Luxman

CONTROL AMPLIFIER

C-10X

Owner's Manual

Contents

Precautions 1
Features of This Unit 2
Names and Functions 4
Connections 12
Operations 18
How to use Remote Control 20
Block Diagram 29
Specifications 32
Before Asking for Repair Services 33

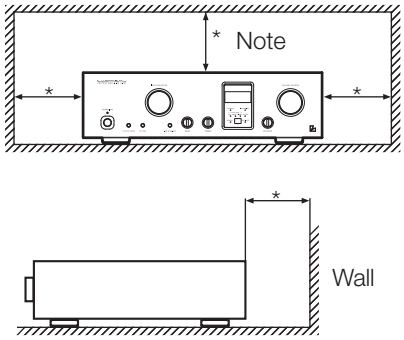
Precautions

Installation place

Install this unit in a location where good ventilation and heat radiation are assured. Especially, installation of this unit where 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 malfunctions even if the 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 product to other input/output devices, be sure to turn off the power of this product and all other connected devices. Failure to observe this may generate a dangerous noise shock resulting in speaker damage and may cause malfunctions.

The connectors to input/output terminals 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.

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

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

If the volume control is set to a high-volume level before the timed muting circuit disengages, a loud, dangerous volume will be suddenly generated. Set the volume control to a low level first and then adjust it after you hear the output from the speakers.

Batteries

Warning: Batteries used for the remote control shall not be exposed to excessive heat such as sunshine, fire or the like.

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.

Safety caution

Warning

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 integration 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.

Electrically controlled fixed resistance switching enables fine sound volume adjustments from 0 dB through –95.5 dB with no deterioration in sound quality over the full range of the volume control.

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.

Adopting a dual FET into the input section of the sub amplifier, which detects any distortion in the audio signal, and dual transistors in the cascade circuit and current mirror circuit, sound quality has been improved throughout the amplification circuit with a transparent sound quality comparable a non-feedback equipped amplifier and excellent high frequency characteristics.

Highly stable power supply

The unit's highly stable power supply circuitry features a large capacity CI-core-type power transformer with 7 custom designed 3,300 µF blocking capacitors.

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.

Loopless chassis structure

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

Zoom function

When the zoom button is pressed on the remote control, the current volume level can be enlarged and displayed.

Dimmer function

The display brightness can be adjusted with 4 brightness levels.

Peel coat, PCB

Dielectric effect is eliminated by using 100 µm thick copper foil and gold plating on the audio circuit boards instead of using resist.

Input/output terminals

Our original high rigidity 27 mm pitch RCA terminals and XLR terminals manufactured by Neutrik.

Remote control (RA-20)

The remote control is encased in aluminum. Tactile switches will satisfy users with a light key touch.

Cast-iron insulators

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

External pre-input terminals

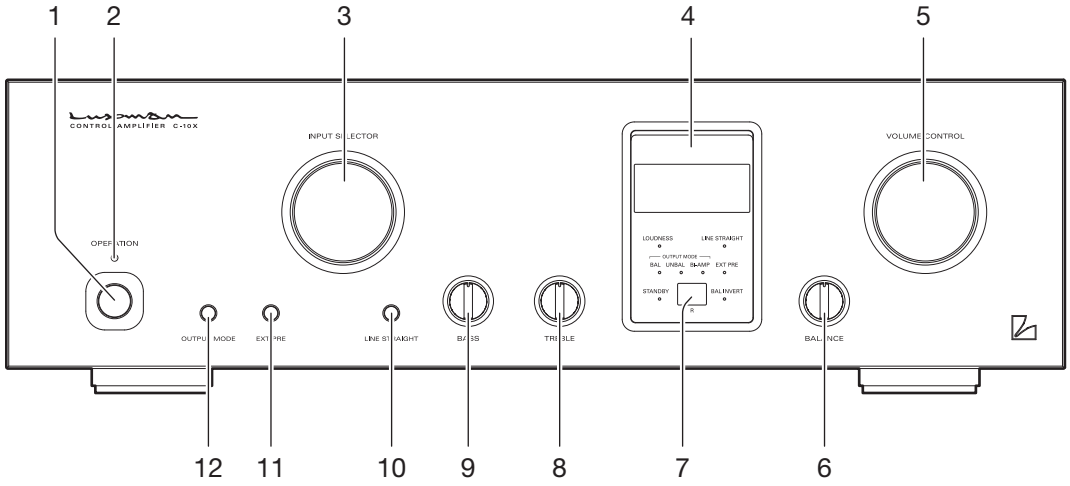
The external pre function allows to switch between external pre-amplifier and AV amplifier.

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.

Names and Functions

Front view



1. Operation button (OPERATION)

Changes this unit from standby to operational.

This unit becomes operational after turning this unit to standby by setting the main power button to the ON/STANDBY position on the rear panel and turning on this button.

2. Operation indicator (OPERATION)

Blinks during warm-up when the operation button is turned on and lights up when the operation state is activated afterward.

3. Input selector (INPUT SELECTOR)

Selects the unbalanced input terminal or balanced input terminal, both of which are located on the rear panel.

- Turning the selector to the right will change the phase as follows: LINE-1 → LINE-2 → LINE-3 → BAL LINE-1 → BAL LINE-2 → BAL LINE-3 → LINE-1 → ...
- Turning the selector to the left will change the phase as follows: LINE-1 → BAL LINE-3 → BAL LINE-2 → BAL LINE-1 → LINE-3 → LINE-2 → LINE-1 → ...

Factory default: LINE-1

While switching inputs, the input/output muting circuit is activated and no sound is generated.

4. Display window

Displays the operation status of this unit.

This status is composed of 8 indicators, an input display and a volume display.

5. Volume control (VOLUME CONTROL)

Adjusts the sound volume.

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 –95.5 dB → –95 dB → ... → 0 dB in steps of 0.5 dB.

6. 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 can be set within the range up to –6 dB for each of left and right.

7. Remote control infrared receiver (R)

Receives signals from the accessory remote control.

8. Tone control for treble (TREBLE)

Controls the frequency characteristics of the high-frequency range.

Setting this control to the center position provides flat frequency characteristics. Rotating this control clockwise enhances the high-frequency range and rotating this control counterclockwise attenuates the high-frequency range. When the line straight button is set to on, this button does not work.

9. Tone control for bass (BASS)

Controls the frequency characteristics of the low-frequency range.

Setting this control to the center position provides flat frequency characteristics. Rotating this control clockwise enhances the low-frequency range and rotating this control counterclockwise attenuates the low-frequency range. When the line straight button is set to on, this button does not work.

10. Line straight button (LINE STRAIGHT)

Enhances the purity of the sound quality by bypassing the tone control circuit.

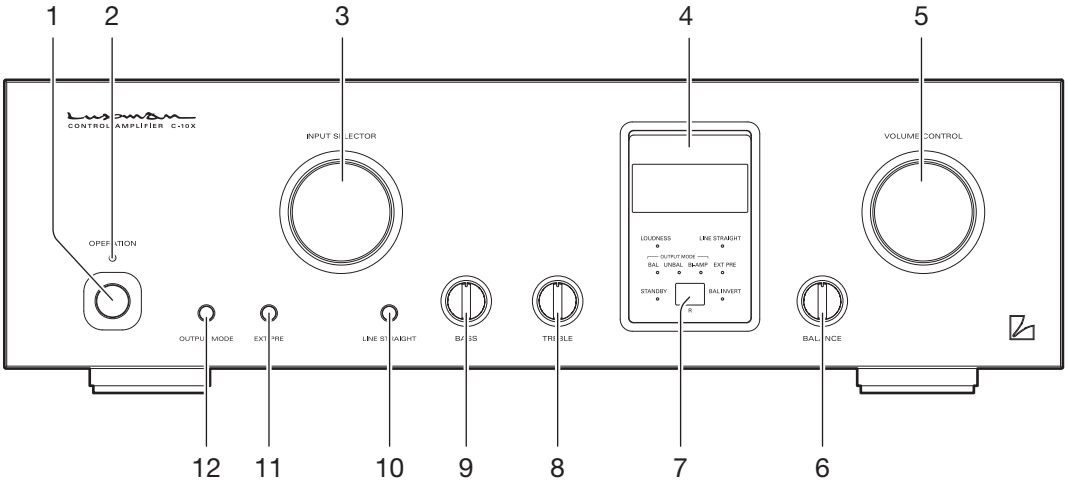
This button toggles the line straight function on and off.

The line straight indicator lights up when the line straight is set to on.

When the line straight button is set to on, tone control and loudness do not work.

Names and Functions

Front panel



11. External pre button (EXT PRE)

This is an input selector button that selects the external pre-input terminals (EXT PRE) on the rear panel.

On: Outputs directly the pre-amplifier or AV amplifier output signal connected to the external pre-input terminal from the unbalanced terminal.

Off: Outputs the output signal selected with the input selector.

Holding down this button for 1 second toggles the external pre-on and external pre-off.

The external pre indicator lights up when external pre-on is selected.

In a state where the main power is off or in a standby state, external pre-input signals will always be output from the unbalanced output terminals regardless of whether this switch is on or off. The input signals connected to the external pre-input terminals will not be output from the balanced output terminals.

When the external pre button is set to on, the volume control of this unit cannot adjust the volume. Volume adjustment should be performed at the input device side such as a pre-amplifier connected to the external pre-input terminal.

When a device such as a CD player that the sound volume adjustment does not function is connected, the sound volume adjustment of the device cannot be controlled by the volume control of this unit. Therefore, switching the selection to the external pre-input will produce a sudden loud sound and it may result in a hearing impairment or damage of the speakers.

For such input devices, be sure to use a pre-amplifier equipped with volume adjustment, begin feeding audio to the speakers with the volume low and adjust the volume to your preferred level.

When changing the connection of the devices with this unit, be sure to do it after turning off the main power or entering into the standby state.

12. Output mode selection button (OUTPUT MODE)

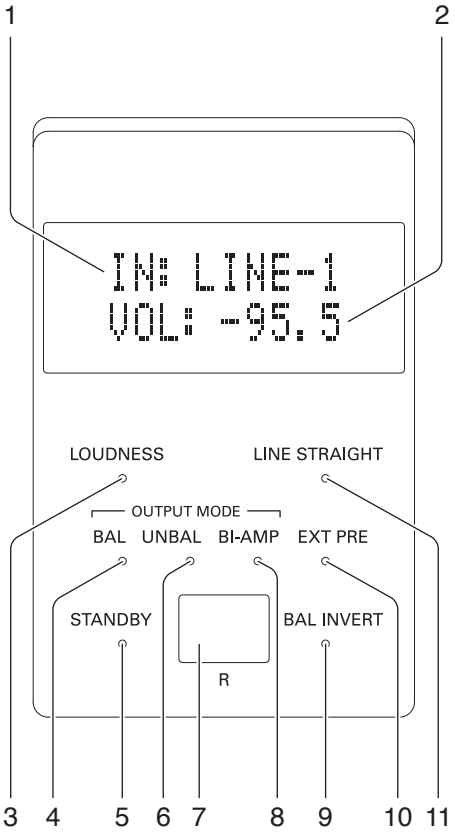
Switches between three output modes; unbalanced output, balanced output and bi-amp output. Every time this button is pressed, the phase changes as follows: UNBAL → BAL → BI-AMP → UNBAL → ...

- Unbalanced output (UNBAL)
  Outputs audio from LINE-1 and LINE-2.
- Balanced output (BAL)
  Outputs audio from BAL LINE-1 and BAL LINE-2.
- Bi-amp output (BI-AMP)
  Outputs audio from LINE-1 and LINE-2.
  LINE-1 (Lch): LOW (Lch)
  LINE-1 (Rch): LOW (Rch)
  LINE-2 (Lch): HIGH (Lch)
  LINE-2 (Rch): HIGH (Rch)

When BAL is selected by the input selector, switching to BI-AMP is unavailable.
To switch to BI-AMP, switch the input selector to UNBAL first and then switch to BI-AMP.
Factory default: Unbalanced output (UNBAL)
While switching the output mode, the input/output muting circuit is activated and no sound is generated.
The preset setting values are stored for each output mode.
Refer to how to make preset on pages 22 through 27 for further information on preset.

Names and Functions

Display window



1. Input display (IN:)

Displays the input terminal selected using the input selector or remote control.

2. Volume display (VOL:)

The current sound volume level will be displayed in increments of 0.5 dB.

- "– – – –" indicates the mute state and no sound is generated.
- The minimum sound volume is –95.5 dB and the maximum sound volume is 0 dB.

3. Loudness indicator (LOUDNESS)

Lights up when the loudness button on the remote control is on.

4. Balanced indicator (BAL)

Lights up when the balanced output terminal is selected for the output mode.

5. Standby indicator (STANDBY)

Lights up when the main power button on the rear panel is on and the operation button is off.

When the operation button is turned on and the main power button is turned off, this indicator lights out.

6. Unbalanced indicator (UNBAL)

Lights up when the unbalanced output terminal is selected for the output mode.

7. Remote control infrared receiver (R)

Receives signals from the accessory remote control.

8. Bi-amp indicator (BI-AMP)

Lights up when the bi-amp output is selected for the output mode.

9. Balanced phase inversion indicator (BAL INVERT)

Lights up when the phase of the balanced input and the balanced output is inverse to the preset setting of this unit.

10. External pre indicator (EXT PRE)

Lights up when the external pre button is on.

11. Line straight indicator (LINE STRAIGHT)

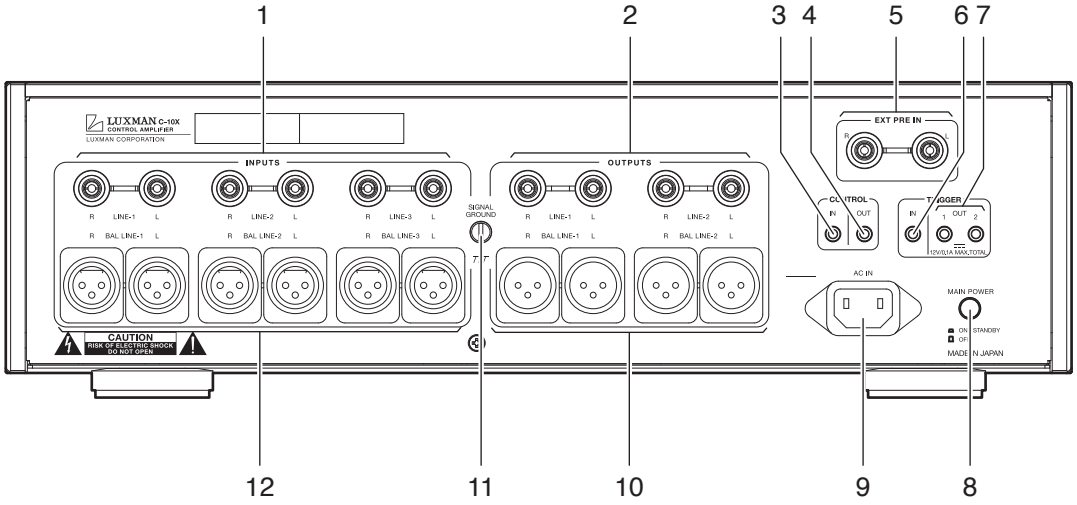
Lights up when the line straight button is on.

When the line straight button is set to on, the loudness function cannot be operated from the supplied remote control.
If this button is pressed, the line straight indicator blinks for 3 seconds to let you know these functions cannot be operated. Turn off the line straight button before operating the loudness function.

The loudness function can be toggled only from the accessory remote control (RA-20).

Names and Functions

Rear panel



1. Unbalanced input terminals/INPUTS (LINE-1, LINE-2, LINE-3)

Coaxial input terminal to receive unbalanced audio signal at line level.

Connect between the unbalanced output terminal of an input device such as a CD player and this input terminal with a pin-plug cable.

The input audio signal is selected and output with the input selector.

There is no difference in quality between LINE-1, LINE-2 and LINE-3.

2. Unbalanced output terminals/OUTPUTS (LINE-1, LINE-2)

The coaxial output terminals to provide unbalanced audio signals of this unit

Connect these terminals to the unbalanced input of an output device such as a power amplifier with a pin-plug cable.

Audio signal to output is selected by the output mode selection button.

There is no difference in quality between LINE-1 and LINE-2.

Factory default: Unbalanced output (UNBAL)

3. Control input terminal (CONTROL IN)

Connects a LUXMAN's device with a control output terminal using a commercially available 3.5 mm monaural mini-jack cable. This connection enables the infrared receiver circuit of the connected device to receive signals from the remote control supplied with this unit and the remote control to operate the device, too.

(The infrared receiver of this unit will not function.)

4. Control output terminal (CONTROL OUT)

Connects a LUXMAN's device with a control input terminal using a commercially available 3.5 mm monaural mini-jack cable. This connection enables the infrared receiver of this unit to receive signals from the remote control of the connected device and the remote control to operate this unit, too.

(The infrared receiver of the device whose input is connected will not function.)

5. External pre-input terminal (EXT PRE IN)

Coaxial input terminal to receive output signal from an external pre-amplifier or AV amplifier.

The input audio signal is directly output from the unbalanced output terminal.

External pre-input signal is not affected by the volume control of this unit.

6. Trigger input terminal (TRIGGER IN)

Trigger input terminal to be connected to devices that have a trigger output terminal. This connection enables this unit to turn to operation/standby in conjunction with the connected device.

7. Trigger output terminal (TRIGGER OUT)

Connection of this trigger output terminal to a device having a trigger input terminal enables the connected device to turn to operation or standby in conjunction with this unit.

8. Main power button (MAIN POWER)

Turns this unit to the standby state. When this button is set to ON/STANDBY, the standby indicator on the front panel lights up to show that this unit turns to the standby state.
When this button is set to OFF, the standby indicator on the front panel turns off to show that the main power is turned off.

9. AC inlet (AC IN)

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

10. Balanced output terminals/OUTPUTS (BAL LINE-1, BAL LINE-2)

Use these XLR output terminals to output balanced audio signals from this unit.
Connect these terminals to the balanced input of an output device such as a power amplifier using balanced XLR cables.
Audio signal to output is selected by the output mode selection button.
There is no difference in quality between BAL LINE-1 and BAL LINE-2.
Factory default: Unbalanced output (UNBAL)

11. Signal ground (earth terminal) (SIGNAL GROUND)

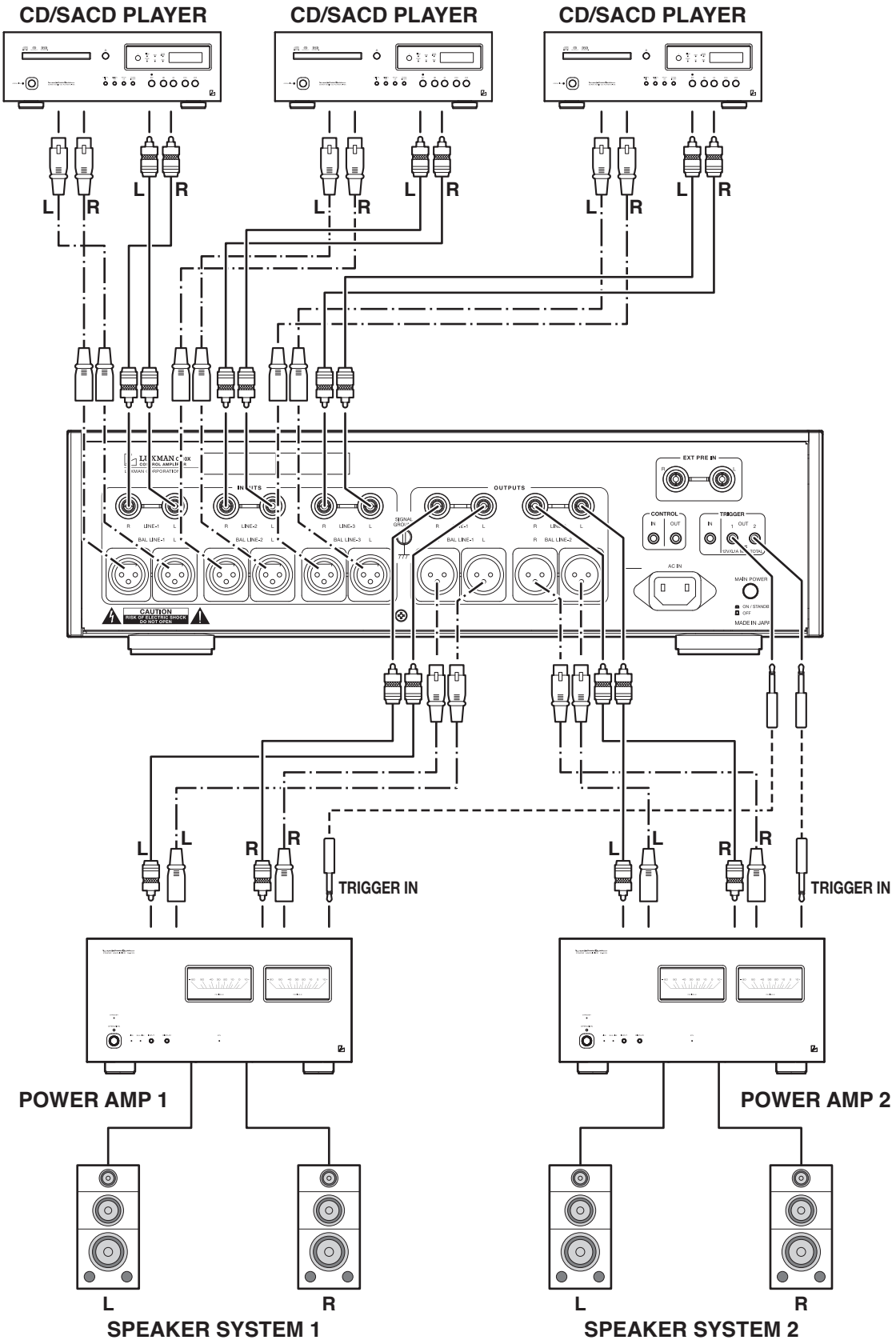
The ground terminal is for a device such as analog player connected to this unit.
This terminal is used to reduce noise when other devices are connected, but not to be used for grounding for safety.

12. Balanced input terminals/INPUTS (BAL LINE-1, BAL LINE-2, BAL LINE-3)

XLR connector input terminal to receive balanced audio signals of a line level.
Connect these terminals to the balanced output of an input device such as a CD player using balanced XLR cables.
The input audio signal is selected and output with the input selector.
There is no difference in quality between BAL LINE-1, BAL LINE-2 and BAL LINE-3.

Connections

Normal stereophonic reproduction



Before Connecting

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

When connecting, turn off the power button of this unit and the power supplies of auxiliary 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 the input terminals to input devices such as a CD player

Connect between the output terminals of an input device such as a CD player and the input terminals of this unit with pin-plug cables or balanced cables.

Take extra care not to incorrectly connect between right and left channels. If the right and left channels are connected reversely, the localization of sound images will deteriorate, thus failing in normal stereo playback.

If pin-plug cables are used, inadequate connection of the grounding of the cables may generate noise including a hum, resulting in an adverse S/N ratio. Carefully insert the connection plug correctly.

How to connect the output terminals to output devices such as a power amplifier

Connect between the input terminals of an output device such as a power amplifier and the output terminals of this unit with pin-plug cables or balanced cables.

Take extra care not to incorrectly connect between right and left channels. If the right and left channels are connected reversely, the localization of sound images will deteriorate, thus failing in normal stereo playback.

If pin-plug cables are used, inadequate connection of the grounding of the cables may generate noise including a hum, resulting in an adverse S/N ratio. Carefully insert the connection plug correctly.

How to connect between the trigger input terminal and other devices

Use a commercially available 3.5 mm monaural mini-plug cable to connect to a device with a trigger output terminal. This connection enables this unit to turn to operation/standby in conjunction with the connected device.

When connection is conducted from a product made by other than LUXMAN, make sure that the trigger output is 12 V. The trigger input of this unit should be 12 volts, the power consumption is 13 mA.

How to connect between the trigger output terminal and other devices

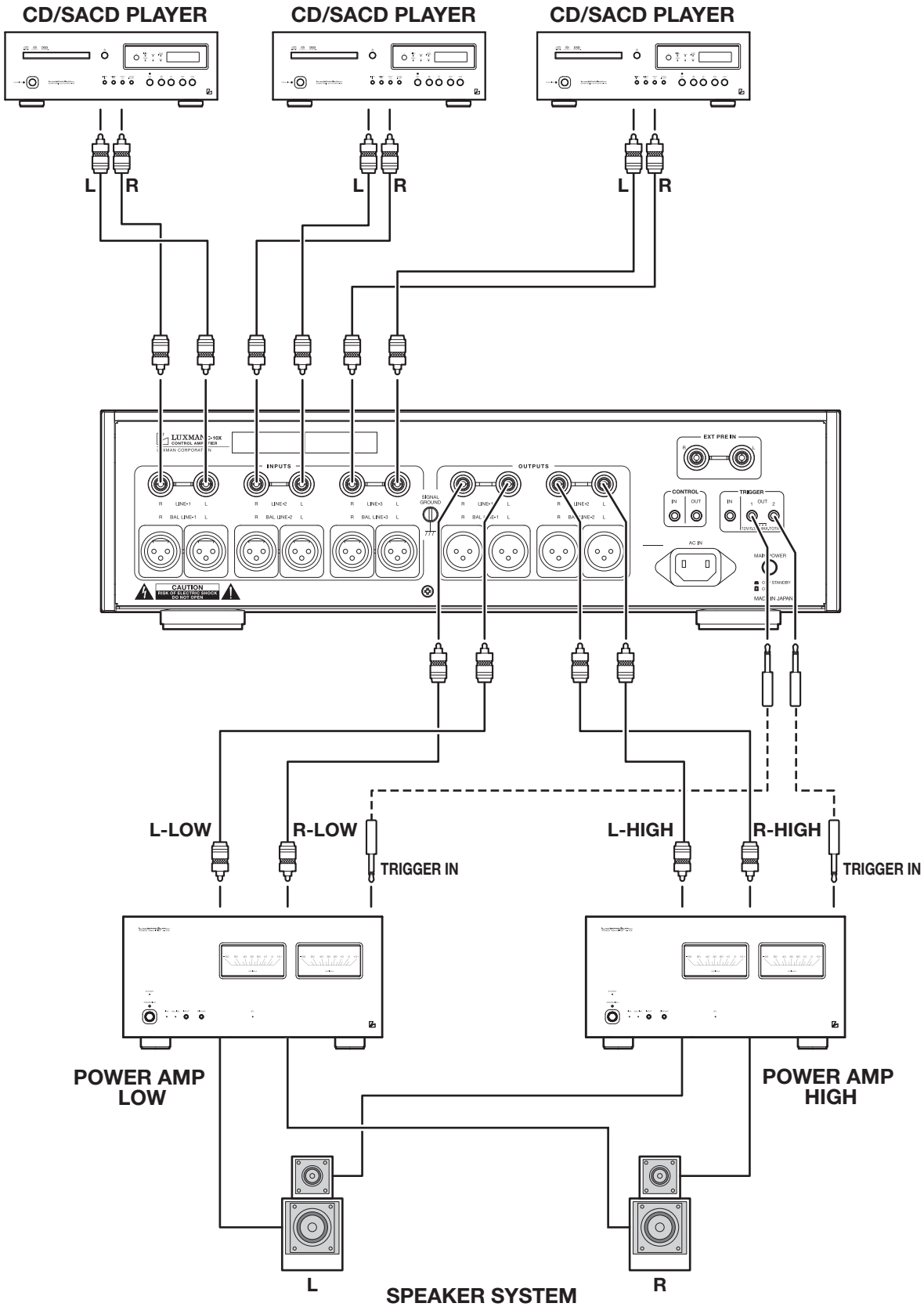
Use a commercially available 3.5 mm monaural mini-plug cable to connect to a device with a trigger input terminal. This connection enables the connected device to turn to operation/standby in conjunction with this unit.

The maximum 12 V output current that can be supplied from this unit is 100 mA as a total of 1 and 2. Be aware that a malfunction may be caused if a load more than the above is applied to this unit by connecting such a device or causing a short circuit.

When this unit is connected to an input/output device, turn off the main power button of this unit or turn this unit to standby to protect the amplifier and speakers from excessive input. Be sure also to turn off the power of the input/output device to connect with this unit. After completing the connection, firstly ensure that the connection is appropriately performed and then put both this unit and the input/output device into the operating state.

Connections

Bi-amplifier/stereophonic reproduction



Bi-amplifier/stereophonic reproduction

How to connect the input terminals to input devices such as a CD player

When the bi-amp output is selected for the output mode of this unit, only the unbalanced input terminal is enabled. Therefore, no sound will be generated if connecting an input device to the balanced input terminal.

Connect between the unbalanced output terminals of an input device such as a CD player and the unbalanced input terminals of this unit with pin-plug cables.

Take extra care not to incorrectly connect between right and left channels. If the right and left channels are connected reversely, the localization of sound images will deteriorate, thus failing in normal stereo playback.

Also, inadequate connection of the grounding of the pin-plug cables may generate noise including a hum, resulting in an adverse S/N ratio. Carefully insert the connection plug correctly.

How to connect the output terminals to output devices such as a power amplifier

When the bi-amp output is selected for the output mode of this unit, only the unbalanced output terminal is enabled. Therefore, no sound will be generated if connecting an output device to the balanced input terminal.

Connect between the unbalanced input terminals of an output device such as a power amplifier and the unbalanced output terminals of this unit with pin-plug cables.

Take extra care not to incorrectly connect between right and left channels. If the right and left channels are connected reversely, the localization of sound images will deteriorate, thus failing in normal stereo playback.

Also, inadequate connection of the grounding of the pin-plug cables may generate noise including a hum, resulting in an adverse S/N ratio. Carefully insert the connection plug correctly.

The L-terminal of LINE-1 is for output of the L channel of the low frequency range and the L-terminal of LINE-2 is for output of the L channel of the high frequency range. The R-terminal of LINE-1 is for output of the R channel of the low frequency range and the R-terminal of LINE-2 is for output of the R channel of the high frequency range.

Sound volume adjustment of the unbalanced output terminal of LINE-2, that is for output of the high frequency range, can be controlled up to ±6 dB in increments of 0.5 dB by the pre-set operation using the accessory remote control.

How to connect between the trigger input terminal and other devices

Use a commercially available 3.5 mm monaural mini-plug cable to connect to a device with a trigger output terminal. This connection enables this unit to turn to operation/standby in conjunction with the connected device.

When connection is conducted from a product made by other than LUXMAN, make sure that the trigger output is 12 V. The trigger input of this unit should be 12 volts, the power consumption is 13 mA.

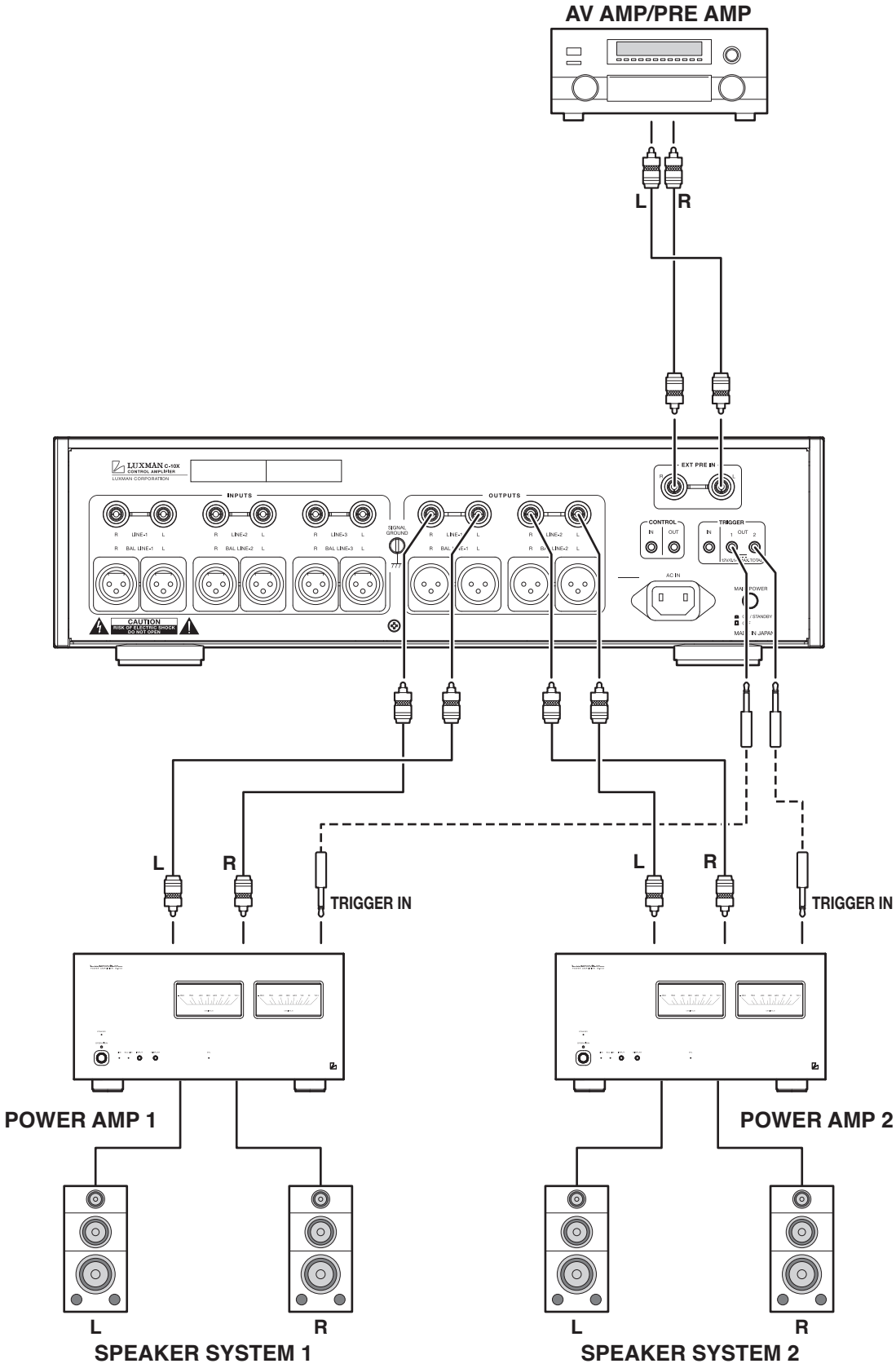
How to connect between the trigger output terminal and other devices

Use a commercially available 3.5 mm monaural mini-plug cable to connect to a device with a trigger input terminal. This connection enables the connected device to turn to operation/standby in conjunction with this unit.

The maximum 12 V output current that can be supplied from this unit is 100 mA as a total of 1 and 2. Be aware that a malfunction may be caused if a load more than the above is applied to this unit by connecting such a device or causing a short circuit.

When this unit is connected to an input/output device, turn off the main power button of this unit or turn this unit to standby to protect the amplifier and speakers from excessive input. Be sure also to turn off the power of the input/output device to connect with this unit. After completing the connection, firstly ensure that the connection is appropriately performed and then put both this unit and the input/output device into the operating state.

External pre playback



External pre playback

How to connect between the external pre-input terminals and an input device such as an AV amplifier

When using this unit with the external pre-input, only the unbalanced output terminal is enabled. Therefore, no sound will be generated if connecting an input device to the balanced input terminal.
In a state where the main power is off or in a standby state, external pre-input signals will always be output from the unbalanced output terminals regardless of whether the external pre button is on or off.

Connect between the pre-output terminals of an input device such as an AV amplifier or pre-amplifier and the external pre-input terminals of this unit with pin-plug cables.
Take extra care not to incorrectly connect between right and left channels. If the right and left channels are connected reversely, the localization of sound images will deteriorate, thus failing in normal stereo playback.
Also, inadequate connection of the grounding of the pin-plug cables may generate noise including a hum, resulting in an adverse S/N ratio. Carefully insert the connection plug correctly.

When the external pre button is on, sound volume adjustment cannot be made with the volume control of this unit. Adjust the sound volume on the input device side such as the AV amplifier or pre-amplifier connected to the external pre-input terminal.

When a device such as a CD player that the sound volume adjustment does not function is connected to the external pre-input terminal, the sound volume adjustment of the device cannot be controlled by the volume control of this unit. Therefore, switching the selection to the external pre-input will produce a sudden loud sound and it may result in a hearing impairment or damage of the speakers.
For such input devices, be sure to use a pre-amplifier equipped with volume adjustment, begin feeding audio to the speakers with the volume low and adjust the volume to your preferred level.

Operations

Before operation

1. Ensure that all connections have been correctly performed. (Normal playback cannot be achieved with incorrect connections of R or L.)
2. Before performing a power cycle or selecting an input, be sure to set the volume display to the minimum position (– – – – display).

Playback procedure

1. Turn on the operation button.
   Check the sound volume indicator during the warm-up and decrease the sound volume according to your need.
2. Select a source with the input selector.
3. Adjust the sound level with the volume control.
4. Operate the line straight button, balance control and tone controls according to the source to play.

Line straight selection

The line straight button is used to reproduce audio via the shortest audio signal route for enhancing the clarity of the source selected. When this button is set to on, the tone controls and the loudness function are bypassed.

Balance control operation

The balance control enables users to adjust the balance of sound volume between the right and left channels.

When the balance adjustment is not required, the balance control should be set to the center position.

Tone controls

This unit has tone controls for the low and high frequency ranges.

The low frequency range is effective at 300 Hz or lower.

This tone control has flat frequency characteristics at the center position. Rotating the control clockwise enhances the low-frequency range, and rotating the control counterclockwise attenuates the low-frequency range.

The high frequency range is effective at 3 kHz or higher.

This tone control is set to flat frequency characteristic at the center position. Rotating the control clockwise enhances the high-frequency range, and rotating the control counterclockwise attenuates the high-frequency range.

For both the low and high frequency ranges the effects on both right and left channels are matched.

When the line straight button is set to on, tone control does not work.

Memory

This unit stores the following items when the operation button is off or the main power is off:

Item	Default
INPUT	Selected source
OUTPUT MODE	Selected mode
BI-AMP	L-Hi: ±6 dB, R-Hi: ±6 dB
BAL PHASE	INPUT-1, 2, 3: 3±, 2±
	OUTPUT: 3±, 2±
OFFSET	BAL LINE-1, 2, 3: 0 to –6 dB
	LINE-1, 2, 3: 0 to –6 dB
BAL INVERT	NORMAL/INVERT
DIMMER	Normal/Dim/Very dim/No light
ZOOM	ON/OFF
LOUDNESS	ON/OFF
LINE-STRAIGHT	ON/OFF
EXT PRE	ON/OFF
Volume level	Set dB value

Memory reset

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

(1) Put into the standby state.

(2) Hold down the operation button on the main unit for 5 seconds or more and press the dimmer button on the accessory remote control once while holding down the operation button.

This will fully reset the memory.

Factory default

Item	Default
INPUT	LINE-1
OUTPUT MODE	UNBALANCE
BI-AMP	L-Hi: 0 dB, R-Hi: 0 dB
BAL PHASE	INPUT-1, 2, 3: 3+, 2–
	OUTPUT: 3+, 2–
OFFSET	BAL LINE-1, 2, 3: 0 dB
	LINE-1, 2, 3: 0 dB
BAL INVERT	NORMAL
DIMMER	MAX (Normal)
ZOOM	OFF
LOUDNESS	OFF
LINE-STRAIGHT	OFF
EXT PRE	OFF
Volume level	Minimum (mute/– – – – display)

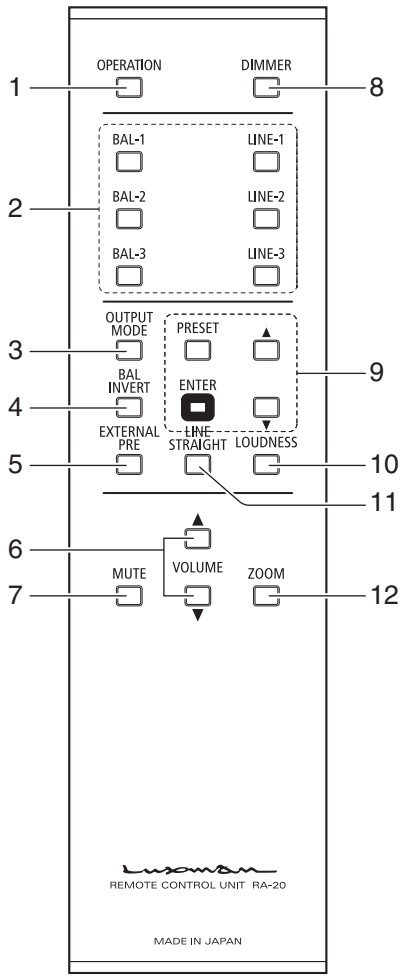
Prohibition display and caution

When tried to change the setting and failed, an error display shown in the table below will be displayed.

Display	Caution
UNBALANCE MODE!!	When unbalanced is selected for both the input and output, the balanced phase cannot be inverted.
BI-AMP MODE!!	When the bi-amp output is selected, balanced input is unavailable to select.
BI-AMP MODE!!	When the bi-amp output is selected, the balanced phase cannot be inverted.
STRAIGHT ON!!	When the line straight button is set to on, loudness is unavailable to select.
EXT PRE MODE!!	When the external pre button is set to on, mute is unavailable to select.
EXT PRE MODE!!	When the external pre button is set to on, the output mode cannot be changed.
IN: BAL.-* VOL: -**.* (The display does not change.)	When the balanced input is selected, switching to the bi-amp output mode is unavailable.

How to use Remote Control

Remote controller (RA-20)



1. Operation button (OPERATION)

Turns this unit to the operating state after turning off the standby indicator at the standby state. Pressing this button again at the operating state turns the unit to the standby state.

2. Input selector (LINE-1, LINE-2, LINE-3, BAL-1, BAL-2, BAL-3)

Selects the unbalanced input terminal or balanced input terminal, both of which are located on the rear panel.

While switching inputs, the input/output muting circuit is activated and no sound is generated.

3. Output mode selection button (OUTPUT MODE)

Switches between three output modes; unbalanced output, balanced output and bi-amp output.

Every time this button is pressed, the phase changes as follows: UNBAL → BAL → BI-AMP → UNBAL → …

- Unbalanced output (UNBAL)
  Outputs audio from LINE-1 and LINE-2.
- Balanced output (BAL)
  Outputs audio from BAL LINE-1 and BAL LINE-2.
- Bi-amp output (BI-AMP)
  Outputs audio from LINE-1 and LINE-2.
  LINE-1 (Lch): LOW (Lch)
  LINE-1 (Rch): LOW (Rch)
  LINE-2 (Lch): HIGH (Lch)
  LINE-2 (Rch): HIGH (Rch)

When BAL is selected by the input selector, switching to BI-AMP is unavailable.

To switch to BI-AMP, switch the input selector to UNBAL first and then switch to BI-AMP.

Factory default: Unbalanced output (UNBAL)

While switching the output mode, the input/output muting circuit is activated and no sound is generated.

The preset setting values are stored for each output mode.

4. Balanced phase inversion button (BAL INVERT)

Inverts the balanced phase that is set with the preset function of this unit. When the phase of the balanced input and the balanced output is to be inverted to the preset setting of this unit, invert the balanced phase of this unit by pressing this button.

Every time this button is pressed, the phase changes as follows: NORMAL → INVERT → NORMAL → INVERT → …

The input/output muting circuit is activated and no sound is generated during the phase switch.

5. External pre button (EXTERNAL PRE)

This is an input selector button that selects the external pre-input terminals (EXT PRE) on the rear panel.

On: Outputs directly the pre-amplifier or AV amplifier output signal connected to the external pre-input terminal from the unbalanced terminal.

Off: Outputs the output signal selected with the input selector.

Holding down this button for 1 second toggles the external pre-on and external pre-off. The external pre indicator lights up when external pre-on is selected.

6. Volume control button (VOLUME)

Adjusts the output level of this unit.

Every time this button is pressed, the output level changes.

- Pressing ▲ increases the sound volume.
- Pressing ▼ decreases the sound volume.

7. Mute button (MUTE)

Mutes the sound temporarily.

The sound will be generated and heard when the mute button is pressed again during the mute.

When the sound volume control is operated during the mute, the volume level changes but the mute is not released.

8. Dimmer button (DIMMER)

Adjusts the brightness of the input display and the volume display of the main unit display. The brightness can be adjusted in 4 steps from no light through normal light.

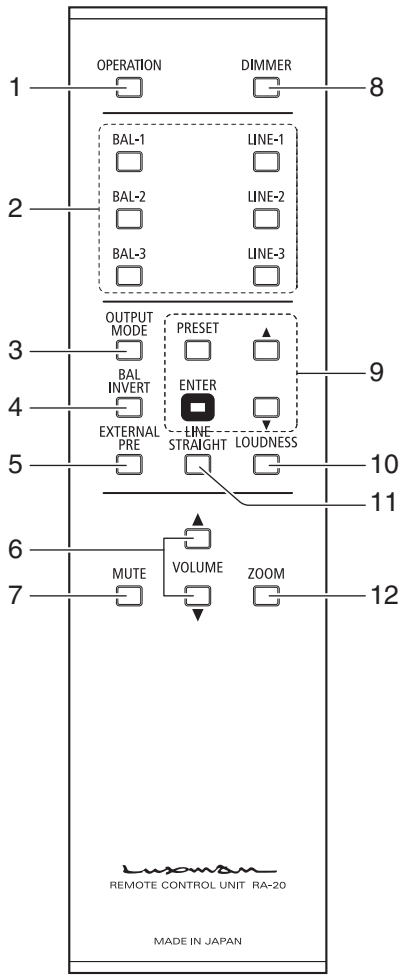
Each time the dimmer button is pressed, the display changes as follows. Normal light → Dim → Very dim → No light → Normal light → …

When no light is selected, “DISPLAY OFF” appears for 1 second and then it goes off.

Factory default: Normal light

How to use Remote Control

Remote controller (RA-20)



9. Preset button (PRESET), Enter button (ENTER)

Determines the adjustment or the setting value.

▲ button (UP)

▼ button (DOWN)

Changes the level of adjustment or the setting.

How to preset the balanced phase setting/BAL PHASE

The balanced phase of this unit can be set for each of input and output.

(1) When the preset button is pressed, the unit enters the preset mode and “BAL PHASE” starts blinking. (Display on the 1st row of Fig. 1Ⓐ) When not changing the balanced phase, press the preset button to exit the preset mode.

(2) When the enter button is pressed, 3+ and 2– of BAL-1 starts blinking and the phase inversion setting of BAL LINE-1 of the balanced input becomes available. (Display on the 2nd row of Fig. 1Ⓐ)

When the enter button is pressed again, the display goes to the phase inversion setting of BAL LINE-2 of the balanced input.

(3) When ▲ or ▼ is pressed, the phase of BAL LINE-1 of the balanced input is inverted and the display changes to 3– and 2+. (Display on the 3rd row of Fig. 1Ⓐ)
When ▲ or ▼ is pressed again, the phase setting goes back to 3+ and 2–.

(4) When the next time the enter button is pressed, the changed BAL LINE-1 setting is determined, 3+ and 2– of BAL-2 starts blinking and the phase inversion setting of BAL LINE-2 of the balanced input becomes available. (Display on the 4th row of Fig. 1Ⓐ)

When the enter button is pressed again, the display goes to the phase inversion setting of BAL LINE-3.

(5) When ▲ or ▼ is pressed, the phase of BAL LINE-2 of the balanced input is inverted and the display changes to 3– and 2+. (Display on the 5th row of Fig. 1Ⓐ)
When ▲ or ▼ is pressed again, the phase setting goes back to 3+ and 2–.

(6) When the next time the enter button is pressed, the changed setting is determined, 3+ and 2– of BAL-3 starts blinking and the phase inversion setting of BAL LINE-3 of the balanced input becomes available. (Display on the 6th row of Fig. 1Ⓐ)

When the enter button is pressed again, the display goes to the phase inversion setting of BAL OUT.

(7) When ▲ or ▼ is pressed, the phase of BAL LINE-3 of the balanced input is inverted and the display changes to 3– and 2+. (Display on the 7th row of Fig. 1Ⓐ)
When ▲ or ▼ is pressed again, the phase setting goes back to 3+ and 2–.

(8) When the next time the enter button is pressed, the changed setting is determined, 3+ and 2– of BAL OUT starts blinking and the phase inversion setting of BAL LINE-1 and BAL LINE-2 of the balanced output becomes available. (Display on the 8th row of Fig. 1Ⓐ)

When the enter button is pressed again, the display goes to the setting of (2) and the phase inversion setting of BAL LINE-1 of the balanced input becomes available again.

(9) When ▲ or ▼ is pressed, the phase of BAL LINE-1 and BAL LINE-2 of the balanced output is inverted and the display changes to 3– and 2+. (Display on the 9th row of Fig. 1Ⓐ)
When ▲ or ▼ is pressed again, the phase setting goes back to 3+ and 2–.

(10) When the next time the enter button is pressed, the display goes back to the setting of (2) and the phase inversion setting of BAL LINE-1 of the balanced input becomes available again.
When the preset button is pressed, the display advances to the OFFSET setting.

When the preset button is pressed, in any of the states from (1) through (10), the setting is stored and BAL PHASE is exited. Then, the display advances to the OFFSET setting. Or when no operation is performed for 1 minute in the preset mode, this mode is exited while keeping the state where the immediately preceding setting is stored and the display returns to the normal display.

How to preset the level offset/OFFSET

The offset setting of input level for each input terminal is available.
Even when playing while switching between multiple input device that have different output level, it is possible to uniform the sound volume of each input device to some extent.

(1) When the preset button is pressed, the unit enters the preset mode and “BAL PHASE” starts blinking. (Display on the 1st row of Fig. 1Ⓐ)

(2) When the preset button is pressed, the unit enters the preset mode of level offset and “OFFSET” starts blinking. (Display on the 1st row of Fig. 1Ⓑ)
When no adjustment of level offset is needed, press the preset button again.
The preset mode is exited and the display returns to the normal display.

(3) When the next time the enter button is pressed, the level of BAL-1 starts blinking and the level adjustment of BAL LINE-1 becomes available. (Display on the 2nd row of Fig. 1Ⓑ)

When the enter button is pressed again, the display goes to the level adjustment of BAL LINE-2.

(4) Pressing ▼ decreases the sound volume of BAL LINE-1 in steps of 0.5 dB. Adjustment is available in the range between 0 and –6 dB.
Example) Pressing ▼ once displays –0.5 dB. (Display on the 3rd row of Fig. 1Ⓑ)

(5) When the next time the enter button is pressed, the changed BAL LINE-1 setting is determined, the level of BAL-2 starts blinking and the level adjustment of BAL LINE-2 becomes available. (Display on the 4th row of Fig. 1Ⓑ)

When the enter button is pressed again, the display goes to the level adjustment of BAL LINE-3.

(6) Pressing ▼ decreases the sound volume of BAL LINE-2 in steps of 0.5 dB. Adjustment is available in the range between 0 and –6 dB.
Example) Pressing ▼ once displays –0.5 dB. (Display on the 5th row of Fig. 1Ⓑ)

(7) When the next time the enter button is pressed, the changed BAL LINE-2 setting is determined, the level of BAL-3 starts blinking and the level adjustment of BAL LINE-3 becomes available. (Display on the 6th row of Fig. 1Ⓑ)

When the enter button is pressed again, the display goes to the level adjustment of LINE-1.

(8) Pressing ▼ decreases the sound volume of BAL LINE-3 in steps of 0.5 dB. Adjustment is available in the range between 0 and –6 dB.
Example) Pressing ▼ once displays –0.5 dB. (Display on the 7th row of Fig. 1Ⓑ)

(9) When the next time the enter button is pressed, the changed BAL LINE-3 setting is determined, the level of LINE-1 starts blinking and the level adjustment of LINE-1 becomes available. (Display on the 8th row of Fig. 1Ⓑ)

When the enter button is pressed again, the display goes to the level adjustment of LINE-2.

(10) Pressing ▼ decreases the sound volume of LINE-1 in steps of 0.5 dB. Adjustment is available in the range between 0 and –6 dB.
Example) Pressing ▼ once displays –0.5 dB. (Display on the 9th row of Fig. 1Ⓑ)

(11) When the next time the enter button is pressed, the changed LINE-1 setting is determined, the level of LINE-2 starts blinking and the level adjustment of LINE-2 becomes available. (Display on the 10th row of Fig. 1Ⓑ)

When the enter button is pressed again, the display goes to the level adjustment of LINE-3.

(12) Pressing ▼ decreases the sound volume of LINE-2 in steps of 0.5 dB. Adjustment is available in the range between 0 and –6 dB.
Example) Pressing ▼ once displays –0.5 dB. (Display on the 11th row of Fig. 1Ⓑ)

(13) When the next time the enter button is pressed, the changed LINE-2 setting is determined, the level of LINE-3 starts blinking and the level adjustment of LINE-3 becomes available. (Display on the 12th row of Fig. 1Ⓑ)

When the enter button is pressed again, the display goes back to the setting of (3) and the level adjustment of BAL LINE-1 becomes available again.

(14) Pressing ▼ decreases the sound volume of LINE-3 in steps of 0.5 dB. Adjustment is available in the range between 0 and –6 dB.
Example) Pressing ▼ once displays –0.5 dB. (Display on the 13th row of Fig. 1Ⓑ)

(15) When the next time the enter button is pressed, the display goes back to the setting of (3) and the level adjustment of BAL LINE-1 becomes available again.

When the preset button is pressed, the preset mode is exited.
When the preset button is pressed, in any of the states from (1) through (15), the setting is stored and the pre-set mode is exited.
Or when no operation is performed for 1 minute in the preset mode, this mode is exited while keeping the state where the immediately preceding setting is stored and the display returns to the normal display.

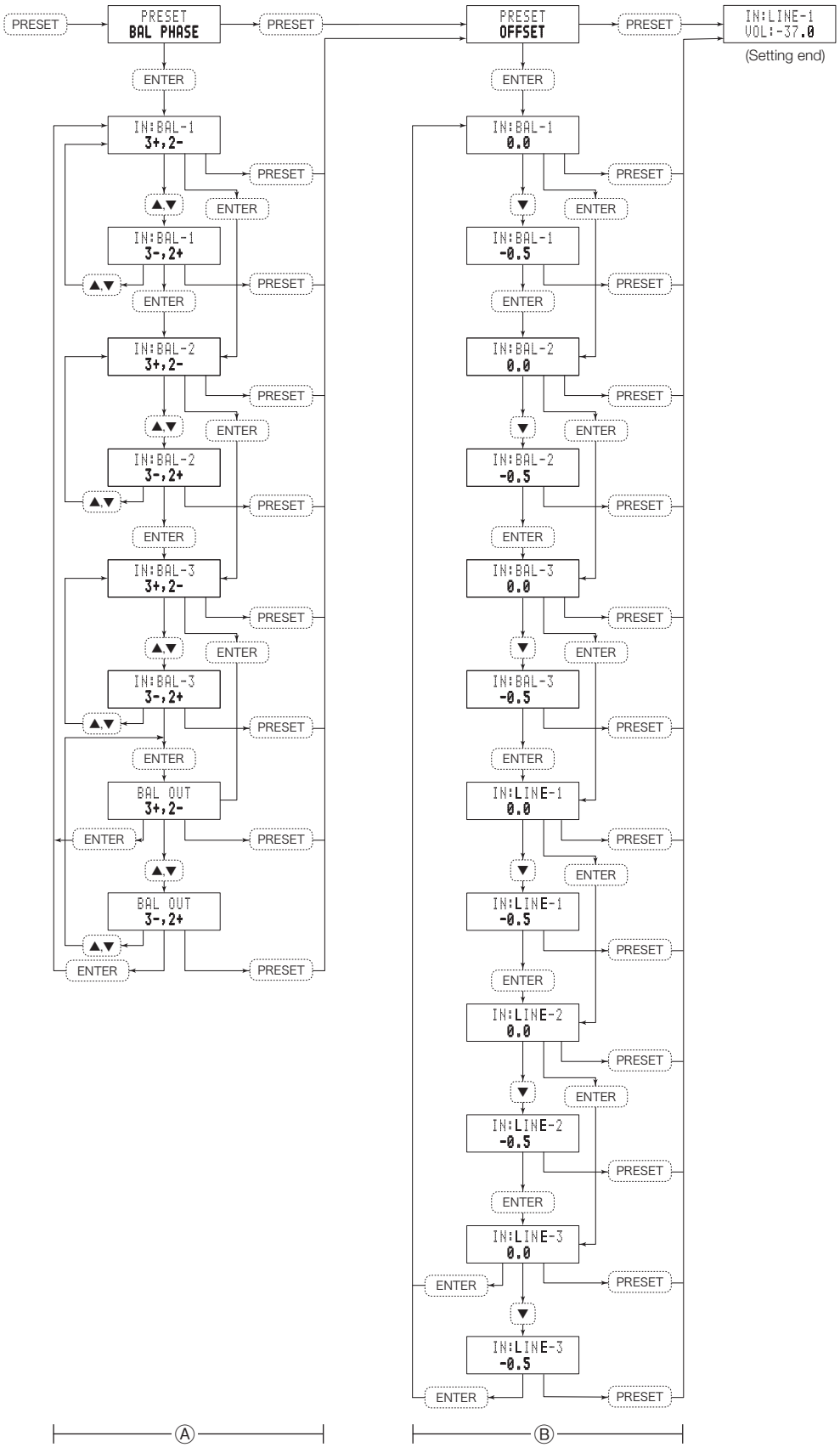
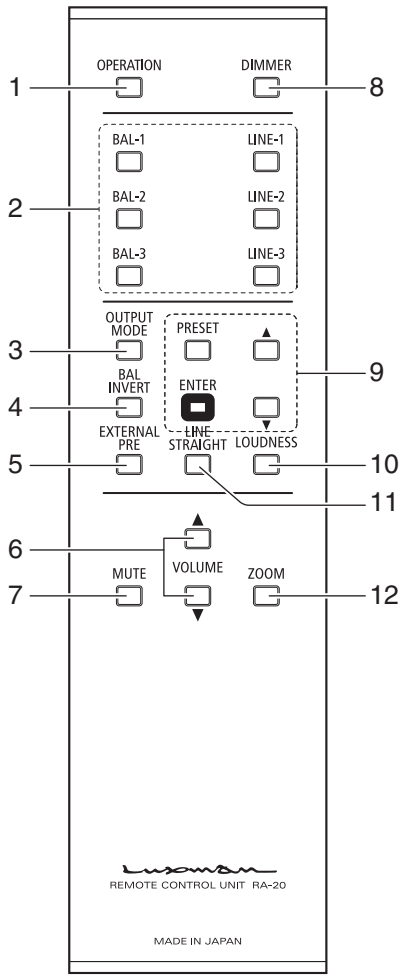

PRESET
BAL PHASE
ENTER
IN:BAL-1
3+,2-
▲▼
IN:BAL-1
3-,2+
IN:BAL-2
3+,2-
IN:BAL-2
3-,2+
IN:BAL-3
3+,2-
IN:BAL-3
3-,2+
BAL OUT
3+,2-
BAL OUT
3-,2+
PRESET
OFFSET
IN:BAL-1
0.0
▼
IN:BAL-1
-0.5
IN:BAL-2
0.0
IN:BAL-2
-0.5
IN:BAL-3
0.0
IN:BAL-3
-0.5
IN:LINE-1
0.0
IN:LINE-1
-0.5
IN:LINE-2
0.0
IN:LINE-2
-0.5
IN:LINE-3
0.0
IN:LINE-3
-0.5
IN:LINE-1
VOL:-37.0
(Setting end)
Ⓐ
Ⓑ

Fig. 1

How to use Remote Control

Remote controller (RA-20)



How to preset the bi-amp output mode/ BI-AMP

(1) When the preset button is pressed in a state where the output mode is bi-amp, the unit enters the preset mode of bi-amp. (Display on the 1st row of Fig. 2)

When no adjustment of L-Hi and R-Hi is needed, press the preset button again. The preset mode is exited and the display returns to the normal display.

(2) When the next time the enter button is pressed, the level of L-Hi starts blinking and the level adjustment of L-Hi ch becomes available. (Display on the 2nd row of Fig. 2)

(3) Pressing ▲ increases the sound volume of L-Hi ch in steps of 0.5 dB.
Pressing ▼ decreases the sound volume of L-Hi ch in steps of 0.5 dB.
Adjustment is available in the range of ±6 dB.
Example) Pressing ▼ once displays –0.5 dB. (Display on the 3rd row of Fig. 2)

(4) When the enter button is pressed, the level of R-Hi starts blinking and the level adjustment of R-Hi ch becomes available.- (Display on the 4th row of Fig. 2)

(5) Pressing ▲ increases the sound volume of R-Hi ch in steps of 0.5 dB.
Pressing ▼ decreases the sound volume of R-Hi ch in steps of 0.5 dB.
Adjustment is available in the range of ±6 dB.
Example) Pressing ▲ once displays +0.5 dB. (Display on the 5th row of Fig. 2)

(6) At this point, when the enter button is pressed, the display returns to the adjustment of (2) and the adjustment of L-Hi ch becomes available again.

(7) When the preset button is pressed, in any of the states from (1) through (5), the setting is stored and the preset mode is exited. Or when no operation is performed for 1 minute in the preset mode, this mode is exited while keeping the state where the immediately preceding setting is stored and the display returns to the normal display.

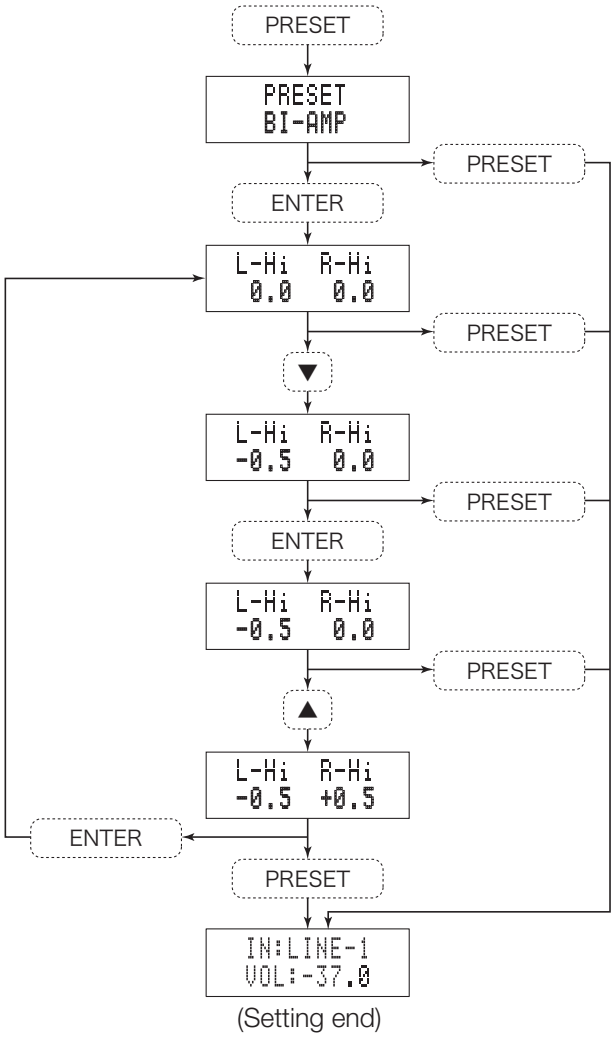


Fig. 2

10. Loudness button (LOUDNESS)

When this button is pressed in a state where the volume control is set at a position that is less than –16 dB, the frequency response is compensated in terms of psycho-acoustics.

Because of this, the response of human ears is compensated at the time of listening at low volume level. This button toggles the loudness on and off.

The loudness indicator lights up when the loudness on is selected.

When the line straight button is set to on, this button does not function.

11. Line straight button (LINE STRAIGHT)

Enhances the purity of the sound quality by bypassing the tone control circuit.

This button toggles the line straight function on and off.

The line straight indicator lights up when the line straight is set to on.

When the line straight button is set to on, tone control and loudness do not work.

---

12. Zoom button (ZOOM)

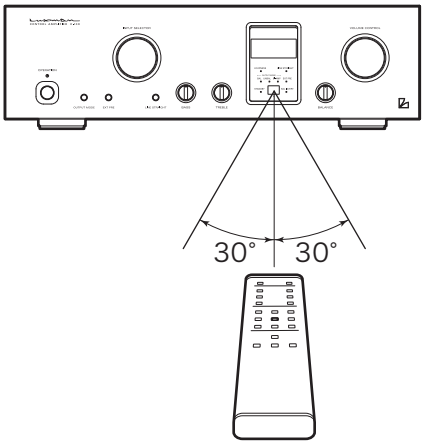
Magnifies the display of the current volume level.

When the zoom button is pressed again, the display returns to the normal display.

How to use Remote Control

Remote control

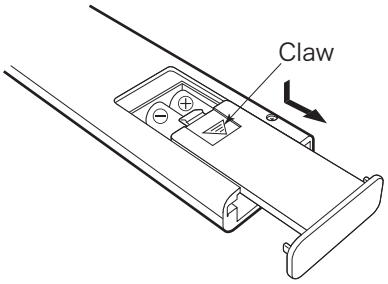
The remote control should be aimed at the remote sensor of this unit within the specified angle range as shown in the illustration.



Effective distance:

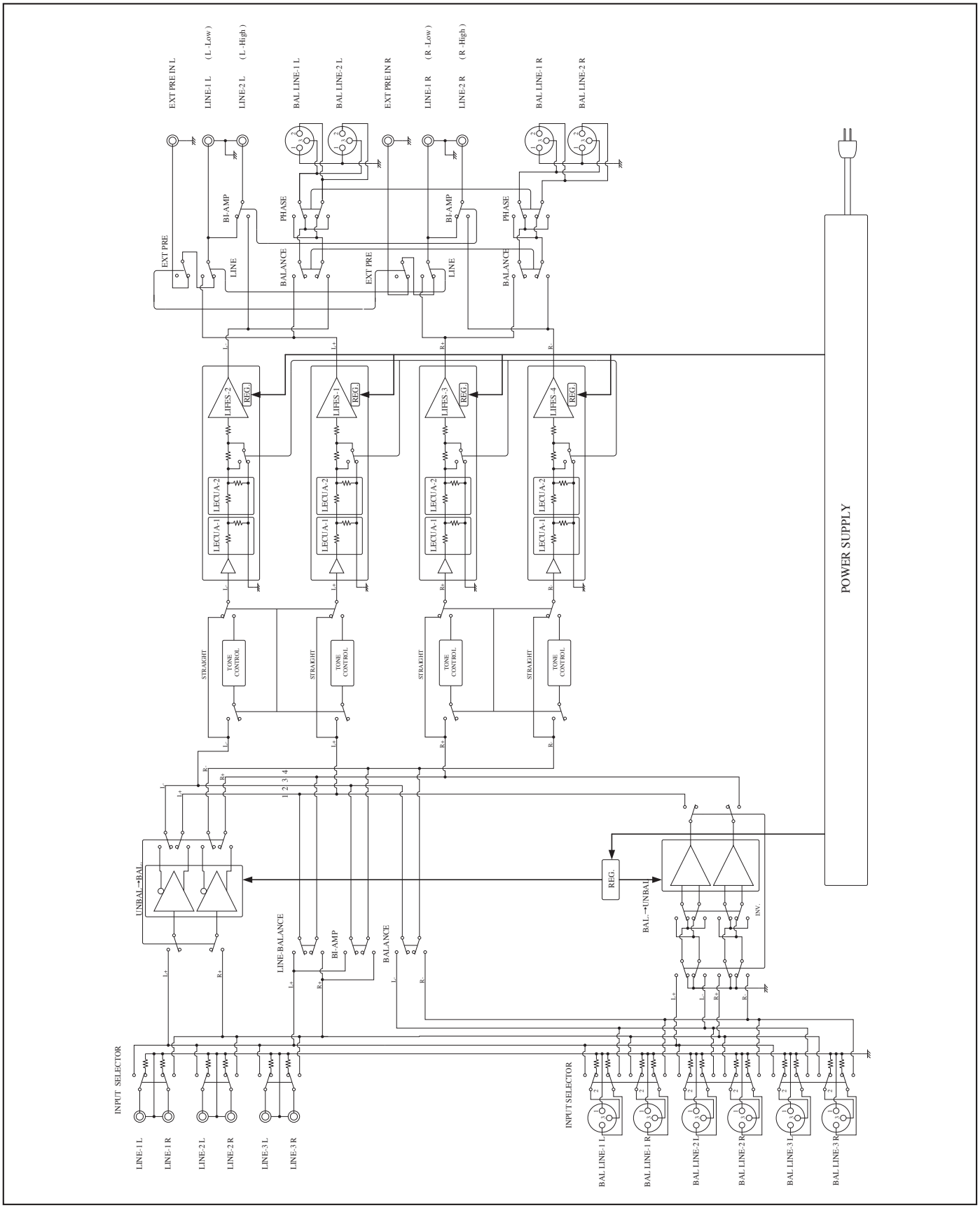
Dry cell
[How to load dry cells]

1. Remove the battery cover on the rear of the remote control. Put your finger on the battery cover claw and slide the cover downward to remove the cover.
2. Put 2 AAA batteries in the battery case as shown in the illustration on the battery case in consideration of the polarity (⊕ and ⊖).
3. In the reverse order of battery cover removal, put the battery cover back to the opening of the remote control and slide the cover upward until it clicks

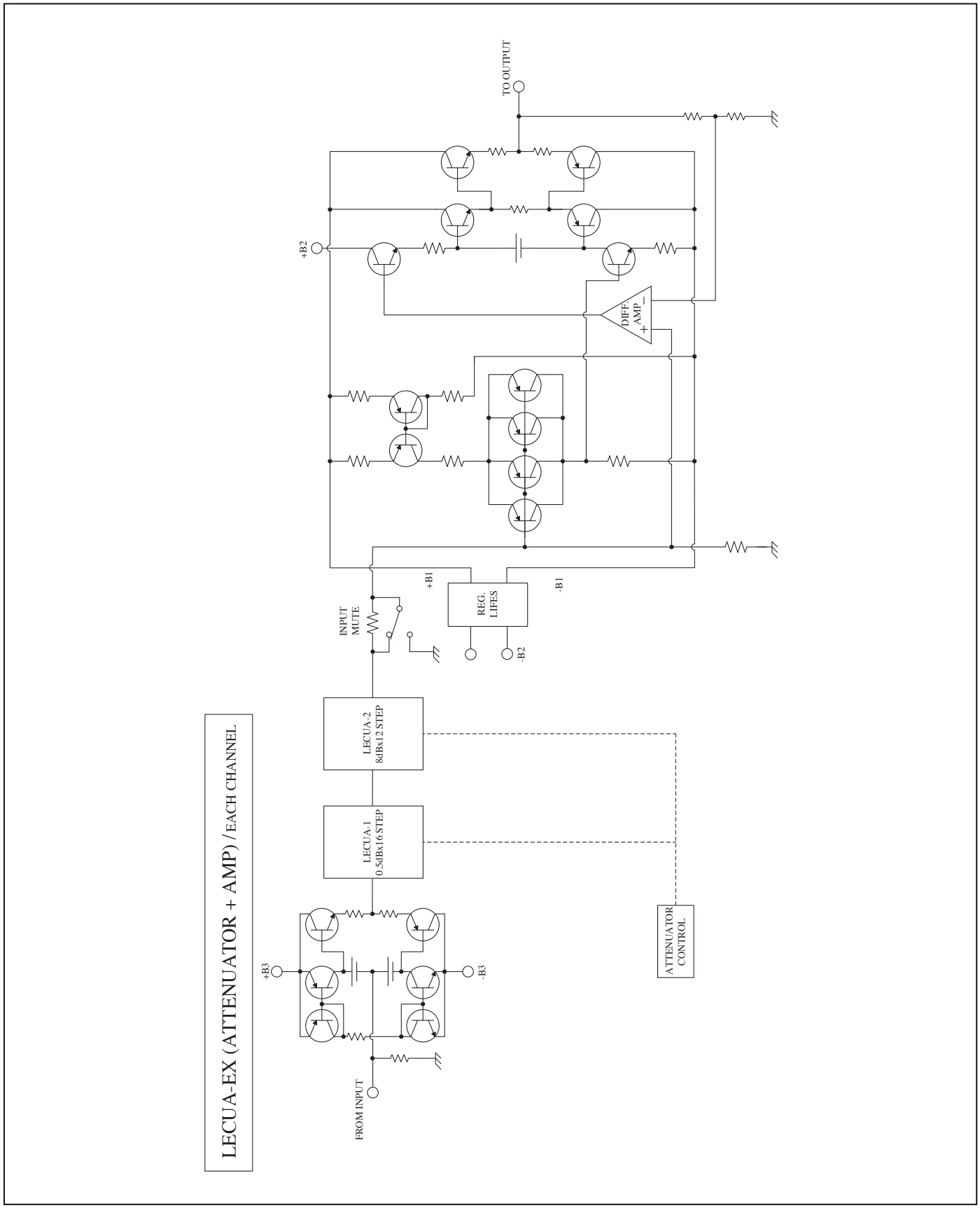


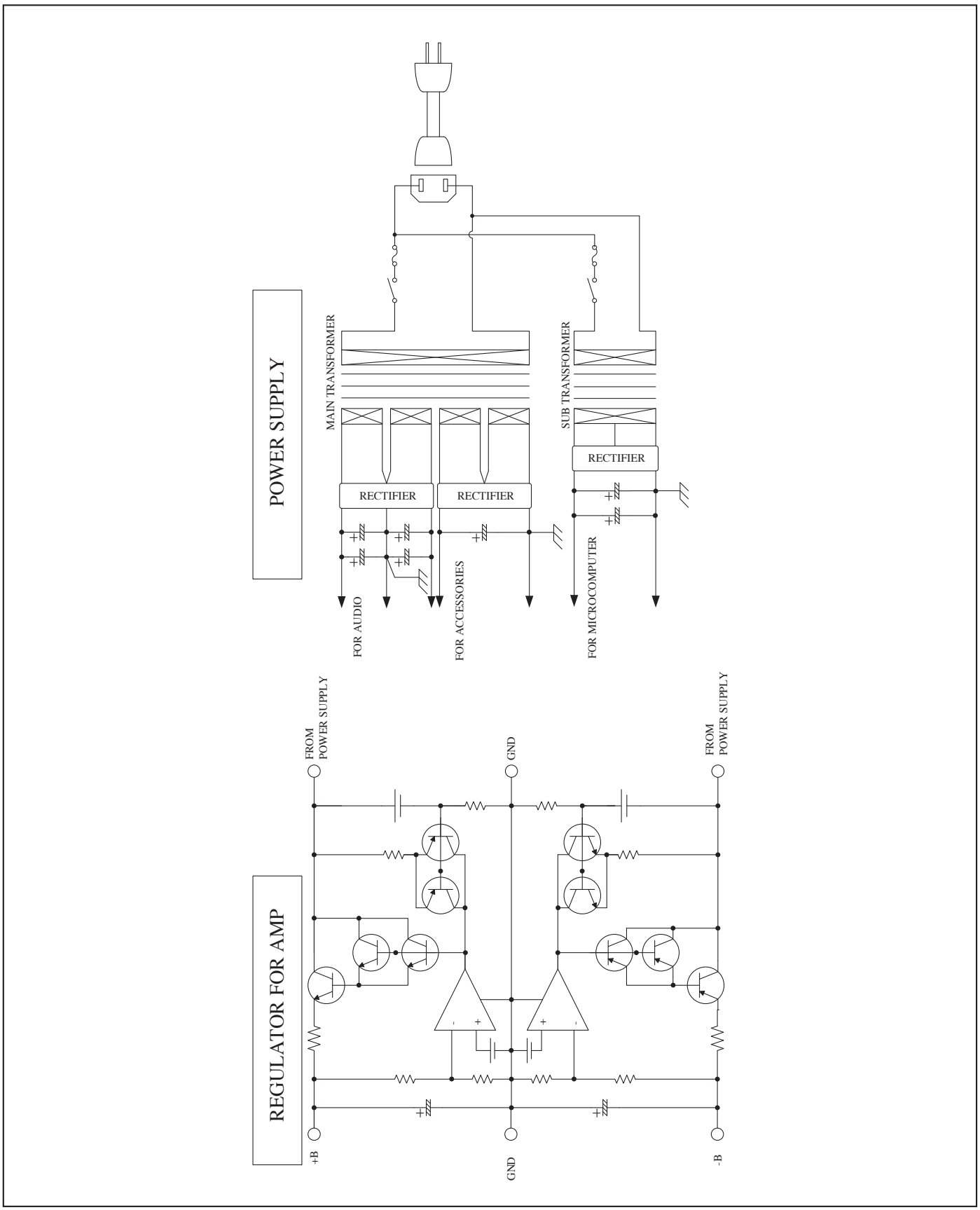
- **Do not use a combination of new and old batteries together.**
- **There may be a case in which the voltages are different between two batteries even though they are the same size. Do not use batteries of different types together.**
- **If the remote control is not used for a long time (more than 1 month), the batteries should be removed from the case. If battery fluid is leaking, wipe away the liquid from the case before inserting new batteries.**
- **To discard exhausted batteries, follow the instructions from your local authority.**

Block Diagram



Block Diagram




POWER SUPPLY
MAIN TRANSFORMER
SUB TRANSFORMER
RECTIFIER
RECTIFIER
RECTIFIER
RECTIFIER
FOR AUDIO
FOR ACCESSORIES
FOR MICROCOMPUTER
REGULATOR FOR AMP
FROM POWER SUPPLY
GND
FROM POWER SUPPLY
+B
GND
-B

Specifications

Input sensitivity	LINE	: 180 mV/1 V output, 1 kHz, load 50 kΩ
	BAL LINE	: 180 mV/1 V output, 1 kHz, load 100 kΩ
	LINE → BAL LINE	: 180 mV/1 V output, 1 kHz, load 100 kΩ
	BAL LINE → LINE	: 180 mV/1 V output, 1 kHz, load 50 kΩ
Maximum output	LINE	: 14.1 V/distortion 0.1%, 1 kHz, load 50 kΩ
	BAL LINE	: 28.7 V/distortion 0.1%, 1 kHz, load 100 kΩ
	LINE → BAL LINE	: 28.7 V/distortion 0.1%, 1 kHz, load 100 kΩ
	BAL LINE → LINE	: 14.1 V/distortion 0.1%, 1 kHz, load 50 kΩ
Input impedance	LINE	: 45 kΩ/1 kHz
	BAL LINE	: 90 kΩ/1 kHz
	LINE → BAL LINE	: 27 kΩ/1 kHz
	BAL LINE → LINE	: 54 kΩ/1 kHz
Output impedance	LINE	: 90 Ω/1 kHz
	BAL LINE	: 180 Ω/1 kHz
Total harmonic distortion	LINE	: 0.005 %/1 V output, 20 Hz - 20 kHz, load 50 kΩ
	BAL LINE	: 0.003 %/1 V output, 20 Hz - 20 kHz, load 100 kΩ
	LINE → BAL LINE	: 0.01%/1 V output, 20 Hz - 20 kHz, load 100 kΩ
	BAL LINE → LINE	: 0.009%/1 V output, 20 Hz - 20 kHz, load 50 kΩ
Frequency response	LINE	: +0, –0.1 dB/1 V output, 20 Hz - 20 kHz, load 50 kΩ
		: +0, –3.0 dB/1 V output, 5 Hz - 110 kHz, load 50 kΩ
	BAL LINE	: +0, –0.1 dB/1 V output, 20 Hz - 20 kHz, load 100 kΩ
		: +0, –3.0 dB/1 V output, 5 Hz - 110 kHz, load 100 kΩ
	LINE → BAL LINE	: +0, –0.2 dB/1 V output, 20 Hz - 20 kHz, load 100 kΩ
		: +0, –3.0 dB/1 V output, 5 Hz - 90 kHz, load 100 kΩ
	BAL LINE → LINE	: +0, –0.2 dB/1 V output, 20 Hz - 20 kHz, load 50 kΩ
		: +0, –3.0 dB/1 V output, 5 Hz - 90 kHz, load 50 kΩ
S/N ratio	LINE	: 129 dB (IHF-A)/distortion 0.1 %, 1 kHz, load 50 kΩ
	BAL LINE	: 132 dB (IHF-A)/distortion 0.1 %, 1 kHz, load 100 kΩ
	LINE → BAL LINE	: 118 dB (IHF-A)/distortion 0.1 %, 1 kHz, load 100 kΩ
	BAL LINE → LINE	: 114 dB (IHF-A)/distortion 0.1 %, 1 kHz, load 50 kΩ
Tone control	Max. amount of change BASS	: ±8 dB at 100 Hz
	TREBLE	: ±8 dB at 10 kHz
Loudness control	100 Hz	: +7 dB
	10 kHz	: +5 dB
Accessories	• Power cable	• Remote control, RA-20
	• Two “AAA” batteries	• Owner’s manual
	• Safety cautions	
Power consumption	40 W	
	2.6 W (at standby)	
Power supply	230 V ~ (50 Hz)	
Max. external dimensions	440 (W) × 130 (H) × 434 (D) mm	
Weight	19.8 kg (main unit)	

* Specifications and appearance are subject to change without notice.

Before Asking for Repair Services

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 main power button is pressed ON. The standby indicator does not light up.	• The power plug is disconnected from the wall outlet, or it is not completely inserted.	• Insert the power plug completely in the wall outlet.
	• The power plug is disconnected from the AC inlet or is not completely inserted.	• Securely insert the power plug in the AC inlet.
Even when the operation button is pressed, the operation indicator does not light.	• The main power button is turned off.	• Light the standby indicator by turning on the main power button.
No sound is generated.	• The volume control or the attenuator of the power amplifier is set at the minimum level.	• Turn the volume control or the attenuator of the power amplifier to adjust the sound volume.
	• The source to be reproduced is not selected with the input selector.	• Select the source to be reproduced with the input selector. Select a source with the input selector buttons.
	• The connected output terminal does not match with the selected output mode.	• Set the output mode to the connected output terminal.
	• Cable connections are incomplete.	• Make cable connections securely.
	• The mute button of the remote control is set to on.	• Set the mute button to off.
	• The external pre button is set to on.	• Set the external pre button to off.
Sound is generated but the sound volume is low. The sound volume is low only on one side of the channel.	• The balance control is not at the center position but turned in either direction.	• The balance control shall be set to the center position under normal conditions.
	• The attenuator of the power amplifier is set to on.	• Turn off the attenuator.
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. Change the power outlet to from a different system.
	• The input/output cables and speaker cables are close to the power cable.	• Keep the input/output cables and speaker cables away from the power cable.
	• In the audio system, there is a set that is grounded through the power cable.	• Attach a 3P-2P conversion adaptor to the power cable/plug of the grounded set.
No effect of tone control is observed.	• The line straight button is set to on.	• Set the line straight button to off.
The loudness is not activated.	• The line straight button is set to on.	• Set the line straight button to off.
The external pre button does not work.	• To prevent incorrect operations, this unit is designed to toggle the separate on/off by holding down the separate button for approximately 1 second.	• Hold down the external pre button for around 1 second.



LUXMAN CORPORATION

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

AG00238G16A
Printed in Japan