

Luxman

CONTROL AMPLIFIER

C-900u

Owner's Manual

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Precautions

luxman
CONTROL AMPLIFIER C-900u

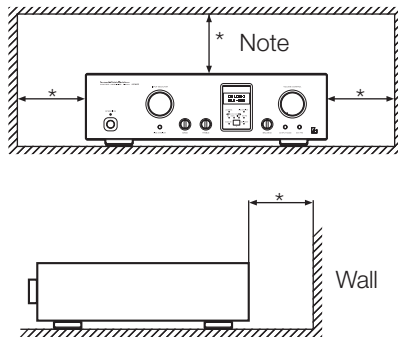
Installation place

Install this unit in a location where good ventilation and heat radiation is 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 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.



Batteries

Caution:

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

Repair and adjustment

When repair and adjustments are needed, please ask the store where you bought the unit.

Cleaning

For cleaning, use a piece of soft cloth to wipe the unit such as cleaning cloth available on the market. If the unit has become very dirty, remove the dirt with soft cloth absorbing a small amount of neutral detergent, and then wipe the unit with dry cloth. Do not use a solvent like benzine or thinner because such a substance can often damage the exterior.

Precautions in connecting with other components

When connecting this unit to input/output devices, be sure to turn off the power switches of this unit and all other connected units. Failure to observe this may generate a strong noise resulting in speaker damage or cause a malfunction.

The pin-plugs to be inserted in the input and output terminals of this unit shall be pushed in firmly. If the grounding terminal is inadequately connected, noises including hum may be generated, resulting in an adverse S/N ratio.

The sound is not generated shortly after the power supply is turned on.

This amplifier is equipped with a time muting circuit in order to separate the output circuit. Therefore, no sound is generated shortly after the power supply is turned on.

If the volume control is moved to a high sound level before the time muting circuit is canceled, a large sound is suddenly generated. Please be advised that the volume control shall be set to a low level at first and adjusted after sound comes out of the speakers.

Features of This Unit

LECUA1000 — LUXMAN Electric Controlled Ultimate Attenuator 1000

Application of the system to obtain attenuation by combining 2 fixed resistances connected in series has improved the efficiency of the LECUA1000 attenuator used in C-1000f.

The shortest signaling route has been achieved by the integrated amplifier circuit thanks to the 3D structure of the mounting boards.

Controlling LECUA1000 to the level equal to the volume position detected by a microprocessor has achieved the operation feeling similar to our conventional sliding-type volume controls.

ODNF - Only Distortion Negative Feedback -

The amplification feedback circuit that has acquired the high-speed primary slew rate and ultra-wide bandwidth by feeding back only distortion components generated during amplification to maintain the pure sound quality of the main-amplifier that is almost non-feedback.

The newest version, 4.0, has achieved the low impedance and high S/N ratio of the transmission circuit thanks to 4-parallelized first stage and Darlington-connected second stage of the amplification circuit.

In addition, the input stages of the error detection circuit are 3-parallelized to improve distortion and noise.

High-inertia power supply

High-inertia power supply circuit that combines a large-capacity OI-core-type power transformer with customizable $3,300\mu\text{F} \times 4$ capacitor blocks.

Schottky barrier diode

Application of schottky barrier diode manufactured by Nihon Inter Electronics Corporation that has less switching noises and higher conversion efficiency to the DC voltage for the power supply rectifier circuit.

LUXMAN's original OFC wires

Our original OFC wires are used in the internal wiring to achieve smooth signal transmission thanks to the spiral wrap shielding on each core and the non-plating process on the core wire.

Loopless chassis structure

This unit consists of the independent construction of a loopless chassis to eliminate increased ground impedance caused by chassis current.

Zoom function

When the ZOOM button on the remote control is pressed, the current volume level is enlarged on the display.

Dimmer function

The brightness of display window can be switched over in 4 steps.

Peel coat, PCB

Dielectric effect of resist eliminated by using copper foil of 100μm in thickness and gold plating on audio circuit board instead of using resist.

Input/output terminals

RCA terminal made of copper alloy and XLR terminal manufactured by Neutrik.

Remote control (RA-20)

The remote control is encased in aluminum. Tactile switches will satisfy users with solid click feeling.

Tactile switches will satisfy users with light key touch.

Cast-iron insulator

This unit is equipped with gradation cast-iron insulators that cuts out unnecessary external vibration and strongly supports the weight of this unit.

External pre-input terminal

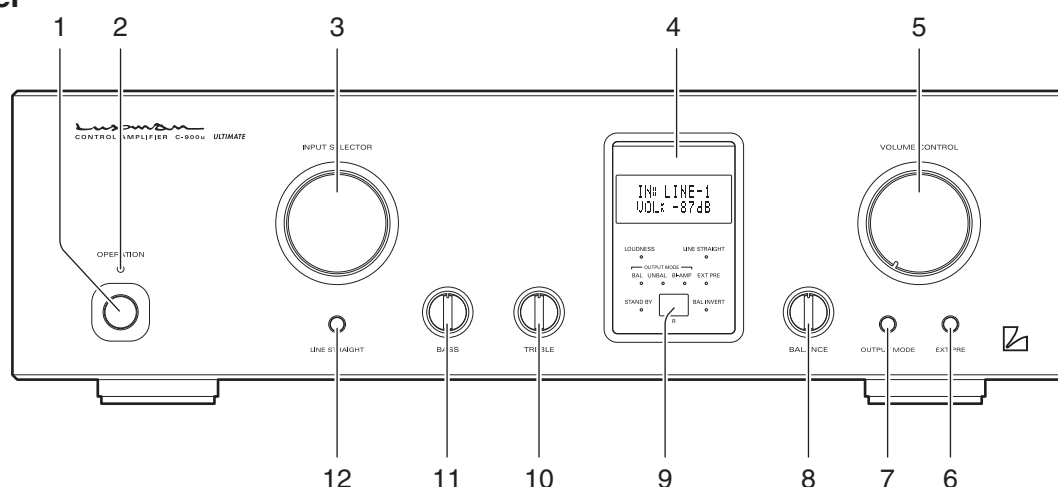
External pre-function capable of switching between external pre-amplifier and AV amplifier.

Selector relay

Selector relay with high sound quality used in the key point of Luxman amplifier, which enhances the separation and cross-talk performances.

Names and Functions

Front panel



1. Operation switch (OPERATION)

Turns this unit from the standby state to operation state. When the main power switch on the rear panel is turned on to set this unit to the standby state and this switch is turned on, this unit is set to the operation state.

2. Operation indicator (OPERATION)

Blinks during warm-up when the operation switch 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.

- Input transition by rotating clockwise:
LINE-1→LINE-2→LINE-3→BAL LINE-1→BAL LINE-2→BAL LINE-3→LINE-1...
- Input transition by rotating counterclockwise:
LINE-1→BAL LINE-3→BAL LINE-2→BAL LINE-1→LINE-3→LINE-2→LINE-1 ...

Factory default: LINE-1

The input/output muting circuit is activated to mute sound during selecting an input.

4. Display window

Displays the operation status of this unit.

This display window is composed of 8 indicators, input display, and volume display.

5. Volume control (VOLUME CONTROL)

Adjusts the sound volume.

Sound is not generated when this control is rotated counterclockwise to the end, and then, the sound volume gradually becomes higher when the control is rotated clockwise as follows: mute→-87 dB→-86 dB→...→0 dB in steps of 1 dB.

6. External pre switch (EXT PRE)

Input selector switch to select the external pre-input terminal (EXT PRE) on the rear panel

ON: Allows the output signals coming from the pre-amplifier or AV amplifier connected to the external pre-input terminal to be provided directly from the unbalanced terminal.

OFF: Enables to reproduce the signals from the source selected with the input selector.

Holding down the switch for approx. 1 second toggles the external pre switch ON and OFF.

When the external pre switch is set to ON, the external pre indicator lights up.

When the main power switch is turned off or this unit is in the standby state, external pre-input signals are always provided from the unbalanced output terminal regardless of this switch setting.

The input signals connected to the external pre-input terminal are not provided from the balanced output terminal.

When the external pre switch is set to ON, the volume control of this unit cannot adjust the sound volume.

Volume adjustment shall be performed at the input device side such as the pre-amplifier connected to the external pre-input terminal.

If a device that has no volume adjustment function such as a CD player is connected to the external pre-input terminal, the volume control of this unit cannot function, and therefore, sudden loud sound may be generated when the external pre-input is selected, which may cause hearing loss or damage to the speakers.

For such input devices, be sure to use a pre-amplifier equipped with the sound volume adjustment function as a relay, generate sound through the speakers with volume lowered, and adjust the volume to your favorite level.

7. Output mode selection switch (OUTPUT MODE)

Selects an output mode from the following 3 kinds: unbalanced output, balanced output, and bi-amplifier output. Every time this switch is pressed, the output changes as follows: UNBAL→BAL→BI-AMP→UNBAL ...

- Unbalanced output (UNBAL)
Sound comes out from LINE-1 and LINE-2.
- Balanced output (BAL)
Sound comes out from BAL LINE-1 and BAL LINE-2.
- Bi-amplifier output (BI-AMP)
Sound comes out 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 the input selector is set to balanced, the bi-amplifier output cannot be selected.

Change the output mode after setting the input selector to unbalanced.

Factory default: Unbalanced output (UNBAL) mode

The input/output muting circuit is activated to mute sound during selecting an output mode.

Every output mode can store preset values, respectively.

Refer to the descriptions about presetting on pages 22 to 25 for presetting.

8. Balance control (BALANCE)

Adjusts the balance of sound volume between right and left channels.

Rotating this control counterclockwise causes the left sound volume to be enhanced, and rotating this control clockwise causes the right sound volume to be enhanced.

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

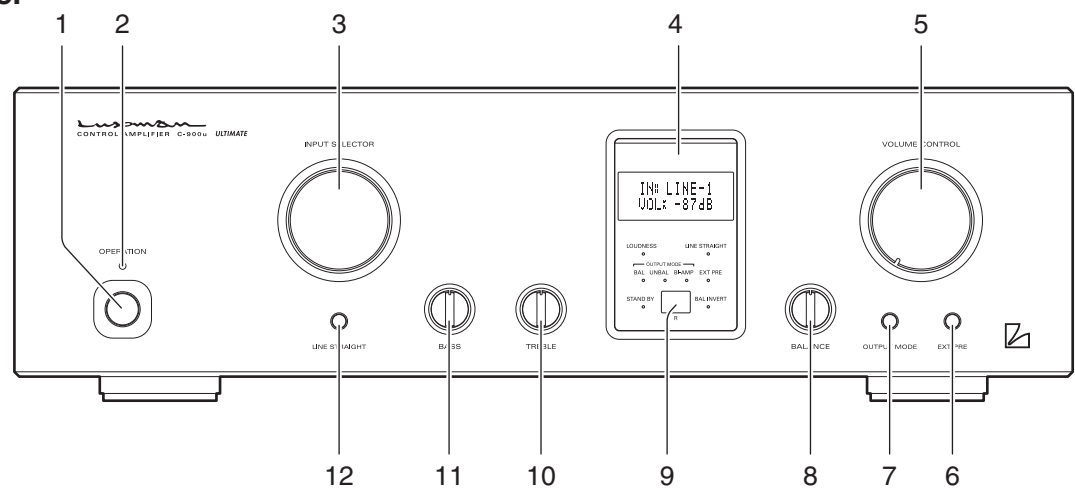
The adjustable value for right/left balance is up to -6 dB for right and left each.

9. Remote sensor (REMOTE)

Receives signals from the accessory remote control.

Names and Functions

Front panel



10. Tone control for treble TONE CONTROL (TREBLE)

Controls the frequency characteristics in the high-frequency range.

When this control is set to the center position, flat frequency characteristic is obtained. Rotating this control clockwise causes the high-frequency range to be enhanced, and rotating this control counterclockwise causes the high-frequency range to be attenuated.

This control does not function when the line straight switch is set to ON.

11. Tone control for bass TONE CONTROL (BASS)

Controls the frequency characteristics in the low-frequency range.

When this control is set to the center position, flat frequency characteristic is obtained. Rotating this control clockwise causes the low-frequency range to be enhanced, and rotating this control counterclockwise causes the low-frequency range to be attenuated.

This control does not function when the line straight switch is set to ON.

12. Line straight switch (LINE STRAIGHT)

This switch is used to increase the purity of the sound quality by bypassing (skipping) the tone control circuit.

Every time this switch is pressed, line straight setting toggles between ON and OFF repeatedly.

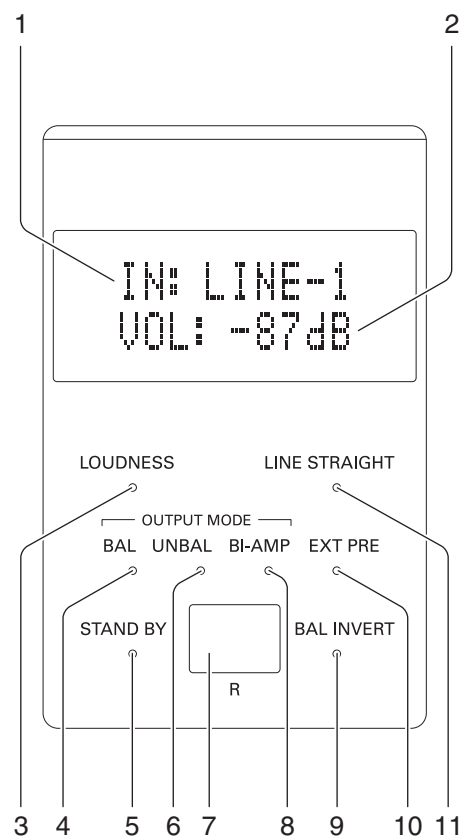
The line straight indicator lights up when the line straight switch is set to ON.

When the line straight switch is set to ON, the tone control and loudness do not function.


CONTROL AMPLIFIER C-900u

Names and Functions

Display window



1. Input indicator (IN:)

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

2. Volume indicator (VOL:)

Indicates the current volume level in steps of 1 dB.

- “-” shows the mute state. No sound is generated.
- The minimum volume level is shown as “-87 dB”, and the maximum volume level is shown as “0 dB”.

3. Loudness indicator (LOUDNESS)

Lights up when the loudness switch on the remote control is set to ON.

4. Balance indicator (BAL)

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

5. Standby indicator (STAND BY)

Lights up when the main power switch on the rear panel is turned on and the operation switch is turned off. When the operation switch is turned on or when the main power switch is turned off, this indicator turns off.

6. Unbalance indicator (UNBAL)

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

7. Remote sensor (REMOTE)

Receives signals from the accessory remote control.

8. Bi-amplifier indicator (BI-AMP)

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

9. Balanced phase inversion indicator (BAL INVERT)

Lights up when the phases of the balanced input and balanced output are inverse against the preset state of this unit.

10. External pre indicator (EXT PRE)

Lights up when the external pre switch is set to ON.

11. Line straight indicator (LINE STRAIGHT)

Lights up when the line straight switch is set to ON.

When the line straight switch is set to ON, the loudness function cannot be operated from the accessory remote control.

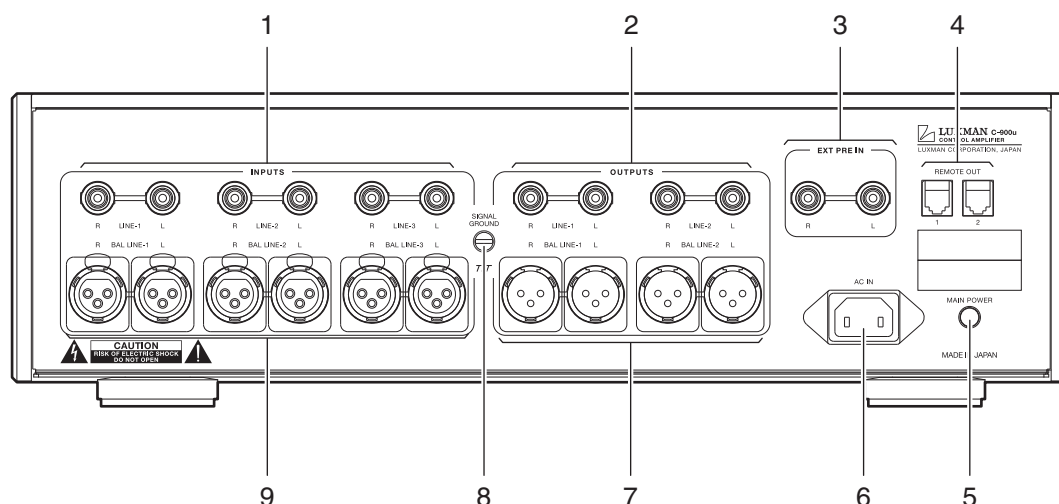
If this switch is pressed, the line straight indicator blinks for 3 seconds to show that this operation cannot be performed.

Perform the loudness function after setting the line straight switch to OFF.

The loudness function can be toggled ON and OFF only with the accessory remote control (RA-20).

Names and Functions

Rear panel



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

RCA input terminals to receive unbalanced audio signals of a line level

Connect these terminals to an unbalanced output of an input device such as a CD player with a pin-plug cable.

Incoming audio signals are selected with the input selector and delivered.

LINE-1, LINE-2, and LINE-3 have the same quality.

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

RCA output terminals to provide unbalanced audio signals of this unit

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

Audio output signals are selected with the output mode selection switch.

LINE-1 and LINE-2 have the same quality.

Factory default output mode: Unbalanced (UNBAL)

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

RCA input terminal to receive output signals from an external pre-amplifier or an AV amplifier

Incoming audio signals are provided directly from the unbalanced output terminal.

External pre-input signals are not affected by the volume control of this unit.

4. Remote output terminals (REMOTE OUT)

If a power amplifier (e.g. M-900u) equipped with a dedicated remote input terminal is connected to this remote output terminal with a dedicated remote cable, the power of the signal-receiving power amplifier can be turned on and off in conjunction with the operation switch of this unit.

ON signals from the remote output terminals are transmitted in a certain period of time after pressing the operation switch of this unit. Therefore, the signal-receiving power amplifier is activated after the elapse of time that consists of the muting time of the signal-receiving amplifier and this transmission delay time.

The remote output terminals 1 and 2 can turn on and off 2 units of power amplifiers at the same time.

Refer to the owner's manual of a signal-receiving power amplifier for available operation settings of the signal-receiving power amplifier.

5. Main power switch (MAIN POWER)

Turns this unit to the standby state.

When this switch is set to ON, the standby indicator on the front panel lights up to show that this unit turns to the standby state.

When this switch is set to OFF, the standby indicator on the front panel turns off to show that the main power is turned off.

6. AC inlet (AC IN)

Connects the accessory power cable.

The power shall be supplied from a household wall socket.

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

XLR connector output terminal to provide balanced audio signals from this unit

Connect these terminals to a balanced input of an output device such as a power amplifier with a balanced cable.

Audio output signals are selected with the output mode selection switch.

BAL LINE-1 and BAL LINE-2 have the same quality.

Factory default output mode: Unbalanced (UNBAL)

8. Signal ground (ground terminal) (SIGNAL GROUND)

Is a ground terminal for devices to be connected to this unit.

This terminal is used not for safety but for noise reduction when other devices are connected.

9. 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.

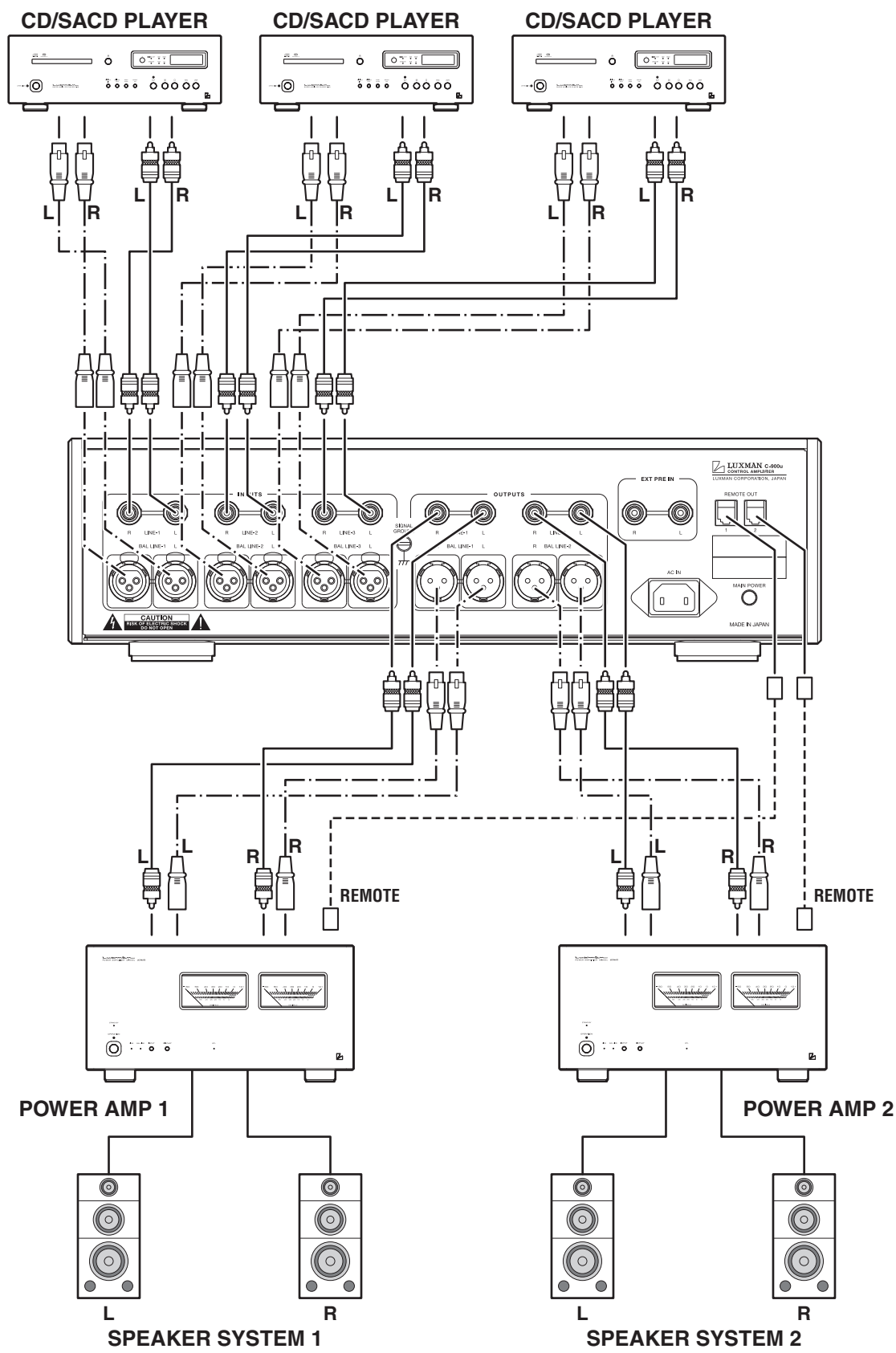
Connect these terminals to a balanced output of an input device such as a CD player with a balanced cable.

Incoming audio signals are selected with the input selector and delivered.

BAL LINE-1, BAL LINE-2, and BAL LINE-3 have the same quality.

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.

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.

How to connect power supply

Use the accessory power cable and insert the AC plug in an outlet on the wall in the room where the unit will be installed.

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.

At this moment, exercise extra care not to conduct wrong connection between the right and left channels. If the right and left channels are connected reversely, the localization of sound images is deteriorated, thus failing in normal stereo playback.

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

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.

At this moment, exercise extra care not to conduct wrong connection between the right and left channels. If the right and left channels are connected reversely, the localization of sound images is deteriorated, thus failing in normal stereo playback.

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

How to connect the remote output terminal to a power amplifier

Connect between the remote input terminal of a power amplifier such as Luxman M-900u and the remote output terminal of this unit with the dedicated remote cable (no polarity) supplied with the power amplifier.

After this connection, the power of the power amplifier can be turned on and off in conjunction with the operation switch of this unit.

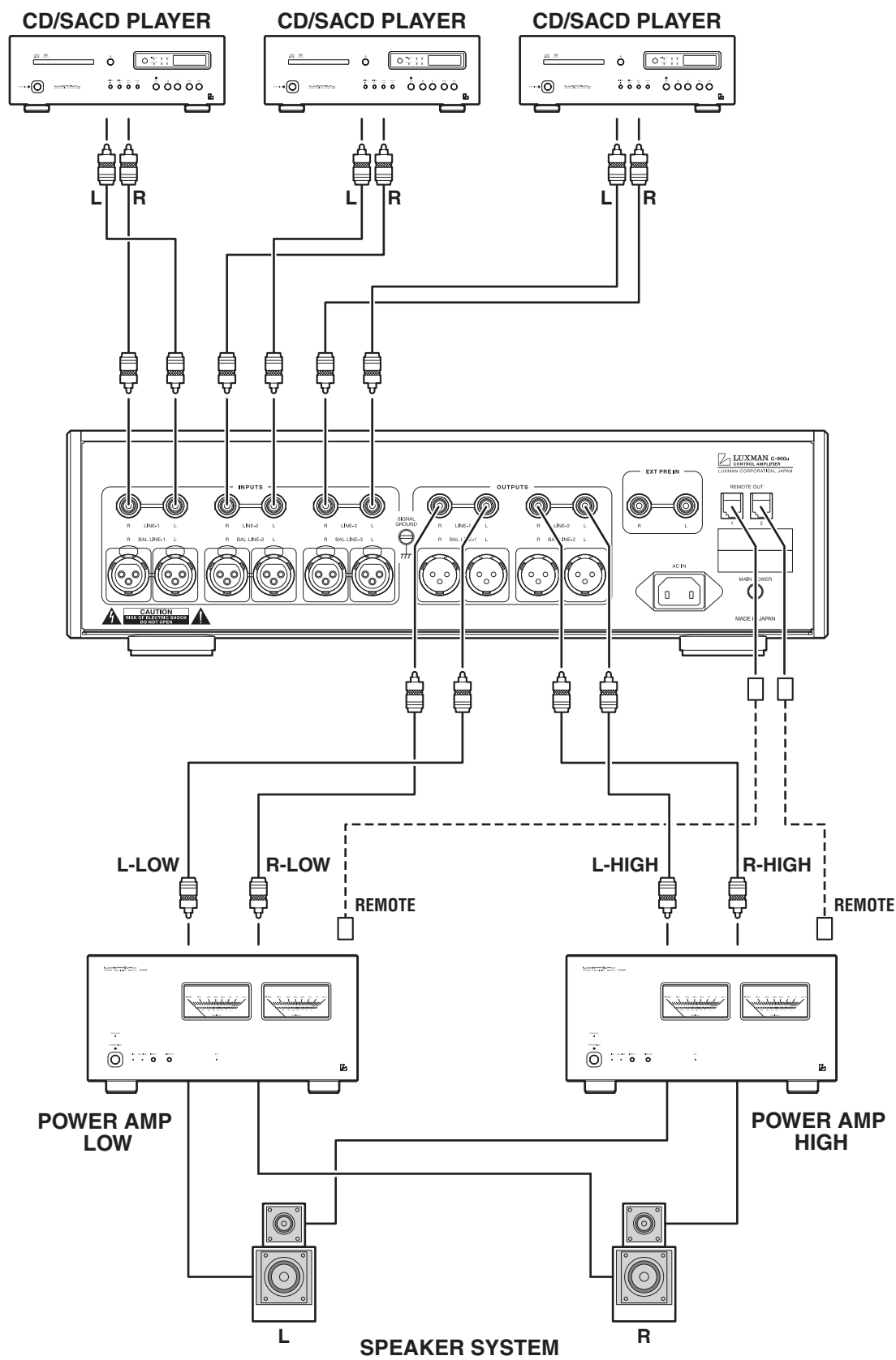
Two (2) remote output terminals are available, and both terminals provide the same signals. Use them according to your taste.

Use the dedicated remote cable only for the connection between Luxman control amplifiers and Luxman power amplifiers. Connection to such a terminal that the remote output of this unit is short-circuited may cause a malfunction.

When this unit is connected to an output device, turn off the main power switch of this unit or turn this unit to the standby state to protect the amplifier and speakers from excessive input. Also turn off the power of the input/output devices connected to this unit. After connection, ensure that connections are appropriately performed and turn this unit and the input/output devices to 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 output mode is set to the bi-amplifier output, only the unbalanced input terminal is active as an input terminal of this unit and no sound comes if the balanced input terminal is connected.

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

At this moment, exercise extra care not to conduct wrong connection between the right and left channels. If the right and left channels are connected reversely, the localization of sound images is deteriorated, thus failing in normal stereo playback.

If the grounding of the pin-plug cables is inadequately connected, noises including hum may be generated, resulting in an adverse S/N ratio. Surely insert the connection plug.

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

When the output mode is set to the bi-amplifier output, only the unbalanced output terminal is active as an output terminal of this unit and no sound comes if the balanced output terminal is connected.

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

At this connection, exercise extra care not to conduct wrong connection between right and left channels. If the right and left channels are connected reversely, the localization of sound images is deteriorated, thus failing in normal stereo playback.

If the grounding of the pin-plug cables is inadequately connected, noises including hum may be generated, resulting in an adverse S/N ratio. Surely insert the connection plug.

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

The LINE-2 unbalanced output terminal that is the output for high frequency can adjust the sound volume of up to ± 6 dB in steps of 1 dB with the preset operation of the supplied remote control.

How to connect the remote output terminal to a power amplifier

Connect between the remote input terminal of a power amplifier such as Luxman M-900u and the remote output terminal of this unit with the dedicated remote cable (no polarity) supplied with the power amplifier.

After this connection, the power of the power amplifier can be turned on and off in conjunction with the operation switch of this unit.

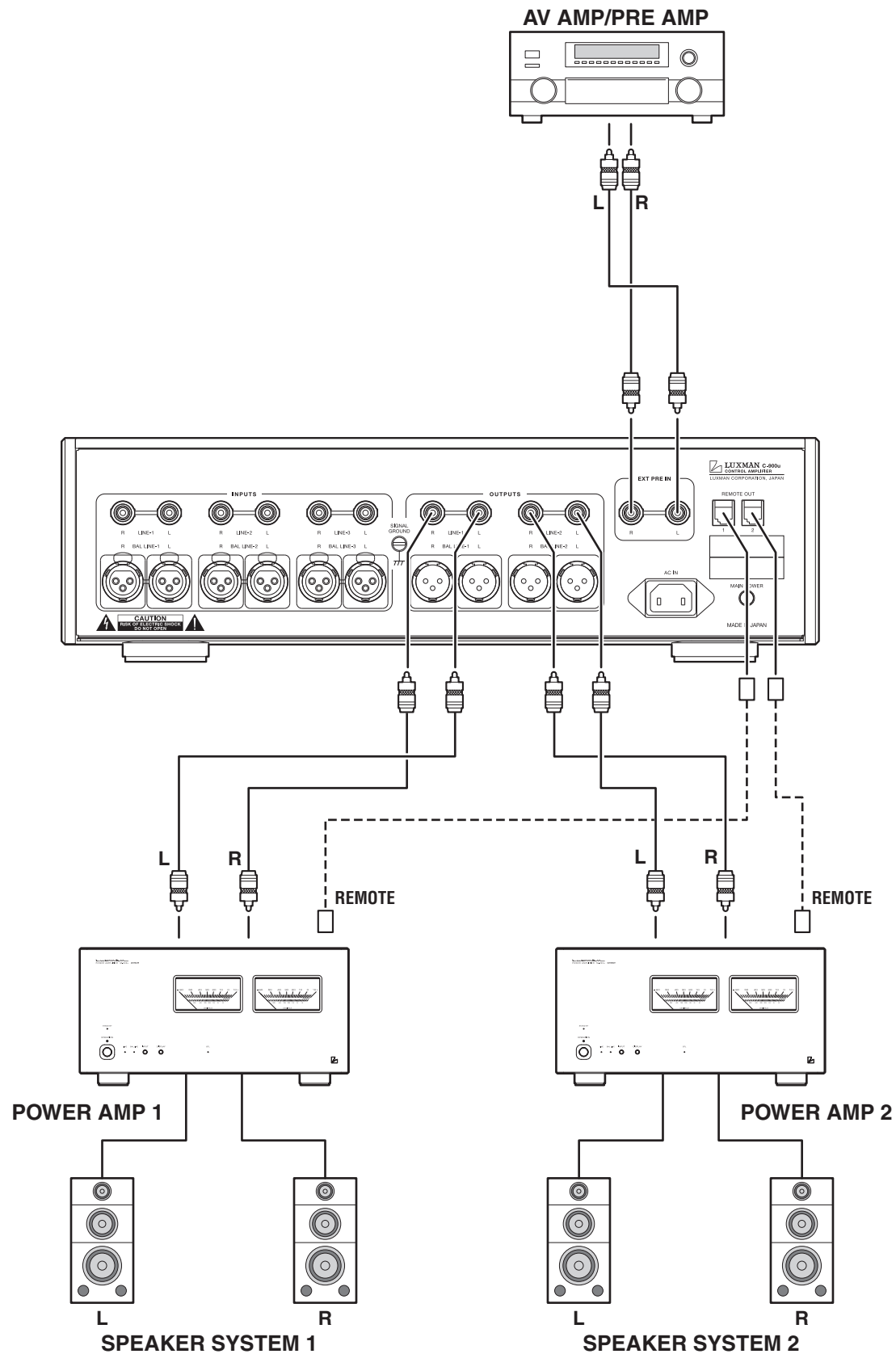
Two (2) remote output terminals are available, and both terminals provide the same signals. Use them according to your taste.

Use the dedicated remote cable only for the connection between Luxman control amplifiers and Luxman power amplifiers. Connection to such a terminal that the remote output of this unit is short-circuited may cause a malfunction.

When this unit is connected to an output device, turn off the main power switch of this unit or turn this unit to the standby state to protect the amplifier and speakers from excessive input. Also turn off the power of the input/output devices connected to this unit. After connection, ensure that connections are appropriately performed and turn this unit and the input/output devices to the operating state.

Connections

External pre reproduction



External pre reproduction

Connection between external pre-input terminal and input devices such as an AV amplifier

When this unit is used through the external pre-input, only the unbalanced output terminal is active as an output terminal of this unit and no sound comes from the balanced output terminal.

When the main power switch is turned off or this unit is in the standby state, external pre -input signals are always provided from the unbalanced output terminal regardless of the external pre switch setting.

Connect between the pre-out terminal of an input device such as an AV amplifier or a pre-amplifier and the external pre-input terminal of this unit with a pin-plug cable.

At this moment, exercise extra care not to conduct wrong connection between the right and left channels. If the right and left channels are connected reversely, the localization of sound images is deteriorated, thus failing in normal stereo playback.

If the grounding of the pin-plug cables is inadequately connected, noises including hum may be generated, resulting in an adverse S/N ratio. Surely insert the connection plug.

When the external pre switch is set to ON, the volume control of this unit cannot adjust the sound volume.

Volume adjustment shall be performed at the input device side such as an AV amplifier and a pre-amplifier connected to the external pre-input terminal.

If a device that has no volume adjustment function such as a CD player is connected to the external pre-input terminal, the volume control of this unit cannot function, and therefore, sudden loud sound may be generated when the external pre-input is selected, which may cause hearing loss or damage to the speakers.

For such input devices, be sure to use a pre-amplifier equipped with the sound volume adjustment function as a relay, generate sound through the speakers with volume lowered, and adjust the volume to your favorite level.

Operations

Before operation

1. Ensure that the connections are correctly performed.
(Normal playback cannot be achieved with wrong connections of R and L.)
2. When the power is turned on or off or the input selector is changed over, set the volume control to the minimum position in advance.

Playback procedure

1. Press the operation switch to turn on the switch after ensuring that the volume control is set to the minimum position.
2. Select a source to be reproduced with the input selector.
3. Adjust the sound level with the volume control.
4. Operate the line straight switch, balance control, tone control, and the like according to the reproduced source.

How to operate line straight switch

The line straight switch is used to play sound with the shortest signaling route for enhancing the purity of the source selected with the input selector. When this switch is set to ON, the tone control and loudness are bypassed.

How to operate balance control

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

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

How to operate the tone control

This unit has the tone control function for the low-frequency and high-frequency ranges.

The low-frequency range type works in the 300 Hz or lower. The tone control is set to flat frequency characteristic at the center position. Rotating the control clockwise causes the low-frequency range to be enhanced, and rotating the control counterclockwise causes the low-frequency range to be attenuated.

The high-frequency range type works in the 3 kHz or higher. The tone control is set to flat frequency characteristic at the center position. Rotating the control clockwise causes the high-frequency range to be enhanced, and rotating the control counterclockwise causes the high-frequency range to be attenuated.

For both the low-frequency and high-frequency ranges, the right and left channels interlockingly function.

When the line straight switch is set to ON, the tone control does not function.

Memory

This unit memorizes the following items when the operation switch is set to OFF or the main power switch is set to 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 : $3\pm$, $2\pm$ OUTPUT : $3\pm$, $2\pm$
BAL INVERT	NORMAL / INVERT
DIMMER	Normal/Darker/Significantly darker/No light
ZOOM	ON / OFF
LOUDNESS	ON / OFF
LINE-STRAIGHT	ON / OFF
EXT PRE	ON / OFF

Memory reset

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

- (1) Turn this unit to the standby state.
- (2) Hold down the operation switch on the main unit for 5 seconds or more and press the dimmer switch once while holding down the operation switch.

That's all for memory reset.

Factory default

Item	Default
INPUT	LINE-1
OUTPUT MODE	UNBALANCE
BI-AMP	L-Hi : 0dB, R-Hi : 0dB
BAL PHASE	INPUT-1, 2, 3 : $3+$, $2-$ OUTPUT : $3+$, $2-$
BAL INVERT	NORMAL
DIMMER	MAX (under normal conditions)
ZOOM	OFF
LOUDNESS	OFF
LINE-STRAIGHT	OFF
EXT PRE	OFF

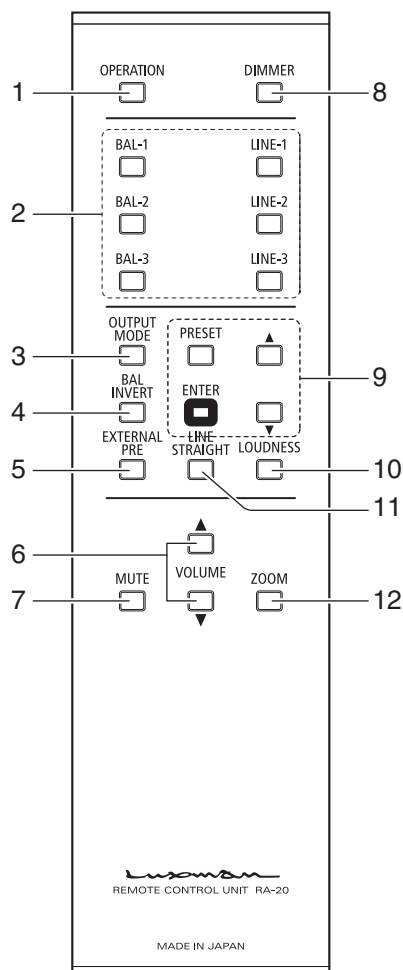
Inhibition and caution

When a setting cannot be changed, an error message as follows is displayed:

Display	Caution
UNBALANCE MODE!!	When the input and output are both unbalance, the balanced phase cannot be inverted.
BI-AMP MODE!!	When the bi-amplifier output is selected, the balanced input cannot be selected.
BI-AMP MODE!!	When the bi-amplifier output is selected, the balanced phase cannot be inverted.
STRAIGHT MODE!!	When the line straight is set to ON, loudness cannot be selected.
EXT PRE MODE!!	When the external pre is set to ON, mute cannot be selected.
EXT PRE MODE!!	When the external pre is set to ON, the output mode cannot be changed.
IN: BAL.-* VOL: -**dB (no change in display)	When the balanced input is selected, the bi-amplifier output mode cannot be selected.

How to use Remote Control

Remote controller (RA-20)



1. Operation switch (OPERATION)

Turns this unit from the standby state to operation state. When the main power switch on the rear panel is turned on to set this unit to the standby state and this switch is turned on, this unit is set to the operation 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.

The input/output muting circuit is activated to mute sound during selecting an input.

3. Output mode selection switch (OUTPUT MODE)

Selects an output mode from the following 3 kinds: unbalanced output, balanced output, and bi-amplifier output. Every time this switch is pressed, the output mode changes as follows: UNBAL→BAL→BI-AMP→UNBAL ...

- Unbalanced output (UNBAL)
Sound comes out from LINE-1 and LINE-2.
- Balanced output (BAL)
Sound comes out from BAL LINE-1 and BAL LINE-2.
- Bi-amplifier output (BI-AMP)
Sound comes out 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 the input selector is set to balanced, the bi-amplifier output cannot be selected.

Change the output mode after setting the input selector to unbalanced.

Factory default: Unbalanced output (UNBAL) mode

The input/output muting circuit is activated to mute sound during selecting an output mode.

Every output mode can store preset values, respectively.

4. Balanced phase inversion switch (BAL INVERT)

Inverts the balanced phase specified with the preset function of this unit.

When the phases of a balanced input and a balanced output must be inverted against the preset state, press this switch to invert the balanced phases.

Every time this switch is pressed, the balanced phase changes as follows: NORMAL→INVERT→NORMAL→INVERT ...

The input/output muting circuit is activated to mute sound during toggling the balanced phase between NORMAL and INVERT.

5. External pre switch (EXTERNAL PRE)

Input selector switch to select the external pre-input terminal (EXT PRE) on the rear panel

ON: Allows the output signals coming from the pre-amplifier or AV amplifier connected to the external pre-input terminal to be provided directly from the unbalanced terminal.

OFF: Enables to reproduce the signals from the source selected with the input selector.

Holding down the switch for approx. 1 second toggles the external pre switch ON and OFF.

When the external pre switch is set to ON, the external pre indicator lights up.

6. Volume control switch (VOLUME)

Adjust the output level of this unit.

Pressing these switches change the output level.

- Pressing ▲ increase the sound volume.
- Pressing ▼ decrease the sound volume.

7. Mute switch (MUTE)

Deadens the sound temporarily.

To cancel mute, press the mute switch again.

Volume level change adjusts the volume level while the sound is muted but does not cancel the mute function.

8. Dimmer switch (DIMMER)

Adjusts the brightness of the input display and volume display on the display window.

The brightness can be adjusted in 4 stages from no light to normal lighting on.

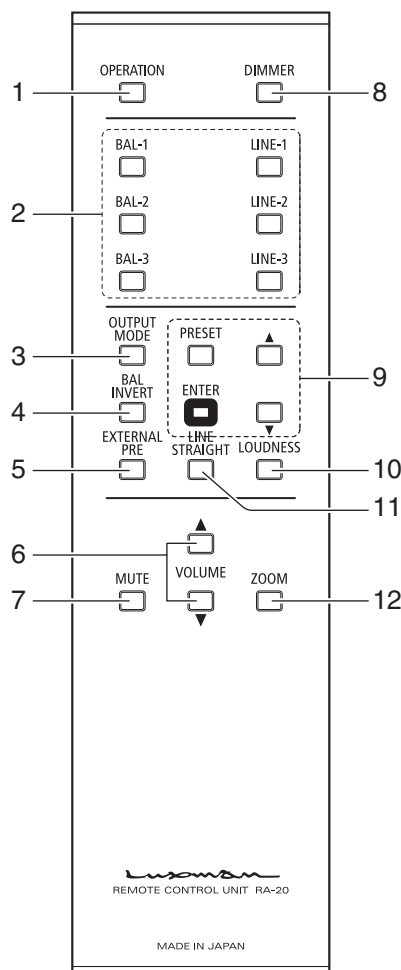
Every time this switch is pressed, the brightness changes as follows: Normal→Darker→Significantly darker→No light→Normal ...

Selection of no light displays "DISPLAY OFF" for 1 second and the sign turns off.

Factory default: Normal light

How to use Remote Control

Remote controller (RA-20)



9. Preset switch (PRESET) Enter switch (ENTER)

Determines adjustments or setting values.

▲ switch (UP)

▼ switch (DOWN)

Changes levels or settings.

Balanced phase setting/BAL PHASE presetting

The balanced phase can be set for input and output, respectively.

- (1) Press the PRESET switch to turn this unit to the preset mode, and BAL PHASE blinks. (1st line of Fig. 1)

If the balanced phase is not changed, press the PRESET switch to exit from the preset mode.

- (2) Press the ENTER switch, 3+ and 2- of BAL-1 blink to show that the BAL LINE-1 phase inversion setting of the balanced input can be performed. (2nd line of Fig. 1)

If the ENTER switch is pressed one more time, the step goes to the BAL LINE-2 phase inversion setting of the balanced input.

- (3) Press ▲ or ▼ to invert the BAL LINE-1 phase of the balanced input and the display turns to 3- and 2+.

Press ▲ or ▼ again to turn the phase setting back to 3+ and 2-.

- (4) Press the ENTER switch to determine the changed setting of BAL LINE-1, 3+ and 2- of BAL-2 blink to show that the BAL LINE-2 phase inversion setting of the balanced input can be performed. (4th line of Fig. 1)

If the ENTER switch is pressed one more time, the step goes to the BAL LINE-3 phase inversion setting.

- (5) Press ▲ or ▼ to invert the BAL LINE-2 phase of the balanced input, and the display turns to 3- and 2+. (5th line of Fig. 1)

Press ▲ or ▼ again to turn the phase setting back to 3+ and 2-.

- (6) Press the ENTER switch to determine the changed setting, 3+ and 2- of BAL-3 blink to show that the BAL LINE-3 phase inversion setting of the balanced input can be performed. (6th line of Fig. 1)

If the ENTER switch is pressed one more time, the step goes to the BAL OUT phase inversion setting.

- (7) Press ▲ or ▼ to invert the BAL LINE-3 phase of the balanced input and the display turns to 3- and 2+. (7th line of Fig. 1)

Press ▲ or ▼ again to turn the phase setting back to 3+ and 2-.

- (8) Press the ENTER switch to determine the changed setting, 3+ and 2- of BAL OUT blink to show that the BAL LINE-1 and BAL LINE-2 phase inversion settings of the balanced output can be performed. (8th line of Fig. 1)

If the ENTER switch is pressed one more time, the step goes back to the step (2) to enable the BAL LINE-1 phase inversion setting of the balanced input again.

- (9) Press ▲ or ▼ to invert the BAL LINE-1 and BAL LINE-2 phases of the balanced output and the display turns to 3- and 2+. (9th line of Fig. 1)

Press ▲ or ▼ again to turn the phase setting back to 3+ and 2-.

- (10) Press the ENTER switch to set the step back to the step (2) to enable the BAL LINE-1 phase inversion setting of the balanced input again.

Press the PRESET switch to exit from the preset mode. Pressing the PRESET switch allows the setting to be memorized in any state of the steps from (1) through (10) and the preset mode to end.

If no entry is performed for 1 minute in the preset mode, the current mode ends with the immediately preceding setting stored, and the regular display resumes.

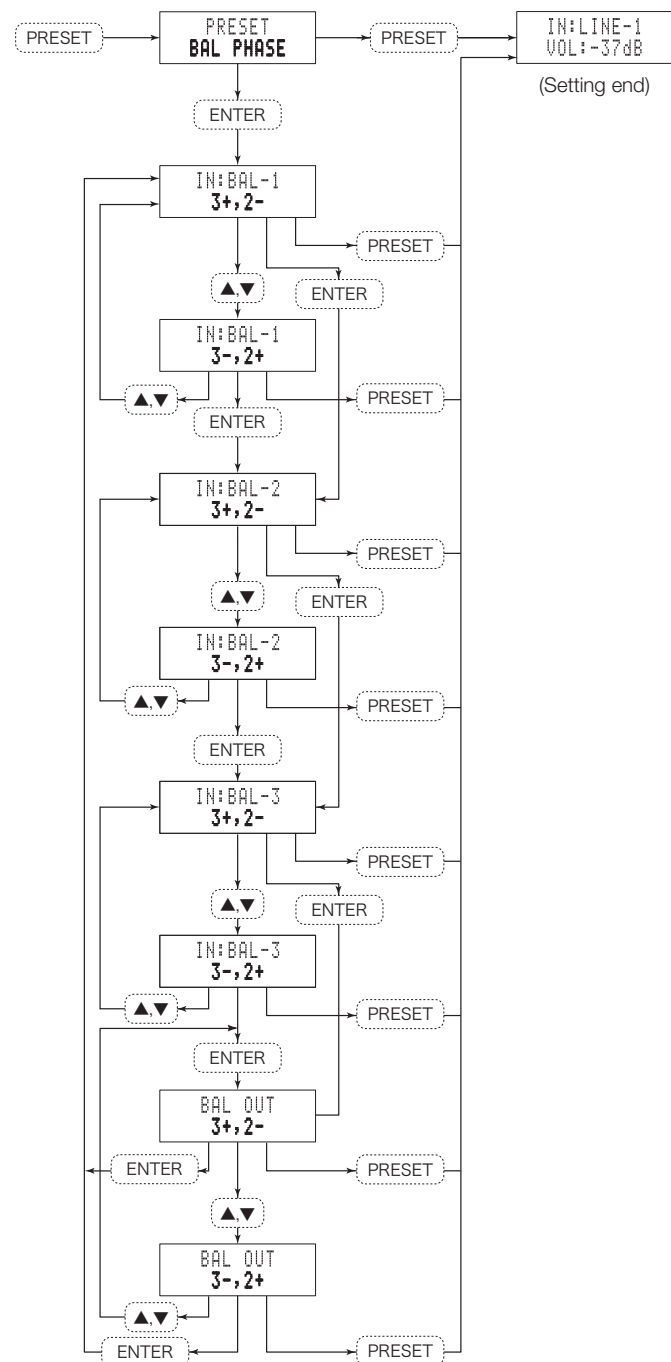
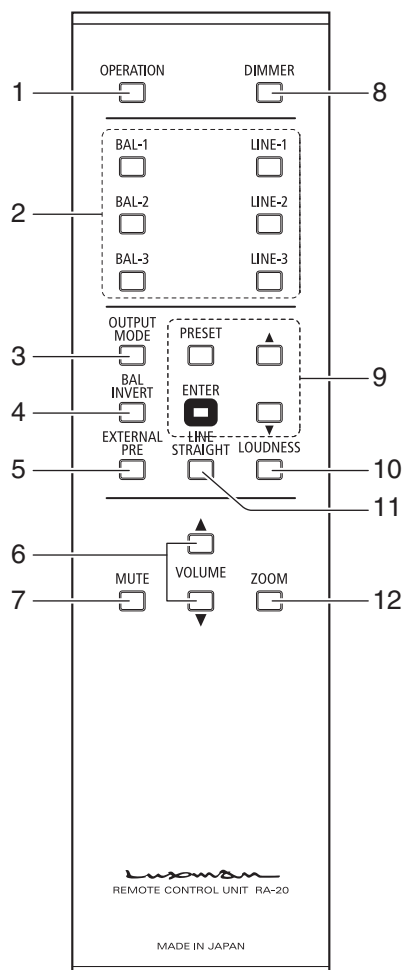


Fig. 1

How to use Remote Control

Remote controller (RA-20)



Bi-amplifier output mode/BI-AMP presetting

- (1) Press the PRESET switch when the output mode is set to the bi-amplifier output to activate the bi-amplifier preset mode. (1st line of Fig. 2)

If adjustments of L-Hi and R-Hi are not necessary, press the PRESET switch again. The preset mode ends and the regular display resumes.

- (2) Press the ENTER switch, and the L-Hi level blinks to show that the level of the L-Hi channel can be adjusted. (2nd line of Fig. 2)
- (3) Pressing ▲ increases the sound volume of the L-Hi channel in steps of 1 dB.

Pressing ▼ decreases the sound volume of the L-Hi channel in steps of 1 dB.

Adjustable range: ± 6 dB

E.g.) If ▼ is pressed once, -1 dB appears. (3rd line of Fig. 2)

- (4) Press the ENTER switch, and the R-Hi level blinks to show that the level of the R-Hi channel can be adjusted. (4th line of Fig. 2)
- (5) Pressing ▲ increases the sound volume of the R-Hi channel in steps of 1 dB.
Pressing ▼ decreases the sound volume of the R-Hi channel in steps of 1 dB.
Adjustable range: ± 6 dB
E.g.) If ▲ is pressed once, +1 dB appears. (5th line of Fig. 2)

(6) Press the ENTER switch to set the step back to the step (2) to enable the L-Hi channel adjustment again.

(7) Pressing the PRESET switch allows the setting to be memorized in any state of the steps from (1) through (5) and the preset mode to end.

If no entry is performed for 1 minute in the preset mode, the current mode ends with the immediately preceding setting stored, and the regular display resumes.

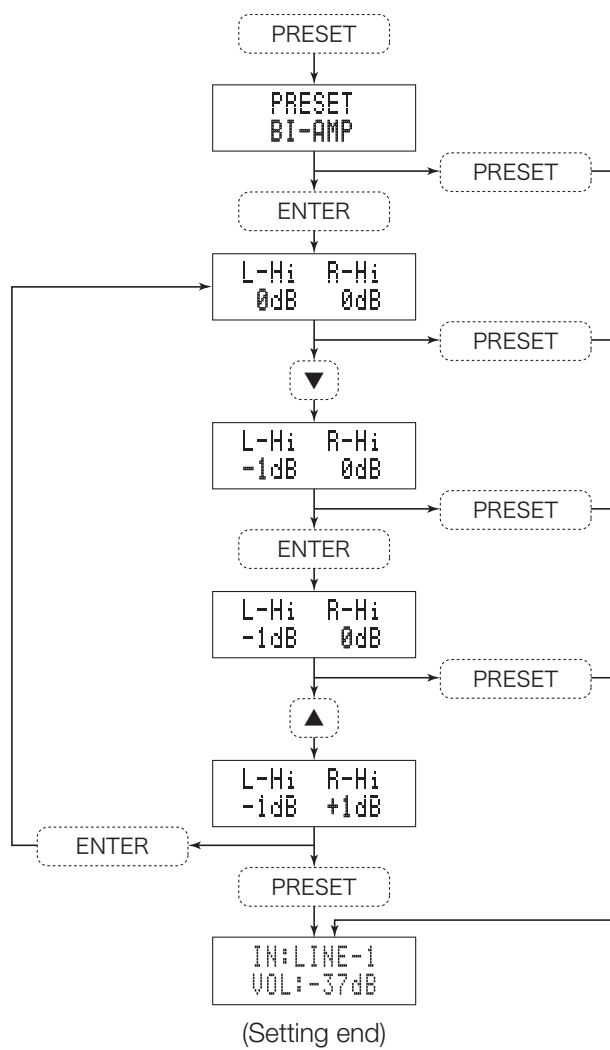


Fig. 2

10. Loudness switch (LOUDNESS)

Psychoacoustically compensates the frequency characteristics when the volume control is set to -16 dB or less.

This compensation allows listeners to complement human listening characteristics when the sound volume is in the low level.

Every time this switch is pressed, the loudness setting toggles between ON and OFF repeatedly.

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

When the line straight switch is set to ON, this switch does not function.

11. Line straight switch (LINE STRAIGHT)

This switch is used to increase the purity of the sound quality by bypassing (skipping) the tone control circuit.

Every time this switch is pressed, the line straight setting toggles between ON and OFF repeatedly.

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

When the line straight switch is set to ON, the tone control and loudness do not function.

12. Zoom switch (ZOOM)

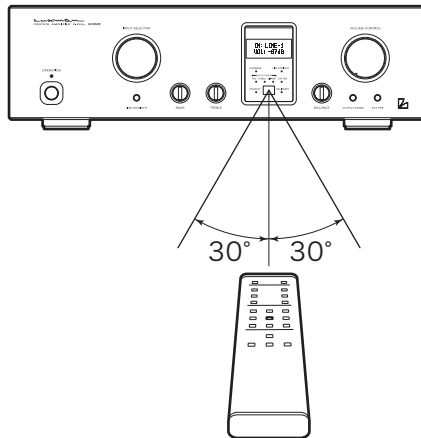
Enlarges the current volume level and displays it.

When this switch is pressed again, the regular display resumes.

How to use Remote Control

Remote control

The remote control shall be aimed at the remote sensor of this unit within the specified angle range shown in the illustration when used.

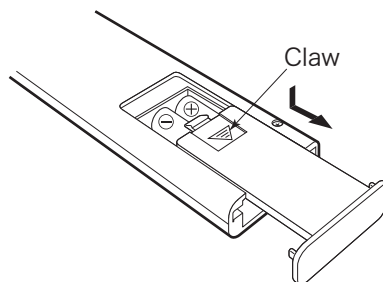


Effective distance: approx. 5 m

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 (\oplus and \ominus).
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.



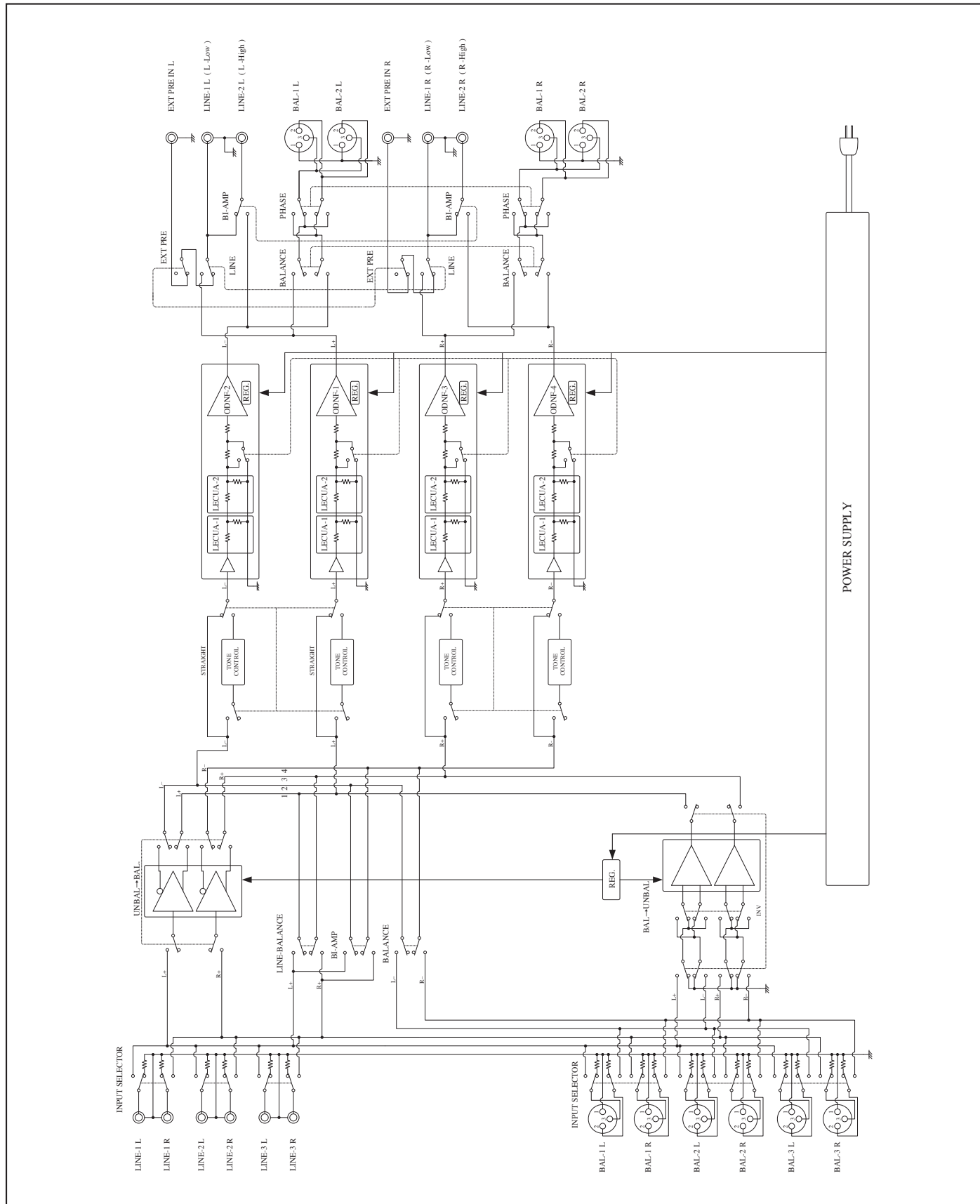
* When the batteries start to lose power, the effective distance becomes shorter or the unit does not function even though the switch is pressed.

In such a case, both of the batteries shall be replaced with new ones at the same time.

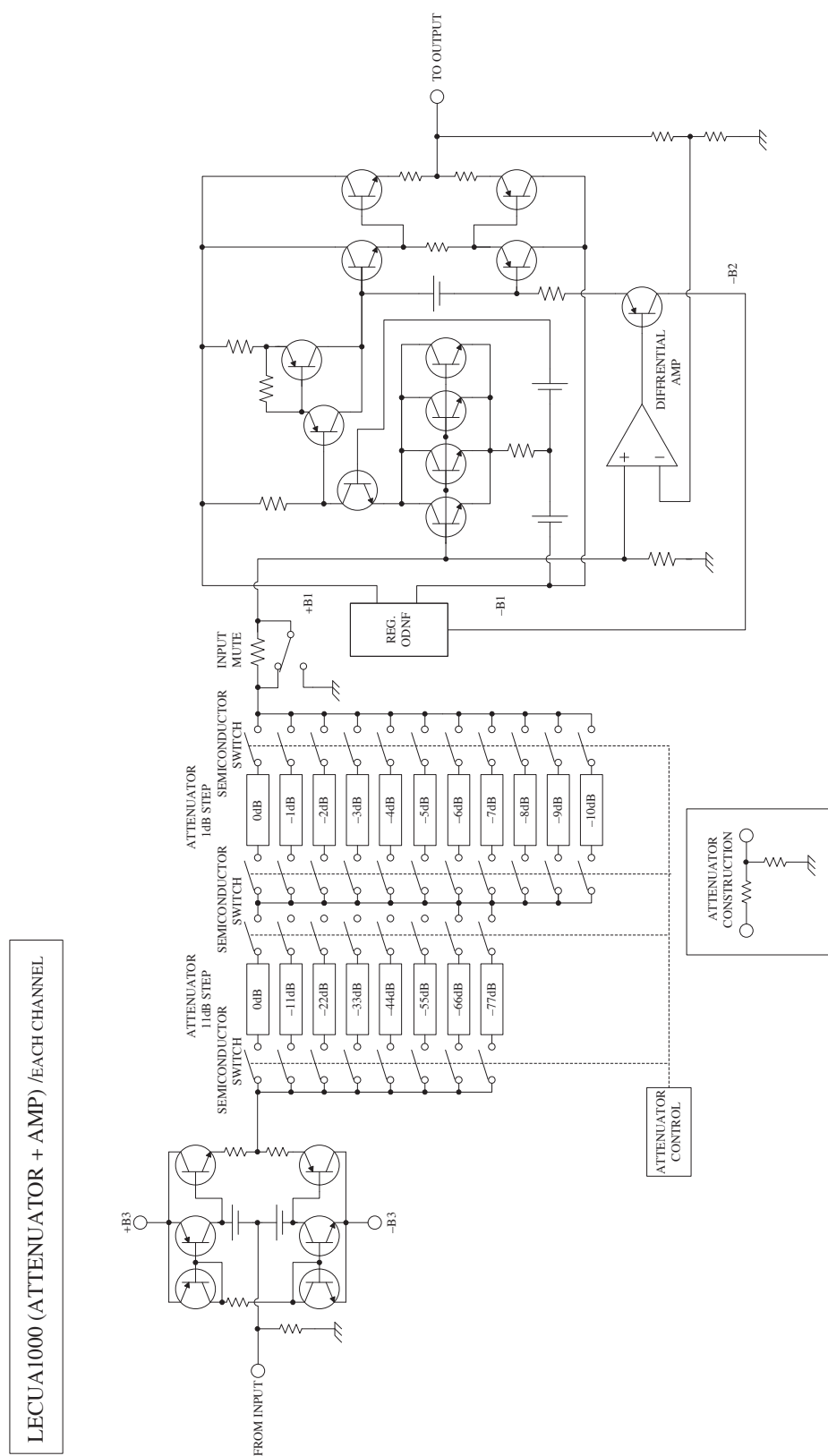
* If the remote control is not used for a long time, the batteries shall be removed from the case.

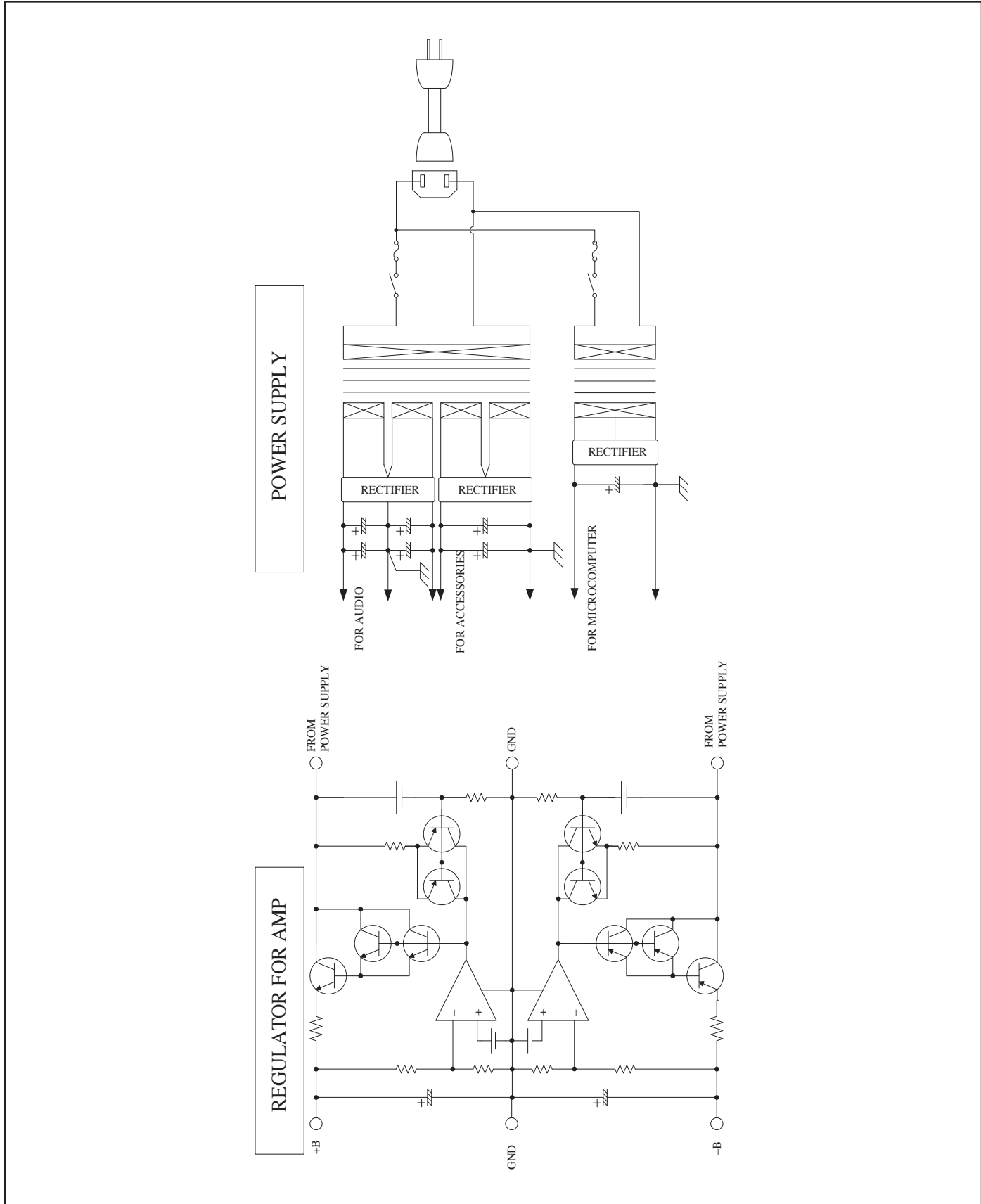
Block Diagram

luxman
CONTROL AMPLIFIER C-900u



Block Diagram





Specifications

Input sensitivity	LINE	: 255 mV / 1 V output, 1 kHz, load 50 k Ω
	BAL LINE	: 255 mV / 1 V output, 1 kHz, load 100 k Ω
	LINE \rightarrow BAL LINE	: 260 mV / 1 V output, 1 kHz, load 100 k Ω
	BAL LINE \rightarrow LINE	: 260 mV / 1 V output, 1 kHz, load 50 k Ω
Maximum output	LINE	: 11 V / distortion 0.1 %, 1 kHz, load 50 k Ω
	BAL LINE	: 22.5 V / distortion 0.1 %, 1 kHz, load 100 k Ω
	LINE \rightarrow BAL LINE	: 22.5 V / distortion 0.1 %, 1 kHz, load 100 k Ω
	BAL LINE \rightarrow LINE	: 11 V / distortion 0.1 %, 1 kHz, load 50 k Ω
Input impedance	LINE	: 43 k Ω / 1 kHz
	BAL LINE	: 86 k Ω / 1 kHz
	LINE \rightarrow BAL LINE	: 33 k Ω / 1 kHz
	BAL LINE \rightarrow LINE	: 66 k Ω / 1 kHz
	Unselected LINE	: 33.5 k Ω / 1 kHz
	Unselected BAL LINE	: 67.0 k Ω / 1 kHz
Output impedance	LINE	: 90 Ω / 1 kHz
	BAL LINE	: 180 Ω / 1 kHz
Total harmonic distortion	LINE	: 0.009 % / 1 V output, 20 Hz - 20 kHz, load 50 k Ω
	BAL LINE	: 0.005 % / 1 V output, 20 Hz - 20 kHz, load 100 k Ω
	LINE \rightarrow BAL LINE	: 0.009 % / 1 V output, 20 Hz - 20 kHz, load 100 k Ω
	BAL LINE \rightarrow LINE	: 0.018 % / 1 V output, 20 Hz - 20 kHz, load 50 k Ω
Frequency response	LINE	: +0, -0.1 dB / 1 V output, 20 Hz - 20 kHz, load 50 k Ω
		: +0, -3.0 dB / 1 V output, 5 Hz - 120 kHz, load 50 k Ω
	BAL LINE	: +0, -0.1 dB / 1 V output, 20 Hz - 20 kHz, load 100 k Ω
		: +0, -3.0 dB / 1 V output, 5 Hz - 120 kHz, load 100 k Ω
	LINE \rightarrow BAL LINE	: +0, -0.2 dB / 1 V output, 20 Hz - 20 kHz, load 100 k Ω
		: +0, -3.0 dB / 1 V output, 5 Hz - 95 kHz, load 100 k Ω
	BAL LINE \rightarrow LINE	: +0, -0.2 dB / 1 V output, 20 Hz - 20 kHz, load 50 k Ω
		: +0, -3.0 dB / 1 V output, 5 Hz - 90 kHz, load 50 k Ω
S/N ratio	LINE	: 123 dB (IHF-A) / distortion 0.1 %, 1kHz, load 50 k Ω
	BAL LINE	: 126 dB (IHF-A) / distortion 0.1 %, 1kHz, load 100 k Ω
	LINE \rightarrow BAL LINE	: 118 dB (IHF-A) / distortion 0.1 %, 1kHz, load 100 k Ω
	BAL LINE \rightarrow LINE	: 114 dB (IHF-A) / distortion 0.1 %, 1kHz, load 50 k Ω
Tone control	Max. amount of change BASS : \pm 8 dB at 100 Hz	
	TREBLE: \pm 8 dB at 10 kHz	
Loudness control	100 Hz	: +7 dB
	10 kHz	: +5 dB
Accessories	• Power cable	• Remote control, RA-20
	• 2 pieces of "AAA" batteries	• Owner's manual
	• Safety cautions	
Power consumption	42 W	
	2.2 W (at standby)	
Power supply	230 V ~ (50 Hz)	
Max. external dimensions	440 (W) \times 130 (H) \times 430 (D) mm	
Weight	19.7 kg (main unit only)	

* Specifications and appearance are subject to change without notice.

Before Asking for Repair Services

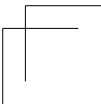
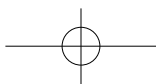
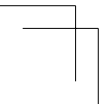
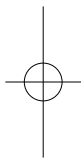
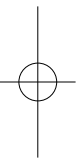
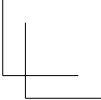
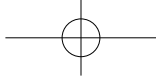
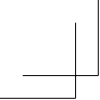


While the unit is used, an unusual phenomenon may be confused as a malfunction for a certain reason. Prior to asking us for repair services, please check the table below and read the instruction manual for the subsidiary devices. If the cause of the malfunction cannot be identified, please contact your dealer.

Problem	Cause	Solution
No power is supplied even though the main power switch is pressed. The standby indicator does not light.	· The power plug is disconnected from the wall outlet, or it is not completely inserted.	· Insert the power plug in the wall outlet completely.
	· The power plug is disconnected from the AC inlet, or it is not inserted completely.	· Securely insert the power plug in the AC inlet.
The operation indicator does not light even though the operation switch is pressed.	· The main power switch is turned off.	· Turn on the main power switch to light the standby indicator.
No sound is generated.	· The volume control or attenuator of the power amplifier is set to the minimum level.	· Rotate the volume control or attenuator of the power amplifier to adjust the sound volume.
	· The input selector is not set to the source to be reproduced.	· Set the input selector to the source to be reproduced.
	· The connected output terminal does not match the selected output mode setting.	· Adjust the output mode of the connected output terminal according to the selected output mode.
	· Cable connections are incomplete.	· Make cable connections securely.
	· The mute switch of the remote control is set to ON.	· Set the mute switch to OFF.
	· The external pre switch is set to ON.	· Set the external pre switch to OFF.
Sound is generated but the sound volume is low. The sound volume is low only at one side channel.	· The balance control is rotated in a one-sided manner.	· The balance control shall be set to the center position under normal conditions.
	· The attenuator of the power amplifier is set to ON.	· Set the attenuator to OFF.
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 the power transformer of another device.	· Install it distant from other devices. Use a wall socket of a different line.
	· The input/output cables and speaker cables are too close to the power cable.	· Keep the input/output cables and speaker cables away from the power cable..
There is no effect of tone control.	· The line straight switch is set to ON.	· Set the line straight switch to OFF.

Before Asking for Repair Services

Problem	Cause	Solution
The loudness function does not work.	· The line straight switch is set to ON.	· Set the line straight switch to OFF.
The external pre switch does not work.	· To prevent malfunction, holding down for approximately 1 second shall be required for switching between ON and OFF in the specifications.	· Hold down the external pre switch for approx. 1 second.





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