



Pre-Amplifier

# C-5000

**Owner's Manual**

Thank you and congratulations on your purchase of this Yamaha product.

- ◆ You can enjoy the high-quality stereo sound of this preamplifier at home.
- ◆ This Owner's Manual describes the unit's features, connection procedures, and operations.
- ◆ To use the product properly and safely, we suggest that you read this manual and Safety Brochure (separate booklet) thoroughly.  
Keep the manual in a safe, accessible place for future reference.

You can download a PDF version of this manual from the following Yamaha website.

<https://download.yamaha.com/>

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## Features



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- ◆ Left-right symmetrical design creates a bookmatched structure
- ◆ Class A operation of full-stage, full-floating balanced signal transmission from input to output
- ◆ Full-floating and balanced phono EQ amplifier with balanced inputs
- ◆ High-accuracy controls that employ a proprietary bearing structure and high-rigidity lever switches
- ◆ Twin transformer designed specifically for audio, which is completely separate from the control power supply
- ◆ Stable mechanical grounding construction dramatically lessens the impact of external vibration.
- ◆ Tone control circuit that features a proprietary parallel volume system
- ◆ Newly-designed brass spiked feet
- ◆ Gain control function that enables ultra fine volume adjustment

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## About this manual

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- ◆ The illustrations as shown in this manual are for instructional purposes only.
- ◆ The company names and product names in this manual are the trademarks or registered trademarks of their respective companies.
- ◆  **WARNING** describes precautions to be followed to avoid the possibility of serious injury or even death.
- ◆  **CAUTION** describes precautions to be followed to avoid the possibility of injury.
- ◆ **NOTICE** describes precautions to be followed to avoid the possibility of malfunction/damage to the product, or damage to data.
- ◆ **Note** describes supplemental information about the product.
- ◆ Before starting to use the product, please be sure to read the separate "Safety Brochure".

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# Table of contents

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<b>Features</b> . . . . .	<b>2</b>
<b>About this manual</b> . . . . .	<b>2</b>
<b>Supplied accessories</b> . . . . .	<b>4</b>
<b>Maintenance</b> . . . . .	<b>4</b>
Mirror-finish side panels . . . . .	4
Surfaces other than the mirror-finish side panels . . . . .	4

## Part Names and Functions

<b>Front panel</b> . . . . .	<b>6</b>
<b>Rear panel.</b> . . . . .	<b>10</b>
Balanced and unbalanced connections . .	14
<b>Remote control</b> . . . . .	<b>16</b>
Installing batteries in the remote control .	18
Operating the remote control . . . . .	18

## Connections

<b>Connecting an external component</b> . . . . .	<b>20</b>
Connecting a turntable . . . . .	22
Connecting a recording component . . . .	22
Connecting another preamplifier . . . . .	23
Connecting a power amplifier and an active subwoofer . . . . .	23
<b>Trigger connections</b> . . . . .	<b>24</b>
Controlling the power on-and-off operation of a connected component, such as a power amplifier, in sync with this unit .	24
Controlling the unit's power on-and- off operation in sync with a connected component, such as an AV receiver . . . .	24
<b>Remote connections</b> . . . . .	<b>25</b>
Operating the unit from another room . .	25
Remote connection between Yamaha components . . . . .	25
<b>Connecting the power cord.</b> . . . . .	<b>26</b>

## Operations

<b>Turning the power on</b> . . . . .	<b>28</b>
<b>Selecting the input and output</b> . . . . .	<b>28</b>
Selecting the input from the EXT.IN jacks .	29
<b>Adjusting the turntable input setting</b> . . . .	<b>29</b>
PHONO selector . . . . .	29
Subsonic filter . . . . .	30
<b>Adjusting the volume level</b> . . . . .	<b>30</b>
Lowering the volume level momentarily .	31
<b>Adjusting the tone</b> . . . . .	<b>31</b>
<b>Connecting headphones</b> . . . . .	<b>32</b>

## Reference Materials

<b>General specifications</b> . . . . .	<b>34</b>
<b>Block diagram</b> . . . . .	<b>36</b>
<b>Audio characteristics</b> . . . . .	<b>37</b>
Frequency response (tone control) . . . .	37
Total harmonic distortion (PHONO). . . .	37
Frequency response (subsonic filter) . . .	38
Volume curve. . . . .	38
<b>Troubleshooting.</b> . . . . .	<b>39</b>
<b>Index</b> . . . . .	<b>41</b>

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# Supplied accessories

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Please make sure that the following accessories are included in the package.

- Remote control
- Batteries (AAA, R03, UM-4) (x2)
- Power cord
- Owner's Manual (this book)
- Safety Brochure (separate booklet)



## WARNING

Do not use the supplied power cord for other devices.

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# Maintenance

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To use this product for an extended period of time, we recommend that you maintain it regularly.



## WARNING

- Check the power cord regularly to see if it is dusty. If so, wipe off the dust completely. Otherwise, fire or electric shock might be caused.
- Do not use aerosol or flammable gas spray for cleaning or lubrication. Otherwise, flammable gas will build up inside the unit, causing possible explosion or fire.

## NOTICE

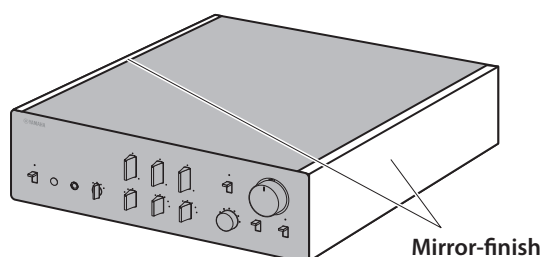
- Use a dry soft cloth to clean the unit. Using cleaning agents, such as benzene or thinner, detergent, or chemically-treated cloth might cause color changes or deterioration of the surface. If the surface gets very dirty, damp a cloth with detergent (diluted with water), wring the cloth tightly, and wipe off the dirt.
- If you wipe the surface area in the vicinity of the Yamaha logo with force, the logo might peel off or fiber from the cloth might stick to the surface.

## Mirror-finish side panels

We recommend that you use a cleaning cloth such as those made for pianos. If the surface is very dirty, use a soft cloth that is damp with water and wrung tightly.

## Surfaces other than the mirror-finish side panels

Wipe other surfaces using a soft dry cloth. If the surface gets very dirty, dampen a cloth with detergent diluted in water, wring the cloth tightly, and then wipe the dirt from the surface.





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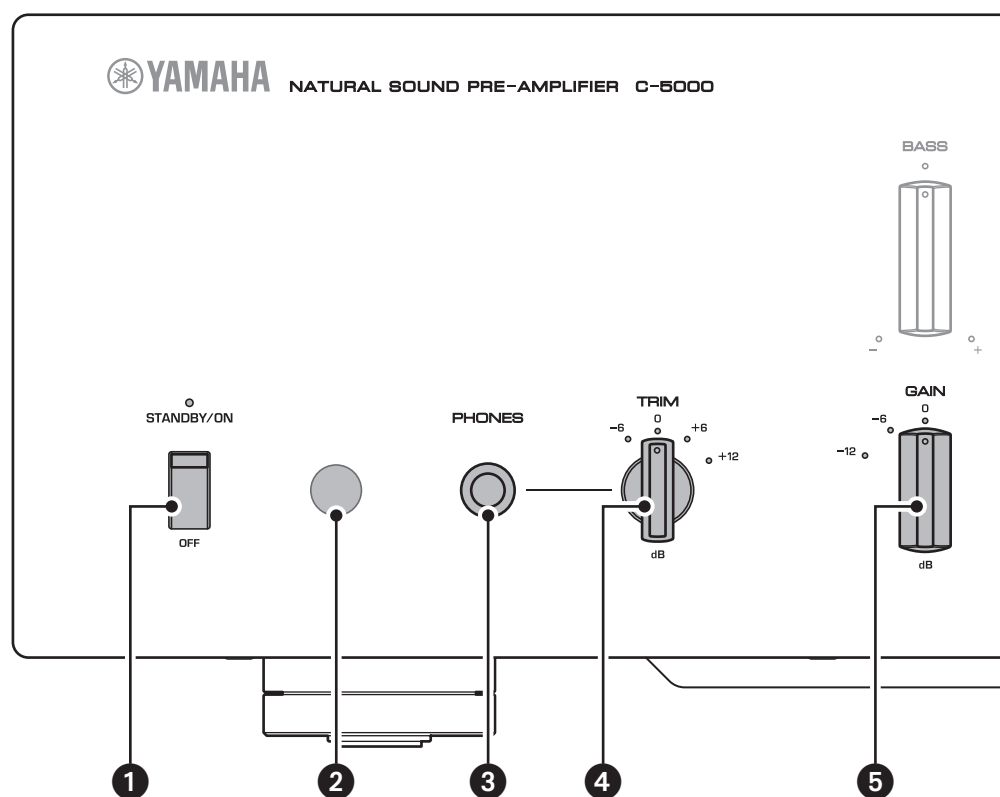
# Part Names and Functions

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This section lists the names and describes the function of various parts on the front and rear panels, and the remote control.

C-5000

# Front panel



## 1 STANDBY/ON/OFF (Power) switch/ indicator

Turns the power to the unit on (standby) or off.

**STANDBY/ON:** Switches between standby and on using the AMP key on the remote control.

**OFF:** Turns the power to the unit off.

Power status	Indicator
On mode	Lit brightly
Standby mode	Lit dimly
Off mode	Off

The unit will enter standby mode not only when you press the AMP key on the remote control, but also in one of the following events:

- If the unit is powered on but not operated for eight hours while the auto power standby function is turned on, or
- If you turn off the power to the device that is connected to this unit's TRIGGER IN jack.

For more information, refer to “**17** AUTO POWER STANDBY switch” in the “Rear panel” section (page 13) and to “Trigger connections” (page 24).

### Note

After you turn on the unit, it will take a few seconds before the unit can reproduce sound.

### NOTICE

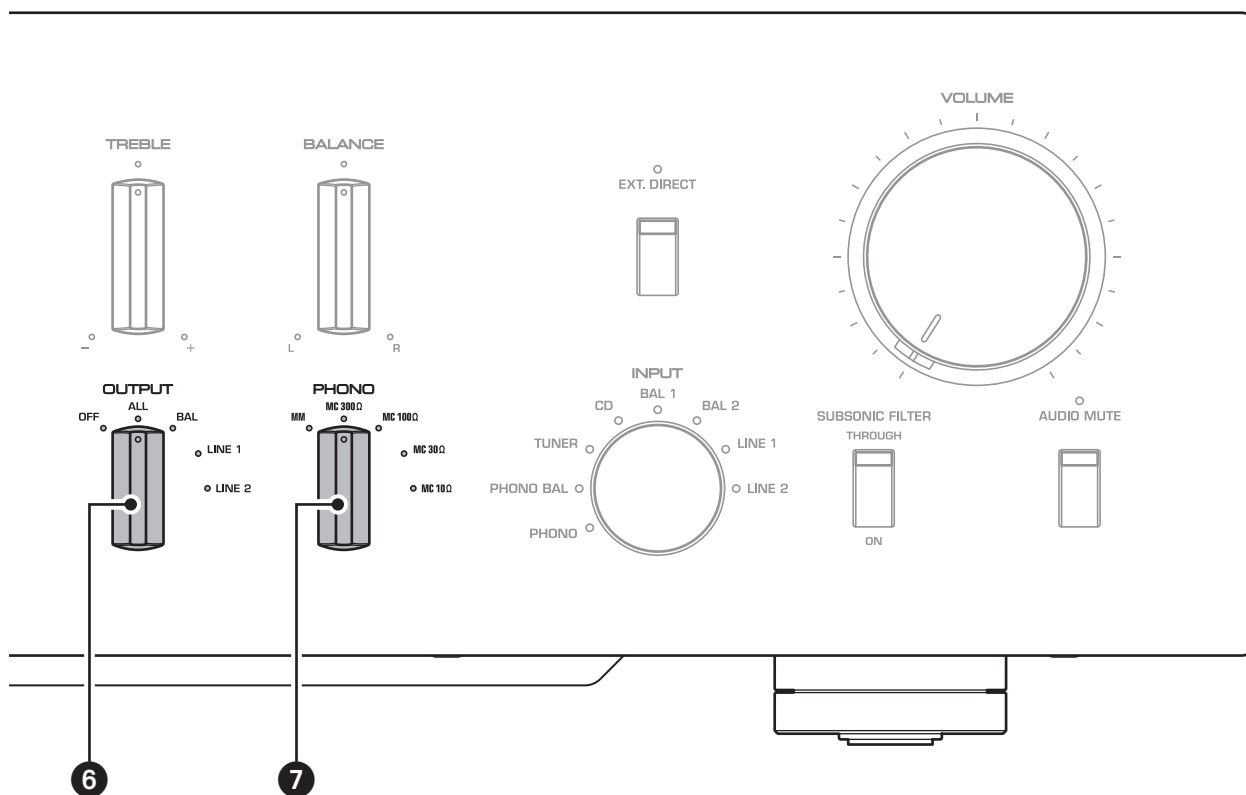
If you plan not to use the unit for an extended period of time, be sure to unplug the power cord from the AC outlet. Even when the STANDBY/ON/OFF (Power) switch is turned off (the power indicator is dark), a minimal amount of electric current is still flowing to the unit.

## 2 Remote control sensor

Receives signals from the remote control. For more information, refer to “Operating the remote control” (page 18).

## 3 PHONES jack

Connect your headphones here to listen to music privately. For more information, refer to “Connecting headphones” (page 32).



#### 4 TRIM selector

Switches the headphone amp gain. The unit will adjust the volume level when headphones are plugged in to avoid sudden changes in volume by modifying the level balance between the audio output from the PHONES jack and from the speakers.

**Choices:** -6 dB, 0 dB, +6 dB, +12 dB

#### 5 GAIN selector

Switches the preamp gain. The unit will smoothly adapt to the power amp gain and speaker sensitivity, enabling you to make fine volume adjustments. For more information, refer to “Adjusting the volume level” (page 30).

**Choices:** -12 dB, -6 dB, 0 dB

#### 6 OUTPUT selector

Specifies which OUTPUT jacks will output signals, as follows:

Use this selector if multiple power amplifiers are connected.

	OUTPUT selector				
	OFF	ALL	BAL	LINE1	LINE2
BAL jacks	—	Output	Output	—	—
LINE 1 jacks	—	Output	—	Output	—
LINE 2 jacks	—	Output	—	—	Output

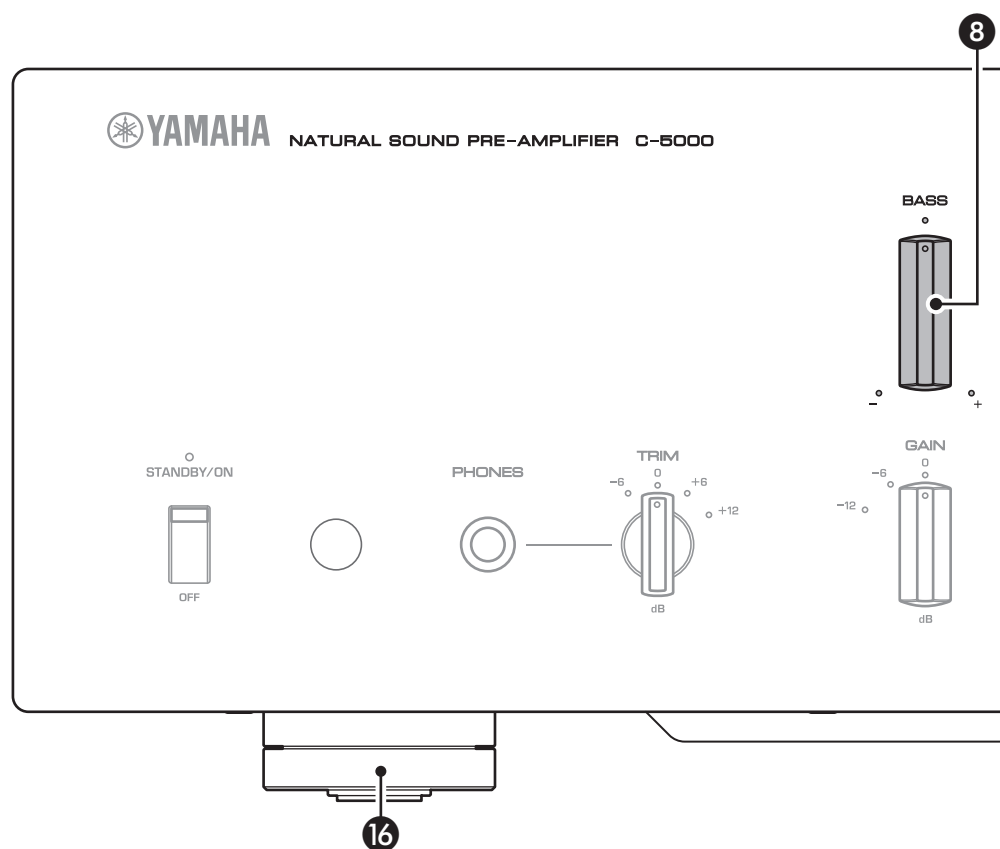
#### 7 PHONO selector

Indicates the type of cartridge installed on the turntable that is connected to the PHONO jacks on the rear panel (MM, MC 300Ω, MC 100Ω, MC 30Ω, MC 10Ω). For more information, refer to “Adjusting the turntable input setting” (page 29).

#### NOTICE

Before you replace the cartridge, be sure to turn off the power to this unit.

# Front panel



## 8 BASS control

Adjusts the low-frequency response in the range from  $-10$  dB to  $+10$  dB (in  $0.5$  dB steps). The center position produces a flat response.

## 9 TREBLE control

Adjusts the high-frequency response in the range from  $-10$  dB to  $+10$  dB (in  $0.5$  dB steps). The center position produces a flat response.

## 10 BALANCE control

Adjusts the audio output balance between the left and right speakers in the range from L (the right channel is muted) to R (the left channel is muted) to compensate for sound imbalances caused by speaker locations or listening room conditions.

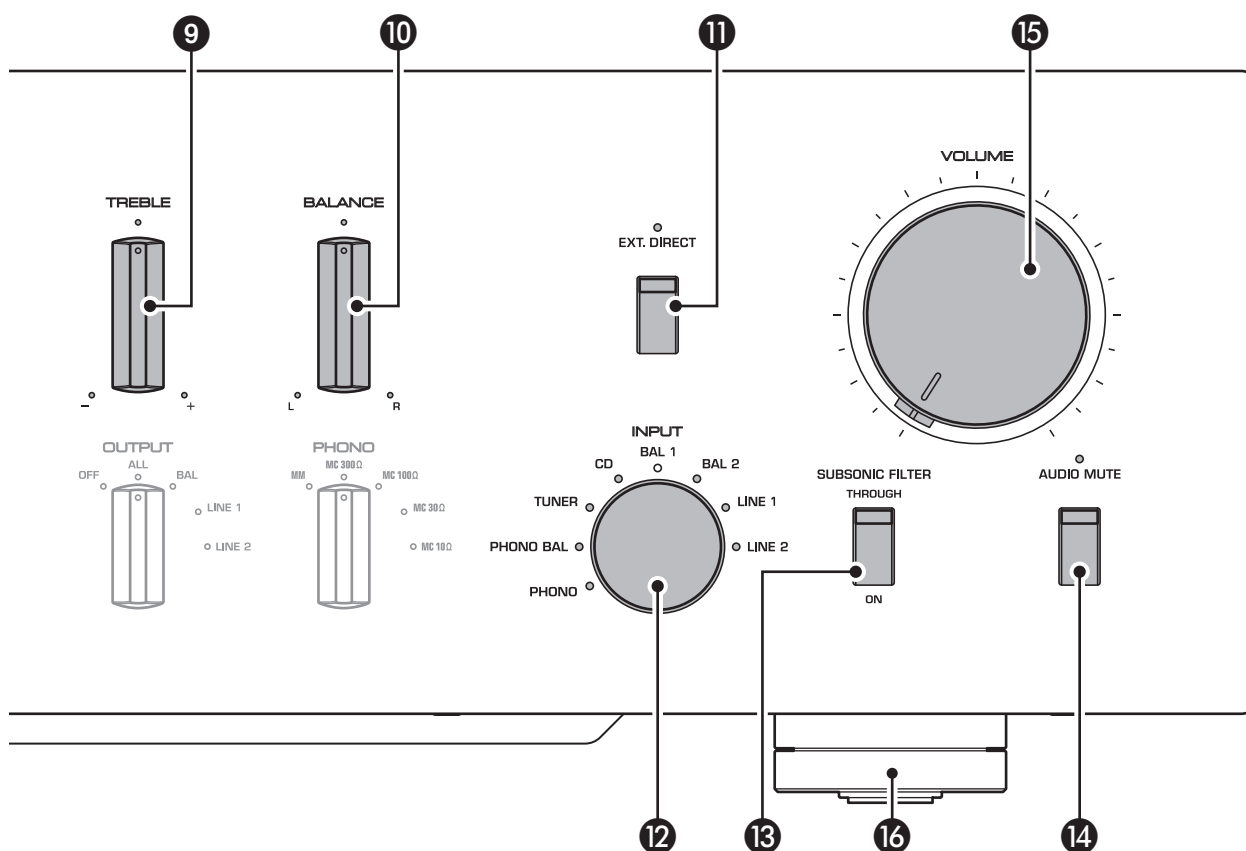
## 11 EXT. DIRECT switch/indicator

If you press the EXT. DIRECT switch once, the EXT. DIRECT indicator will light up, and the audio source input at the EXT. IN jacks will be output at the connected output jacks. For more information, refer to “Connecting another preamplifier” (page 23) and “Selecting the input and output” (page 28).

If you press the EXT. DIRECT switch again or rotate the INPUT selector, the signal specified by the INPUT selector will become the input source, and the EXT. DIRECT indicator will turn off.

### Note

If EXT. DIRECT is selected, no signal will be output at the LINE 2 OUT (recording) jacks nor at the PHONES jack.



## 12 INPUT selector/indicator

Enables you to select the input source to play back. Options are: **PHONO**, **PHONO BAL**, **TUNER**, **CD**, **BAL 1**, **BAL 2**, **LINE 1**, and **LINE 2**. The indicator for the selected input source lights up.

### Note

If **LINE 2** is selected here, audio signals will not be output at the **LINE 2 OUT** (recording) jacks.

## 13 SUBSONIC FILTER switch

Toggles between **ON** (enabled) and **THROUGH** (disabled) for the subsonic filter. For more information, refer to “Adjusting the turntable input setting” (page 29).

### Note

If the **INPUT** selector is set to any option other than **PHONO** or **PHONO BAL**, the filter will be disabled.

## 14 AUDIO MUTE switch/indicator

Press this switch to reduce the current volume level by approximately 20 dB. The indicator will light up. Press again to restore the audio output to the previous volume level. The indicator will turn off.

## 15 VOLUME control

Adjusts the volume level. This setting will not affect the output level at the **LINE 2 OUT** (recording) jacks.

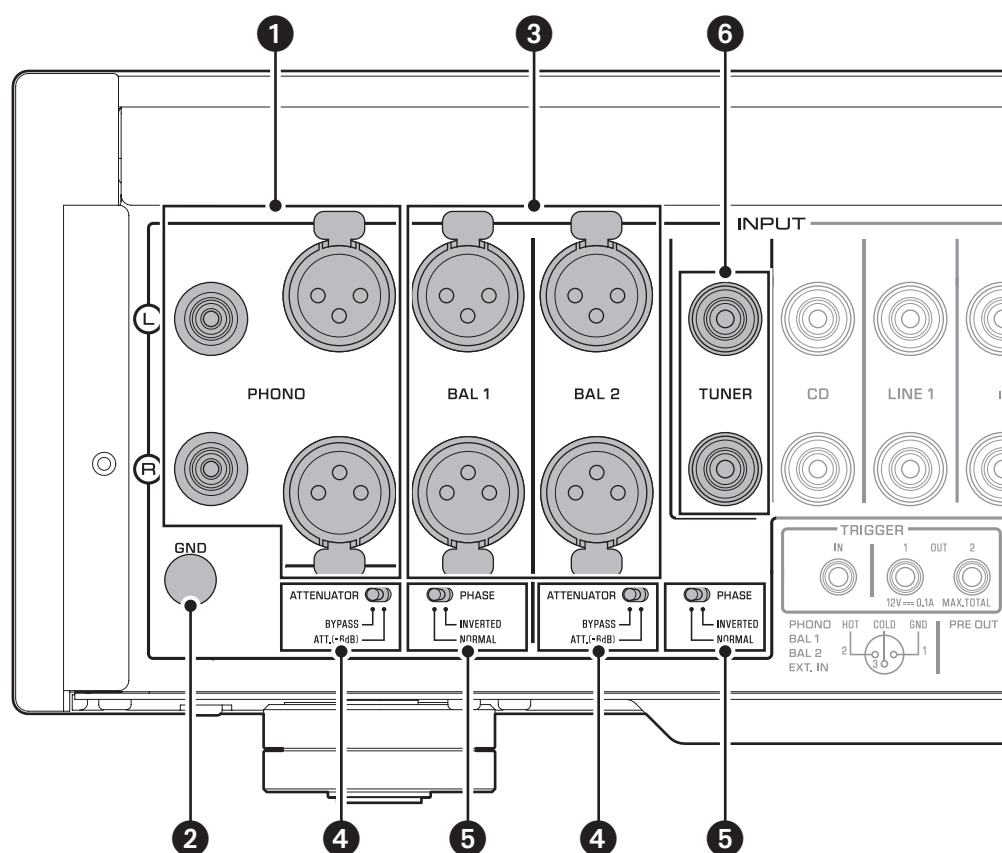
### Note

The **VOLUME** control will not affect the volume level if **EXT. DIRECT** is selected as the input source. To adjust the volume level, use the volume control on the external preamplifier or another component connected to the **EXT. IN** jacks.

## 16 Feet

If the unit is unstable, adjust the height of the feet as needed by rotating them.

# Rear panel



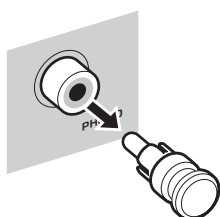
## Note

For information regarding the connection procedure, refer to "Connections" (page 19).

## 1 PHONO jacks

RCA and XLR-type jacks. If the INPUT selector is set to PHONO, the signals at the RCA-type PHONO jacks will be the input source. If the INPUT selector is set to PHONO BAL, the signals at the XLR-type PHONO jacks will be the input source.

Your preamplifier comes with a shorting plug installed on each RCA-type PHONO input jack. If you are planning to connect an external component to these jacks, remove the shorting plugs. For more information, refer to "Connecting a turntable" (page 22).



## CAUTION

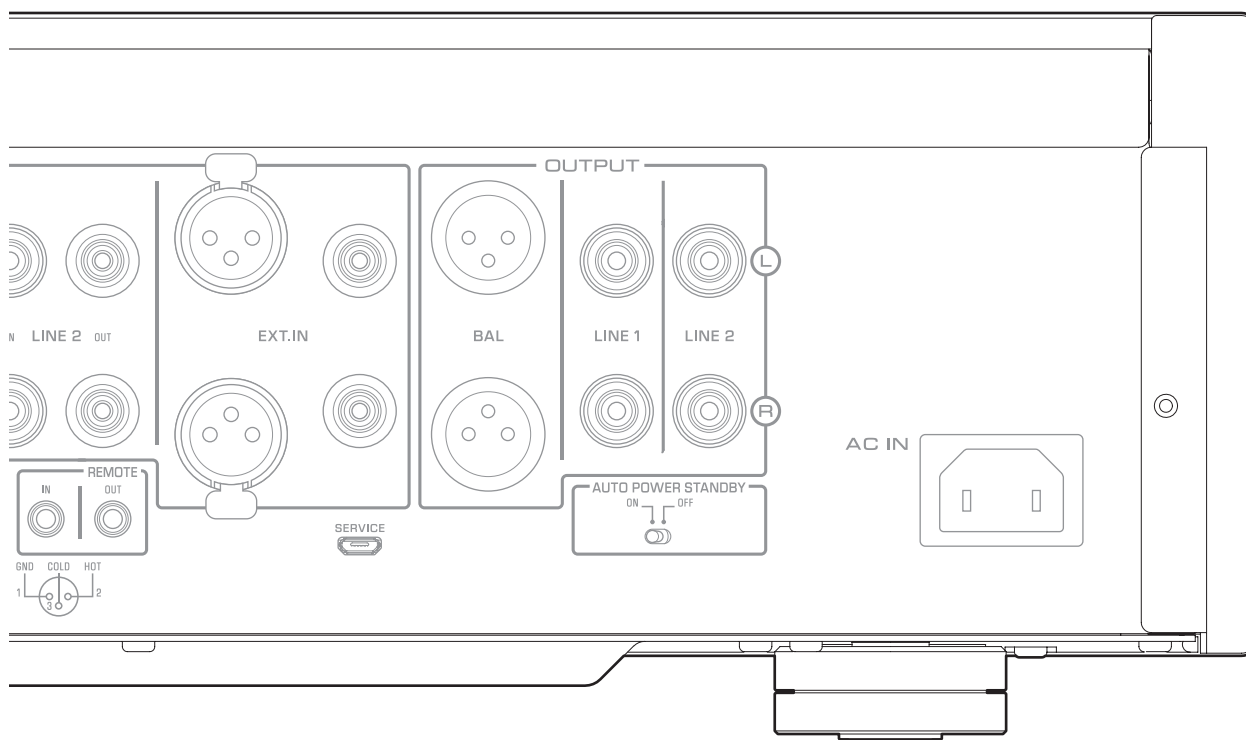
Handle the shorting plugs carefully. Do not allow children to play with the shorting plug; otherwise they might swallow it.

## NOTICE

- Shorting plugs are intended for unused INPUTS ONLY; using them on OUTPUTS can cause serious damage to your components.
- If you are planning not to use the RCA-type PHONO input jacks, insert the shorting plugs into the jacks to prevent random static or noise from degrading the audio signal.

## 2 GND (ground) terminal

If you connect your turntable to the RCA-type PHONO input jacks, also connect the turntable to this terminal. Doing so may reduce noise.



\* The illustration above shows the model for Europe.

### 3 BAL 1/BAL 2 jacks

These are two sets of XLR-type balanced input jacks. If the INPUT selector is set to BAL 1 or BAL 2, signals at the corresponding XLR jacks will be the input source.

#### Note

Set the ATTENUATOR selector and PHASE selector appropriately for the playback components that are connected to the unit.

### 4 ATTENUATOR selector

Enables you to set the allowable input level for the XLR-type balanced input jacks (BAL 1 and BAL 2 jacks). For more information, refer to “Adjusting the volume level” (page 30).

**BYPASS:** The allowable input level will not change. Usually select this option.

**ATT. (–6 dB):** The input gain will be lowered by 6 dB to raise the allowable input level. Select this option if the audio output from the connected component sounds distorted.

### 5 PHASE selector

Specifies the HOT pin position for the XLR-type balanced input jacks (BAL 1 and BAL 2 jacks).

**NORMAL:** Pin #2 is specified as HOT.

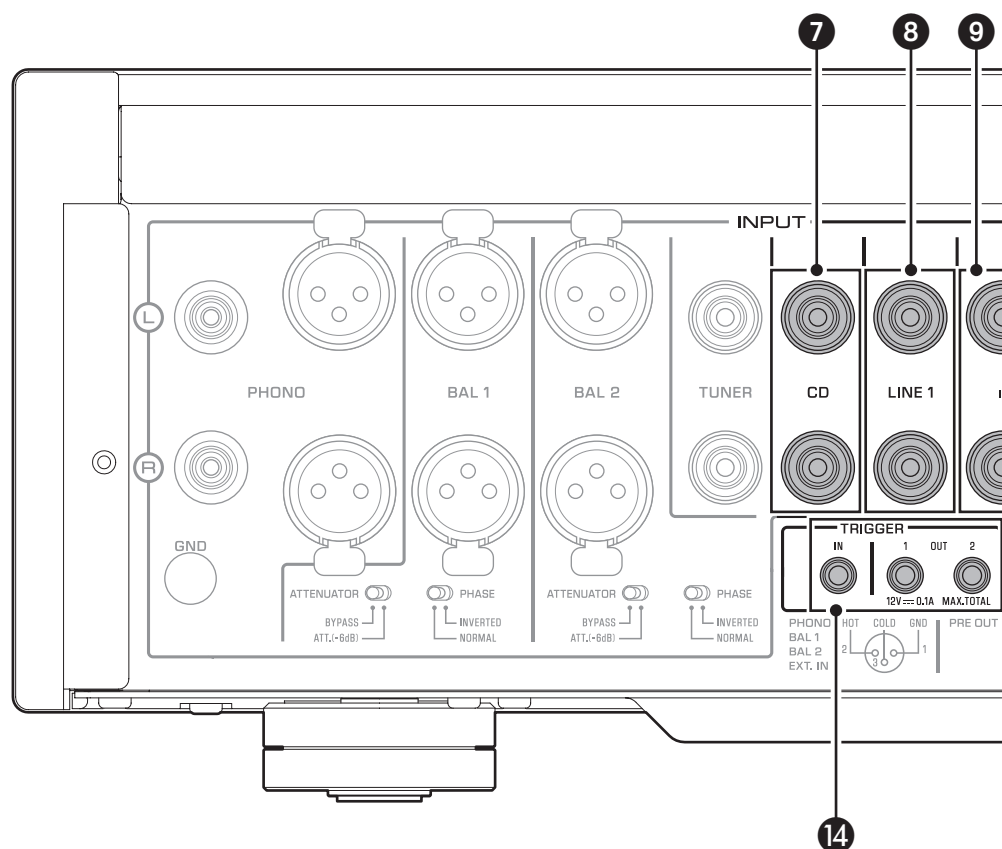
**INV.:** Pin #3 is specified as HOT.

For more information, refer to “Balanced and unbalanced connections” (page 14).

### 6 TUNER jacks

These are RCA input jacks. If the INPUT selector is set to TUNER, signals at these jacks will be the input source. Connect your tuner here.

# Rear panel



## 7 CD jacks

These are RCA input jacks. If the INPUT selector is set to CD, signals at these jacks will be the input source. Connect your CD player here.

## 8 LINE 1 jacks

These are RCA input jacks. If the INPUT selector is set to LINE 1, signals at these jacks will be the input source.

## 9 LINE 2 IN jacks

These are RCA input jacks. If the INPUT selector is set to LINE 2, these jacks will be the input source.

## 10 LINE 2 OUT (recording) jacks

These are RCA input jacks for recording. These jacks normally output the input source signals selected via the front panel or remote control. For information on the connection procedure, refer to "Connecting a recording component" (page 22).

### Note

- Connect the LINE 2 IN jacks and LINE 2 OUT (recording) jacks to the same component.
- The LINE 2 OUT (recording) jacks will not output any signals if the INPUT selector is set to LINE 2 or the EXT. DIRECT switch is pressed.

## 11 EXT.IN jacks

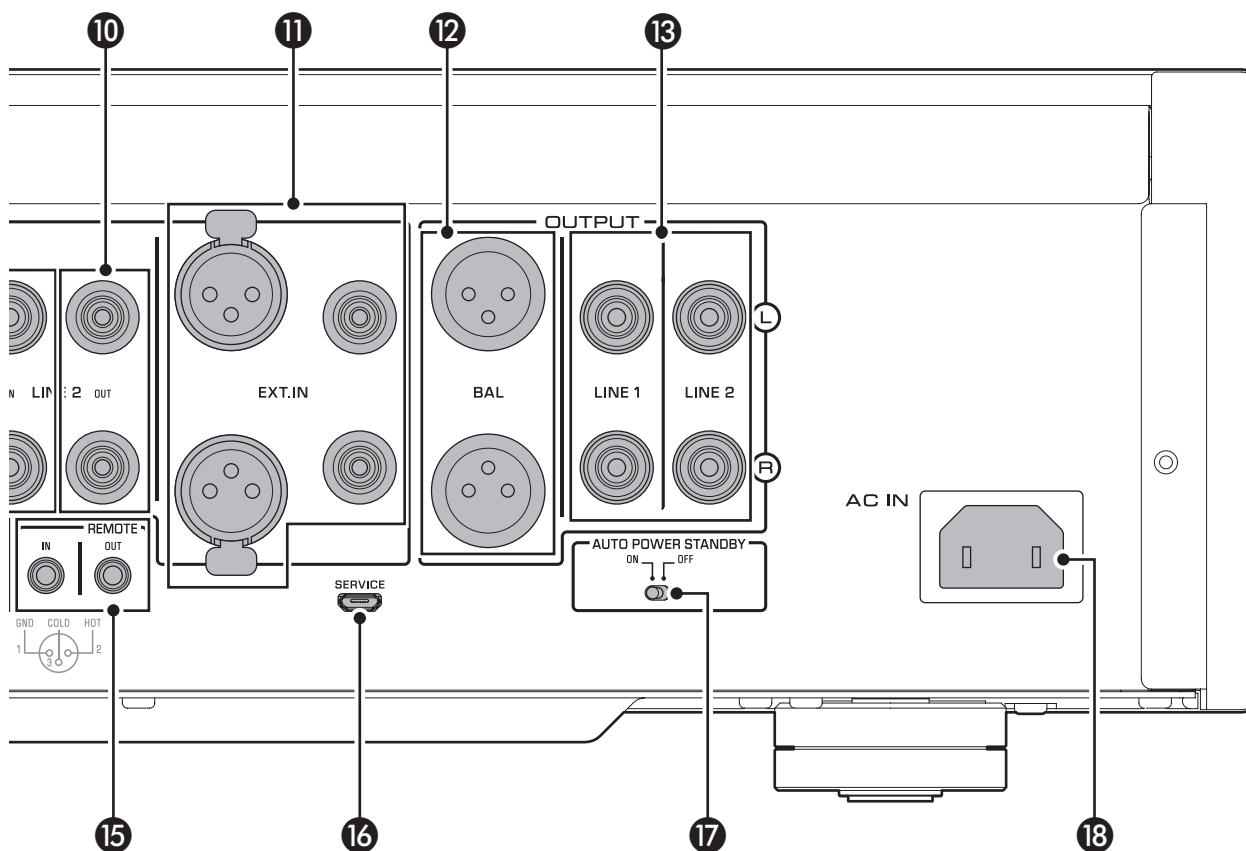
These jacks feature XLR-type input jacks and RCA input jacks. If the EXT. DIRECT switch is pressed, signals at these jacks will be the input source. Connect your preamplifier here. For more information, refer to "Connecting another preamplifier" (page 23).



### CAUTION

You cannot adjust the volume level of the signals input at the EXT. IN jacks. Therefore, be sure to connect to the EXT. IN jacks a component that features a volume control.





\* The illustration above shows the model for Europe.

### Note

The volume level is fixed. Operating the VOLUME control or GAIN selector on this unit will not change the volume level of the signal from the EXT. IN jacks. Adjust the volume level using the volume control on the component connected to the EXT. IN jacks.

### 12 BAL jacks

These are XLR-type output jacks. Connect these jacks to the balanced input jacks on the power amplifier.

### 13 LINE 1/LINE 2 jacks

These are RCA output jacks. Connect these jacks to the RCA input jacks on the power amplifier.

### 14 TRIGGER IN/TRIGGER OUT jacks

These are monaural mini jacks. Connect external components that support the trigger function here. For more information, refer to “Trigger connections” (page 24).

### 15 REMOTE IN/REMOTE OUT jacks

These are monaural mini jacks. Connect external components that support the remote function here. For more information, refer to “Remote connections” (page 25).

### 16 SERVICE jack

This jack is used to service the product. It is rarely used.

### 17 AUTO POWER STANDBY switch

Specifies whether the unit automatically enters standby mode.

**ON:** The unit enters standby mode automatically if it is powered on but not operated for eight hours.

**OFF:** The unit does not enter standby mode automatically.

### 18 AC IN jack

Connect the supplied power cord here. For more information, refer to “Connecting the power cord” (page 26).

## Balanced and unbalanced connections

This unit features XLR-type balanced jacks and RCA-type unbalanced input jacks.

### Note

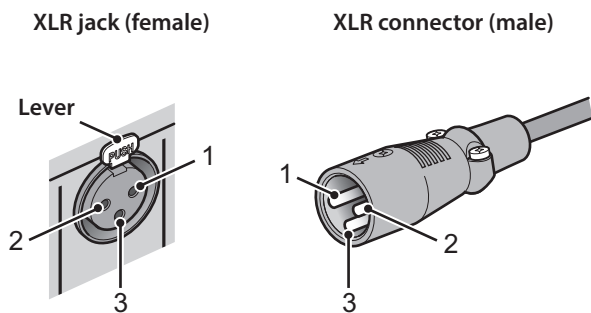
Do not use balanced and unbalanced connections between two components simultaneously. Doing so would create a ground loop that could generate static and noise.

### Balanced connection

A balanced connection is designed to cancel and prevent unwanted noise. Since longer cables tend to pick up more noise, a balanced connection is useful if you need to use long cables. Generally, if your components feature balanced outputs, you should use balanced connections.

### Jacks for balanced connections

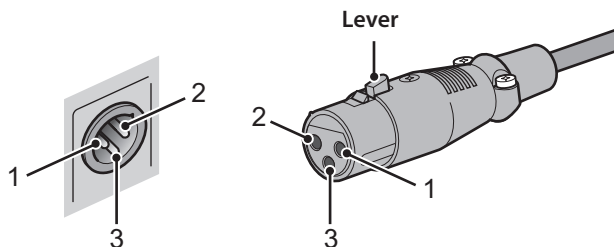
XLR-type jacks on this unit are used for balanced connections. The input and output jacks utilize different designs. Input jacks are female, and output jacks are male. For balanced connections, balanced cables with XLR connectors are used. Connect a male connector on the cable to a female jack on the unit, and connect a female connector to a male jack on the unit.



When connecting a cable to an input jack, be sure to align the pins on the connector with the holes in the jack, and then insert the connector into the jack until you hear a click. To remove the cable, while pressing and holding down the lever on the input jack on the unit, pull out the male XLR connector from the jack.

XLR jack (male)

XLR connector (female)



When connecting a cable to an output jack, be sure to align the holes on the connector with the pins on the jack, and then insert the connector into the jack until you hear a click. To remove the cable, while pressing and holding down the lever on the female XLR connector, pull it out from the jack.

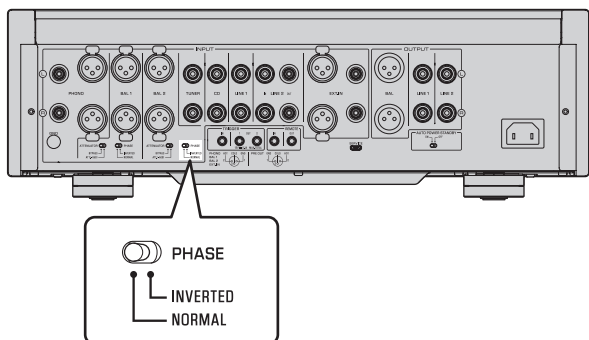
### Balanced connection polarity

When making a balanced connection, you must set the polarity correctly. Generally, pin #2 is Hot, but sometimes pin #3 can be Hot. Refer to the owner's manual for the connected component to learn which pin at the output jack is Hot.

To set the polarity for the BAL 1 and BAL 2 input jack pins, use the PHASE selector on the rear panel.

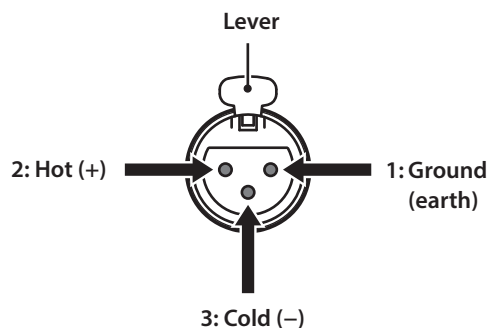
### Note

- The PHONO and EXT. IN jacks do not feature a PHASE switch. The pin polarity of these jacks is standard and fixed.
- Pin #2 is Hot on Yamaha players.



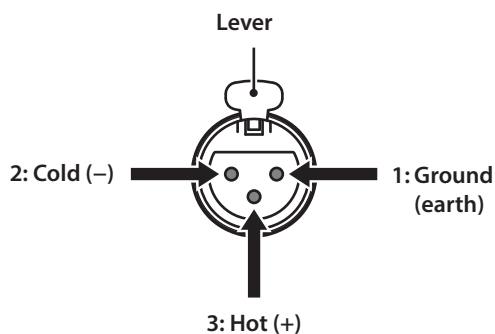
If the PHASE selector is set to NORMAL, pin #2 becomes Hot.

#### XLR-type input jack

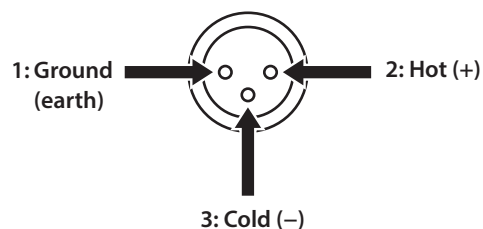


If the PHASE selector is set to INVERTED, pin #3 becomes Hot.

#### XLR-type input jack

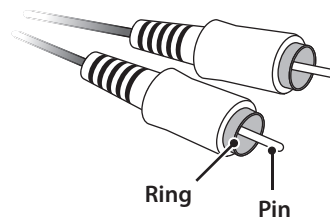


#### XLR-type output jack

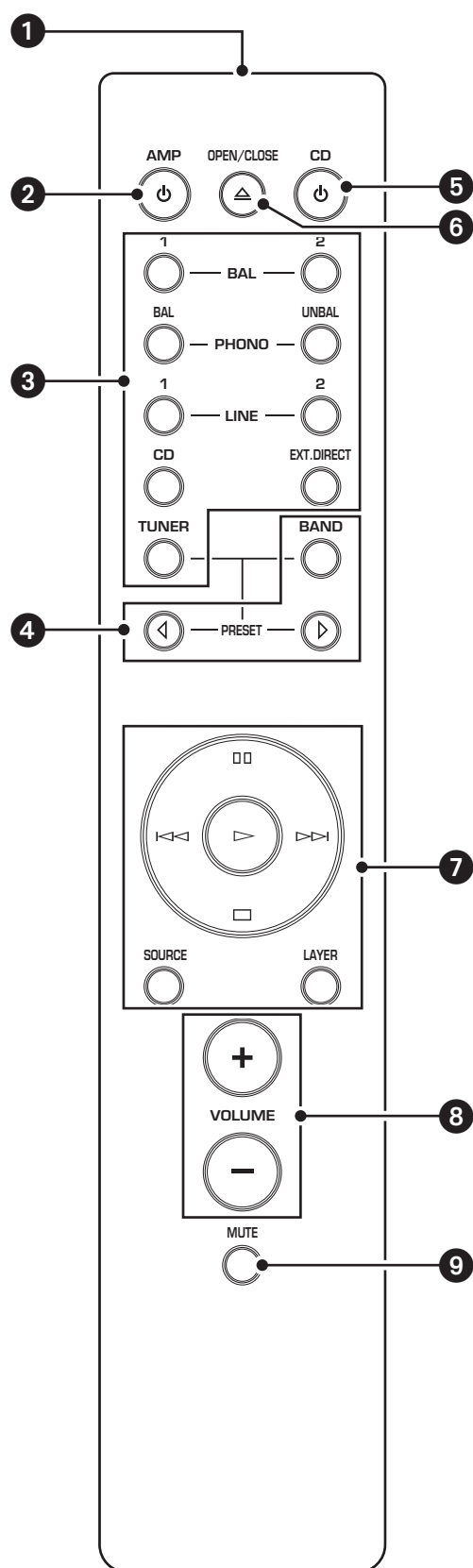


### Unbalanced connection

If you are connecting an audio component that features only standard RCA jacks, use the RCA jacks on this unit for unbalanced connections. For unbalanced connections, unbalanced cables with RCA connectors should be used. These jacks and connectors do not feature a male or female design nor polarity differences.



# Remote control



## 1 Infrared signal transmitter

Outputs infrared control signals toward the unit.

## 2 AMP key

Turns on the power to the unit or switches it to standby mode. For more information regarding standby mode, refer to “Front panel” (page 6).

## 3 Input select keys

Enable you to select the input source to be played back.

**BAL:** Selects the component connected to the XLR-type BAL 1 or BAL 2 jacks as the input source.

**PHONO:** Selects the turntable connected to the PHONO jacks (XLR-type or RCA) as the input source. Press the BAL key to select the source at the XLR-type jacks, or the UNBAL key to select the source at the RCA jacks.

**LINE:** Selects the component connected to the RCA-type LINE 1 or LINE 2 jacks as the input source.

**EXT. DIRECT:** Selects the component connected to the EXT. IN jacks as the input source. If EXT. DIRECT is selected as the input source, audio signals will not be output at the LINE 2 OUT or PHONES jacks.



**CD:** Selects the component (usually, a CD player) connected to the RCA-type CD jacks as the input source.

**TUNER:** Selects the component (usually, a tuner) connected to the RCA-type TUNER jacks as the input source.

### Note

Audio signals of the selected input source will be output at the LINE 2 OUT (recording) jacks. If LINE 2 is selected as the input source, audio signals will not be output at the LINE 2 OUT (recording) jacks.

## 4 Tuner control keys

Enable you to control the functions of the connected Yamaha tuner. Use the BAND key to switch the reception band, and the PRESET   keys to select a preset station. For more information, refer to the owner’s manual for your tuner.

### Note

Some Yamaha tuner models might not support these key functions.



## 5 CD key

Turns on the power to a connected Yamaha CD player, or switches it to standby mode.

## 6 OPEN/CLOSE key

Opens or closes the disc tray of a connected Yamaha CD player. For more information, refer to the owner's manual for your CD player.

### Note

Some Yamaha CD player models might not support the  CD key and/or  OPEN/CLOSE key functions.



## 7 CD player control keys

Enable you to control the functions of a connected Yamaha CD player. For more information, refer to the owner's manual for your CD player.

### (Play)

Starts playback.

### (Pause)

Pauses playback. Press  or  to resume playback.

### (Stop)

Stops playback.

### (Skip)

Skips to the next track, or returns to the beginning of the current track.

### SOURCE key

Selects the source to be played on the Yamaha CD player. The playback source changes each time this key is pressed.

### LAYER key

Toggles the playback layer of a hybrid super audio CD between "Super audio CD" and "CD."

### Note

Some Yamaha CD player models might not support these key functions.

## 8 VOLUME +/- keys

Adjust the volume level.

### Note

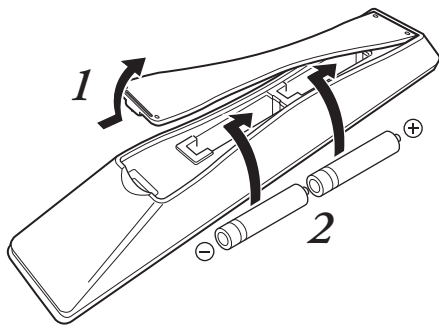
The VOLUME +/- keys on the remote control will not affect the volume level if EXT. DIRECT is selected as the input source. To adjust the volume level, use the volume control on the external amplifier connected to the EXT. IN jacks.

## 9 MUTE key

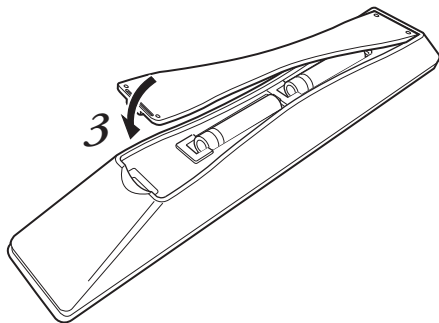
Reduces the current volume level by approximately 20 dB. Press the key again to restore the audio output to the previous volume level. Pressing the VOLUME + or - key on the remote control will also cancel muting.

## Installing batteries in the remote control

- 1 Remove the battery compartment cover.
- 2 Insert two batteries (AAA, R03, UM-4) according to the polarity markings (+ and -) on the inside of the battery compartment.



- 3 Reinstall the battery compartment cover.



### WARNING

- Do not toss the batteries into an open fire, or expose them to high temperatures, such as direct sunlight or open flame. Otherwise, the battery might explode, causing fire or injury.
- Do not try to recharge non-rechargeable batteries. Otherwise, batteries might explode or leak, causing blindness, chemical burns or injury.
- If a battery is leaking, do not touch the liquid. Otherwise, blindness or chemical burns might be caused. If your eyes, mouth, or skin comes in contact with the liquid, immediately wash the site thoroughly with water and seek medical attention.

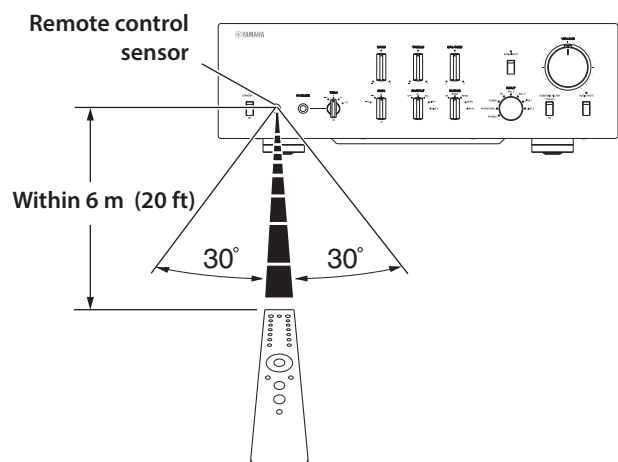


### CAUTION

- Do not use a new and old batteries at the same time. Otherwise, fire, burns, or irritation due to leaking battery liquid might be caused.
- Do not use two different types of batteries at the same time. For example, if you use an alkaline battery and a manganese battery together, or two batteries from two different manufacturers or with different product numbers at the same time, fire, burns, or skin irritation due to leaking battery liquid might be caused.
- Keep the batteries out of the reach of children. Otherwise, a child might swallow the battery by accident. Also, leaking battery liquid might cause skin irritation.
- Insert the two batteries according to the polarity markings (+ and -). Otherwise, fire, burns, or skin irritation due to leaking battery liquid might be caused.
- If you plan not to use the remote control for an extended period of time, or if the batteries are exhausted completely, remove them from the remote control. Otherwise, all batteries will eventually become exhausted and might leak, causing skin irritation or damage to the remote control.

## Operating the remote control

To operate the remote control, aim it directly at the remote control sensor on the front panel of the unit.



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# Connections

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This section explains how to connect the unit to an audio source, such as a tuner or CD player, and a power amplifier.



## CAUTION

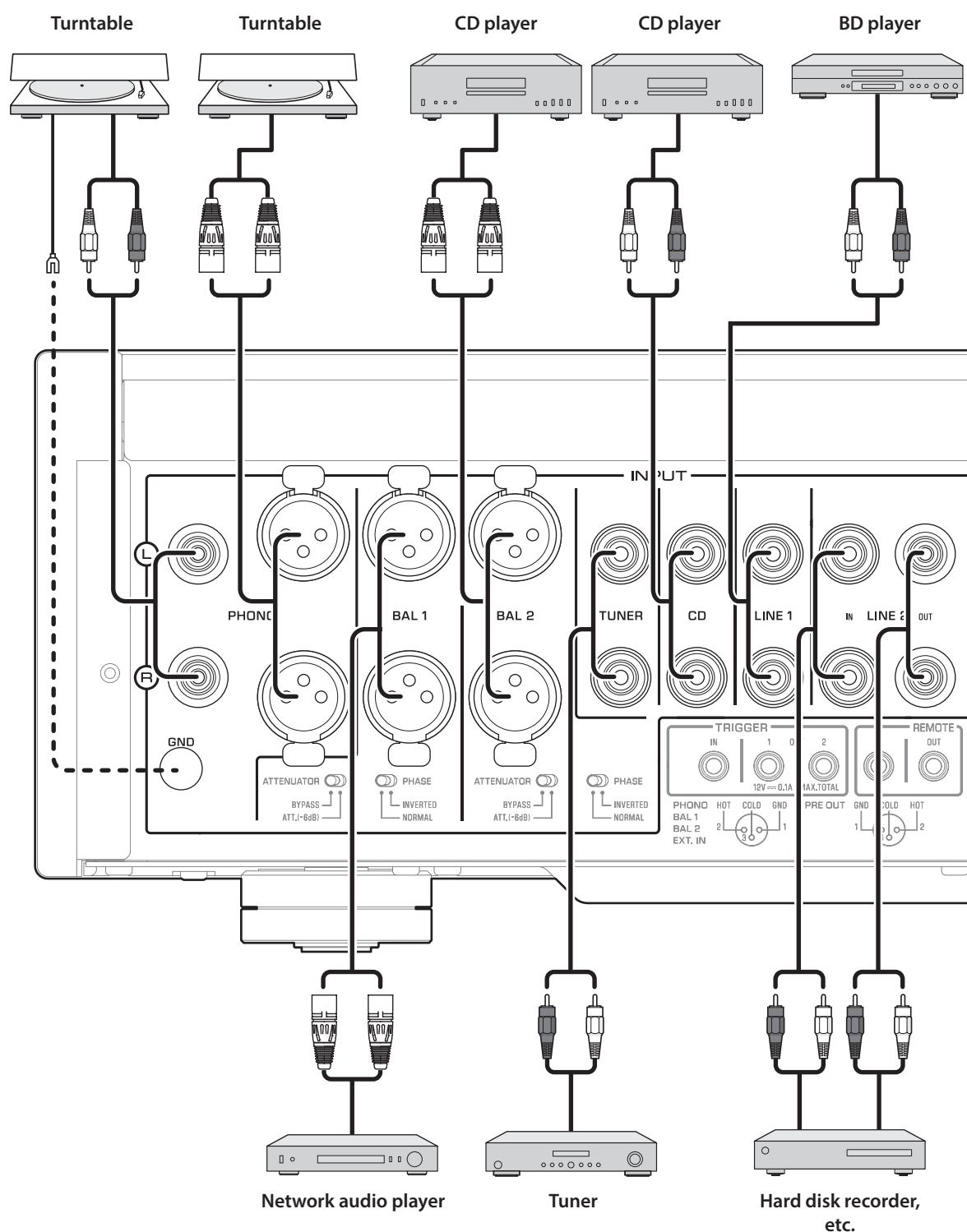
Turn off the power to all components before making any connections.

## NOTICE

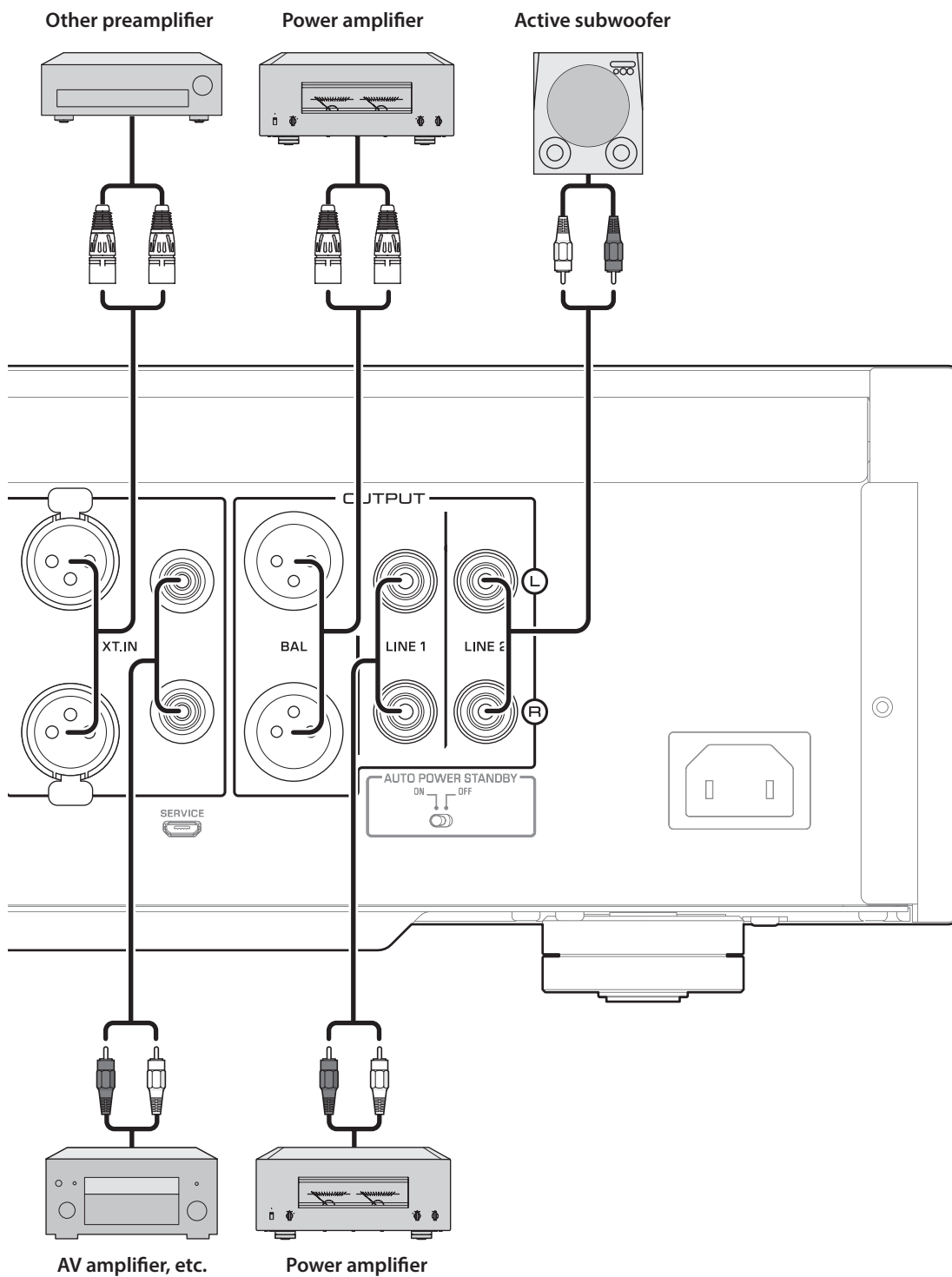
- Do not use balanced and unbalanced connections between two components simultaneously. Doing so would create a ground loop that could generate static and noise.
- If you are planning to connect external components, read and follow the instruction manuals for those components. Otherwise, this unit or external components might malfunction.

C-5000

# Connecting an external component







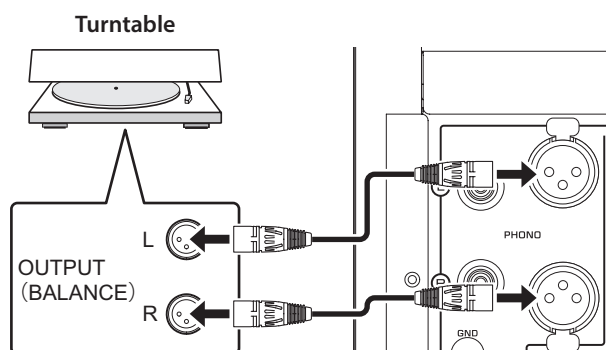
## NOTICE

Do not use balanced and unbalanced connections between two components simultaneously. Doing so would create a ground loop that could generate static and noise.

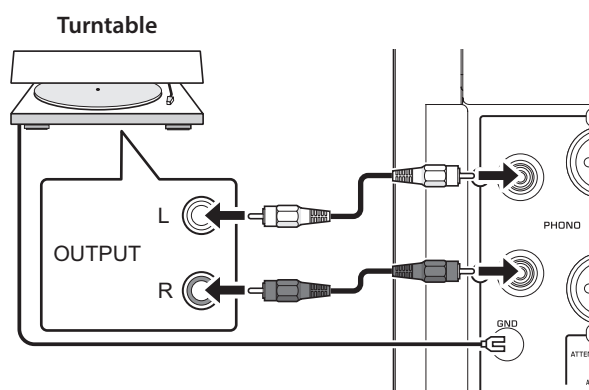
## Connecting a turntable

Connect your turntable to the PHONO jacks on this unit. The unit provides XLR-type balanced jacks and RCA-type unbalanced input jacks.

### Balanced connection



### Unbalanced connection



#### Note

If you connect the turntable to the RCA jacks on this unit, listen to and compare the sound with the GND (ground) terminal connected and unconnected, and then select whichever less noisy.

#### NOTICE

Do not use balanced and unbalanced connections between this unit and the turntable simultaneously. Doing so would create a ground loop that could generate static and noise.

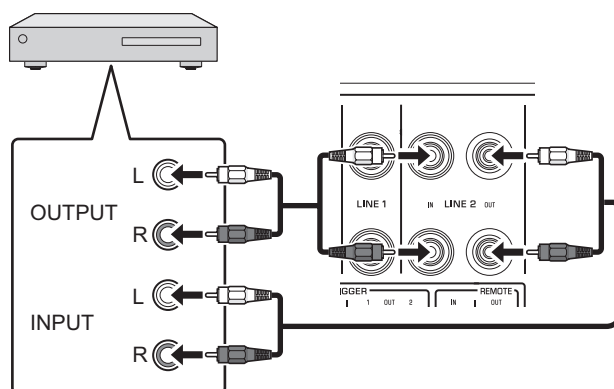
## Connecting a recording component

You can connect a recording device, such as a hard disk recorder to the unit, and record audio input from the unit. Connect the recording component to both LINE 2 IN jacks and LINE 2 OUT (recording) jacks.

#### Note

- Make sure that you connect the LINE 2 IN jacks and LINE 2 OUT (recording) jacks to the same component.
- The signal from the LINE 2 OUT (recording) jacks is essentially identical to the signal from the output jacks specified by the OUTPUT selector. If the INPUT selector is set to LINE 2, no signal will be output at the LINE 2 OUT (recording) jacks.

Hard disk recorder,  
etc.

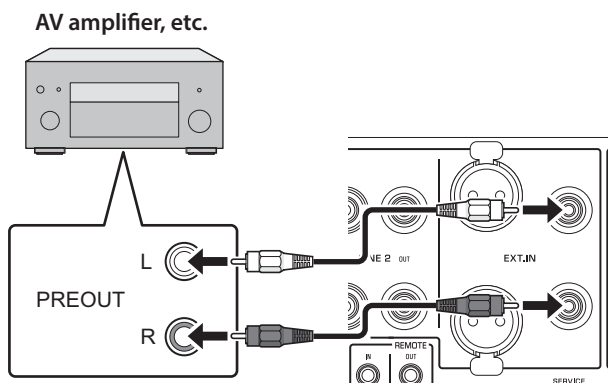
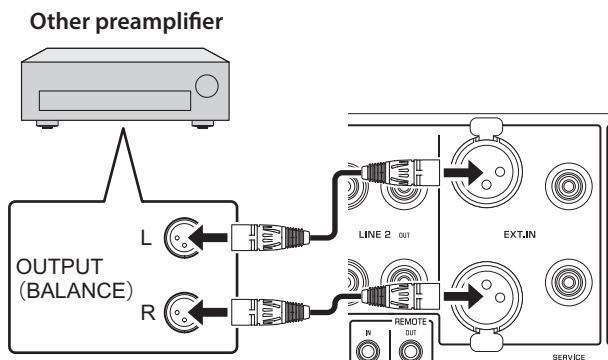


## Connecting another preamplifier

If you connect the output of another preamplifier to the EXT. IN jacks on this unit and press the EXT. DIRECT switch, the source signal will pass through the unit and will be output to the connected power amplifier. The source signal input at the balanced EXT. IN jacks will be output at the balanced BAL jacks. The source signal input at the unbalanced EXT. IN jacks will be output at the LINE 1 and LINE 2 jacks.

### Note

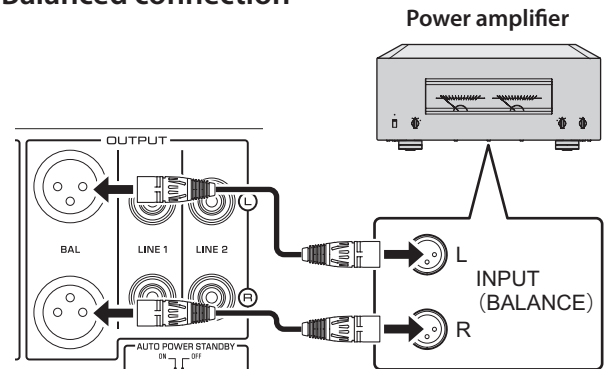
If the EXT. DIRECT switch is turned on, you will not hear any sound from the headphones connected to the PHONES jack.



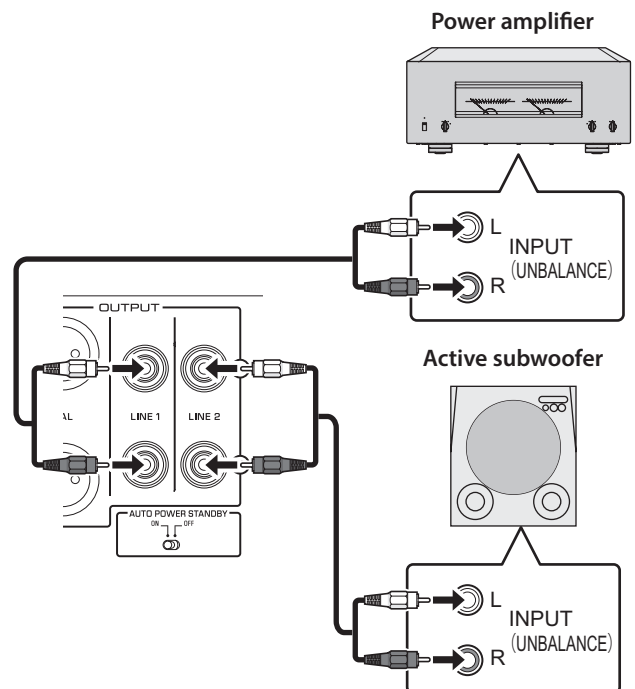
## Connecting a power amplifier and an active subwoofer

You can connect a power amplifier and an active subwoofer to the BAL, LINE 1, or LINE 2 output jacks on this unit.

### Balanced connection



### Unbalanced connection



### NOTICE

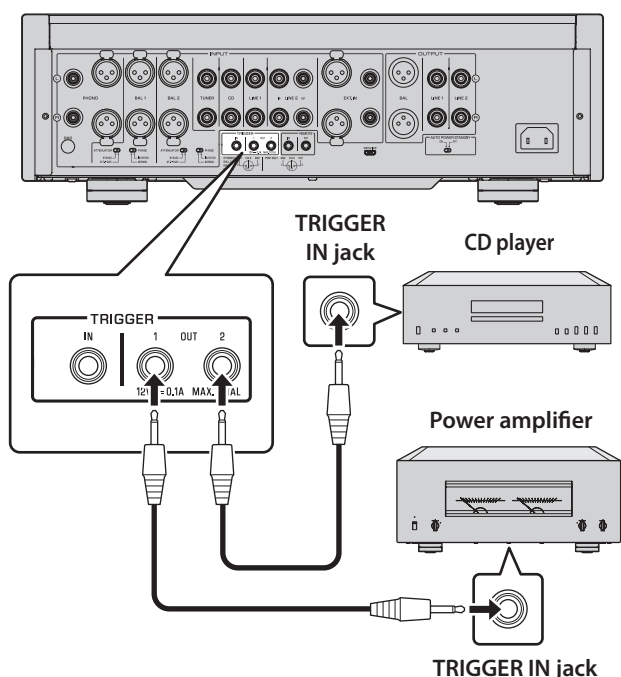
Do not use balanced and unbalanced connections between two components simultaneously. Doing so would create a ground loop that could generate static and noise.

# Trigger connections

## Controlling the power on-and-off operation of a connected component, such as a power amplifier, in sync with this unit

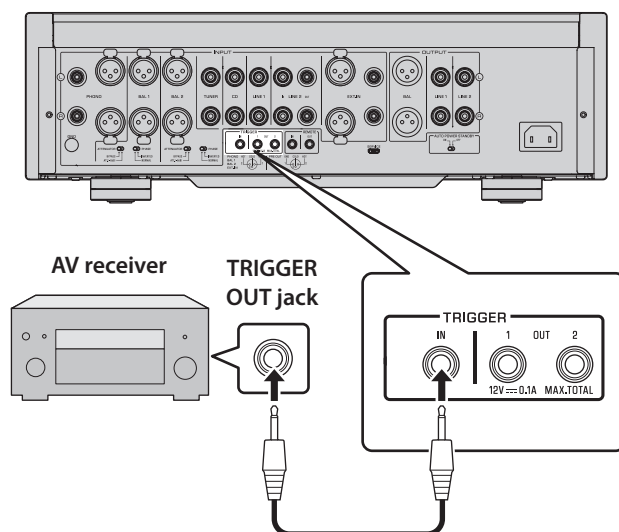
You can control the power on-and-off operation of a connected component, such as a Yamaha CD player or power amplifier, in sync with this unit.

Use a system cable to connect the unit's TRIGGER OUT jack to the connected component's TRIGGER IN jack.



## Controlling the unit's power on-and-off operation in sync with a connected component, such as an AV receiver

You can control the unit's power on-and-off operation in sync with a connected component, such as a Yamaha AV receiver. Use an optional system cable to connect the unit's TRIGGER IN jack to the connected component's TRIGGER OUT jack. While the unit is in standby mode, turning on the power to the connected component will also turn on the unit, and the signal at the EXT. IN jacks will be selected as the input source. When the power to the connected component is turned off, the unit will enter standby mode.



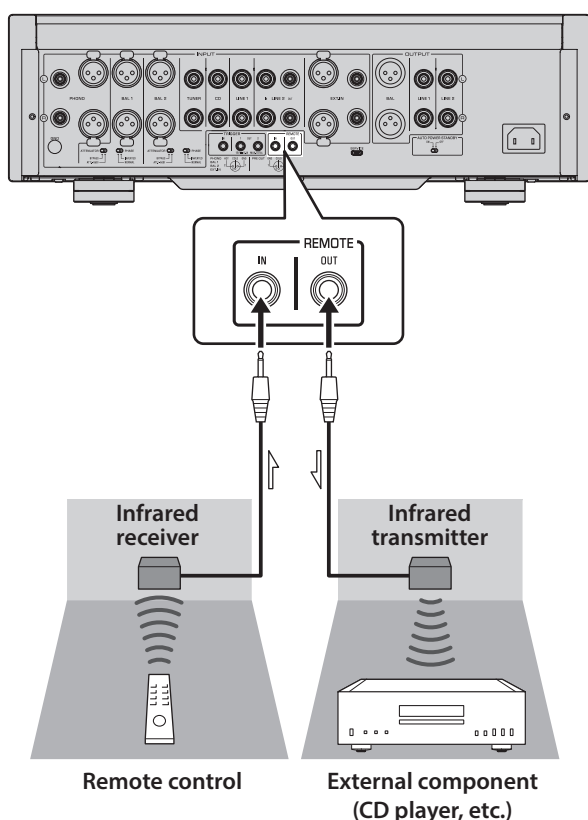
### Note

- If the power switch of this unit is turned OFF, power to the unit will not be triggered from a connected component.
- Unless the input source is selected via the EXT. DIRECT switch, turning off the connected component will not turn off power to the unit.

# Remote connections

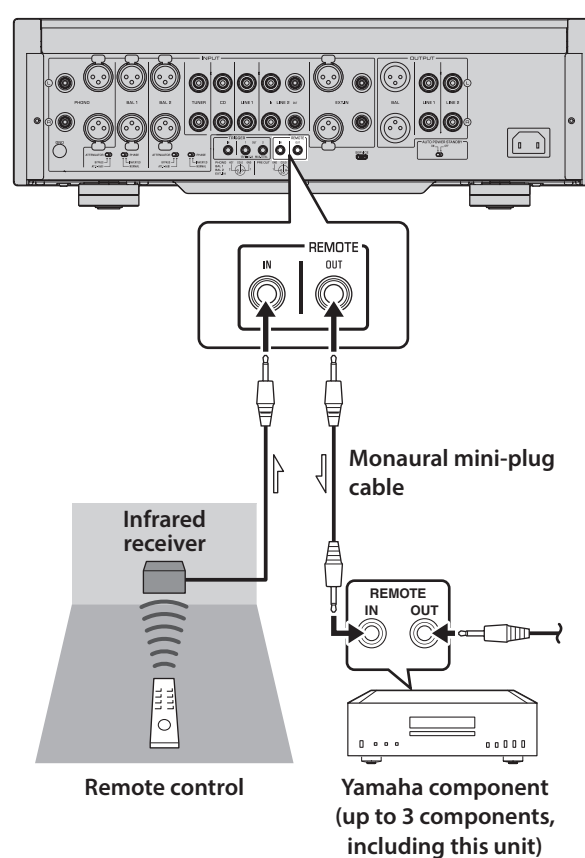
## Operating the unit from another room

If you connect an infrared receiver and transmitter to the unit's REMOTE IN/OUT jacks, you will be able to operate the unit and/or external component from another room, using the supplied remote control.



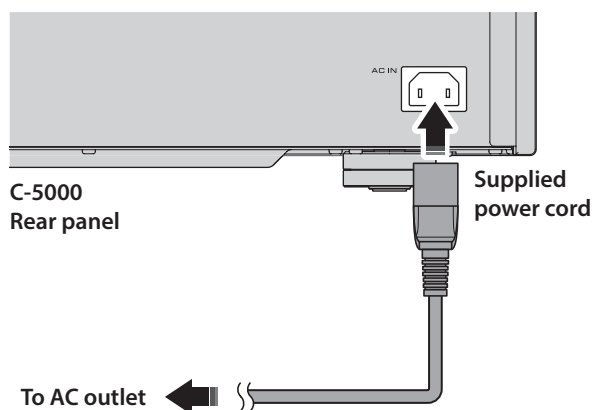
## Remote connection between Yamaha components

If you have another Yamaha component that supports remote connections, as this unit does, an infrared transmitter is not necessary. You can transmit remote signals by connecting an infrared receiver to the unit's REMOTE IN jack, and the REMOTE IN jack of the other component to the unit's REMOTE OUT jack, using monaural mini-plug cables. Up to three Yamaha components (including this unit) can be set up for remote connection.



# Connecting the power cord

After all connections are complete, make sure that the STANDBY/ON/OFF (Power) switch is turned off, then plug the power cord into the AC IN connector of the unit, and then plug the power cord into the AC outlet.



## CAUTION

- Do not use an AC outlet that is so loose that the plug does not stay firmly in place. Otherwise, fire, electric shock, or burning might be caused.
- When disconnecting the power cord from the AC outlet, grasp the plug; do not pull the cord. Otherwise, the power cord might be damaged, causing an electric shock or fire.
- Insert the power plug into the AC outlet all the way firmly. If the plug is not inserted completely, use of the unit might cause an electric shock. Or, dust might build up on the plug, causing fire or burning.

## NOTICE

If you plan not to use the unit for an extended period of time, be sure to unplug the power cord from the AC outlet. Even when the STANDBY/ON/OFF switch is turned off (the power indicator is dark), a minimal amount of electric current is still flowing to the unit.



## WARNING

- If you notice any of the following abnormal conditions, turn off the power to the unit immediately, and disconnect the power plug from the AC outlet.
  - The power cord or plug is damaged.
  - The unit is emitting odor, strange noise, or smoke.
  - Liquid has been spilled or objects have fallen into the unit.
  - The sound is suddenly muted during operation.
  - The unit is cracked or damaged.

Otherwise, continued use of the unit might lead to electric shock, fire, or malfunction. Contact your nearest Yamaha dealer or service center for check-up or repair.

- Do not touch the power cord or plug during lightning storms. Otherwise, an electric shock might be caused.
- Be sure to use a power outlet with the power voltage labeled on the unit. If the unit is plugged into an outlet of an inappropriate voltage, fire, electric shock, or malfunction might be caused.
- Use only the supplied power cord. Do not use the supplied power cord for other devices. Otherwise, fire, burning, or malfunction might be caused.
- Plug the unit into an AC outlet that is clearly visible and easily reached, so that you can unplug the unit easily and quickly from the AC outlet in case of emergency. Even when the power switch is turned off, a minimal amount of electric current is still flowing to the unit, unless you unplug the unit from the AC outlet.
- If a lightning storm is approaching, turn off the power to the unit immediately, and disconnect the power plug from the AC outlet. Otherwise, fire or malfunction might be caused.
- If you plan not to use the unit for an extended period of time, be sure to unplug the power cord from the AC outlet. Otherwise, fire or malfunction might be caused.

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# Operations

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This section explains basic operating procedures.  
You can follow these procedures to take advantage of the unit's functions.  
These procedures are intended only as examples.

C-5000

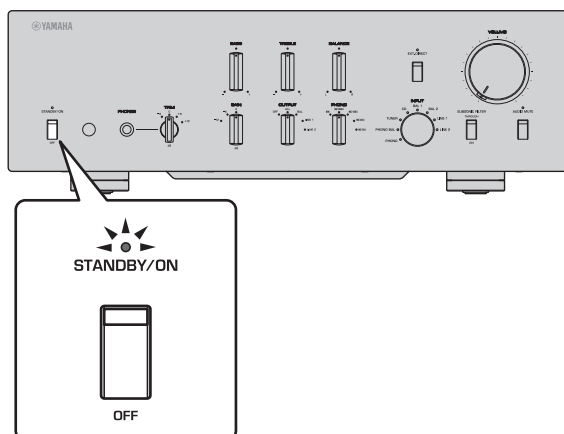
# Turning the power on



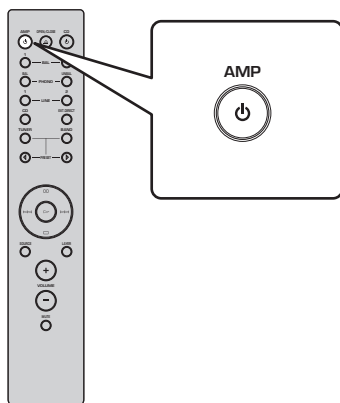
## CAUTION

Be sure to lower the volume level to minimum before turning the power on.

Turn the power on by setting the STANDBY/ON/OFF (Power) switch on the front panel to STANDBY/ON.



If the unit is in standby mode, you can also turn the power on using the remote control.



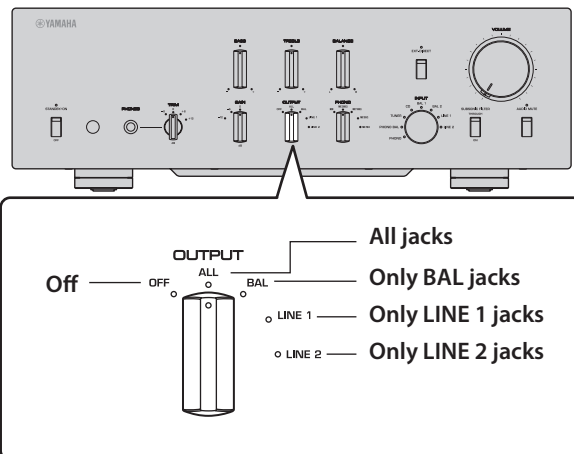
## NOTICE

Turn on the power to all components in the following sequence: power amplifier, preamplifier (this unit), other components (such as a CD player and tuner).

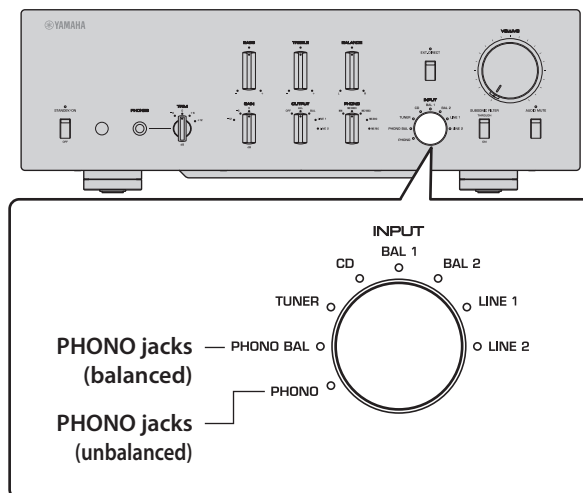
Reverse this sequence when you turn the power off.

# Selecting the input and output

Select a pair of output jacks using the OUTPUT selector.



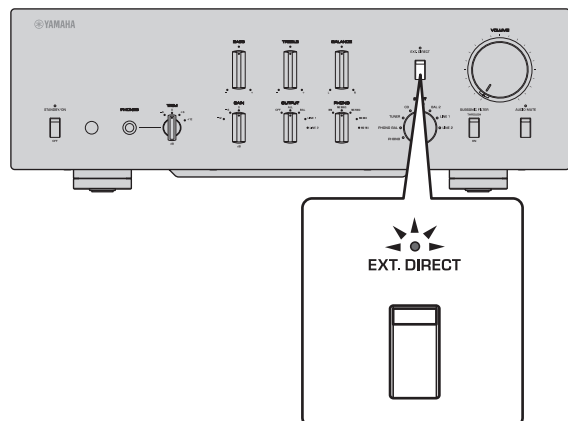
Select the audio source using the INPUT selector.



The corresponding indicators will light up.



## Selecting the input from the EXT.IN jacks



Press the EXT. DIRECT switch. The EXT. DIRECT indicator will light up. The INPUT selector setting will be disabled, and the audio source input from the EXT. IN jacks will be output at a pair of the output jacks. The source signal input at the balanced input jacks will be output at the balanced BAL output jacks. The source signal input at the LINE input jacks will be output at the LINE 1 and LINE 2 output jacks.

If you press the EXT. DIRECT switch again or rotate the INPUT selector, the signal specified by the INPUT selector will become the input source. The EXT. DIRECT indicator will turn off.

### Note

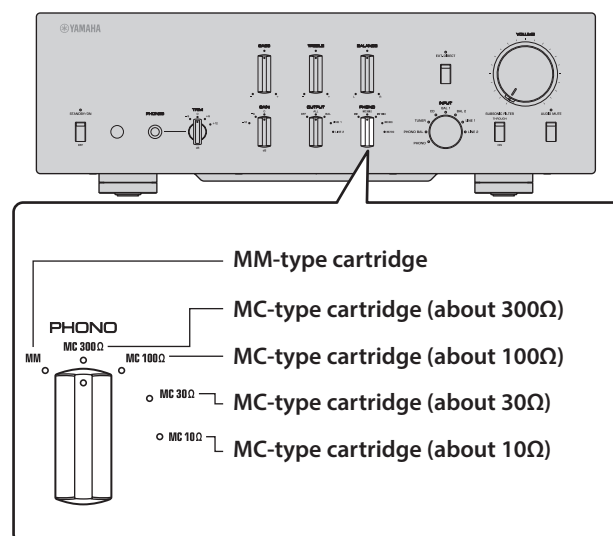
If EXT. DIRECT is selected, no signal will be output at the LINE 2 OUT (recording) jacks nor at the PHONES jack.

## Adjusting the turntable input setting

### PHONO selector

Set the PHONO selector according to the turntable cartridge.

### Options for turntable cartridge



### CAUTION

If an MM-type cartridge is used on the turntable, be sure to set the PHONO selector to MM.

### Note

Impedance labels on the PHONO selector indicate approximate values. Listen to and check the sound with different impedance settings to select the most appropriate option.

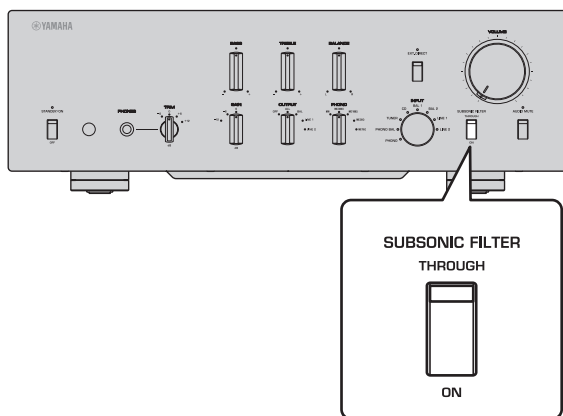
### NOTICE

Before you replace the cartridge, be sure to turn off the power to this unit.

## Subsonic filter

Turn on the SUBSONIC FILTER switch to apply the subsonic filter, as needed.

A resonating turntable tone arm or a warped vinyl record could cause a very low frequency rumble (subsonic noise) that might apply load and damage to the speakers. A subsonic filter will cut such noise to protect the speakers.

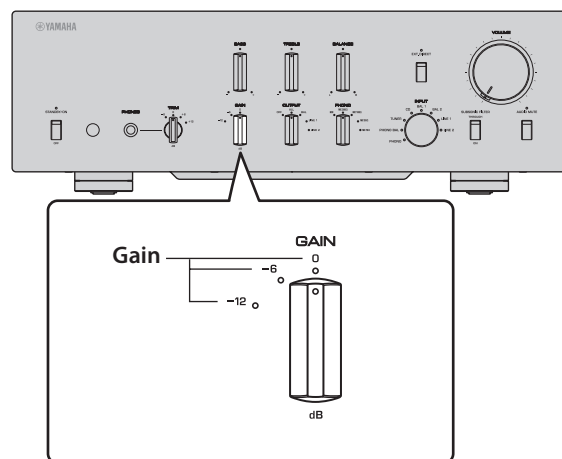


### Note

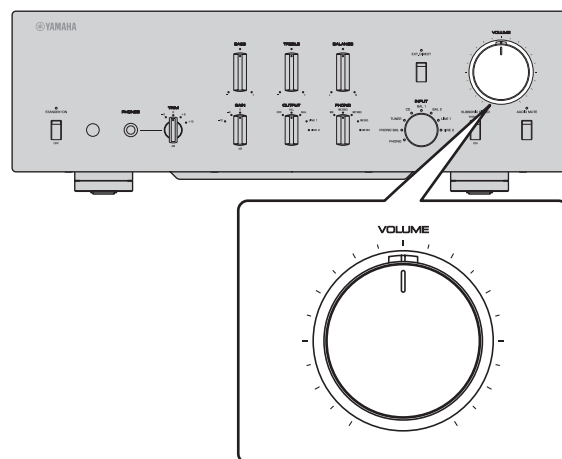
The subsonic filter is disabled whenever any audio source other than the turntable (connected to the PHONO jacks) is selected as the input source, even if the SUBSONIC FILTER switch is turned on.

## Adjusting the volume level

Set the gain using the GAIN selector so that you can make fine volume adjustments.

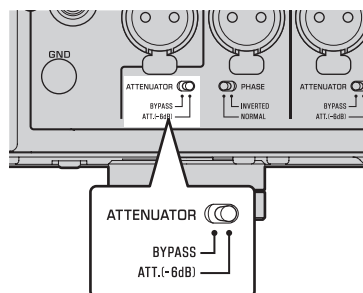


Adjust the volume level using the VOLUME control.



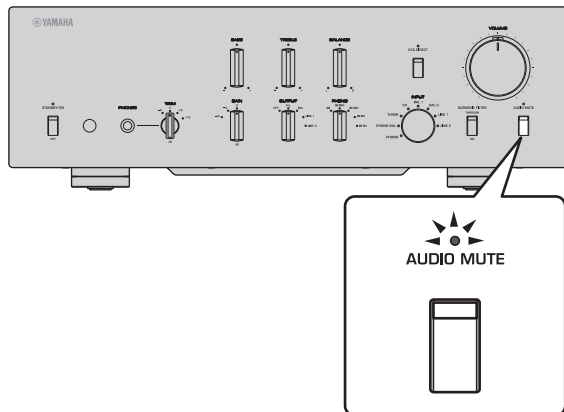
### Note

If you still hear distortion even if the VOLUME control is turned down, the signal might exceed the allowable input level. If the audio source is being input at the balanced input jacks (BAL 1 or BAL 2), set the ATTENUATOR selector to ATT. (-6 dB).



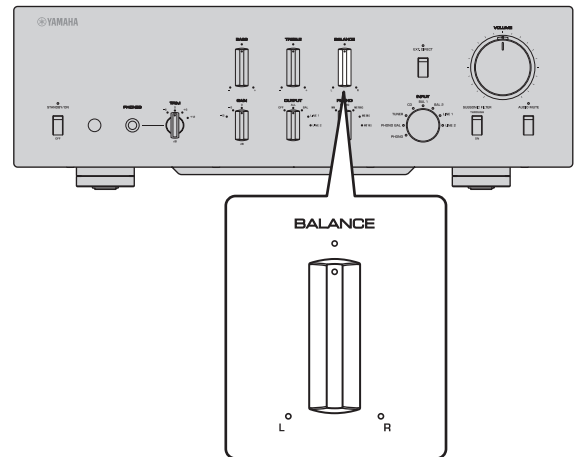
## Lowering the volume level momentarily

Press the AUDIO MUTE switch to reduce the current volume level by approximately 20 dB. Press the switch again to restore the previous volume level.

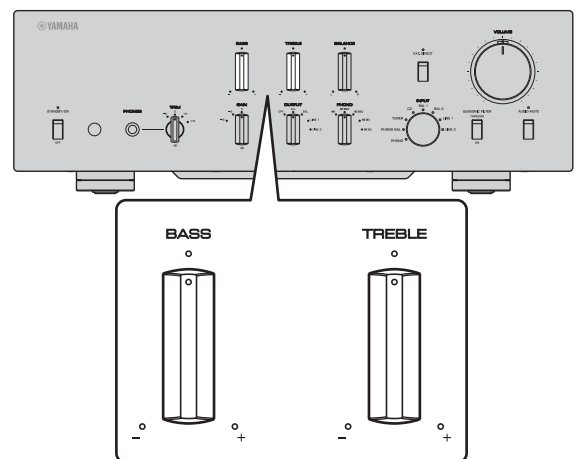


## Adjusting the tone

Adjust the volume level balance between the left and right speakers using the BALANCE control.



Adjust the volume level of the high and low ranges using the BASS and TREBLE control.



### Note

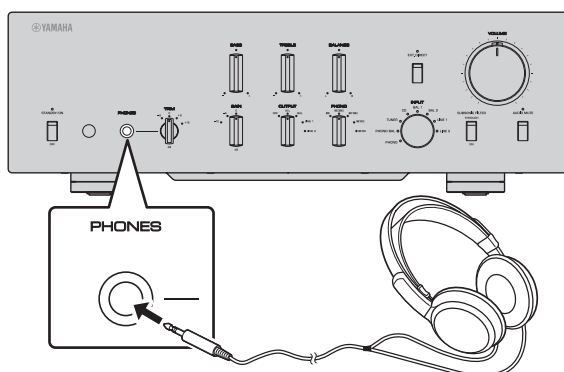
- If both BASS and TREBLE controls are set to the center, the audio signal will bypass the tone control circuit.
- The BASS, TREBLE, and BALANCE control settings will not affect the input signals at the EXT. IN jacks nor the output signals at the LINE 2 OUT (recording) jacks.

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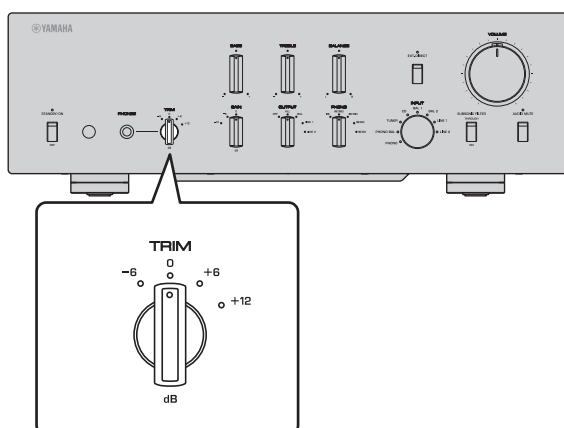
# Connecting headphones

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If headphones are connected to the PHONES jack, no signal will be output at the output jacks (BAL, LINE 1, and LINE 2 output jacks) on the rear panel.



Use the TRIM selector to switch the headphone amp gain so you can adjust the level balance between the audio output from the PHONES jack and the speakers to avoid sudden changes in volume.



## Note

If EXT. DIRECT is selected, no signal will be output from the PHONES jack.

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# Reference Materials

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C-50000

# General specifications

## Rated output voltage/output impedance (Input 200 mV, 20 Hz to 20 kHz, THD 0.01%)

BAL (BYPASS).....	2 Vrms/150Ω
BAL (ATT. -6dB).....	1 Vrms/150Ω
LINE 1/LINE 2.....	1 Vrms/150Ω
LINE 2 OUT (recording).....	200 mVrms/1.2 kΩ

## Maximum output voltage (1 kHz, THD 0.05%)

BAL.....	6 Vrms
LINE 1/LINE 2.....	3 Vrms
LINE 2 OUT (recording).....	3 Vrms

## Input sensitivity/input impedance

### BAL/LINE 1/LINE 2, 1 V

BAL 1/BAL 2.....	200 mVrms/52 kΩ
TUNER/CD/LINE 1/LINE 2 IN .....	200 mVrms/47 kΩ
EXT.IN.....	1 Vrms/20 kΩ

### LINE 2 OUT (recording) (150 mV, 1 kHz)

PHONO (MC 300Ω).....	100 μVrms/300Ω
PHONO (MC 100Ω).....	100 μVrms/100Ω
PHONO (MC 30Ω).....	100 μVrms/30Ω
PHONO (MC 10Ω).....	100 μVrms/10Ω
PHONO (MM, XLR-type).....	2.5 mVrms/52 kΩ
PHONO (MM, RCA-type).....	2.5 mVrms/47 kΩ

## Maximum input signal voltage

### LINE 2 OUT (recording) (1 kHz, THD 0.05%)

BAL (BYPASS).....	2.8 Vrms
BAL (ATT. -6dB).....	5.6 Vrms
TUNER/CD/LINE 1/LINE 2 IN.....	2.8 Vrms
PHONO (MC).....	2 mVrms
PHONO (MM).....	50 mVrms
EXT.IN.....	5.6 Vrms

## Frequency response (JEITA, load 22 kΩ)

10 Hz to 100 kHz.....	+0/-3 dB
20 Hz to 20 kHz.....	+0/-0.3 dB

## Total harmonic distortion plus noise (JEITA, 20 Hz to 20 kHz)

BAL 1/BAL 2/TUNER/CD/LINE 1/LINE 2 IN → BAL/LINE 1/LINE 2.....	0.0100%
PHONO (MC) → LINE 2 OUT (recording) .....	0.0200%
PHONO (MM) → LINE 2 OUT (recording) .....	0.0200%

## Channel separation

### (Input 1.0 kΩ terminated, 1 kHz/10 kHz, JEITA)

BAL 1/BAL 2/TUNER/CD/LINE 1/LINE 2 IN .....	110 dB or higher
PHONO (MC).....	80 dB or higher
PHONO (MM).....	98 dB or higher

## Function separation

### (IHF-A network, input 1.0 kΩ terminated, JEITA)

BAL 1/BAL 2/TUNER/CD/LINE 1/LINE 2 IN .....	110 dB or higher
PHONO (MC).....	75 dB or higher
PHONO (MM).....	95 dB or higher

## Signal to noise ratio

### (IHF-A network, input 1.0 kΩ terminated, JEITA)

BAL 1/BAL 2/TUNER/CD/LINE 1/LINE 2 IN .....	110 dB or higher
PHONO (MC 300Ω).....	80 dB or higher
PHONO (MM).....	98 dB or higher

## Residual noise (IHF-A network)

BAL/LINE 1/LINE 2.....	3 μV
------------------------	------

## Tone control characteristics

### Bass

Boost/cut.....	30 Hz/±9 dB
Turnover frequency.....	350 Hz

### Treble

Boost/cut.....	20 kHz/±9 dB
Turnover frequency.....	3.5 kHz

**Headphone jack rated output power**  
**(1 kHz, 32Ω, 0.2% THD)**

..... 35 mW + 35 mW

**RIAA equalization deviation**

MC/MM .....±0.5 dB

**Subsonic filter characteristics**

MC/MM ..... 15 Hz/–3 dB

**Power supply**

[Models for U.S.A. and Canada]. . .AC 120 V, 60 Hz  
[Model for China] .....AC 220 V, 50 Hz  
[Model for Korea] .....AC 220 V, 60 Hz  
[Model for Australia]. . . . .AC 230–240 V, 50 Hz  
[Models for U.K. and Europe] . . . .AC 230 V, 50 Hz  
[Model for Asia] . . . . .AC 220–240 V, 50 Hz/60 Hz  
[Models for Central and South America,  
and Taiwan] . . . . .AC 110 V, 60 Hz

**Power consumption**

..... 60 W

**Standby power consumption**

Off mode ..... 0.1 W  
Standby mode ..... 0.2 W

**Dimensions (W x H x D)**

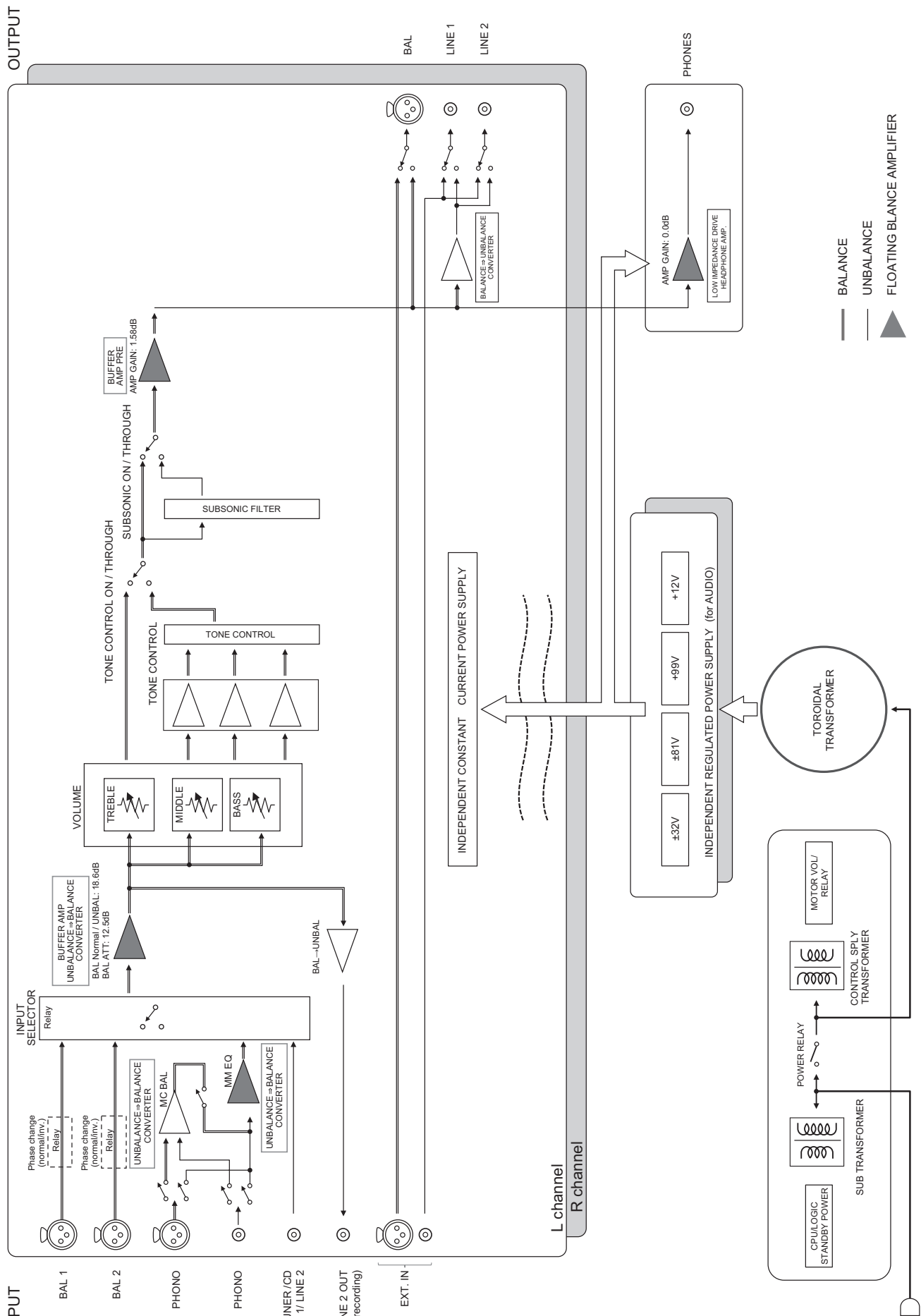
..... 435 × 142 × 451 mm

**Weight**

..... 19.1 kg

\* The contents of this manual apply to the latest specifications as of the publishing date. To obtain the latest manual, access the Yamaha website then download the manual file.

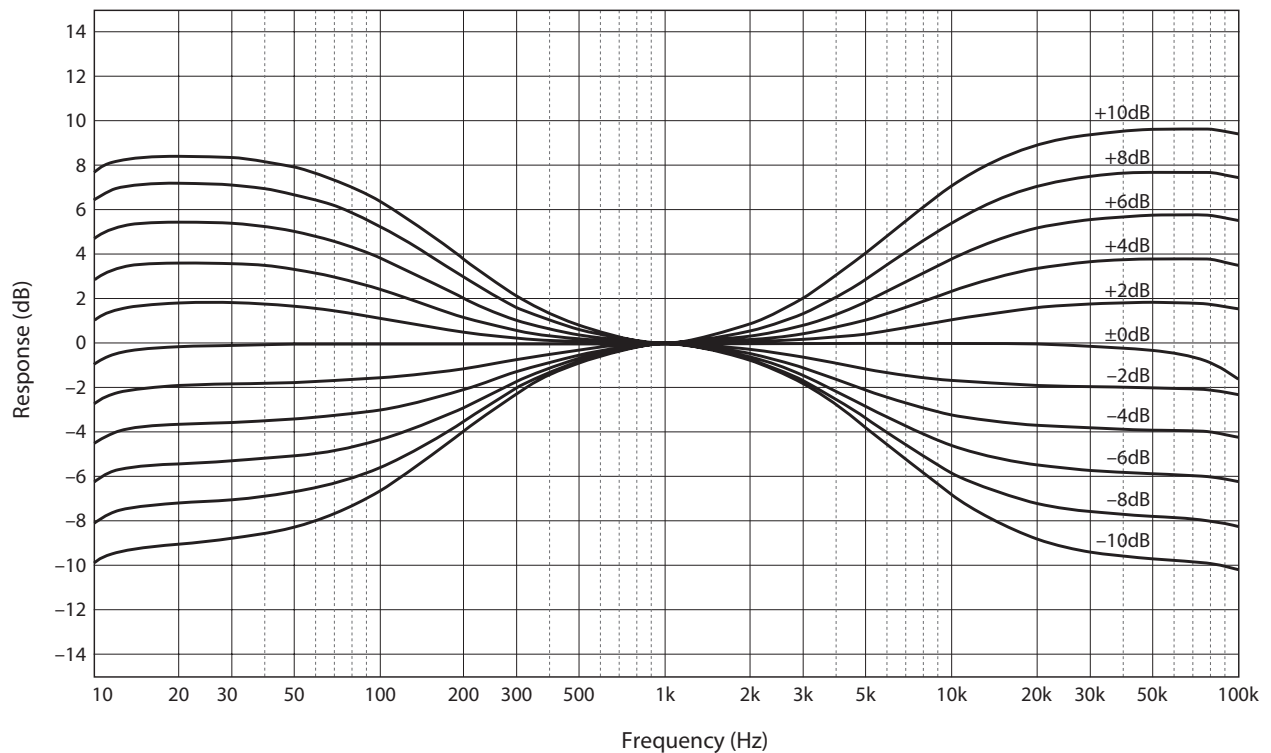
# Block diagram



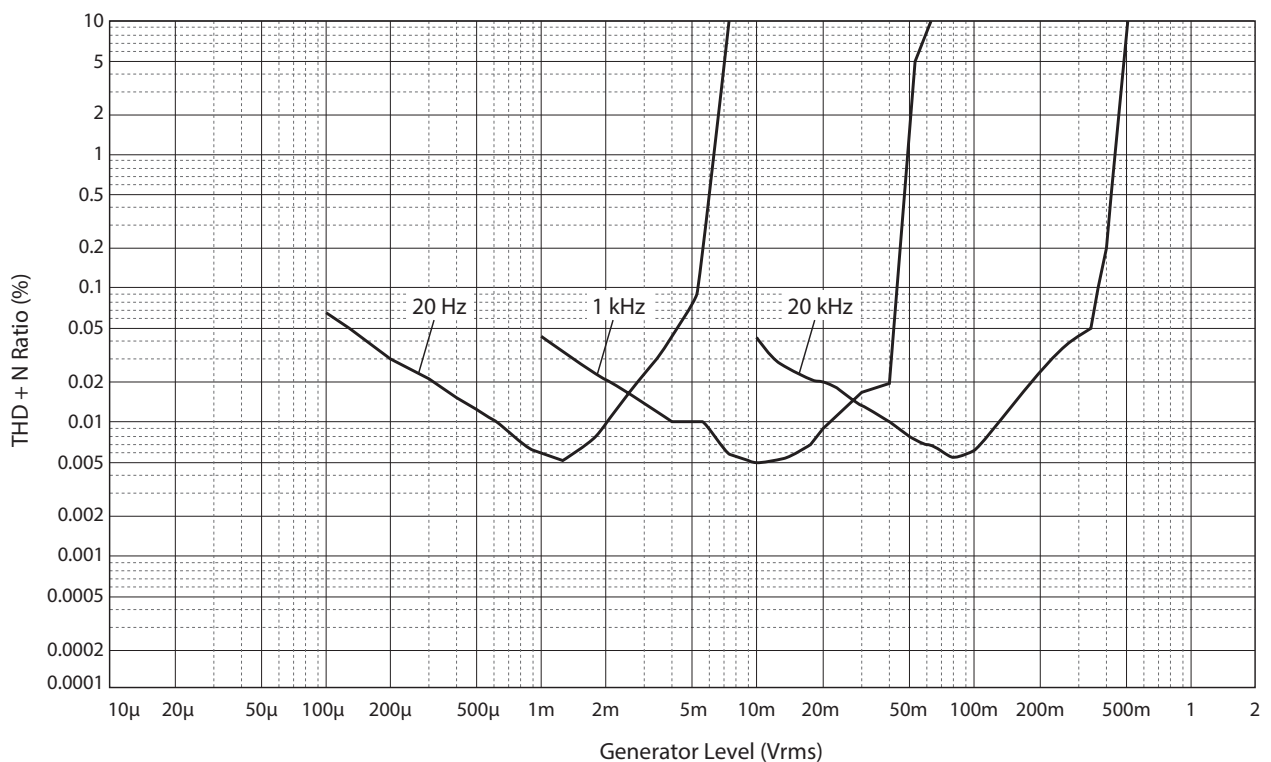


# Audio characteristics

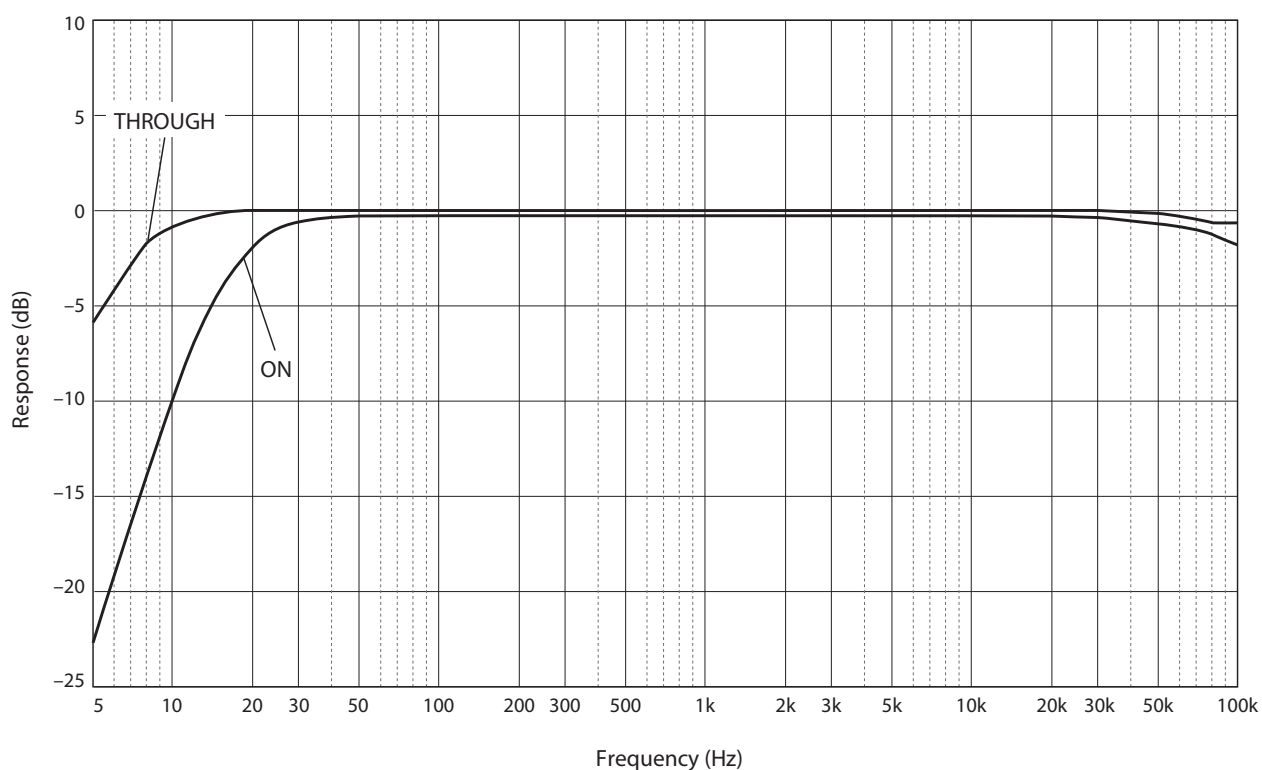
## Frequency response (tone control)



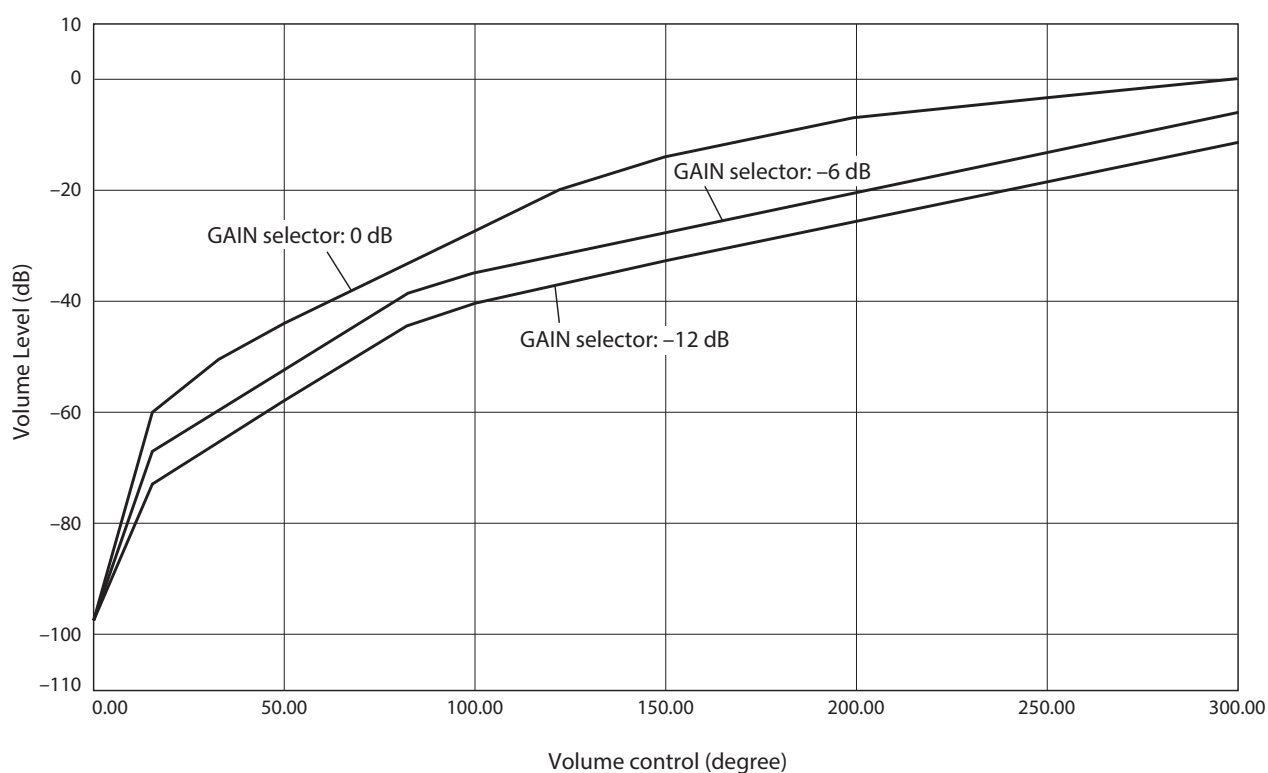
## Total harmonic distortion (PHONO)



## Frequency response (subsonic filter)



## Volume curve



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# Troubleshooting

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Refer to the table below if this unit does not function properly. If the instructions below do not help, or if the problem you are experiencing is not listed below, turn off the unit, disconnect the power cord, and contact the nearest authorized Yamaha dealer or service center.

Problem	Cause	Remedy	See page
<b>Power does not turn on.</b>	The power cord is not connected to the AC IN connector on the rear panel or is not plugged into an AC outlet.	Connect the power cord firmly.	26
	The unit has been exposed to a strong external electric shock (such as lightning or strong static electricity).	Turn off the unit, disconnect the power cord from the AC outlet, wait for about 30 seconds, and then plug the unit in again.	26
	There is a problem with the internal circuitries of this unit.	Disconnect the power cord from the AC outlet and contact the nearest authorized Yamaha dealer or service center.	26
<b>No sound is heard.</b>	Incorrect input or output cable connections.	Connect the cables properly. If the problem persists, the cables might be defective.	20
	No appropriate input source has been selected.	Select an appropriate input source using the INPUT selector on the front panel (or one of the input selector keys on the remote control).	28
	The OUTPUT selector setting does not match the output jacks that are being used.	Select an appropriate output using the OUTPUT selector.	28
<b>The volume level cannot be adjusted.</b>	EXT. DIRECT is selected as the input source.	Adjust the volume level on the connected component. Alternatively, connect the external component to a pair of the input jacks other than the EXT. IN jacks, and then select the corresponding input source.	20 28
<b>Only one channel speaker can be heard.</b>	The playback component is not connected properly.	Make sure that the connections are made properly. If the problem persists, the cables might be defective.	20

Problem	Cause	Remedy	See page
<b>A “humming” noise is heard.</b>	Incorrect input or output cable connections.	Connect the cables properly. If the problem persists, the cables might be defective.	20
	The turntable is not grounded to the GND terminal.	Connect the turntable to the GND terminal of this unit.	22
	Both balanced and line cables are being used simultaneously between two components.	Do not use both balanced and line cables simultaneously between two components. Doing so would create a ground loop that could generate static and noise.	21
<b>Playback audio from the component connected to the BAL 1 or BAL 2 balanced input jacks sounds distorted.</b>	The level of the signal at the balanced input jacks is exceeding the allowable input level.	If the level of the signal at the XLR-type balanced output jacks on the connected playback component is doubled compared to the RCA unbalanced jacks, set the ATTENUATOR selector located below the input jacks to ATT. (−6 dB).	30
<b>Bass lacks depth when BAL 1 or BAL 2 (balanced input) is selected.</b>	The polarity is incorrect.	Select the correct polarity using the PHASE selector.	14
<b>The volume level of the vinyl record is too low.</b>	The PHONO switch on the front panel is set incorrectly.	Set the PHONO switch to the MM or MC position according to the type of magnetic cartridge of the turntable.	29
<b>The remote control does not work or function properly.</b>	The remote control has been used out of the operating range.	The remote control must be used within a maximum distance of 6 m and no more than 30 degrees off-axis from the remote control sensor on the front panel.	18
	Direct sunlight or lighting (from an inverter type of fluorescent lamp, strobe light, etc.) is hitting the remote control sensor on the front panel.	Change the orientation of the lighting or reposition the unit.	18
	The batteries are weak.	Replace all batteries.	18

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# Index

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## A

AC IN jack .....	26
Adjusting the turntable input .....	29
ATTENUATOR selector .....	30
AUDIO MUTE switch .....	31
AUTO POWER STANDBY switch .....	13

## B

BAL 1 jack .....	11
BAL 2 jack .....	11
BALANCE control .....	31
Balanced connection .....	14
BAL jack .....	13
BASS control .....	31

## C

Connecting a power amplifier .....	23
Connecting a recording component .....	22
Connecting a subwoofer .....	23
Connecting a turntable .....	22
Connecting headphones .....	32

## E

EXT. DIRECT switch .....	29
External In jack .....	23
EXT. IN jack .....	23

## G

GAIN selector .....	30
GND (ground) terminal .....	22

## I

INPUT selector .....	28
----------------------	----

## L

LINE 1 jack .....	13
LINE 2 jack .....	13
LINE 2 IN jack .....	12
LINE 2 OUT (recording) jack .....	12

## O

OUTPUT selector .....	28
-----------------------	----

## P

PHASE selector .....	14
PHONES jack .....	32
Phono jack .....	22
PHONO jack .....	22
PHONO selector .....	29
Power indicator .....	6
Power switch .....	6

## R

Remote connection .....	25
Remote control sensor .....	18
REMOTE jack .....	25

## S

SERVICE jack .....	13
STANDBY/ON/OFF indicator .....	6
STANDBY/ON/OFF switch .....	6
SUBSONIC FILTER .....	30
SUBSONIC FILTER switch .....	30

## T

TREBLE control .....	31
Trigger connection .....	24
TRIGGER jack .....	24
TRIM selector .....	32
Turning the power on .....	6

## U

Unbalanced connection .....	15
-----------------------------	----

## V

VOLUME control .....	30
----------------------	----





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