STEREO POWER AMPLIFIER

M-10X

Owner's Manual

Contents

Installation location

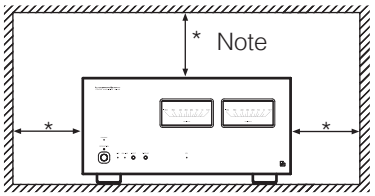
Install this unit in a location where good ventilation and heat radiation are assured. Especially, installation of this unit where direct sunlight is present, where the temperature rises excessively high such as close to a heater, or where it is humid or dusty may cause malfunctions even if the heat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

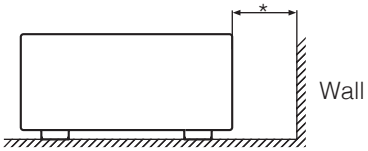
Ventilation

Do not block the ventilation holes of the top and bottom panels. If the amplifier is installed on a rack or the like, secure ample space for cooling and leave the door open. Do not pile up other things on the amplifier and never put articles on it. Failure to observe this may cause a malfunction.

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 devices such as a control amplifier, 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 each input terminal of this unit must be pushed in firmly. If the grounding terminal is inadequately connected, noise or hum, may be generated, resulting in an adverse S/N ratio.

Cautions when connecting speakers

When making speaker system connections, exercise extra care not to short-circuit between (+) and (–) of the speaker terminals and speaker input terminals of this unit. If a large signal is applied to the amplifier while it is short-circuited, a large current may be passed through the output circuit and cause malfunctions.

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 of the input device such as a control amplifier to a low level first and then adjust it to an appropriate level after sound comes from the speaker.

Protection circuit

This product is equipped with a protection circuit that is activated upon detecting overcurrent, abnormally high temperatures and DC drifts to protect the amplifier and speakers. When this protection circuit is activated, the output to the speaker terminals will be shut off, the standby indicator will light up and this unit will enter standby. If the protection circuit is frequently activated even after turning off the main power, disconnecting the AC plug from the wall outlet, reconnecting the AC plug after a certain period and turning on the power again, please contact the dealer who sold you the unit.

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.

Take care if you try to perform all the installation work yourself to avoid injury.

Features of This Unit

4 x 2 output structure

This product continues the 4 × 4 output from the M-900u and has adopted the structure of 4 parallels × 2 modules. That is, 2 modules of 4-parallel push-pull amplification circuit structured with a 3-stage Darlington are used for each channel. Rated output of 150 W+150 W (8Ω), 300 W+300 W (4 Ω).

LIFES – Luxman Integrated Feedback Engine System –

ODNF, Luxman's original amplification feedback circuitry, has been renewed, and LIFES, the newly developed amplification engine, is incorporated to play the heart of an audio amplifier with richer sound.

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

BTL connection mode

The BTL connection mode with 2 units of this product has achieved a high-quality and high-power monaural amplifier structure.

2-channel input selector

Provides the capability of switching between the unbalanced input of an RCA terminal made of copper alloy and the balanced input of an XLR terminal manufactured by Neutrik that supports high-grade balanced signal transmission.

Balanced input phase inversion

A balanced input phase selector switch has been equipped, which is useful for connecting input devices from abroad.

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.

Highly stable power supply

The highly stable power supply circuit combines a large-capacity EI-core-type power transformer using rectangular copper winding wires with customizable 20,000 μF × 4 block capacitors.

4-parallel speaker relay

The impedance of speaker output lines is reduced thanks to the placement of a 4-parallel contact structure of speaker relays with low resistance values for each channel.

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. In addition, a high voltage SiC Schottky diode made by ROHM Co., Ltd. is used for the power rectifier circuit of the voltage amplifier stage.

LUXMAN's original OFC wiring

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

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.

High-grade analog meter

Large-sized analog meter with a shower light equipped, light OFF/meter OFF selectable.

Loopless chassis

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

Large speaker terminals

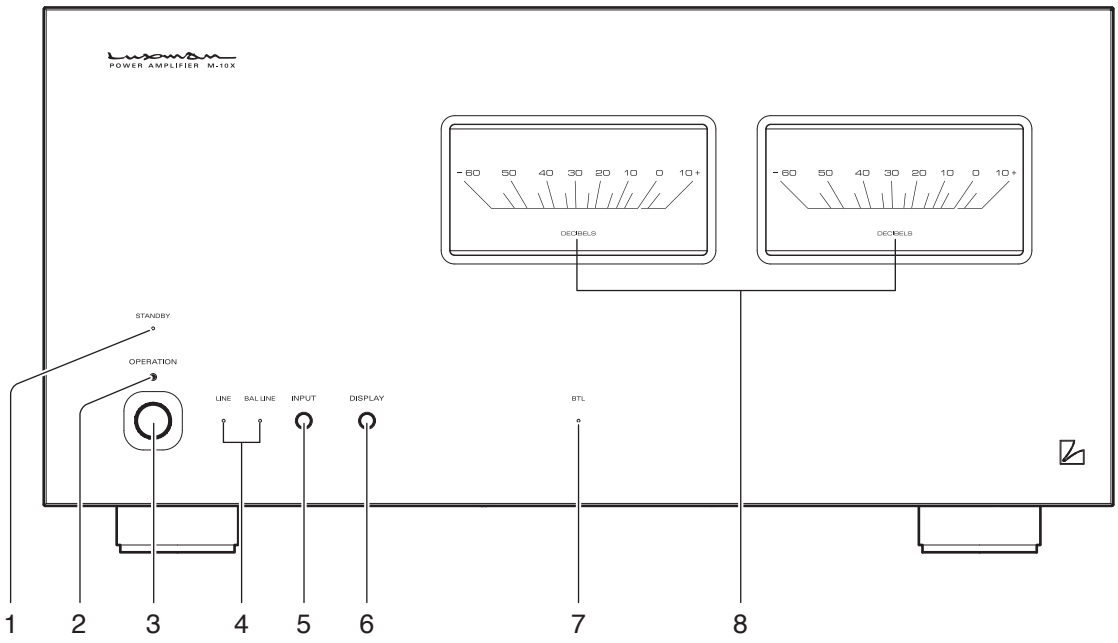
The speaker terminals have right and left identical layout characteristics, which are compatible with Y lugs and enable easy connection with extra-thick speaker cables.

Cast-iron insulators

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

Names and Functions

Front panel



1. Standby indicator (STANDBY)

Indicates that this unit is on standby.

This indicator lights up when the operation button is turned off after the main power button on the rear panel is set to ON/STANDBY.

When the operation button is turned on and the main power button is set to OFF, this indicator turns off.

2. Operation indicator (OPERATION)

Blinks for approximately 15 seconds during time muting when the operation button is turned on and lights up when it becomes operational afterward.

3. 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.

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

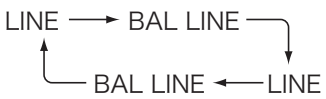
4. Input indicator (LINE/BAL LINE)

Indicates the input selected with the input button.

5. Input button (INPUT)

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

Every time this button is pressed, the selection changes as follows: LINE→BAL LINE→LINE→BAL LINE→LINE…



Factory default: LINE

When this button is toggled, the input/output muting circuit is activated and no sound is generated.

6. Display button (DISPLAY)

Selects the power meter light and display. This button operates differently depending on the setting of the BTL selection switch on the rear panel.

When STEREO is selected:

- Every time this button is pressed, the setting changes as follows: light ON/power meter ON→light OFF/power meter ON→light OFF/power meter OFF→light ON/power meter ON...

When BTL (MONO) is selected:

- Only the power meter on the left side operates.
- Every time this button is pressed, the setting changes as follows: right and left lights ON/power meter (left) ON→left light ON/power meter (left) ON→light OFF/power meter ON→light OFF/power meter OFF→right and left lights ON/power meter (left) ON...

Factory default as follows:

At STEREO	Power meter light ON
	Power meter display ON
At BTL (MONO)	Power meter right and left lights ON
	Power meter display ON (left)

The setting of the display button is remembered in both STEREO and BTL (MONO).

7. BTL indicator (BTL)

Lights when the BTL selection switch on the rear panel is set to BTL (MONO) to show that this unit turns to a monaural amplifier with BTL connection. When the BTL selection switch is set to STEREO, this indicator turns off to show that this unit turns to a stereo amplifier with normal connection.

Factory default: No lighting (STEREO)

8. Power meters

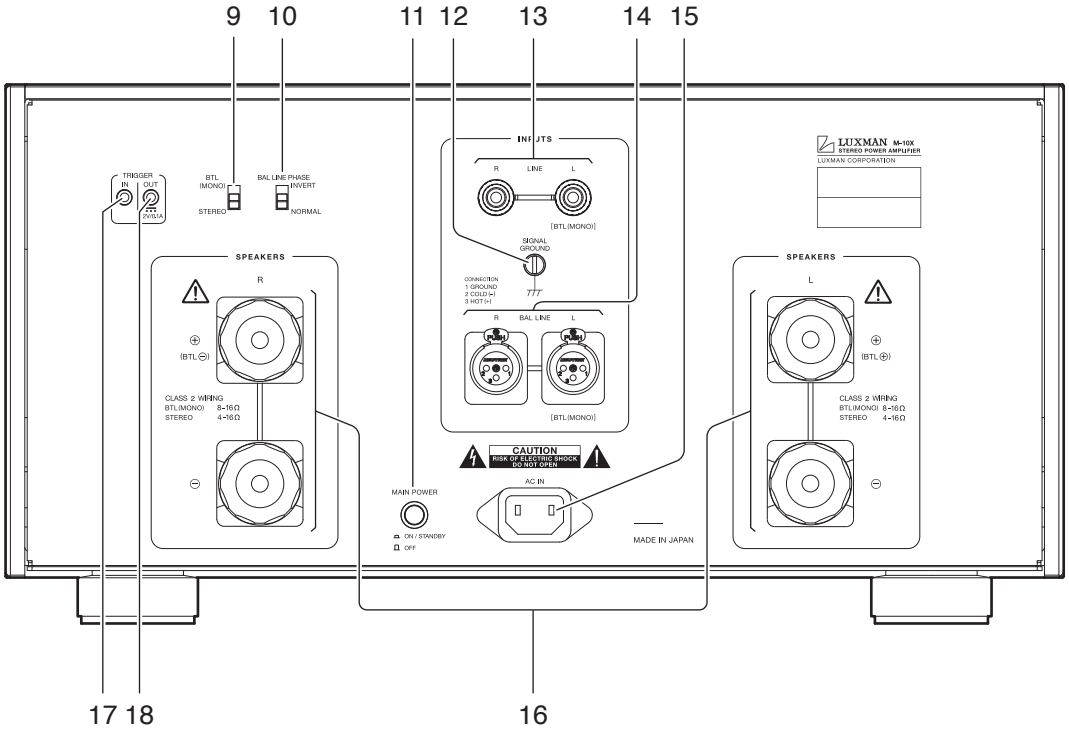
Indicates the level of output to the speakers, with lighting equipped.

The light/power meter operate differently depending on the setting of the display button and the setting of the BTL selection switch on the rear panel.

- This meter indicates the output level in decibels from –60 dB through +10 dB while the power meter is in operation.
- When STEREO is selected, the meter on the left reads the level of the L channel, and the meter on the right reads the level of the R channel.
- When BTL (MONO) is selected, the level is indicated only with the left meter.

Names and Functions

Rear panel



9. Stereo/BTL selection switch (STEREO/BTL (MONO))

When STEREO is selected, this unit operates as a stereo power amplifier.

When BTL (MONO) is selected, this unit operates as a monaural power amplifier with a BTL connection.

Factory default: STEREO

10. Phase inverter switch (BAL LINE PHASE)

Change the phase when the balance input terminal is used. The phase shall correspond to the phase of the input device.

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

11. Main power button (MAIN POWER)

Turns this unit to standby.

When this button is set to ON/STANDBY, the standby indicator on the front panel lights up yellow to show that this unit changes to on standby. 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.

12. 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 the noise when other devices are connected. This terminal is not an electrical safety feature.

13. Unbalanced input terminal (INPUTS LINE)

Coaxial input terminal to receive unbalanced audio signal at line level. Connect this terminal to an unbalanced output of an input device such as a control amplifier with a pin-plug cable.

Audio input signals coming to LINE are selected with the input button on the front panel and delivered.

14. Balanced input terminal (INPUTS BAL LINE)

XLR connector input terminal to receive balanced audio signals of a line level. Connect these terminals to the balanced inputs of a unit such as a preamplifier using balanced XLR cables.

Audio input signals coming to BAL LINE are selected with the input button on the front panel and delivered. To enjoy sound playback properly, set the phase inverter switch in accordance with the phase of the balanced output of the input device such as a control amplifier.

When BTL (MONO) is selected, only signals from the L side are valid. Therefore, securely connect the left channel output terminal (L side) of the input device to the L side input terminal of the M-10X for the left channel and the right channel output terminal (R side) of the input device to the L side input terminal of another M-10X for the right channel.

Signals from the R side input terminal are not provided.

15. AC inlet (AC IN)

Connect the supplied accessory power cable here to power the unit from an AC wall outlet.

16. Speaker terminals (SPEAKERS)

Connect the left speaker to the L side speaker terminal of this unit and the right speaker to the R side speaker terminal given the polarity.

At this moment, securely connect the ⊕ terminal of the speaker system to the speaker terminal ⊕ (red) of this unit, and the ⊖ terminal of the speaker system to the speaker terminal ⊖ (black) of this unit.

Speaker systems with impedance of 4-16 Ω can be connected to this unit.

When BTL (MONO) is selected, this unit turns into to a monaural power amplifier. Therefore, either a right or left speaker system can be connected exclusively. If stereo playback is desired, another M-10X is required. When BTL (MONO) is selected, securely connect the ⊕ terminal of the speaker system to the ⊕ terminal (red) (BTL⊕) of the L side speaker terminal of this unit, and the ⊖ terminal of the speaker system to the ⊖ terminal (red) (BTL⊖) of the R side speaker terminal of this unit.

Speaker systems with impedance of 8-16 Ω can be connected to this unit in the BTL mode.

17. Trigger input terminal (TRIGGER IN)

Trigger input terminal to be connected to a control amplifier, power amplifier and other devices that have a trigger output terminal. If the main power button is set to ON/STANDBY and this unit is turned to standby, this unit can be turned to operating or standby in conjunction with the operation button of a connected device.

When the main power button is set to OFF, this unit does not operate in conjunction with other devices.

18. Trigger output terminal (TRIGGER OUT)

Connection of this trigger output terminal to a device (such as an M-10X) having a trigger input terminal enables the connected device to turn to operation or standby in conjunction with this unit.

Memory reset

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

(1) Turn the power supply to standby.
(2) Perform the following operations while pressing the display button.
(3) Turn on the operation button.
(4) The input indicator, LINE and BAL LINE light up in 5 seconds.
(5) Press the input switch once.
(6) The power supply turns to standby.
(7) Release the display button.

That's all for memory reset.

Factory default

Item	Default
Input	LINE
Display	
At STEREO	Power meter light ON Power meter display ON
At BTL (MONO)	Power meter right and left lights ON Power meter display ON (left)

Connections

Before connecting

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

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

Connecting to the power supply

Connect the supplied accessory power cable here to power the unit from an AC wall outlet.

How to connect the input terminals to input devices such as a control amplifier

Connect between the output terminals of an input device such as a control amplifier 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 between the trigger input terminal and other devices

A control amplifier such as a C-900u and a power amplifier such as an M-10X can be connected. This connection enables this unit to turn to operation/standby in conjunction with the connected device.

Use the supplied modular conversion cable to connect a device with a modular output terminal such as a C-900u; use a commercially available 3.5 mm monaural mini-plug cable to connect a device with a 3.5 mm output terminal such as an M-10X.

When connection is conducted from a product made by other than LUXMAN, make sure that the trigger output is 12 V. When the trigger input of this unit is 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 such as an M-10X. This connection enables the connected device to turn to operation/standby in conjunction with this unit.

The maximum output current that can be supplied from this unit with 12 V is 100 mA. 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.

How to connect speakers

(Stereo connection)

Connect the left-channel speaker to the SPEAKERS L terminal of this unit and the right-channel speaker to the SPEAKERS R terminal.

Securely connect the ⊕ terminal of the speaker system to the speaker terminal ⊕ (red) of this unit, and the ⊖ terminal of the speaker system to the speaker terminal ⊖ (black) of this unit. If the ⊕ or ⊖ terminal is reversely connected to either of the right or left of the speaker system, the signal phases reproduced from the right and left of the speaker system are also reversed. In such a case, be aware that the sound level in the low range will be reduced and the acoustic stability will worsen; thus, normal stereo playback will not be achieved.

(BTL connection)

When BTL (MONO) is selected, this unit turns into a monaural power amplifier, and if stereo playback is desired, another M-10X is required.

Connect the left-channel speaker to the left speaker terminal of an M-10X and the right-channel speaker to the right speaker terminal of M-10X. Securely connect the ⊕ terminal of the speaker system to the red SPEAKERS L terminal (BTL ⊕) of this unit, and the ⊖ terminal of the speaker system to the red SPEAKERS R terminal (BTL ⊖) of this unit.

• Do not bring the core wire of the speaker cable into contact with the core wires of other speaker cables or the metal parts of this unit. Failure to observe this may cause a malfunction of this unit or the speakers.

• When the power of this unit is set to on, do not touch the metal parts of the terminals or the core wires of the cables. Failure to observe this may result in an electric shock.

• Use extra care not to connect in reverse polarity or reverse right/left channel to perform normal stereo playback.

Some speaker selection switch boxes have the ⊖ speaker terminal connected to the common ground terminal. When BTL (MONO) is selected, the inverted output side of this unit is short-circuited to the common ground and excessive current flows into this unit. The protection circuit is activated, which may cause a breakdown. Therefore, do not use such a switch box. When BTL (MONO) is selected, this unit shall be directly connected to speaker systems, or the switch box with which the ⊖ speaker terminal can be independently selected shall be used.

When this unit is connected to an input device or a speaker system, turn off the main power button of this unit or turn this unit to standby to protect the amplifier and speakers from excessive input.

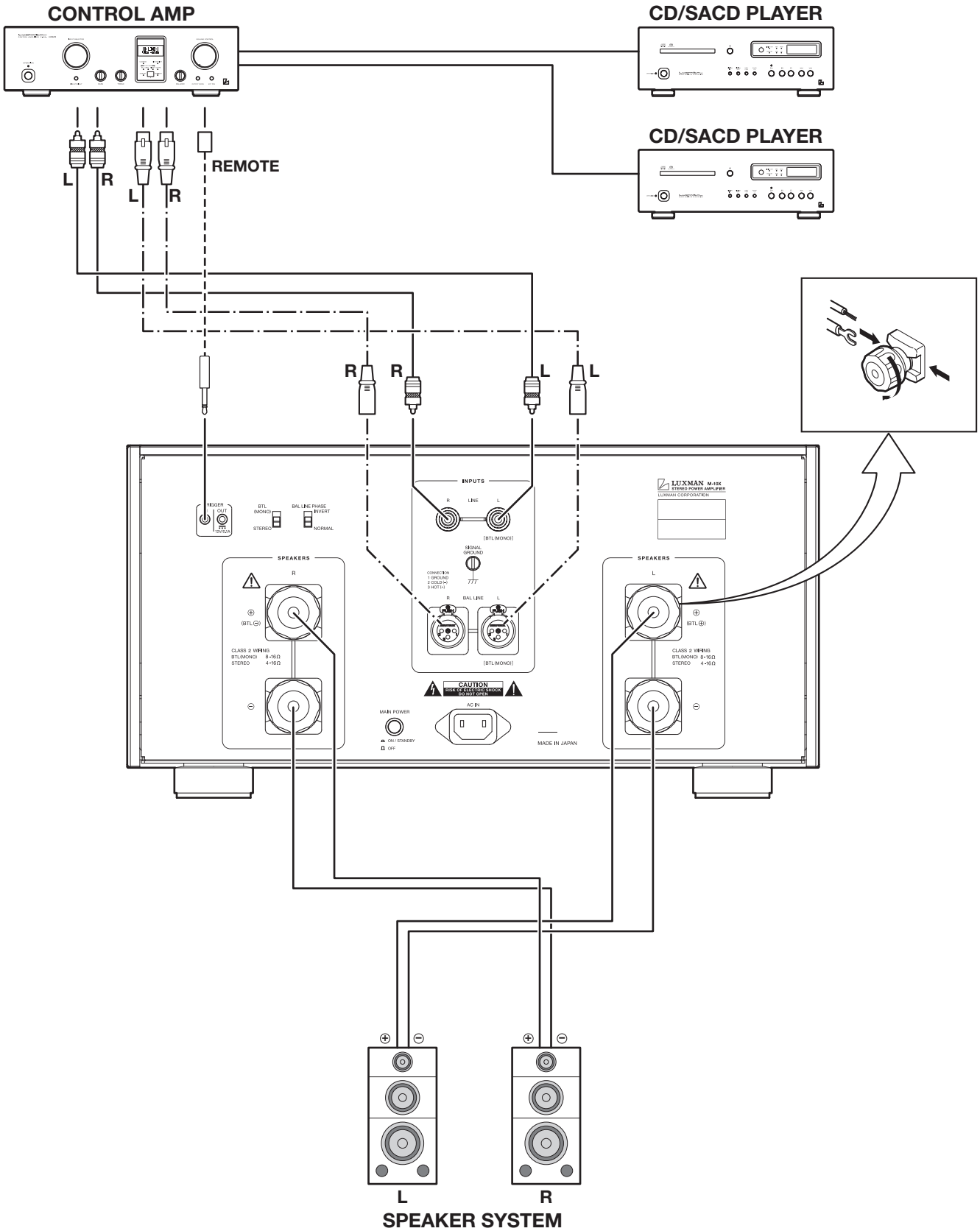
After connection, ensure that connections are appropriately performed and turn this unit to operating.

NOTE:

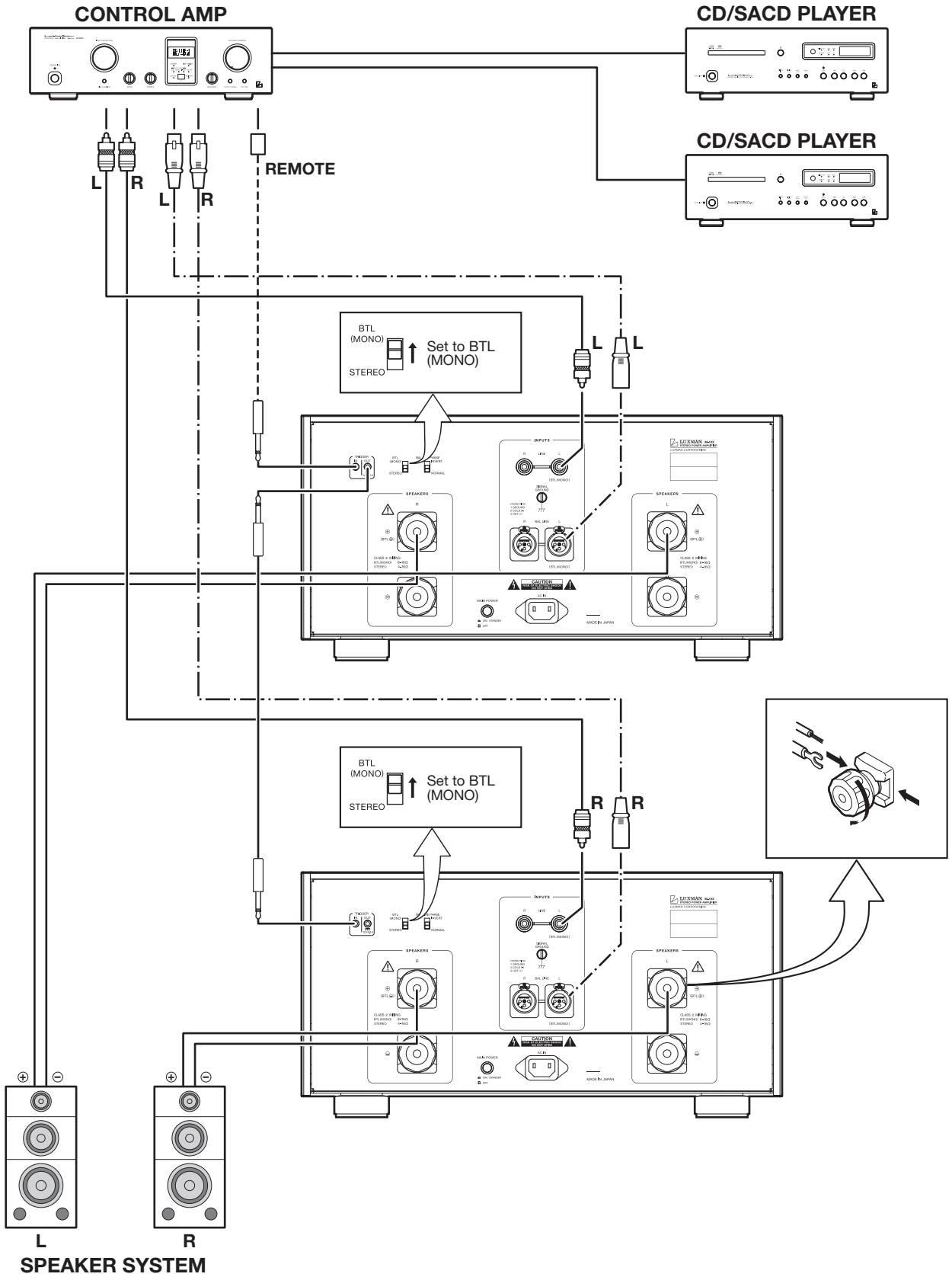
- This symbol that touching uninsulated terminals or wiring may result in an unpleasant sensation.
- Before connecting to speakers, turn off the main power switch.

Connections

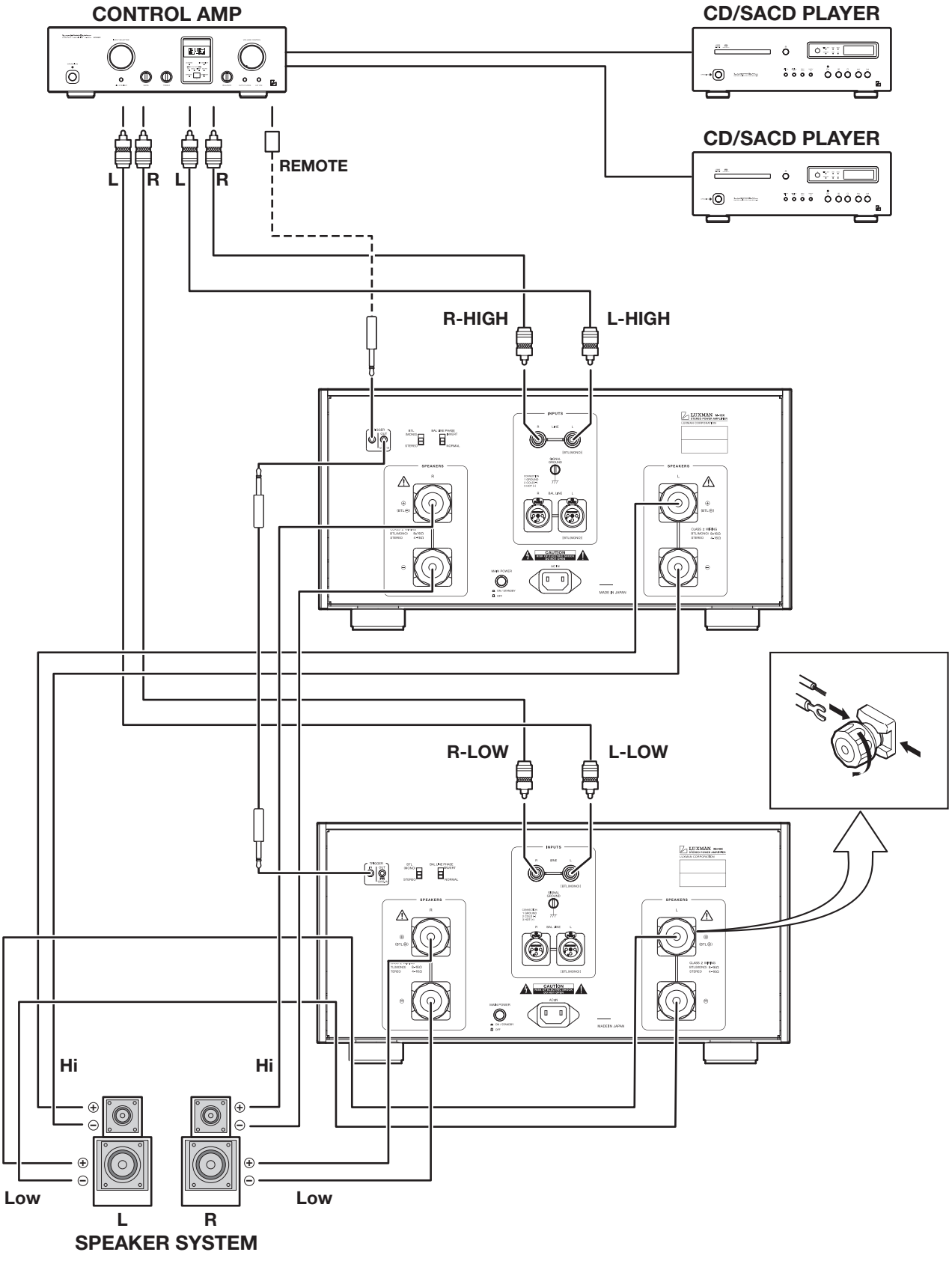
Normal stereophonic reproduction



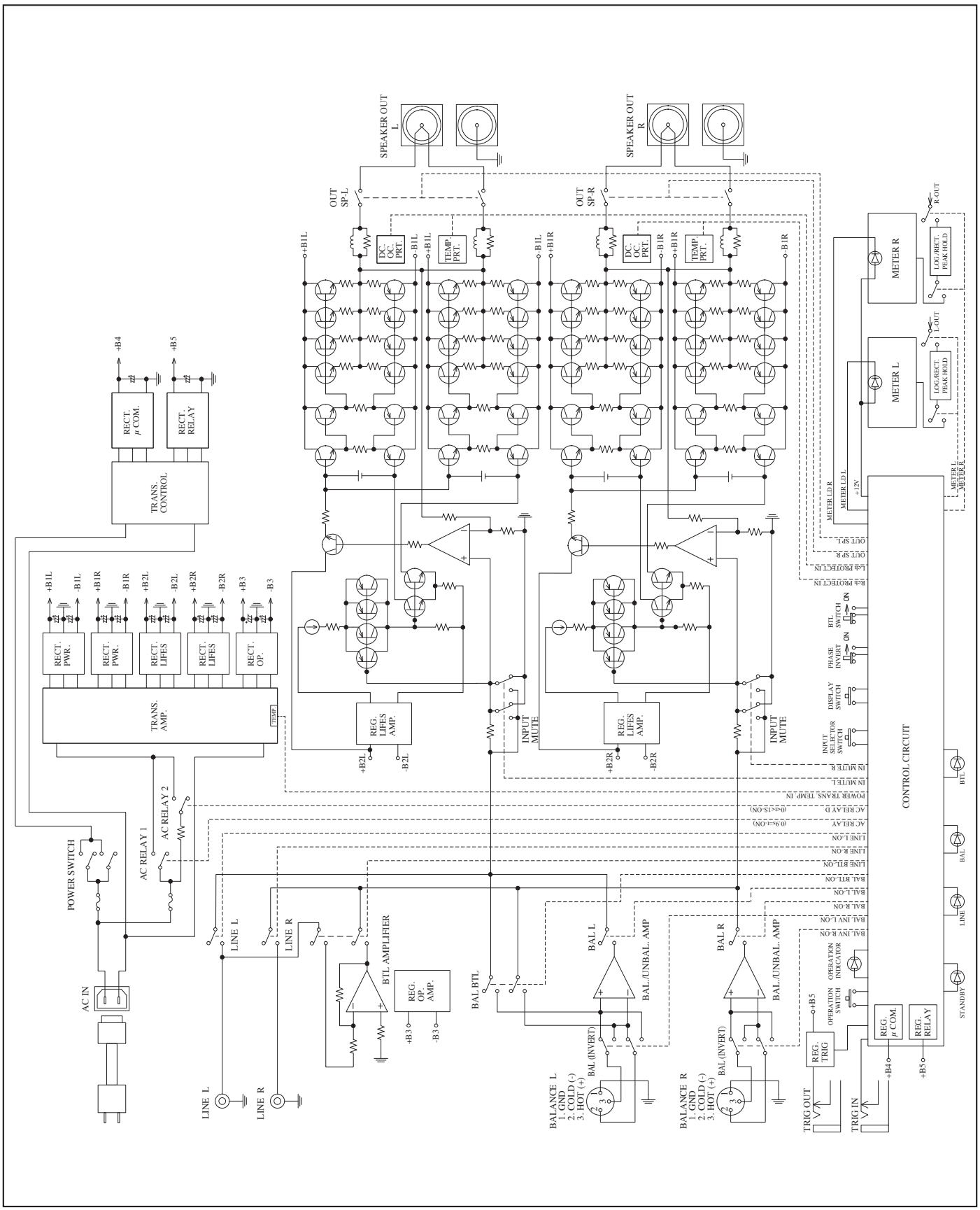
BTL stereophonic reproduction



Bi-amplifier/stereophonic reproduction



Block Diagram



Specifications

Rated output (stereo)	150 W + 150 W (8 Ω) 300 W + 300 W (4 Ω)
Rated output (BTL)	600 W (8 Ω)
Instantaneous maximum output (stereo)	1200 W + 1200 W (1 Ω)
Instantaneous maximum output (BTL)	2400 W (2 Ω)
Input sensitivity	1.24 V/150 W, load 8 Ω Gain 29 dB
Input impedance	LINE 51 kΩ BAL LINE 28 kΩ
Total harmonic distortion	0.003 % or less/1 kHz, 150 W, load 8 Ω 0.04 % or less/20 Hz-20 kHz
Frequency response	+0, –0.1 dB/20 Hz-20 kHz +0, –3.0 dB/1 Hz-130 kHz
S/N ratio	117 dB (IHF-A weighted, input short)
Damping factor	600 (according to Current Injection Method by EIAJ)
Supplied functions	• Main power button • Input button • Phase inverter switch • Display button • Balanced input terminal x1 • Signal ground terminal • AC inlet • Operation button • BTL selection switch • Power meters • Unbalanced input terminal x1 • Speaker terminal x1 • Trigger input terminal • Trigger output terminal
Accessories	• Power cable • Owner's manual • Modular/3.5-mm conversion cable • Safety cautions
Power consumption	540 W 290 W (at no input) 1.0 W (at standby)
Power supply	230 V ~ (50 Hz)
Max. external dimensions	440 (W) x 224 (H) x 488 (D) mm
Weight	48.4 kg

* 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 for any connected input and output devices and check the troubleshooting table below. If the cause of the malfunction cannot be identified, please contact your dealer. After LUXMAN's representatives have accepted your request for repair services, inspection fees and transportation expenses may be claimed, even though the unit may be found to be operating normally.

Problem	Cause	Solution
No power is supplied even though the operation switch is pressed.	· 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.
	· The main power button is turned off.	· Turn on the main power button.
The operation state is not activated even after connecting the trigger input.	· The main power button is turned off.	· Turn on the main power button.
No sound is generated.	· The volume control of the input device is set to the minimum level.	· Rotate the volume control of the input device clockwise to adjust the sound volume.
	· The input signal to be played back with the input button is not selected.	· Select the input signal to be played back with the input button.
	· Cable connections are incomplete.	· Make cable connections securely.
	· The output level of the input device is set to the minimum position.	· Adjust the output level.
No sound is generated on one side.	· The connecting cable is not connected on one side.	· Make cable connections securely.
Sound is generated but the sound volume is low. The sound volume is low only at one side channel. Inappropriate localization of sound images No bass is generated.	· The BTL connection is made, but the STEREO/BTL selection switch is set to STEREO.	· When the BTL connection is made, set the STEREO/BTL selection switch to BTL (MONO).
	· The stereo connection is made, but the STEREO/BTL selection switch is set to BTL (MONO).	· When the stereo connection is made, set the STEREO/BTL selection switch to STEREO.
	· The balance control of the control amplifier is set to one side.	· Adjust the balance control of the control amplifier according to your taste.
	· The R and L channels are connected in reverse.	· Connect the R channel and L channel appropriately.
	· The ⊕ and ⊖ terminals of the speaker system on one side are connected in reverse.	· Connect the ⊕ and ⊖ terminals of the speaker systems on both sides appropriately.
Humming sound is generated.	· The ground side of the pin-plug cable has no contact with the terminal.	· Make connections securely so that the ground side of the pin-plug cable can be connected.
The display window does not light up.	· The display is set to OFF.	· Use the display button to turn the setting to ON.

MEMO

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