

Luxman

STEREO POWER AMPLIFIER

M-900u

Owner's Manual

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Precautions

STEREO POWER AMPLIFIER M-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.

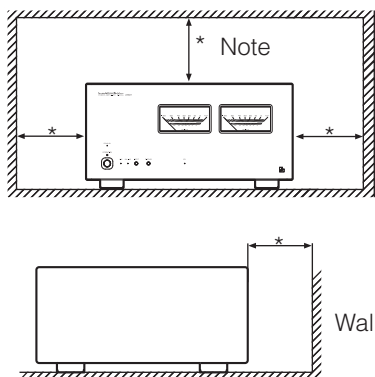
Therefore, do not install this unit in such places.

Ventilation holes

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 in connecting with other components

When connecting this product to 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 strong noise resulting in speaker damage or cause a malfunction.

The pin-plug to be inserted in each input terminal 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.

Cautions in connecting speakers

When making speaker system connections, exercise extra care not to short-circuit between \oplus and \ominus of the speaker terminals and speaker input terminals of this unit.

If a large signal is applied to the amplifier with its circuit left short-circuited, a large current may be passed through the output circuit and cause a malfunction.

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 of the input device such as a control amplifier shall be set to a low level at first and adjusted according to your taste after sound comes out of the speakers.

Protection circuit

This product is equipped with a protection circuit that is activated upon detection of overcurrent, abnormally high temperature, and DC drift to protect the amplifier and speakers. When the protection circuit is activated, the output to the speaker terminal is shut off and the standby indicator lights up to show that this product is in the standby state. If the protection circuit is frequently activated even after the power switch is turned off, the power plug is disconnected from the wall outlet, the power plug is connected again after a lapse of a certain time, and the power switch is turned on again, please consult your dealer.

Repair and adjustment

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

Cleaning

For cleaning, use a piece of soft cloth to wipe the unit such as cleaning cloth 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.

SAFETY CAUTIONS

CAUTION

Exercise extra care when this unit is unpacked, assembled, transported, and installed because this unit is heavy.

Features of This Unit

4 x 2 output structure

This product has inherited the idea of 4 x 4 output from B-1000f, and has adopted the structure of 4 parallels x 2 modules, that is, 2 modules of 4-parallel push-pull amplification circuit structured with 3-stage Darlington are used for each channel.

Rated output of 150 W+150 W (8Ω), 300 W+300 W (4Ω)

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.

BTL connection mode

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

2-channel input selector

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

Balanced input phase selection

Balanced input phase selection switch equipped, which is useful for the case of connecting foreign-made input devices.

Selector relay

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

High-inertia power supply

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

4-parallel speaker relay

Impedance of speaker output lines reduced thanks to placement of 4-parallel contact structure of speaker relays with low resistance value for each channel.

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.

Peel coat, PCB

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

High-grade analog meter

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

Loopless chassis

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

Large type of speaker terminals

Speaker terminals with right and left identical characteristics layout, which is compatible with Y lugs to enable easy connection with extra-thick speaker cables.

AC inlet

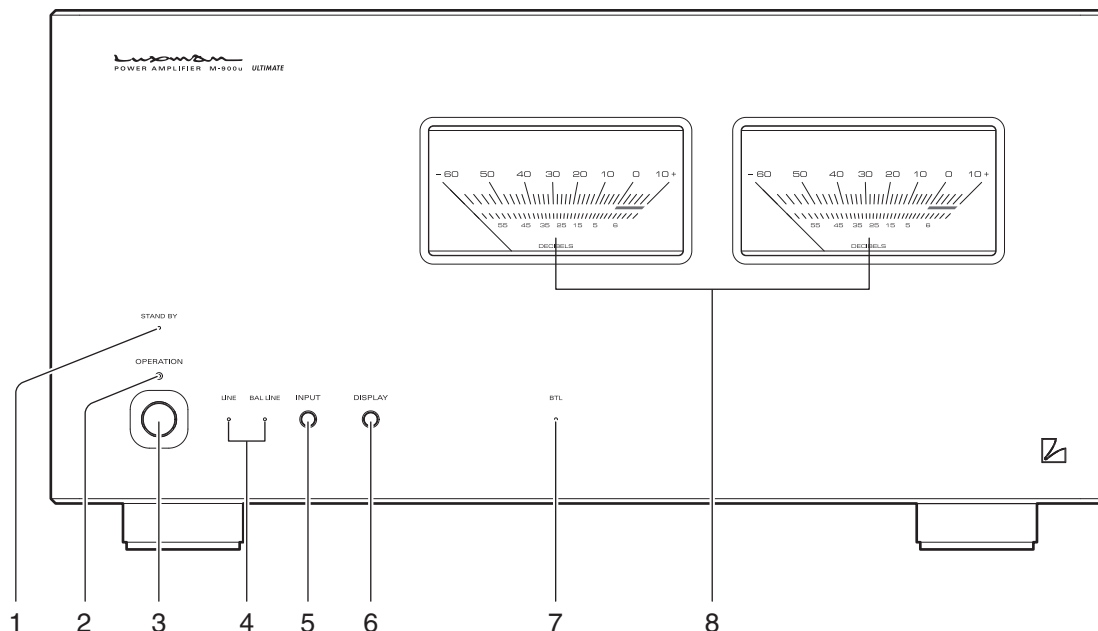
This inlet enables the connection with an external power cable.

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.

Names and Functions

Front panel



1 . Standby indicator (STAND BY)

Indicates that this unit is in the standby state. This indicator lights when the operation switch is turned off after the main power switch on the rear panel is turned on. When the operation switch is turned on and when the main power switch is turned off, this indicator turns off.

2. Operation indicator (OPERATION)

Blinks (for approx. 15 sec.) in the time muting mode when the operation switch is turned on and lights up when the operation state is activated afterward.

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

4. Input indicator (LINE/BAL LINE)

Indicates the input selected with the input switch.

5. Input switch (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 switch is pressed, the selection changes as follows: LINE→BAL LINE→LINE→BAL LINE→LINE...



Factory default: LINE

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

6. Display switch (DISPLAY)

Selects the power meter light and display.

This switch operates differently depending on the setting of the BTL selection switch on the rear panel.

When STEREO is selected:

- Every time this switch 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 at the left side operates.
- Every time this switch 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 (left) 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 switch is memorized in both STEREO and BTL (MONO), respectively.

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

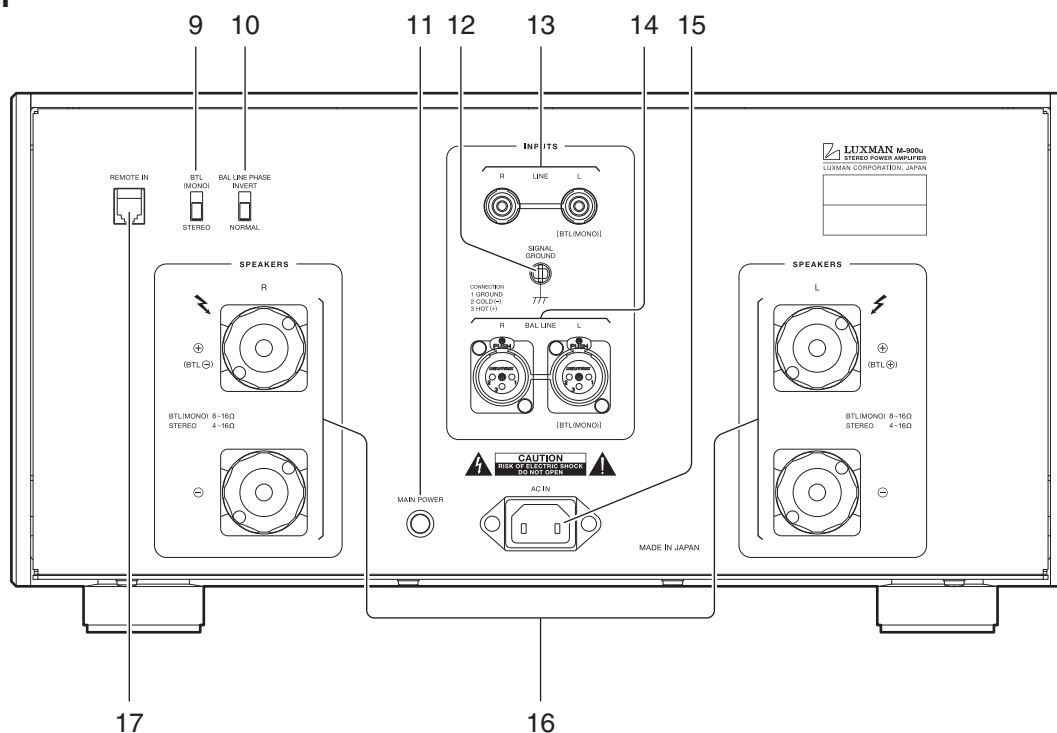
Indicates the level of output to the speakers, with lighting equipped.

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

- This meter indicates the output level in decibels from -60dB through +10 dB during the power meter in operation.
- When STEREO is selected, the meter at left reads the level of the L channel, and the meter at 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 monoaural power amplifier with 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 be corresponding 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 switch (MAIN POWER)

Turns this unit to the standby state.

When this switch is turned on, the standby indicator on the front panel lights yellow to show that this unit turns to the standby state.

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

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

Is a ground terminal for devices to be connected to this unit. This terminal is used to reduce noise when other devices are connected.

This terminal is designed not for safety.

13. Unbalanced input terminal (INPUTS LINE)

Coaxial input terminal to receive unbalanced audio signals of a 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 switch 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 this terminal to a balanced output of an input device such as a control amplifier with a balanced cable.

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

To enjoy sound reproduction 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, and therefore, securely connect the left channel output terminal (L side) of the input device to the L side input terminal of M-900u 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-900u for the right channel. Signals from the R side input terminal are not provided.

15. AC inlet (AC IN)

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

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 in consideration of 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 to a monaural power amplifier. Therefore, either right or left speaker system can be connected exclusively.

If stereo playback is desired, another M-900u 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. Remote input terminals (REMOTE IN)

Connects a control amplifier (e.g. C-900u) equipped with dedicated remote output terminal using a dedicated remote cable.

If the main power switch is turned on and this unit is turned to the standby state, this unit can be turned to the operating state or standby state in conjunction with the operation switch of a control amplifier.

When the main power switch is turned off, this unit does not operate in conjunction with the control amplifier.

Memory reset

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

- (1) Turn the power supply to the standby state.
- (2) Perform the following operations while pressing the display switch.
- (3) Turn on the operation switch.
- (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 the standby state.
- (7) Release the display switch.

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 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 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.

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 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 input terminal to a control amplifier

Connect between the remote output terminal of a control amplifier such as Luxman C-900u and the remote input terminal of this unit with the dedicated remote cable supplied with this unit.

After this connection, this unit can be turned to the operating state in conjunction with the operation switch of the control amplifier.

Use the dedicated remote cable only for the connection between this unit and Luxman control amplifiers.

How to connect speakers

[stereo connection]

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

Securely connect the \oplus terminal of the speaker system to the speaker terminal \oplus (red) of this unit, and the \ominus terminal of the speaker system to the speaker terminal \ominus (black) of this unit. If the \oplus and \ominus terminals are reversely connected to either of the right and left speaker systems, the acoustic phases of the signals reproduced from the right and left speaker systems 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 failing in normal stereo playback.

[BTL connection]

When BTL (MONO) is selected, this unit turns to a monaural power amplifier, and if stereo playback is desired, another M-900u is required.

Connect the left-channel speaker to the speaker terminal of M-900u for the left channel, and the right-channel speaker to the speaker terminal of M-900u for the right channel.

Securely connect the \oplus terminal of the speaker system to the red SPEAKERS L terminal (BTL \oplus) of this unit, and the \ominus terminal of the speaker system to the red SPEAKERS R terminal (BTL \ominus) of this unit.

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 \ominus 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.

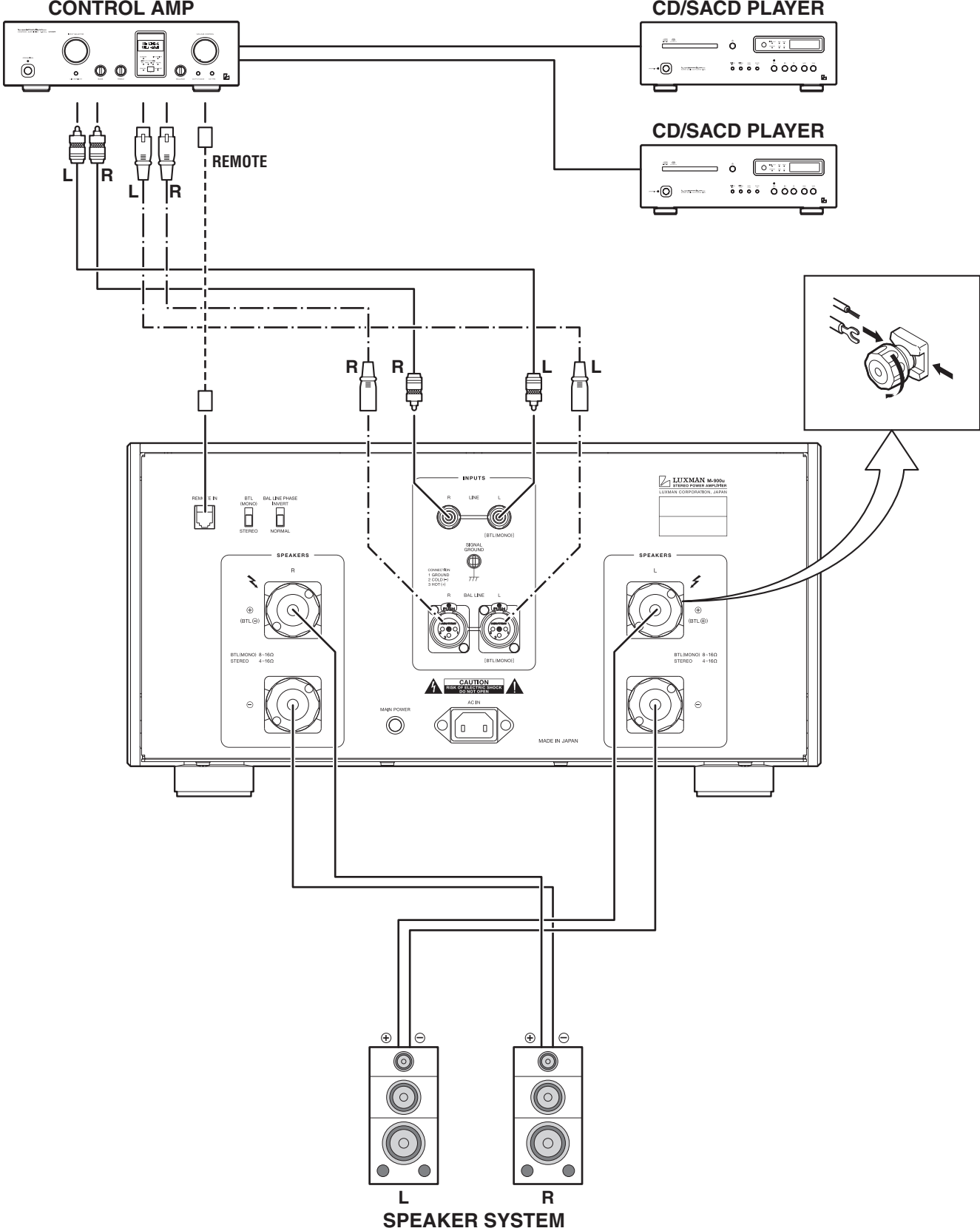
When BTL (MONO) is selected, this unit shall be directly connected to speaker systems, or the switch box with which the \ominus speaker terminal can be independently selected shall be used.

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

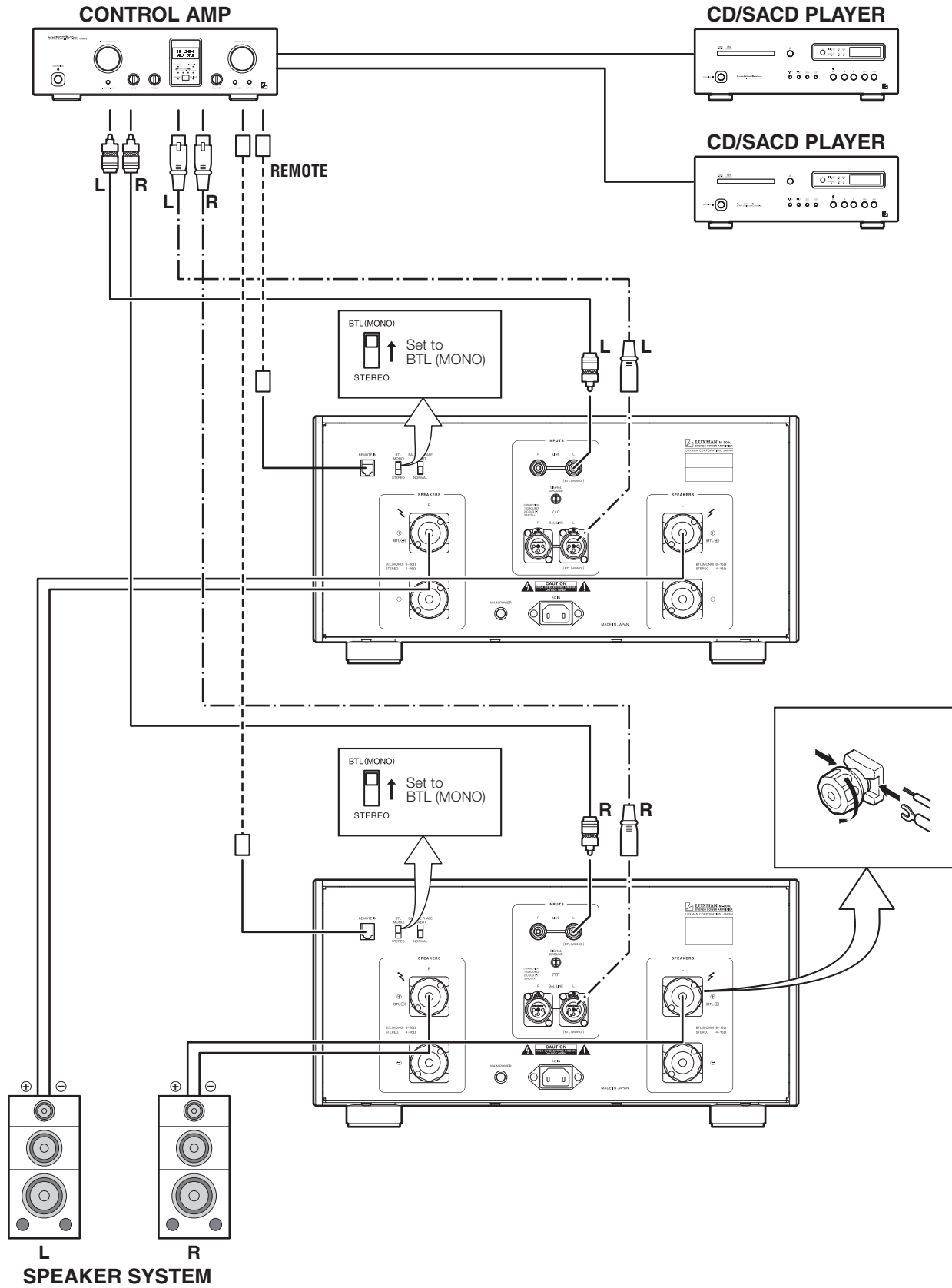
After connection, ensure that connections are appropriately performed and turn this unit to the operating state.

Connections

Normal stereophonic reproduction

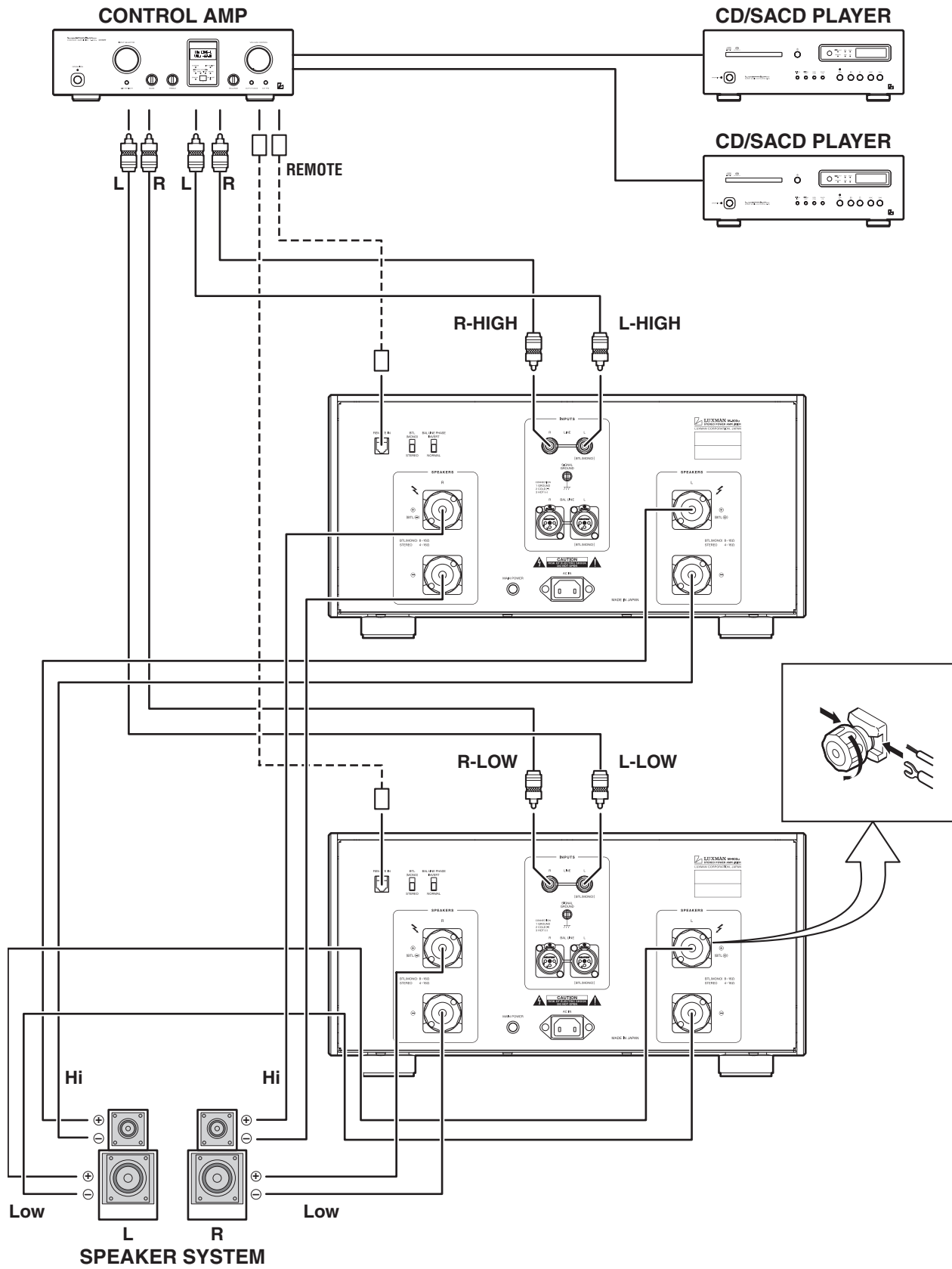


BTL stereophonic reproduction



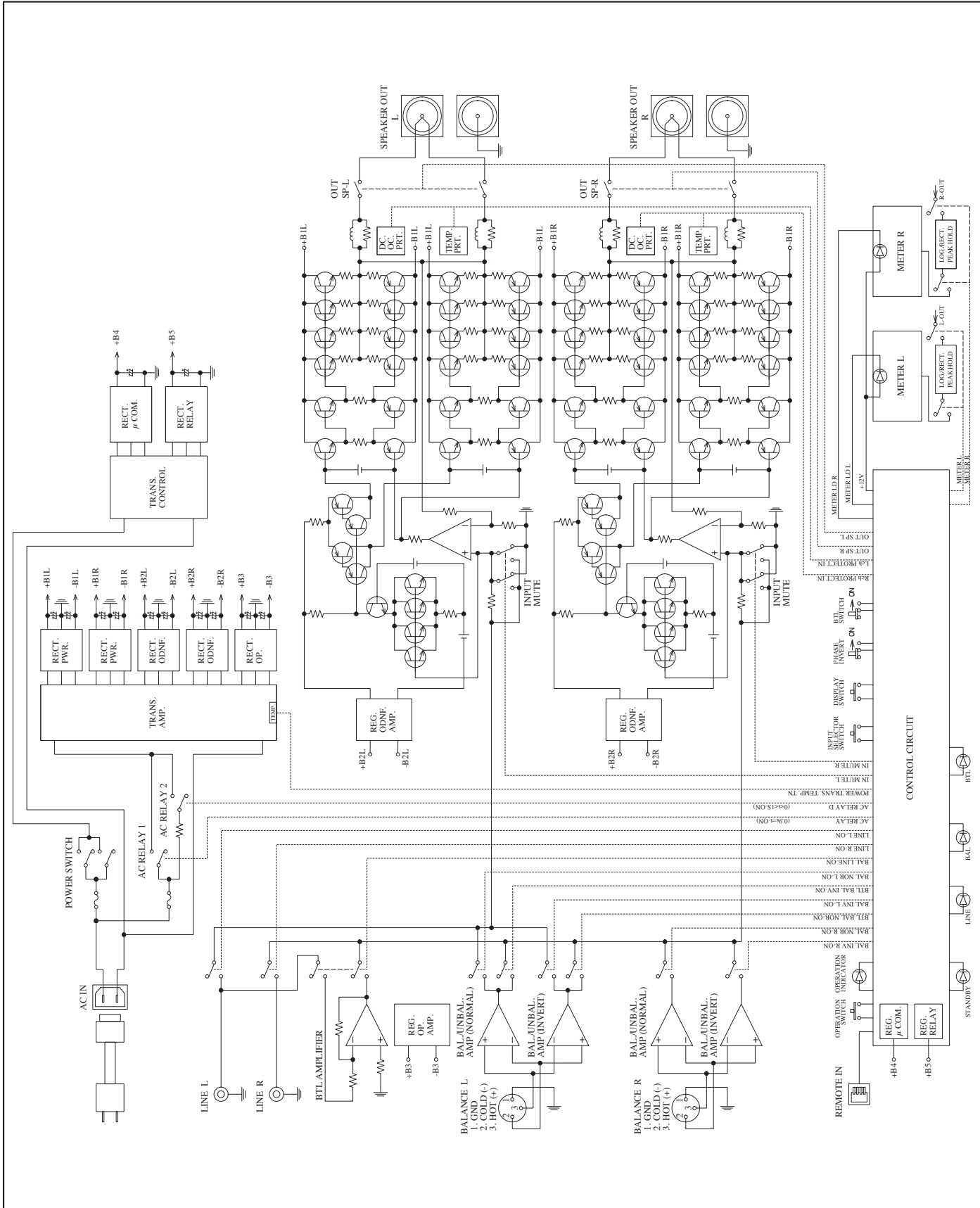
Connections

Bi-amplifier/stereophonic reproduction



Block Diagram

STEREO POWER AMPLIFIER M-900u



Specifications

Continuous rated output (stereo)	150 W + 150 W (8 Ω) 300 W + 300 W (4 Ω)	
Continuous 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	34 kΩ
Total harmonic distortion	0.008 % or less/1kHz · 150 W, load 8 Ω 0.1 % or less/20Hz-20 kHz	
Frequency response	+0, -0.1dB/20Hz-20kHz +0, -3.0dB/1Hz-130kHz	
S/N ratio	117 dB (IHF-A weighted, input short)	
Damping factor	710	
Attached equipment	<ul style="list-style-type: none"> •Main power switch •Input switch •Phase inverter switch •Display switch •Balanced input terminal •Signal ground terminal •AC inlet 	<ul style="list-style-type: none"> •Operation switch •BTL selection switch •Power meters •Unbalanced input terminal •Speaker terminal •Remote input terminal
Accessories	<ul style="list-style-type: none"> •Power cable •Owner's manual 	<ul style="list-style-type: none"> •Dedicated remote cable •Safety cautions
Power consumption	540 W 280 W (under no signal) 1.0 W (at standby)	
Power supply	230 V ~ (50 Hz)	
Max. external dimensions	440 (W) × 224 (H) × 485 (D)mm	
Weight	48.0 kg	

* Specifications and appearance are subject to change without notice.

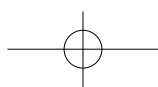
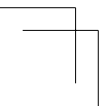
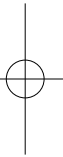
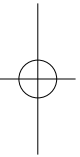
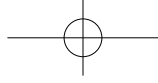
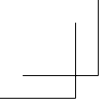
Before Asking for Repair Services

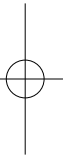
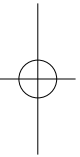
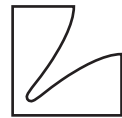
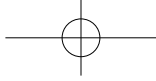
STEREO POWER AMPLIFIER M-900u

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 operation switch is pressed.	· 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.	· Insert the power plug in the AC inlet completely.
	· The main power switch is turned off.	· Turn on the main power switch.
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 switch is not set to the input signal to be reproduced.	· Set the input switch to the input signal to be reproduced.
	· 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 only.	· 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 channel and L channel are connected reversely.	· Connect the R channel and L channel appropriately.
	· The ⊕ and ⊖ terminals of the speaker system on one side are connected reversely.	· Connect the ⊕ and ⊖ terminals of the speaker systems on both sides appropriately.
Humming sound (boon or zzz noise) 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 switch to set the display to ON.

MEMO





LUXMAN CORPORATION, JAPAN

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