones together for each channel to be used. Use headphones with an impedance of 16 Ω or higher.

The balanced output terminal of this unit outputs signals as shown in the figure below.

① GROUND
② HOT
③ COLD



3-Pin XLR connector

15. Sensitivity selector (SENSITIVITY)

Selects HIGH, MID, or LOW in accordance with the efficiency of the headphones to be used.

If the headphone efficiency is low and the sound volume is insufficient even when the volume control is turned up, set to HIGH.

On the other hand, if the headphone efficiency is high and it is difficult to control the volume, set to LOW.

The sensitivity setting of this unit is set as follows.

HIGH: 0dB
MID: –6 dB
LOW: –12 dB

16. Balance control (BALANCE)

Adjusts the relative volume of the right and left channels.

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

This knob should be set to the center position under normal conditions, and rotated to make adjustment if necessary.

Adjustment value of the left and right balance of this unit can be set within the range up to –12 dB for each of left and right.

17. Mute button (MUTE)

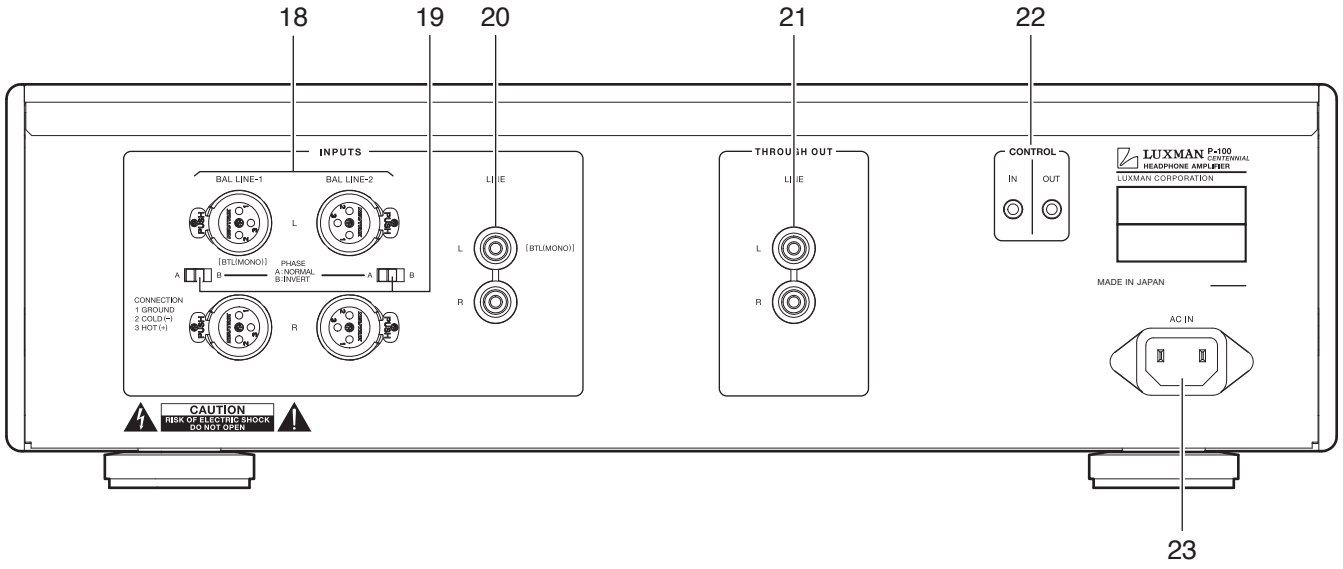
When this button is pressed and the mute function is activated, and the operation indicator will start blinking and there will be no audio output.

The volume can be adjusted even when the mute is on.

Pressing this button again sets the mute function to off.

Names and Functions

Rear panel



18. Balanced input terminals/INPUTS (BAL LINE-1, BAL LINE-2)

XLR connector input terminal to input balanced signals of a line level.

Connect these terminals to the balanced output of an input device such as a CD player using balanced cables.

When PHONES-4 (BTL-L) (BTL-R) is selected and used in BTL connection mode, connect to BAL LINE-1 [BTL (MONO)].

19. Balanced input phase switch (PHASE)

This switch is used to invert (180°) the phase of the balanced signal input to this unit.

NORMAL is the positive phase and INVERT is the reverse phase.

A: NORMAL position ① GROUND
② COLD (–)
③ HOT (+)

B: INVERT position ① GROUND
② HOT (+)
③ COLD (–)

20. Line input terminals (unbalanced) / INPUTS (LINE)

This is an input terminal to input unbalanced signal at line level.

Connect this terminal to the unbalanced output of an input device such as a CD player using pin-plug cables.

When PHONES-4 (BTL-L) or (BTL-R) is selected, connect to LINE [BTL (MONO)].

21. Through output terminals (THROUGH OUT)

This output terminal directly outputs the input signal connected to the line input terminal.

Through output signal is not affected by the volume control of this unit.

22. Control terminal (CONTROL)

This terminal is used to adjust the volume externally.

In the case of BTL connection mode where the two units of this unit are used with PHONES-4 (BTL-L) and (BTL-R), the volume can be linked by connecting IN-OUT of each unit with two commercially available 3.5 mm monaural mini-plug cables.

When PHONES-1,2,3 is selected, connect a 3.5 mm monaural mini-plug cable from OUT of a LUXMAN product with a control terminal to IN of this unit, and use a remote controller (RA-17A, etc.) that can control the volume of the pre-main amplifier, which can turn up/down the volume.

23. AC inlet (AC IN)

Connects the accessory power cable. The power should be supplied from a household wall socket.

Memory

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

Item	Settings
THROUGH OUT	on/off
BAL/G-DIV (PHONES-2, 3)	BAL/G-DIV (UNBAL)
VOLUME LIMIT	on/off
Volume limit setting	L10/L20/L30/L40/ L50 (–dB)
Volume level	Configured dB value

Memory reset

All settings can be restored to the factory defaults by the following steps:

(1) Turn off the power of this unit. (Wait at least 5 seconds)

(2) Press the operation button on the main unit while pressing the MUTE button on the main unit for power on.

(3) After 5 seconds, the four indicators THROUGH OUT/ BAL/G-DIV/BTL will light up.

(4) Hold down the MUTE button and press VOLUME LIMIT once to turn on the VOLUME LIMIT.

(5) Release the MUTE button.

(6) The unit enters power-on operation and enters the operating state with the factory default.

This will fully reset the memory.

In case of an error occurred

If an error is detected during power-on, all indicators will blink.

If this condition occurs, turn off the power of this unit once. If the power is turned on again and this unit is normal, the memory will be reset and the unit will operate at the factory default.

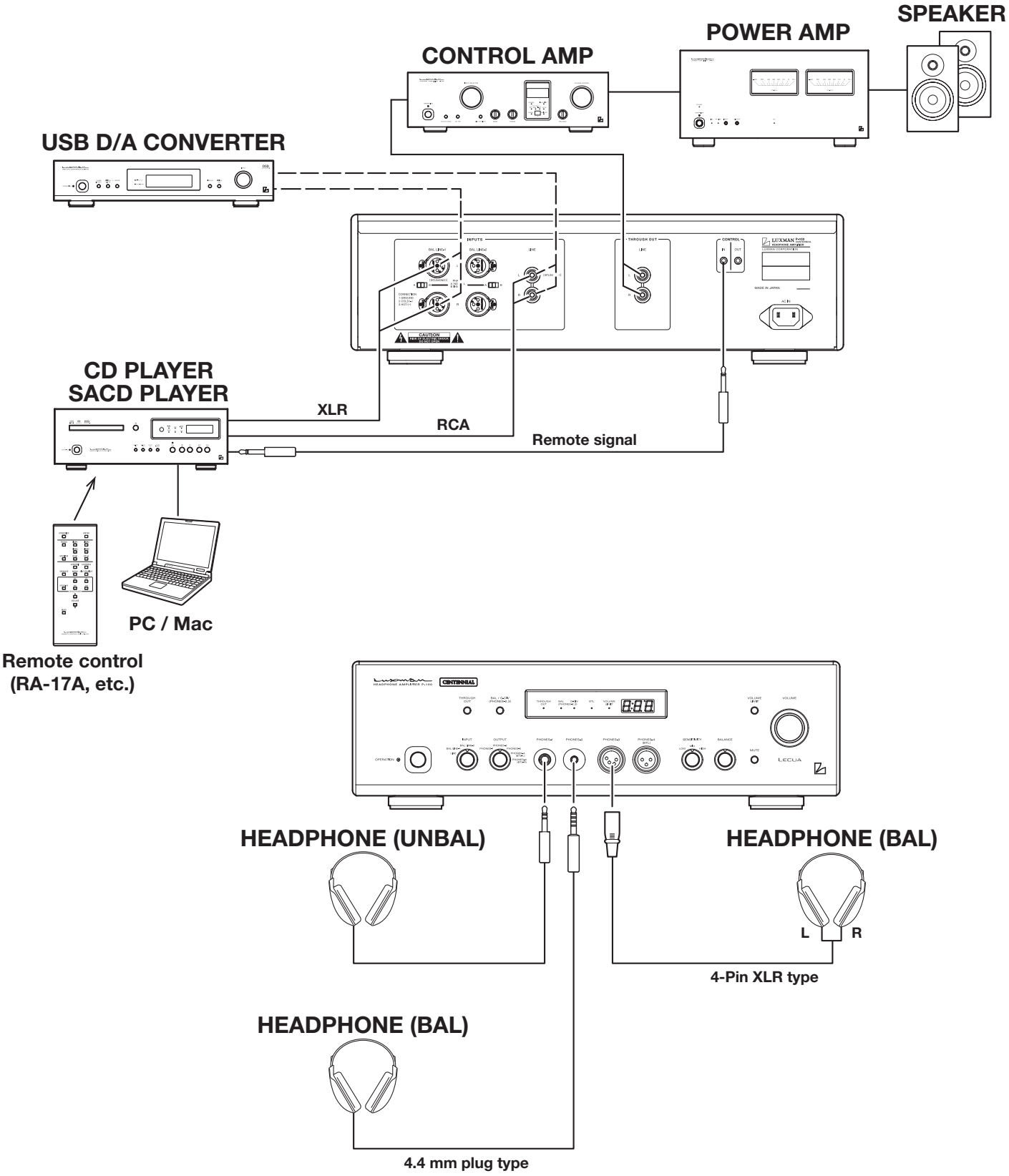
If the error condition occurs again, please contact our service center.

Factory default

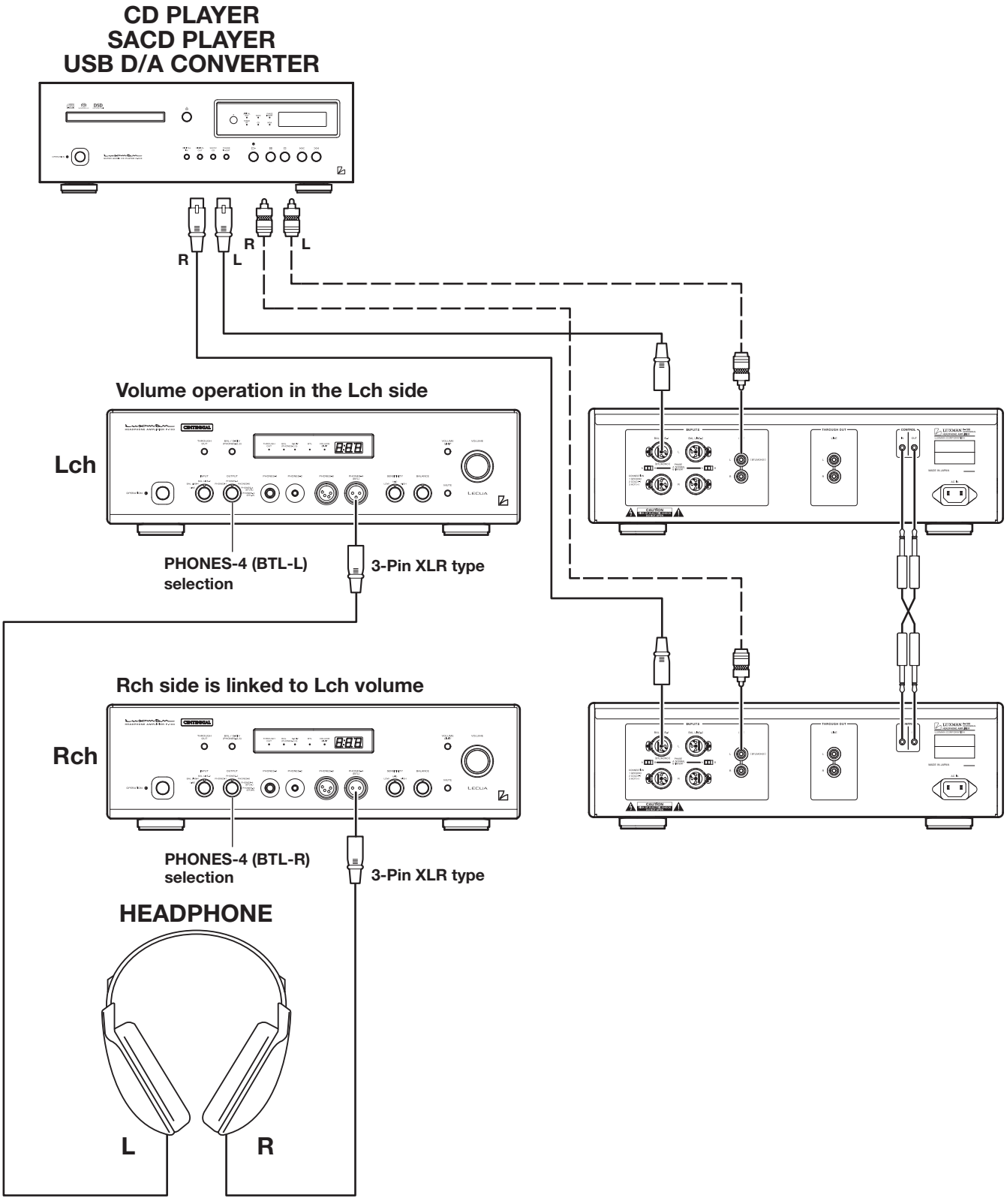
Item	Settings
THROUGH OUT	off
BAL/G-DIV (PHONES-2, 3)	BAL
VOLUME LIMIT	off
Volume limit setting	L10 (–dB)
Volume level	Minimum (mute/––– display)

Connections

Normal stereophonic reproduction



BTL stereophonic reproduction



Connections

Before Connecting

Before connecting other devices, connect the jack side of the accessory power cable to the AC inlet of this unit.

Before connection, turn off the main power switch of this unit and the power of all other connected devices to prevent unexpected accidents that may be caused by noise.

Connecting to the power supply

Insert the accessory power supply cable plug into an AC outlet on the wall of the listening room.

How to connect input devices

Connect the audio output terminal of an input device such as a CD player and SACD player, or the recording output (REC OUT) terminal of a control amplifier to the input terminal of this unit. If the output from the device was taken with an RCA pin cable, connect it to the line input terminal on this unit. If the output was taken with a balanced cable (XLR connector), connect it to the balanced line input terminal on this unit. At this time, set the input selector to the input you wish to listen to connected. When connected to the line input terminal, set the selector to LINE, and when connected to the balanced input terminal, set the selector to the connected BAL LINE-1 or BAL LINE-2.

Balanced headphone connection

Insert a balanced 4.4 mm plug into the balanced headphone output PHONES-2 and insert a 4-Pin XLR connector into the balanced headphone output PHONES-3.

When using PHONES-4 (BTL-L) and PHONES-4 (BTL-R), insert a 3-Pin XLR connector into each of the two units, left and right side together.

The compatible impedance of the headphones is from 16 Ω to 600 Ω.
When G-DIV (unbalanced) is selected for PHONES-2 and 3, use from 8 Ω to 600 Ω.

Unbalanced headphone connection

Insert your headphones into the headphone jack (PHONES-1).

The compatible impedance of the headphones is from 8 Ω to 600 Ω.

Since this unit has a high output power, please be careful with the volume level. To prevent unexpected problems, always set the volume control to the minimum position when turning the power ON/OFF and when plugging in and unplugging the headphones.

Through output connection

Use this through output terminal when you want to connect the line signal to the line input terminal of this unit when the input device has only one output terminal and you also want to connect the line signal to a control amplifier or integrated amplifier. Connect the through output terminal and the line input terminal of the control amplifier or pre-main amplifier with an pin-plug cable.

Turn off the through output when enjoying music through headphones.

To enjoy music through your speaker system, turn on the through output. The through output when this unit is turned off, outputs the line input signal regardless of whether the through output button is ON/OFF.

If the output impedance of the input device is large and the input impedance of the device connected to the through output is small, the headphone output will be reduced.
Also, turn down the volume control of the device connected to the through output when turning ON/OFF this unit. Failure to observe this may generate noise.
It is recommended to turn off the through output when listening to headphones.

BTL connection

Selecting PHONES-4 (BTL-L) or (BTL-R) enables the BTL connection mode using two units of this unit.

Connect the left channel [BTL (MONO)] input and left channel headphone XLR connector to the BTL-L selected side, and the right channel [BTL (MONO)] input and right channel headphone XLR connector to the BTL-R selected side. In addition, to link the volume values of the two units, connect the IN-OUT of each control terminal to each other with two commercially available 3.5 mm monaural mini-plug cables. In this case, volume operation is available only on the side with BTL-L selected (left channel side), and switches and volumes other than THROUGH OUT/MUTE on the side with BTL-R selected (right channel side) are disabled. The SENSITIVITY and BALANCE adjustments and VOLUME LIMIT settings for the BTL-L selected side are also applied to the BTL-R selected side.

Connection between the control terminal and other models (when not linked to PHONES-4BTL)

When PHONES-1, 2, or 3 is selected, it is possible to operate the volume by inputting the volume up/down signal to the control terminal through a remote control (RA-17A, etc.) that can operate the volume of the pre-main amplifier.

Use a commercially available 3.5 mm monaural mini-plug cable to connect a LUXMAN products (SACD/CD player, etc.) that has a control output terminal to the control input terminal of this unit. If the RA-17A or other device is used to control the volume while the connected device is turned ON, the volume value of this unit will change.

If a pre-main amplifier is included among the devices connected to the control input terminal, the volume of this unit and the pre-main amplifier will go up and down at the same time when the volume is operated with the remote control.

If you do not want the volume of this unit and the pre-main amplifier to go up and down at the same time, do not connect a cable to the control input terminals of the pre-main amplifier or turn off the speaker selectors of the pre-main amplifier (the audio output from the headphone output terminals of the pre-main amplifier will go up and down at this time).

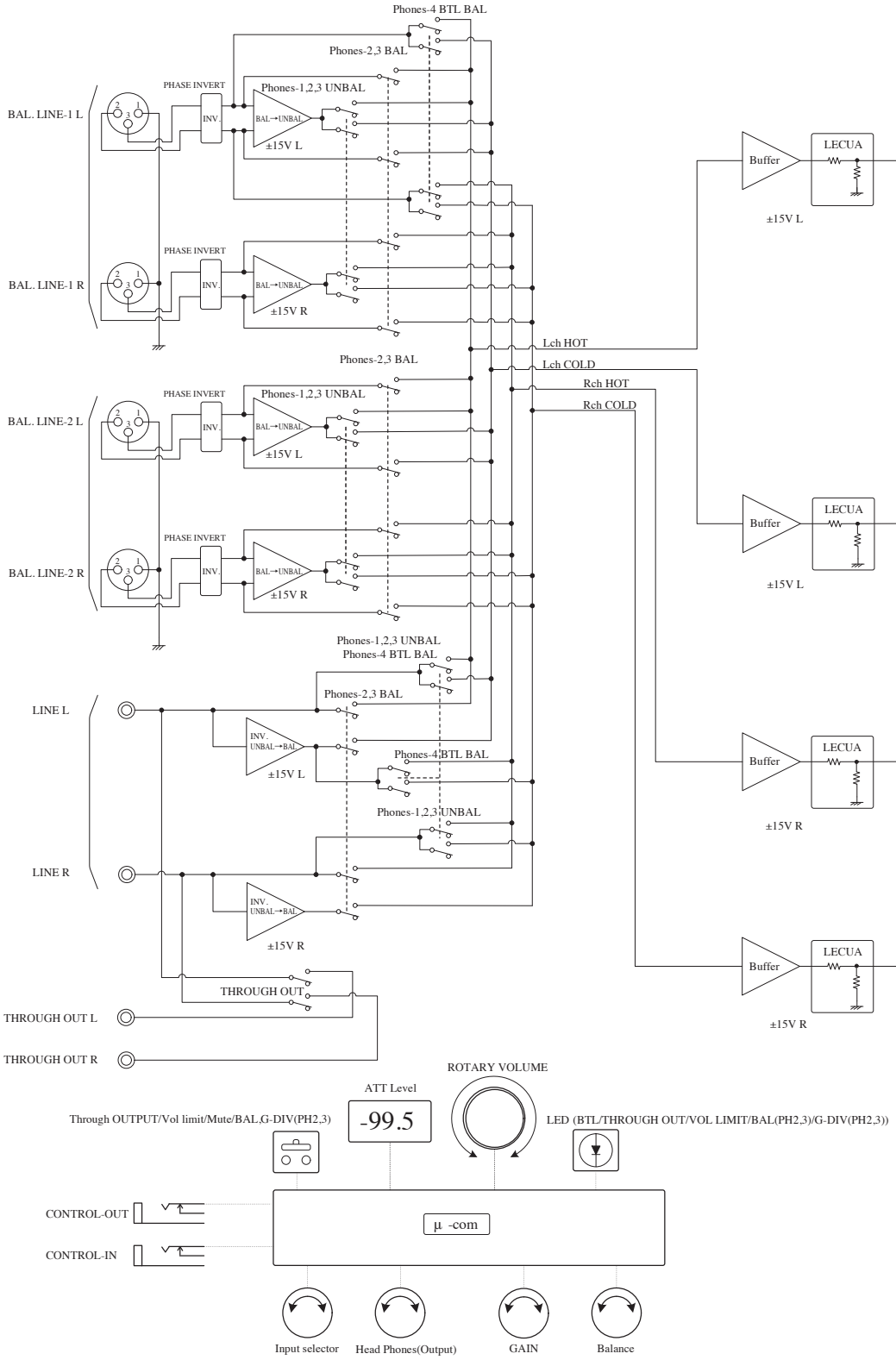
Volume limit setting

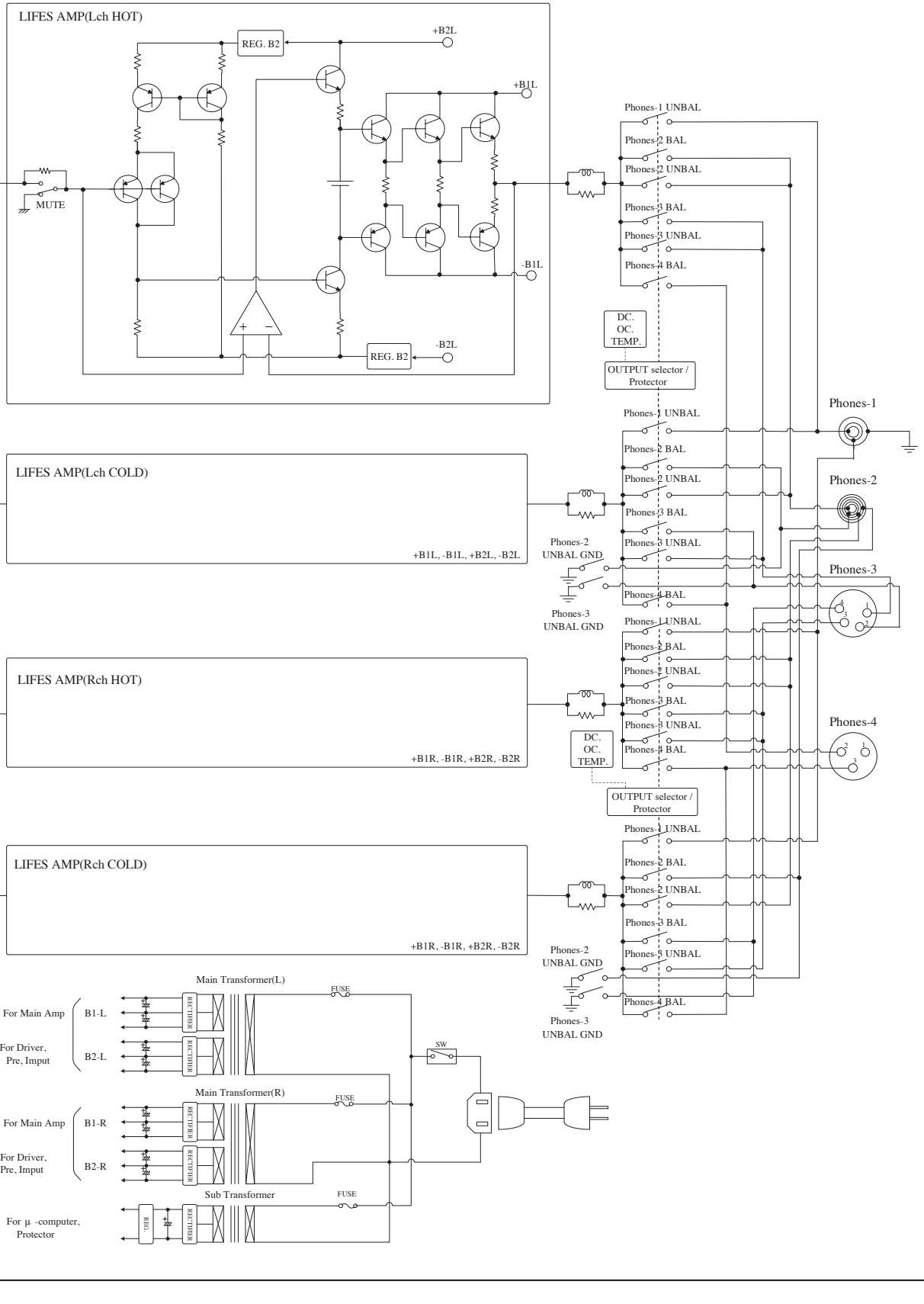
To prevent excessive sound pressure listening from stressing the ears or a sudden increase in volume due to incorrect volume operation, a volume limit can be set on this unit.

The volume limit can be set in 5 steps of 10/20/30/40/50 (–dB) in accordance with the following procedure.

1. Press and hold (2 seconds) the VOLUME LIMIT button while not playing or with headphones unplugged.
2. The current setting is shown blinking on the sound volume indicator (default value: “L10”).
3. Select from L10, L20, L30, L40, or L50 displayed on the volume control in the blinking state.
4. Function ON (indicator lights up) when 5 seconds elapses in the blinking state or when the setting is confirmed by pressing and holding (2 seconds) the VOLUME LIMIT button.

Block Diagram




LIFES AMP(Lch HOT)
REG. B2
+B2L
+B1L
MUTE
-B1L
-B2L
REG. B2
LIFES AMP(Lch COLD)
+B1L, -B1L, +B2L, -B2L
LIFES AMP(Rch HOT)
+B1R, -B1R, +B2R, -B2R
LIFES AMP(Rch COLD)
+B1R, -B1R, +B2R, -B2R
Phones-1 UNBAL
Phones-2 BAL
Phones-2 UNBAL
Phones-3 BAL
Phones-3 UNBAL
Phones-4 BAL
DC.
OC.
TEMP.
OUTPUT selector /
Protector
Phones-2
UNBAL GND
Phones-3
UNBAL GND
Phones-1
Phones-2
Phones-3
Phones-4
Main Transformer(L)
Main Transformer(R)
Sub Transformer
FUSE
SW
For Main Amp
For Driver,
Pre, Imput
B1-L
B2-L
B1-R
B2-R
For μ -computer,
Protector
RECTIFIER

Specifications

Rated output	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, PHONES-2 (G-DIV), PHONES-3 (G-DIV)
	BAL	: PHONES-2 (BAL), PHONES-3 (BAL), PHONES-4
Input sensitivity	LINE → UNBAL	: 1 V (SENSITIVITY HIGH)
	BAL LINE → BAL	: 2 V (SENSITIVITY HIGH)
	LINE → BAL	: 1 V (SENSITIVITY HIGH)
	BAL LINE → UNBAL	: 1 V (SENSITIVITY HIGH)
Input impedance	LINE	: 14 kΩ (THROUGH OUT OFF)
	BAL LINE	: 28 kΩ
Total harmonic distortion	LINE → UNBAL	: 0.0025 % (8 Ω, 1 kHz, 4 W, both CHs simultaneous drive)
	BAL LINE → BAL	: 0.0015 % (16 Ω, 1 kHz, 8 W, both CHs simultaneous drive)
S/N ratio	LINE → UNBAL	: 117 dB or more (IHF-A weighted, input short)
	BAL LINE → BAL	: 119 dB or more (IHF-A weighted, input short)
Frequency response	LINE → UNBAL	: 20 Hz to 20,000 Hz (+0, –0.1 dB) 10 Hz to 175,000 Hz (+0, within –3 dB)
	BAL LINE → BAL	: 20 Hz to 20,000 Hz (+0, –0.1 dB) 10 Hz to 175,000 Hz (+0, within –3 dB)
Supplied functions	• Volume display • Sensitivity • Through output • BAL/G-DIV • Mute • Balance control • Headphone output • Input • Volume limit • Phase inverter switch • Unbalanced headphone jack (PHONES-1) x1 • Balanced headphone jack (PHONES-2) x1 • 4-Pin XLR balanced headphone output (PHONES-3) ×1 • 3-Pin XLR balanced headphone output (PHONES-4) ×1	
Accessories	• Owner's Manual (This document) • Safety cautions • 100th Anniversary Model Greeting Card • Power cable	
Power supply	230 V ~ (50 Hz)	
Power consumption	67 W 47 W (at no input)	
Max. external dimensions	446 (W) × 136 (H) × 401 (D) mm (front side knob with 14 mm and rear side terminal with 8 mm included in depth)	
Weight	19.7 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 for any connected input and 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 button is pressed.	• The power plug is disconnected from the AC inlet or is not completely inserted.	• Insert the power plug completely in the wall outlet.
	• The power cable is disconnected from the AC inlet or is not completely inserted.	• Securely insert the power cable into the AC inlet.
Power is ON, but 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.
	• The input settings of the pin-plug cable and the balanced cable do not match.	• Correctly match the cable type to be used with the input selector.
	• The input selector of the control amplifier is not correct.	• Set the input selector of the control amplifier correctly.
	• The volume control of the input device such as a control amplifier is turned down.	• Adjust the volume control of the input device such as a control amplifier.
	• The REC OUT output of the control amplifier or other input device is turned off.	• Set the REC OUT to ON.
No sound is generated on one side.	• The balanced volume of the input device is set too far to the left or right.	• Adjust the balanced volume to the center or to the desired balance.
	• The connecting cable is not connected on one side.	• Connect the cable correctly.
No signal is generated from the through output.	• The through output button is turned off.	• Turn on the through output button.
Protection is activated when the headphone is plugged and unplugged.	• The volume control is set to the higher level.	• When plugging in or unplugging the headphone plug, turn the volume control in minimum.
Humming sound is generated.	• The grounding side of the connection cable has no contact.	• Make the cable connection securely.
	• Induction noise is picked up from a power transformer of another device	• Install it away from other devices.
	• The headphone cable and power cable are too close to each other.	• Keep the headphone cable and power cable away each other.

MEMO

MEMO

LUXMAN CORPORATION

1-3-1 Shinyokohama, Kouhoku-ku, Yokohama-shi, Kanagawa 222-0033, Japan

AG00238G30A
Printed in Japan