

# DENON

## PMA-1520AE

INTEGRATED AMPLIFIER

# Owner's Manual

[Front panel](#)[Rear panel](#)[Remote](#)[Index](#)

You can print more than one page of a PDF onto a single sheet of paper.

# Contents

<b>Accessories</b> .....	<u>3</u>
Inserting the batteries.....	<u>4</u>
Operating range of the remote control unit.....	<u>4</u>
<b>Features</b> .....	<u>5</u>

## Part names and functions

<b>Front panel</b> .....	<u>6</u>
<b>Rear panel</b> .....	<u>9</u>
<b>Remote control unit</b> .....	<u>10</u>
Amplifier operation.....	<u>10</u>
CD player operation.....	<u>11</u>
Network audio player operation.....	<u>12</u>

## Connections

<b>Speaker connection</b> .....	<u>14</u>
Connecting the speakers cables.....	<u>14</u>
Speaker A/B connection.....	<u>15</u>
Bi-wiring connection.....	<u>16</u>
<b>Connecting a playback device</b> .....	<u>17</u>
<b>Connecting a recording device</b> .....	<u>18</u>
<b>Connecting amplifiers</b> .....	<u>19</u>
<b>Connecting the power cord</b> .....	<u>20</u>

## Playback

Turning the power on.....	<u>22</u>
Selecting the input source.....	<u>23</u>
Adjusting the volume.....	<u>23</u>
Turning off the sound temporarily.....	<u>23</u>
Adjusting the tone.....	<u>23</u>
Playing CDs.....	<u>24</u>
Recording.....	<u>24</u>

## Settings

<b>Setting the Auto Standby mode</b> .....	<u>26</u>
Turning Auto Standby mode off.....	<u>26</u>
Turning Auto Standby mode on.....	<u>26</u>
<b>Setting the power amp direct mode</b> .....	<u>27</u>
Turning power amp direct mode on.....	<u>27</u>
Turning power amp direct mode off.....	<u>27</u>

## Tips

<b>Contents</b> .....	<u>28</u>
Tips.....	<u>29</u>
Troubleshooting.....	<u>30</u>

## Appendix

Explanation terms.....	<u>34</u>
Specifications.....	<u>35</u>
Index.....	<u>37</u>

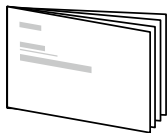


Thank you for purchasing this Denon product. To ensure proper operation, please read this owner's manual carefully before using the product. After reading them, be sure to keep them for future reference.

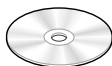
## Accessories

Check that the following parts are supplied with the product.

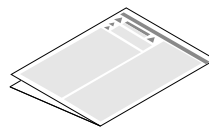
① Getting Started



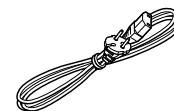
② CD-ROM (Owner's manual)



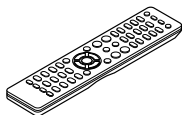
③ Safety Instructions



④ Power cord



⑤ Remote control unit (RC-1186)

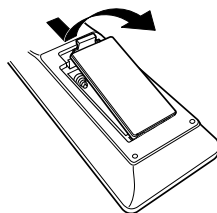


⑥ R03/AAA batteries

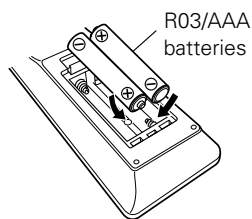


## Inserting the batteries

- 1 Remove the rear lid in the direction of the arrow and remove it.



- 2 Load the two batteries properly as indicated by the  $\oplus$  and  $\ominus$  marks in the battery compartment.



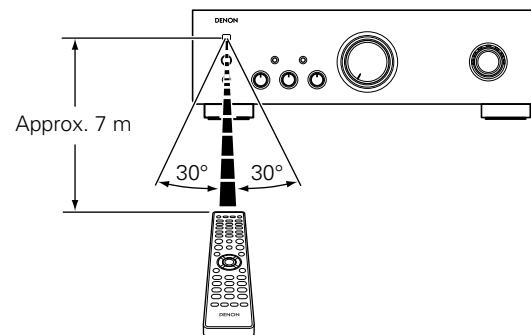
- 3 Put the rear cover back on.

### NOTE

- When inserting the batteries, be sure to do so in the proper direction, following the  $\oplus$  and  $\ominus$  marks in the battery compartment.
- To prevent damage or leakage of battery fluid:
  - Do not use a new battery together with an old one.
  - Do not use two different types of batteries.
- Remove the batteries from the remote control unit if it will not be in use for long periods.
- If the battery fluid should leak, carefully wipe the fluid off the inside of the battery compartment and insert new batteries.

## Operating range of the remote control unit

Point the remote control unit at the remote sensor when operating it.



# Features

## • Advanced UHC-MOS Single Push-pull Circuit

The new generation UHC-MOS FET is employed for the power amplifier output stage. The handling power guideline has been scaled up from 150 Watts to 260 Watts.

The operation stability affected by the temperature fluctuation is improved by using the dual FET selected first stage for the voltage amplifier stage. Furthermore, the phase property is stabilized up to the high range by using the cascade bootstrap circuit.

## • Power Supply

To make the most of the Advanced UHC-MOS Single Push-pull Circuit, this powerful power supply consists of a LC mount twin transformer, schottky barrier diodes, and a custom block type capacitor that is tuned for high-quality sound.

## • Phono Equalizer

Even a user who is particular about analog records is satisfied because the Phono Equalizer circuit for the FET input supports MM/MC.

## • Pre Out

A Pre Out connector is equipped that can extend the system's possibility by using another power amplifier to drive a bi-amplifier with a speaker that supports the bi-wiring or adding a subwoofer to upgrade the system.

## • Adoption of a Large potentiometer with motorized function

This unit adopts a large potentiometer that is provided with higher-grade integrated amplifiers as well.

## • Resonance Suppression Design

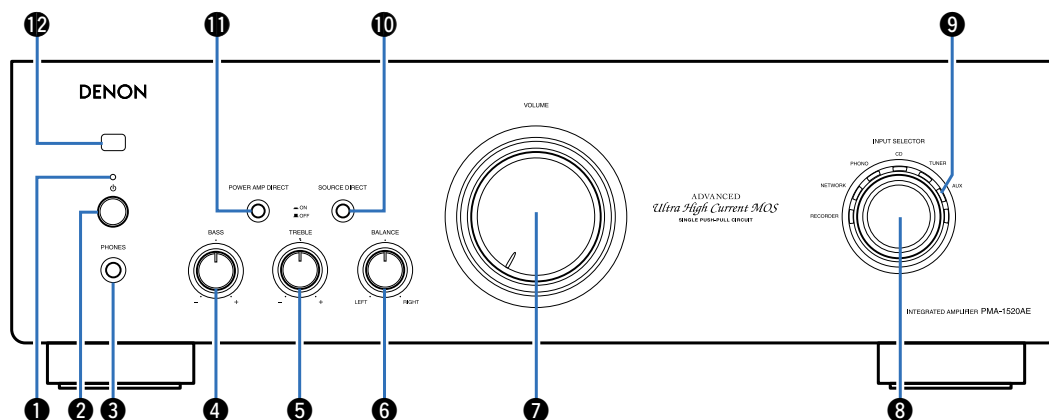
Effects of vibrations on the audio quality of this unit have been substantially minimized, by scattering resonance points by varying the configurations of fins in the heat sink, as well as by lowering the center of gravity of the power amplifier block.

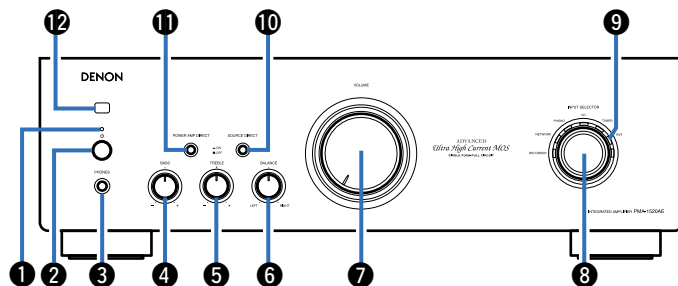


# Part names and functions

For buttons not explained here, see the page indicated in parentheses ( ).

## Front panel





### 1 Power indicator

This is lit as follows according to the power status :

- For several seconds after the power is turned on : Red (blinking)
- Power on : Green
- Muting : Red (blinking)
- Standby (Auto Standby mode "Off") : Red
- Standby (Auto Standby mode "On") : Off
- Power off : Off

### 2 Power operation button (⏻)

This turns the power on/off (🔗 page 22).

### 3 Headphone jack (PHONES)

Used to connect headphones.

This jack is used to plug in the headphones. (The Speaker output is turned off when the headphones are plugged.)

#### NOTE

- To prevent hearing loss, do not raise the volume level excessively when using headphones.

### 4 BASS control knob

This adjusts the bass (🔗 page 23).

### 5 TREBLE control knob

This adjusts the treble (🔗 page 23).

### 6 BALANCE control knob

This adjusts the balance of the volume output from the left and right speakers (🔗 page 23).

### 7 VOLUME control knob

This adjusts the volume level (🔗 page 23).

### 8 INPUT SELECTOR knob

This selects the input source (🔗 page 23).

### 9 Input indicators (🔗 page 23)

### 10 SOURCE DIRECT button

This turns SOURCE DIRECT mode on/off (🔗 page 23).

### 11 POWER AMP DIRECT button

This switches the power amp direct mode on/off (🔗 page 27).

### 12 Remote control sensor

This receives signals from the remote control unit (🔗 page 4).



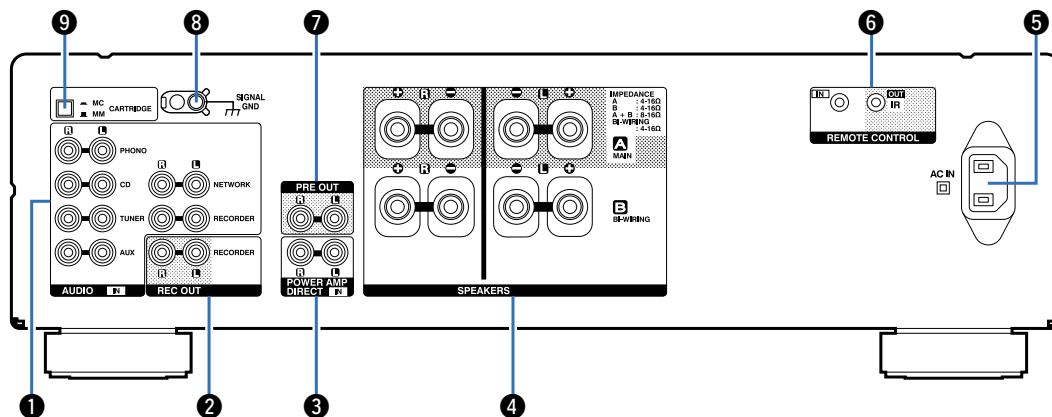
## NOTE

- Functions ④, ⑤ and ⑥ are only available when the SOURCE DIRECT button is set to off.
- When the VOLUME control knob is set just beyond the “12 o’clock” position (over halfway), the adjustments that can be made with the BASS and TREBLE controls is decreased.
- When the VOLUME control knob is set to maximum or turned fully clockwise, the base and treble can no longer be adjusted.
- When power amp direct mode is on, adjustment of the volume, balance and tone on the main unit has no effect. You should adjust the volume on the input device.
- When power amp direct mode is on, the main unit is at its maximum volume. Check the output level on the input device before playback, and adjust the volume accordingly.





# Rear panel



## 1 Audio connectors (AUDIO)

Used to connect players ([page 17](#), [18](#)).

## 2 REC OUT connectors (RECORDER)

Used to connect the input connector of a recorder ([page 18](#)).

## 3 Power amplifier direct connectors (POWER AMP DIRECT)

Used to connect a pre-amplifier when this unit is used as a power amplifier ([page 19](#)).

The volume should be adjusted on the connected device.

## 4 Speaker system terminals (SPEAKERS)

Used to connect speakers ([page 15](#), [16](#)).

## 5 AC inlet (AC IN)

Used to connect the power cord ([page 20](#)).

## 6 REMOTE CONTROL jacks

Extension jack for future use.

## 7 PRE OUT connectors

Use this to add such equipment as a power amplifier or subwoofer ([page 19](#)).

## 8 SIGNAL GND jacks

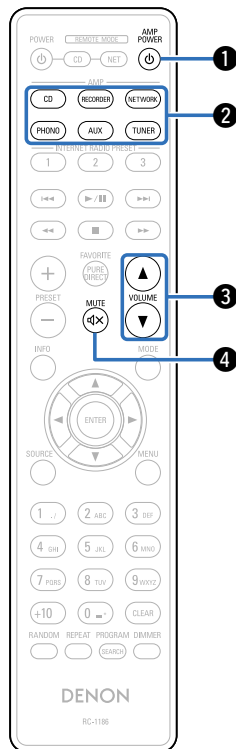
Used to connect a turntable ([page 17](#)).

## 9 CARTRIDGE selection switch

Set this switch to MM or MC according to the type of cartridge used on your turntable.



# Remote control unit



## Amplifier operation

### 1 AMP POWER button (⏻)

This turns the power on/off (standby) (🔧 page 22, 26).

### 2 Input source select buttons (AMP)

These select the input source (🔧 page 23, 24).

### 3 VOLUME buttons (▲▼)

These adjust the volume level (🔧 page 23).

### 4 MUTE button (🔇)

This mutes the audio (🔧 page 23)



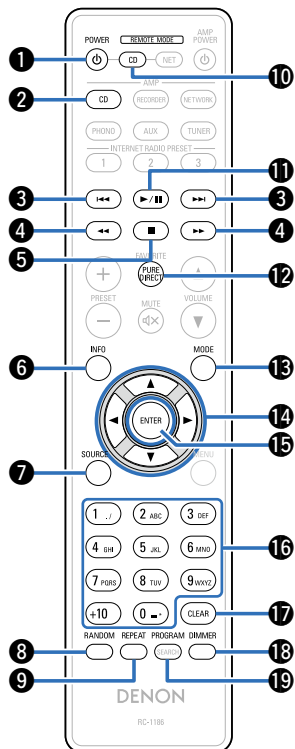
- The included remote control unit can be used to operate Denon CD players and network audio player. When using it, also refer to the operating instructions of the other devices.
- Some products may not be operable.



## CD player operation

To operate Denon CD player, press REMOTE MODE CD button to switch the remote control to the CD operation mode.

- REMOTE MODE CD button lights for approximately two seconds.



### 1 POWER button (⏻)

### 2 Input source select button (CD)

### 3 Reverse-skip/ Forward-skip buttons (⏮, ⏭)

### 4 Fast-reverse/Fast-forward buttons (⏮⏮, ⏭⏭)

### 5 Stop button (■)

### 6 Information button (INFO)

### 7 SOURCE button

### 8 RANDOM button

### 9 REPEAT button

### 10 Remote mode select button (REMOTE MODE CD)

### 11 ▶/⏸ button

### 12 PURE DIRECT button

### 13 MODE button

### 14 Cursor buttons (⬆⬇⬇⬆)

### 15 ENTER button

### 16 Number buttons (0 – 9, +10)

### 17 CLEAR button

### 18 DIMMER button

### 19 PROGRAM button



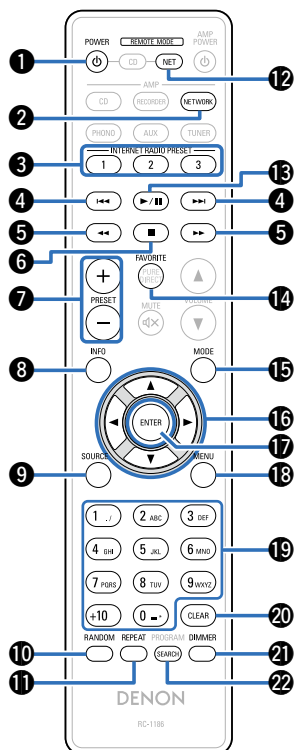
- Operate the amplifier with the amplifier operation button even when the remote control operation mode is CD.



## Network audio player operation

To operate Denon network audio player, press REMOTE MODE NET button to switch the remote control to the NETWORK operation mode.

- REMOTE MODE NET lights for approximately two seconds.



- |   |   |
|---|---|
| <b>1</b> POWER button (⏻)                         | <b>11</b> REPEAT button                               |
| <b>2</b> Input source select button (NETWORK)     | <b>12</b> Remote mode select button (REMOTE MODE NET) |
| <b>3</b> INTERNET RADIO PRESET buttons (1 – 3)    | <b>13</b> ▶/⏸ button                                  |
| <b>4</b> Reverse-skip/Forward-skip buttons (⏮, ⏭) | <b>14</b> FAVORITE button                             |
| <b>5</b> Fast-reverse/Fast-forward buttons (⏪, ⏩) | <b>15</b> MODE button                                 |
| <b>6</b> Stop button (■)                          | <b>16</b> Cursor buttons (⬆, ⬅, ➡, ⬇)                 |
| <b>7</b> PRESET buttons (+, -)                    | <b>17</b> ENTER button                                |
| <b>8</b> Information button (INFO)                | <b>18</b> MENU button                                 |
| <b>9</b> SOURCE button                            | <b>19</b> Number buttons (0 – 9, +10)                 |
| <b>10</b> RANDOM button                           | <b>20</b> CLEAR button                                |
|   | <b>21</b> DIMMER button                               |
|   | <b>22</b> SEARCH button                               |



- Operate the amplifier with the amplifier operation button even when the remote control operation mode is NETWORK.



# Connections

**Speaker connection** (👉 page 14)

**Connecting a playback device** (👉 page 17)

**Connecting a recording device** (👉 page 18)

**Connecting the power cord** (👉 page 20)

**Connections for all compatible audio signal format is described in this operating instructions. Please select the types of connections corresponding to the equipment you are connecting.**

## NOTE

- Do not plug in the power cord until all connections have been completed.
- When making connections, also refer to the operating instructions of the other components.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Do not bundle power cords with connection cables. Doing so can result in humming or noise.
- Do not turn up the volume without a turntable connected to the PHONO input terminals. Doing so will cause humming or noise.

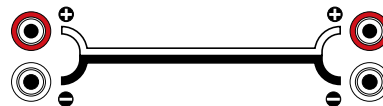
## ■ Cables used for connections

Provide necessary cables according to the devices you want to connect.

Audio cable



Speaker cable



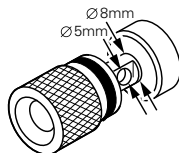
# Speaker connection

## NOTE

- Disconnect this unit's power plug from the power outlet before connecting the speakers.
- Connect so that the speaker cable core wires do not protrude from the speaker terminal. The protection circuit may be activated if the core wires touch the rear panel or if the + and – sides touch each other (see page 34 "Protection circuit").
- Never touch the speaker terminals while the power cord is connected.
- Use speakers with impedances within the ranges shown below to suit how they are used.

Speakers used	Impedance
SPEAKERS A (Standard connection)	4 – 16 $\Omega$ /ohms
SPEAKERS B	4 – 16 $\Omega$ /ohms
SPEAKERS A and SPEAKERS B	8 – 16 $\Omega$ /ohms
SPEAKERS A and SPEAKERS B (for bi-wiring connections)	4 – 16 $\Omega$ /ohms

## Speaker terminal dimensions



## Connecting the speakers cables

Carefully check the left (L) and right (R) channels and + (red) and – (black) polarities on the speakers being connected to the unit, and be sure to connect the channels and polarities correctly.

**1 Peel off about 10 mm of sheathing from the tip of the speaker cable, then either twist the core wire tightly or apply solder to it.**



**2 Turn the speaker terminal counterclockwise to loosen it.**



**3 Insert the speaker cable's core wire to all the way into the speaker terminal.**

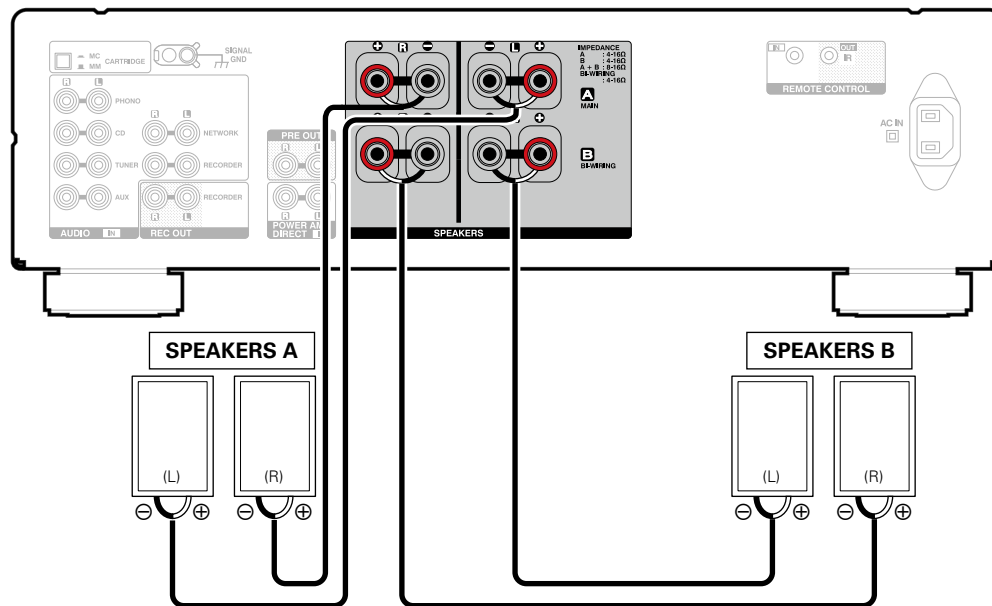


**4 Turn the speaker terminal clockwise to tighten it.**



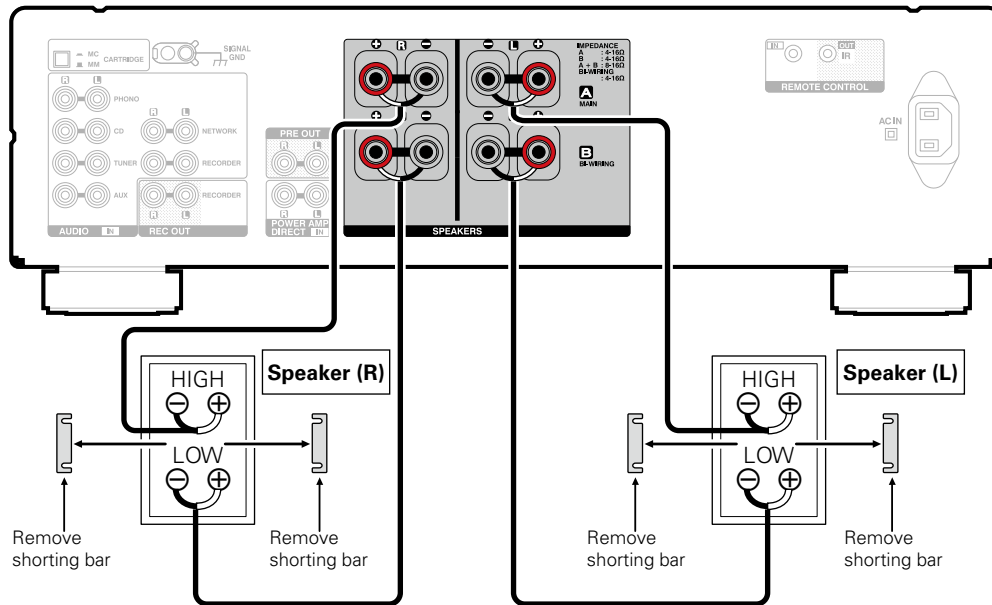
## Speaker A/B connection

- The same signal is output from the SPEAKERS A and SPEAKERS B terminals.
- When only one set of speakers is to be connected, use either the SPEAKERS A or SPEAKERS B terminals.



## Bi-wiring connection

- When bi-wiring with bi-wireable speakers, connect the mid and high range terminals to SPEAKERS A (or SPEAKERS B), the low range terminals to SPEAKERS B (or SPEAKERS A).
- This connection limits the effect of signal interference between the high range speakers and low range speakers, allowing you to enjoy high quality playback.



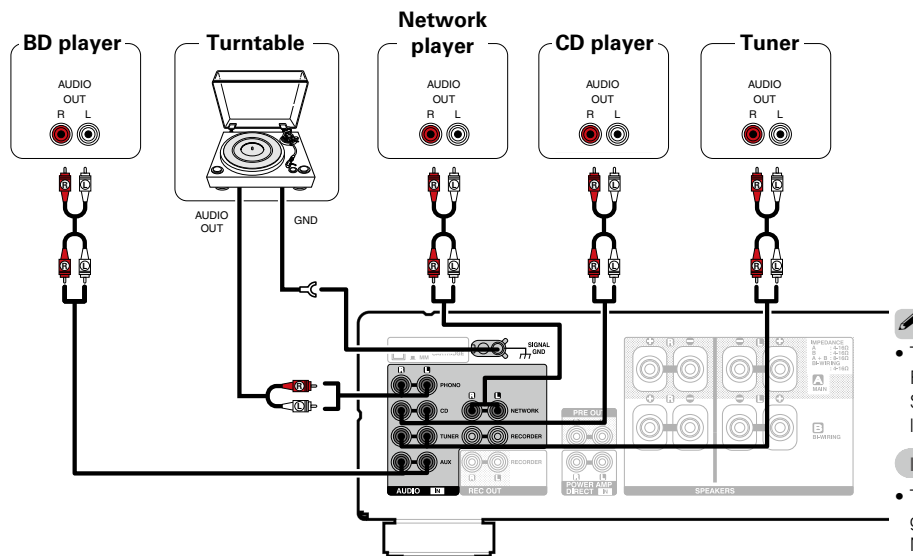


## Connecting a playback device

You can connect turntables, tuners, CD players and network audio players to this unit.

This unit is compatible with turntables equipped with a moving magnet (MM) phono cartridge. When you connect to a turntable with a low output moving coil (MC) cartridge, use a commercially available MC head amp or a step-up transformer.

If you set this unit's input source to "PHONO" and you accidentally increase the volume without having a turntable connected, you may hear a hum noise from the speakers.



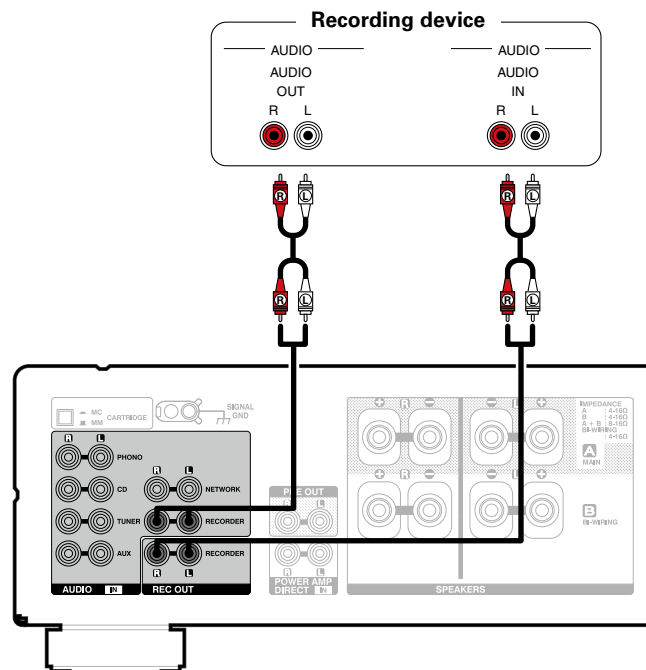
- The PHONO input terminals are equipped with a short pin-plug. Remove this plug to connect a record player. Store the removed short pin-plug in a safe place so as not to lose it.

### NOTE

- The ground line (SIGNAL GND) on this unit is not a safety ground. Connect it to reduce noise when noise is excessive. Note that depending on the turntable, connecting the ground line may have the reverse effect of increasing noise. In this case, it is not necessary to connect the ground line.



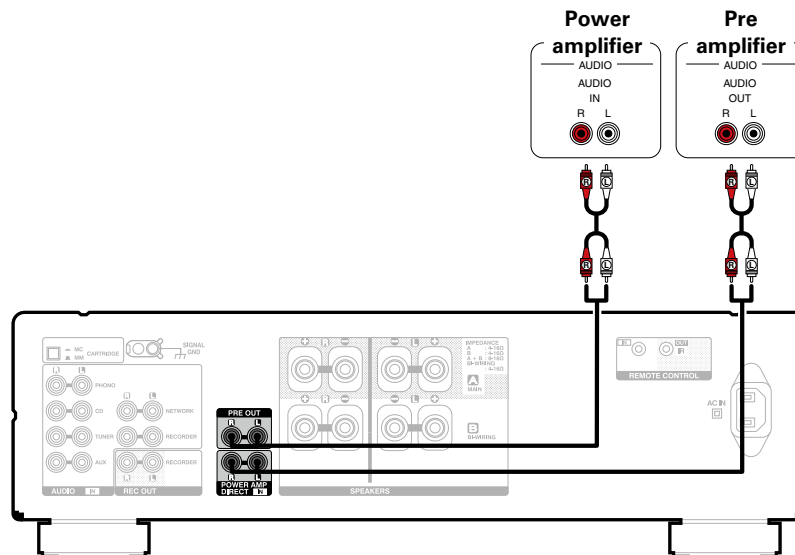
# Connecting a recording device

**NOTE**

- Never insert the short-circuiting pin plug into the recording output connectors (RECORDER). Doing so could result in damage.



# Connecting amplifiers



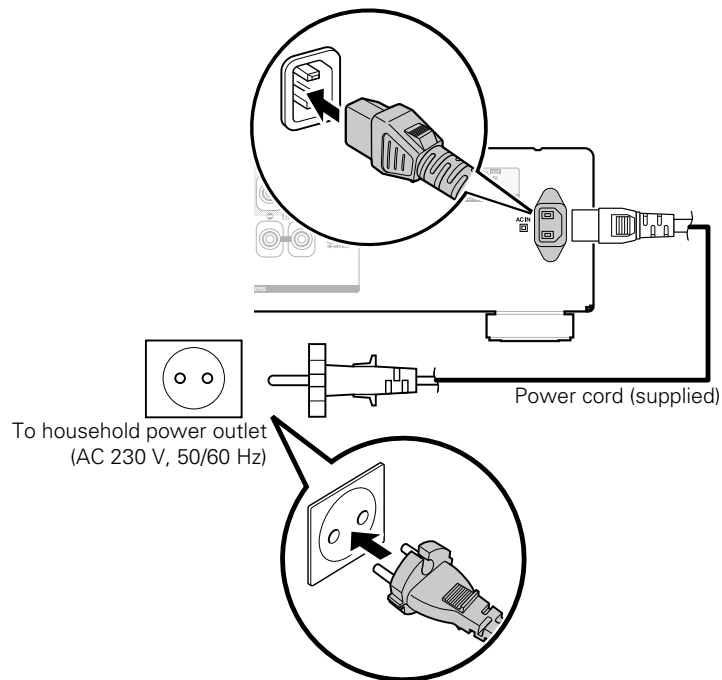
## NOTE

- Never insert the short-circuiting pin plug into the PRE OUT terminals. Doing so could result in damage.



## Connecting the power cord

Wait until all connections have been completed before connecting the power cord.



# Playback

**Turning the power on** (👉 page 22)

**Selecting the input source** (👉 page 23)

**Adjusting the volume** (👉 page 23)

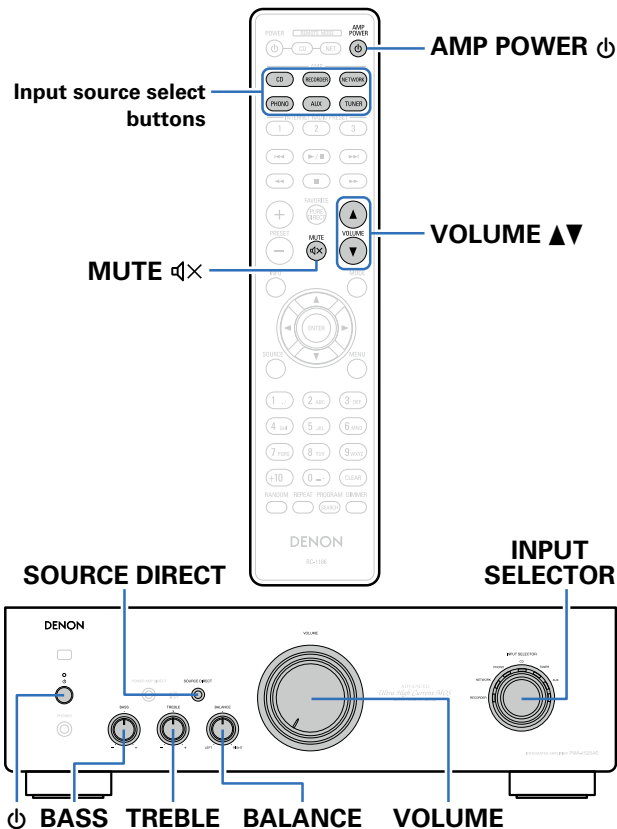
**Turning off the sound temporarily** (👉 page 23)

**Adjusting the tone** (👉 page 23)

**Playing CDs** (👉 page 24)

**Recording** (👉 page 24)





## Turning the power on

- 1 Press **AMP POWER** on this unit to turn the power on.  
Input indicator for the selected source lights.



- Press AMP POWER to turn on power from standby mode.

### NOTE

- Turn VOLUME on this unit to adjust the volume to the lowest level before turning on the power.

## Turning the power off

- 1 Press **AMP POWER**.  
The power is set to the standby mode.
- 2 Press **AMP POWER** on this unit to turn the power off.  
All indicators turn off.



## Selecting the input source

- 1 **Press the input source select button to be played back.**  
The indicator of the selected input source lights.



- You can also select the input source by turning INPUT SELECTOR on the main unit.


## Adjusting the volume

- 1 **Use VOLUME ▲▼ to adjust the volume.**



- You can also adjust the volume by turning VOLUME on the main unit.

## Turning off the sound temporarily

- 1 **Press MUTE .**  
The power indicator on the main unit blinks red.



- Muting can be cancelled by pressing MUTE  again.


## Adjusting the tone

- 1 **Press SOURCE DIRECT on this unit to turn off source direct mode.**
- 2 **Turn the BASS, TREBLE and BALANCE control knobs to adjust the tone.**



## Playing CDs

This section uses playback from a CD as an example.

- 1 Press  on this unit to turn the power on.
- 2 Press the input source select buttons to switch the input source to "CD".  
The "CD" input indicator lights.
- 3 Playback the CD.
- 4 Use VOLUME ▲▼ to adjust the volume.

### ■ Playback in source direct mode

The signal does not pass through the tone adjustment circuitry (BASS, TREBLE and BALANCE), resulting in playback of a higher sound quality.

- 1 Press SOURCE DIRECT on this unit to turn on source direct mode.

## Recording

- 1 Press the input source select button (CD, NETWORK, PHONO, AUX or TUNER) to be played.
- 2 Set the recorder to the record mode.
- 3 Start playing the source to be recorded.





# Settings

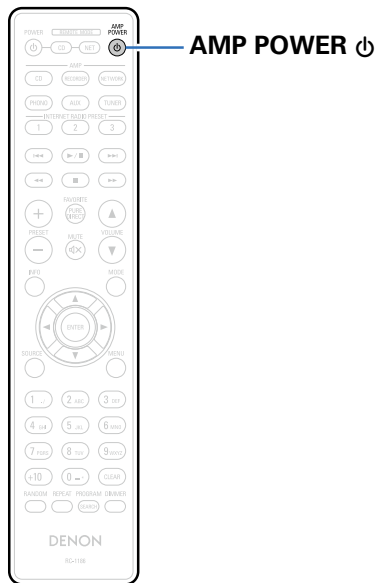
**Setting the Auto Standby mode** ( [page 26](#))

**Setting the power amp direct mode** ( [page 27](#))



# Setting the Auto Standby mode


You can set the unit to automatically switch to standby mode if the unit is not operated for 30 minutes when there is no audio input.  
Auto Standby mode is set to on by default.



## Turning Auto Standby mode off

- 1 Press and hold AMP POWER  for more than 5 seconds to turn the Auto Standby mode off.  
The standby indicator flashes three times.

## Turning Auto Standby mode on

- 1 Press and hold AMP POWER  for more than 5 seconds to turn the auto standby mode on.  
The standby indicator flashes three times.

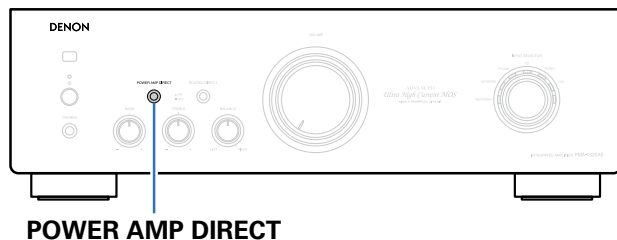


- If you set the Auto Standby mode while the unit is ON, the unit will enter the standby mode as soon as the Auto Standby mode setting is completed.
- When iPod is being charged, this unit enters the power standby mode after charging.



# Setting the power amp direct mode

When a pre-amplifier is connected to this unit and the unit is used as a power amplifier, follow the instructions below to turn power amp direct mode on.



## Turning power amp direct mode on

### 1 Press POWER AMP DIRECT on the main unit.

- By switching this on, it is possible to play back a device connected to the Power Amp Direct connector on the rear panel. In this case, the input indicator is turned off.

## Turning power amp direct mode off

### 1 Press POWER AMP DIRECT on the main unit.

- By switching it off, it is possible to play back the program source selected using the INPUT SELECTOR knob. In this case, the input indicator lights up.

#### NOTE

- When the power amp direct mode is on, adjustment of the volume, balance and tone on the main unit has no effect. Adjust the volume on the pre-amplifier.
- When the power amp direct mode is on, the main unit outputs at maximum volume. Check the output level on the input device before playing it and adjust the volume accordingly.



# Tips

## Contents

■ <b>Tips</b> .....	(29)	■ <b>Troubleshooting</b> .....	(30)
I want to adjust the tone myself .....	(29)	Power does not turn on / Power is turned off .....	(30)
I want to aound playback that is faithful to the original sound .....	(29)	Operations cannot be performed through the remote control unit .....	(31)
I want to use bi-wiring compatible speakers.....	(29)	No sound comes out .....	(32)
I want to use this unit as a power amplifier .....	(29)	Desired sound does not come out.....	(33)
I want to use this unit as a pre-amplifier .....	(29)	Sound is interrupted or noise occurs.....	(33)
I want to operate a Denon CD player or network audio player using the remote control of this unit.....	(29)		
I want to stop the unit from automatically switching to standby mode.....	(29)		




## Tips

### I want to adjust the tone myself

- Use the BASS, TREBLE and BALANCE knobs to adjust the sound as desired ( [page 23](#)).

### I want to sound playback that is faithful to the original sound

- Set the Source Direct mode on ( [page 23](#)).

### I want to use bi-wiring compatible speakers

- This unit is compatible with bi-wiring connections. Enjoy high quality playback by using bi-wiring connections ( [page 16](#)).


### I want to use this unit as a power amplifier

- Turn the power amp direct mode on ( [page 27](#)).


### I want to use this unit as a pre-amplifier

- Connect the power amplifier to the PRE OUT connectors of this unit ( [page 19](#)).

### I want to operate a Denon CD player or network audio player using the remote control of this unit

- Switch the remote control operating mode ( [page 11, 12](#)).
- Also refer to the CD player or network audio player instruction manuals.

### I want to stop the unit from automatically switching to standby mode

- Set the Auto Standby mode to off ( [page 26](#)).




## Troubleshooting

If a problem occurs, first check the following:

1. Are the connections correct?
2. Is the unit being operated as described in the owner's manual?
3. Are the other components operating properly?

If this unit does not operate properly, check the items listed in the table below. If the problem persists there may be a malfunction. In that case, disconnect the power immediately and contact your retail outlet.

### ■ Power does not turn on / Power is turned off

Symptom	Cause / Solution	Page
Power does not turn on.	<ul style="list-style-type: none"> <li>• Check whether the power plug is correctly inserted into the power outlet.</li> </ul>	<u>20</u>
Power automatically turns off.	<ul style="list-style-type: none"> <li>• The Auto Standby mode is set. The Auto Standby mode switches the unit to standby mode when the unit is not operated for approximately 30 minutes. To disable the Auto Standby mode, press and hold the AMP POWER  button for more than 5 seconds when the Auto Standby mode is enabled.</li> </ul>	<u>26</u>
Power turns off and the power indicator flashes in red approx. every 1 seconds.	<ul style="list-style-type: none"> <li>• Please re-install this unit in a place having good ventilation.</li> <li>• Check the speaker connection. The protection circuit may have been activated because speaker cable core wires came in contact with each other or a core wire was disconnected from the connector and came in contact with the rear panel of this unit. After unplugging the power cord, take corrective action such as firmly re-twisting the core wire or taking care of the connector, and then reconnect the wire.</li> </ul>	– <u>14</u>



Symptom	Cause / Solution	Page
Power turns off and the power indicator flashes in red approx. every 0.5 seconds.	<ul style="list-style-type: none"> <li>• Due to the temperature rise within this unit, the protection circuit is working. Turn off the power and wait about an hour until this unit sufficiently cools down. Then, turn on the power again.</li> <li>• Turn down the volume and turn on the power again.</li> <li>• This unit's amplifier circuit has failed. Turn off the power and please contact the Denon service adviser.</li> </ul>	<p><u>34</u></p> <p><u>22, 23</u> –</p>

## ■ Operations cannot be performed through the remote control unit

Symptom	Cause / Solution	Page
Operations cannot be performed through the remote control unit.	<ul style="list-style-type: none"> <li>• Batteries are worn out. Replace with new batteries.</li> <li>• Operate the remote control unit within a distance of about 7 m from this unit and at an angle of within 30°.</li> <li>• Remove any obstacle between this unit and the remote control unit.</li> <li>• Insert the batteries in the proper direction, checking the ⊕ and ⊖ marks.</li> <li>• The set's remote control sensor is exposed to strong light (direct sunlight, inverter type fluorescent bulb light, etc.). Move the set to a place in which the remote control sensor will not be exposed to strong light.</li> <li>• When using a 3D video device, the remote control unit of this unit may not function due to effects of infrared communications between units (such as TV and glasses for 3D viewing). In this case, adjust the direction of units with the 3D communications function and their distance to ensure they do not affect operations from the remote control unit of this unit.</li> </ul>	<p><u>4</u></p> <p><u>4</u></p> <p>–</p> <p><u>4</u></p> <p>–</p> <p>–</p>



## ■ No sound comes out

Symptom	Cause / Solution	Page
No sound comes out of speakers.	• Check the connections for all devices.	<a href="#">13</a>
	• Insert connection cables all the way in.	–
	• Check that input connectors and output connectors are not reversely connected.	–
	• Check cables for damage.	–
	• Check that speaker cables are properly connected. Check that cable core wires come in contact with the metal part on speaker terminals. Also, securely tighten speaker terminals. Check speaker terminals for looseness.	<a href="#">14</a>
	• Check that a proper input source is selected.	<a href="#">23</a>
	• Adjust the volume.	<a href="#">23</a>
	• Cancel the mute mode.	<a href="#">23</a>





## ■ Desired sound does not come out

Symptom	Cause / Solution	Page
No sound comes out of a specific speaker.	<ul style="list-style-type: none"> <li>• Check that the speaker cable is properly connected.</li> <li>• Adjust the BALANCE control knob.</li> </ul>	<a href="#">14</a> <a href="#">23</a>
The left and right of stereo sound is reversed.	<ul style="list-style-type: none"> <li>• Check whether the left and right speakers are connected to the correct speaker terminals.</li> </ul>	<a href="#">14</a>

## ■ Sound is interrupted or noise occurs

Symptom	Cause / Solution	Page
When playing a record, the sound is distorted.	<ul style="list-style-type: none"> <li>• Adjust to a proper needle pressure.</li> <li>• Check the tip of the needle.</li> <li>• Replace the cartridge.</li> </ul>	– – –
When playing a record, a humming noise comes out of the speakers.	<ul style="list-style-type: none"> <li>• Check that the turntable is connected correctly.</li> <li>• If there is a TV or AV device near the turntable, such devices may affect the playback sound. Install the turntable in a location as far away as possible from the TV or other AV devices.</li> </ul>	<a href="#">17</a> –
When playing a record at high volume, a “howling” sound comes out of the speakers.	<ul style="list-style-type: none"> <li>• Install the turntable and speakers as far from each other as possible.</li> <li>• The vibrations from the speakers are being transmitted to the player through the floor. Use cushions, etc., to absorb the speakers' vibrations.</li> </ul>	<a href="#">17</a> –



# Appendix

## Explanation terms

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### B

#### **Bi-wiring connection**

This method of connecting a speaker by using two speaker cables enables separate transmission of treble and bass signals. This enables playback with minimal interference between the high-range speaker unit and the low-range speaker unit.

### M

#### **MM/MC cartridge select**

There are two types—MM (Moving Magnet) and MC (Moving Coil)—of cartridges for turntable.

As the output levels for these two types of cartridges differ, the setting of the phono equalizer that is mounted in this unit must be switched according to the type of cartridge for your turntable. For switching, use the MM/MC cartridge select button.

### P

#### **Protection circuit**

This is a function to prevent damage to devices within the power supply when an abnormality such as an overload, excess voltage occurs or over temperature for any reason.

If a malfunction occurs in this unit, the power indicator blinks red and the unit switches to standby mode.

### S

#### **Source direct**

Playback with higher fidelity to the source becomes possible, as input audio signals are output by bypassing the audio quality-control circuits (BASS/TREBLE/BALANCE).

#### **Speaker impedance**

This is an AC resistance value, indicated in  $\Omega$  (ohms). Greater power can be obtained when this value is smaller.



# Specifications

## ■ Power amplifier section

**Rated Output Power:**

both channels driven (CD IN– SPEAKER OUT)  
70 W + 70 W (8  $\Omega$ /ohms, 20 Hz – 20 kHz, T.H.D. 0.07 %)

**Dynamic power:**

140 W + 140 W (4  $\Omega$ /ohms, DIN, 1 kHz, T.H.D. 0.7 %)

**High frequency distortion:**

0.01 % (Rated output: –3 dB), 8  $\Omega$ /ohms, 1 kHz

**Output terminals:**

Speaker:  
A or B: 4 – 16  $\Omega$ /ohms  
A + B: 8 – 16  $\Omega$ /ohms  
Suited for headphones/stereo headphones

**Input Sensitivity / Input Impedance:**

P. DIRECT: 0.84 V / 47 k $\Omega$ /kohms  
Gain: 29 dB

## ■ Pre amplifier section

**Equalizer amplifier output:**  
(REC OUT terminals)

150 mV

**Input Sensitivity/Input Impedance:**

PHONO (MM): 2.5 mV/47 k $\Omega$ /kohms  
PHONO (MC): 200  $\mu$ V/100  $\Omega$ /ohms  
CD, TUNER, AUX, NETWORK, RECORDER:  
125 mV/47 k $\Omega$ /kohms (SOURCE DIRECT: Off)  
125 mV/23 k $\Omega$ /kohms (SOURCE DIRECT: On)

**RIAA Deviation:**

PHONO: 20 Hz – 20 kHz  $\pm$ 0.5 dB

**Maximum Input:**

PHONO (MM): 130 mV/1 kHz  
PHONO (MC): 10 mV/1 kHz

**Rated Output:**

PRE OUT: 0.84 V (Input CD 125 mV)



## ■ Overall performance

### S/N Ratio (A network):

PHONO (MM): 89 dB

(With input terminals short-circuited, 5 mV input signal)

PHONO (MC): 74 dB

(With input terminals short-circuited, 0.5 mV input signal)

CD, TUNER, AUX, NETWORK, RECORDER: 108 dB (input terminals short-circuited)

### Tone control (bass):

BASS: 100 Hz  $\pm$ 8 dB

TREBLE: 10 kHz  $\pm$ 8 dB

## ■ General

### Power supply:

AC 230 V, 50/60 Hz

### Power consumption:

295 W

### Power consumption in standby mode:

0.2 W

For the purpose of improvement, the specifications and design are subject to change without notice.



# Index



## A

Accessories.....	3
Adjusting the tone.....	23
BALANCE.....	23
BASS.....	23
TREBLE.....	23
Adjusting the volume.....	23
Auto Standby mode.....	26



## C

Cables used for connections.....	13
Connection	
Players.....	17
Power amplifier.....	19
Power cord.....	20
Pre amplifier.....	19
Recording device.....	18
Speaker.....	14, 15
Speaker (Bi-wiring).....	16



## M

MM/MC cartridge select.....	9, 34
-----------------------------	-------



## P

Protection circuit.....	34
-------------------------	----



## R

Remote control unit.....	10
Inserting the batteries.....	4



## S

Selecting the input source.....	23
Source direct.....	24, 34
Speaker impedance.....	34



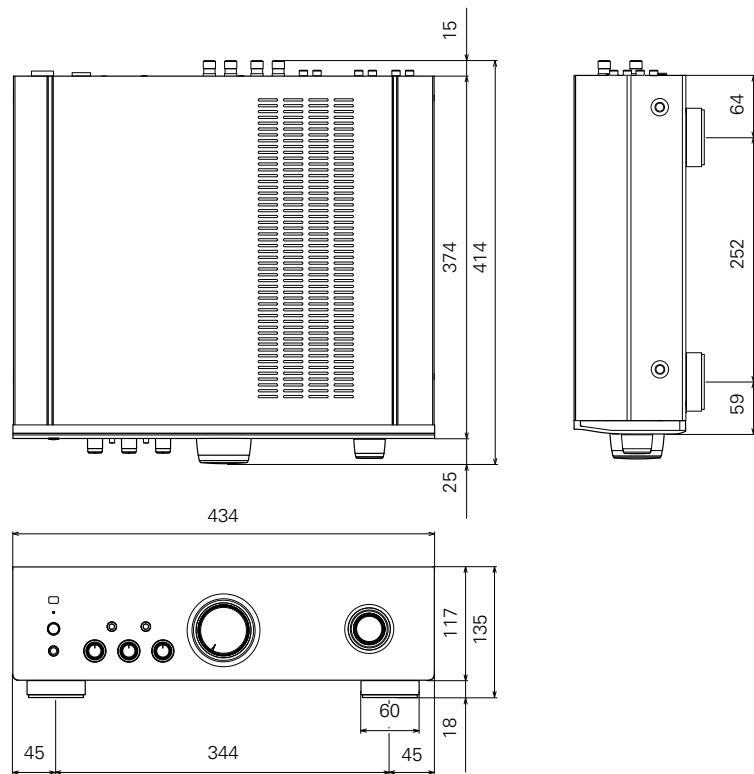
## T

Tips.....	29
Troubleshooting.....	30
Turning off the sound temporarily.....	23
Turning the power on.....	22



## ■ Dimensions

Unit : mm



## ■ Weight : 16.1 kg



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