

YAMAHA AX-10

Natural Sound Stereo Integrated Amplifier

Préampli/ampli de puissance stéréo de la série "Natural Sound"

Natural Sound Stereo-Verstärker

Natural Sound Integrerad Stereo Förstärkare

Amplificatore integrato stereo a Suono Naturale

Amplificador integrado estéreo de Sonido Natural

Natural Sound Geïntegreerde Stereo Versterker

**OWNER'S MANUAL
MODE D'EMPLOI
BEDIENUNGSANLEITUNG
BRUKSANVISNING
MANUALE DI ISTRUZIONI
MANUAL DE INSTRUCCIONES
GEBRUIKSAANWIJZING**

FEATURES

- **70W + 70W (8Ω) RMS Output Power, 0.03% THD, 20–20,000 Hz**
- **High Dynamic Power, Low Impedance Drive Capability**
- **PURE DIRECT Switch to Reproduce the Purest Source Sound**
- **PRE OUT/MAIN IN Terminals Useful for Connecting An Equalizer, Sound Processor, etc.**
- **Remote Control Capability**

CONTENTS

Supplied Accessories	2
Caution	3
Connections	4
Operations	6
Remote Control Transmitter	9
Notes about the Remote Control Transmitter	10
Troubleshooting	11
Specifications	12

CAUTION: READ THIS BEFORE OPERATING YOUR UNIT.

1. To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
2. Install this unit in a cool, dry, clean place – away from windows, heat sources, sources of excessive vibration, dust, moisture and cold. Avoid sources of humming (transformers, motors). To prevent fire or electrical shock, do not expose the unit to rain or water.
3. Never open the cabinet. If something drops into the set, contact your dealer.
4. Do not use force on switches, controls or connection wires. When moving the unit, first disconnect the power plug and the wires connected to other equipment. Never pull the wires themselves.
5. The openings on the cabinet assure proper ventilation of the unit. If these openings are obstructed, the temperature inside the cabinet will rise rapidly and eventually damage the circuits. Therefore, avoid placing objects against these openings and do not install the unit where the flow of air through the ventilation openings could be impeded.
6. Always set the VOLUME control to “0” before starting the audio source play: increase the volume gradually to an appropriate level after the play has been started.
7. Do not attempt to clean the unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
8. Be sure to read the “TROUBLESHOOTING” section regarding common operating errors before concluding that the unit is faulty.
9. **When not planning to use this unit for long periods of time (ie., vacation, etc.), disconnect the AC power plug from the wall outlet.**
10. To prevent lightning damage, disconnect the AC power plug and disconnect the antenna cable when there is an electrical storm.
11. Grounding or polarization – Precautions should be taken so that the grounding or polarization of an appliance is not defeated.
12. AC outlet
Do not connect audio equipment to the AC outlet on the rear panel if that equipment requires more power than the outlet is rated to provide.
13. **Voltage Selector (General Model only)**
The voltage selector on the rear panel of this unit must be set for your local main voltage BEFORE plugging into the AC main supply.
Voltages are 110/120/220/240V AC, 50/60 Hz.

IMPORTANT

Please record the serial number of this unit in the space below.

Serial No.:

The serial number is located on the rear of the unit. Retain this Owner's Manual in a safe place for future reference.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION (FOR CANADA MODEL)

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT AND FULLY INSERT.

FOR CANADIAN CUSTOMER

THIS DIGITAL APPARATUS DOES NOT EXCEED THE “CLASS B” LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATION OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

For U.K. customers

If the socket outlets in the home are not suitable for the plug supplied with this appliance, it should be cut off and an appropriate 3 pin plug fitted. For details, refer to the instructions described below.

Note: The plug severed from the mains lead must be destroyed, as a plug with bared flexible cord is hazardous if engaged in a live socket outlet.

SPECIAL INSTRUCTIONS FOR U.K. MODEL

IMPORTANT:

The wire in the mains lead are coloured in accordance with the following code:

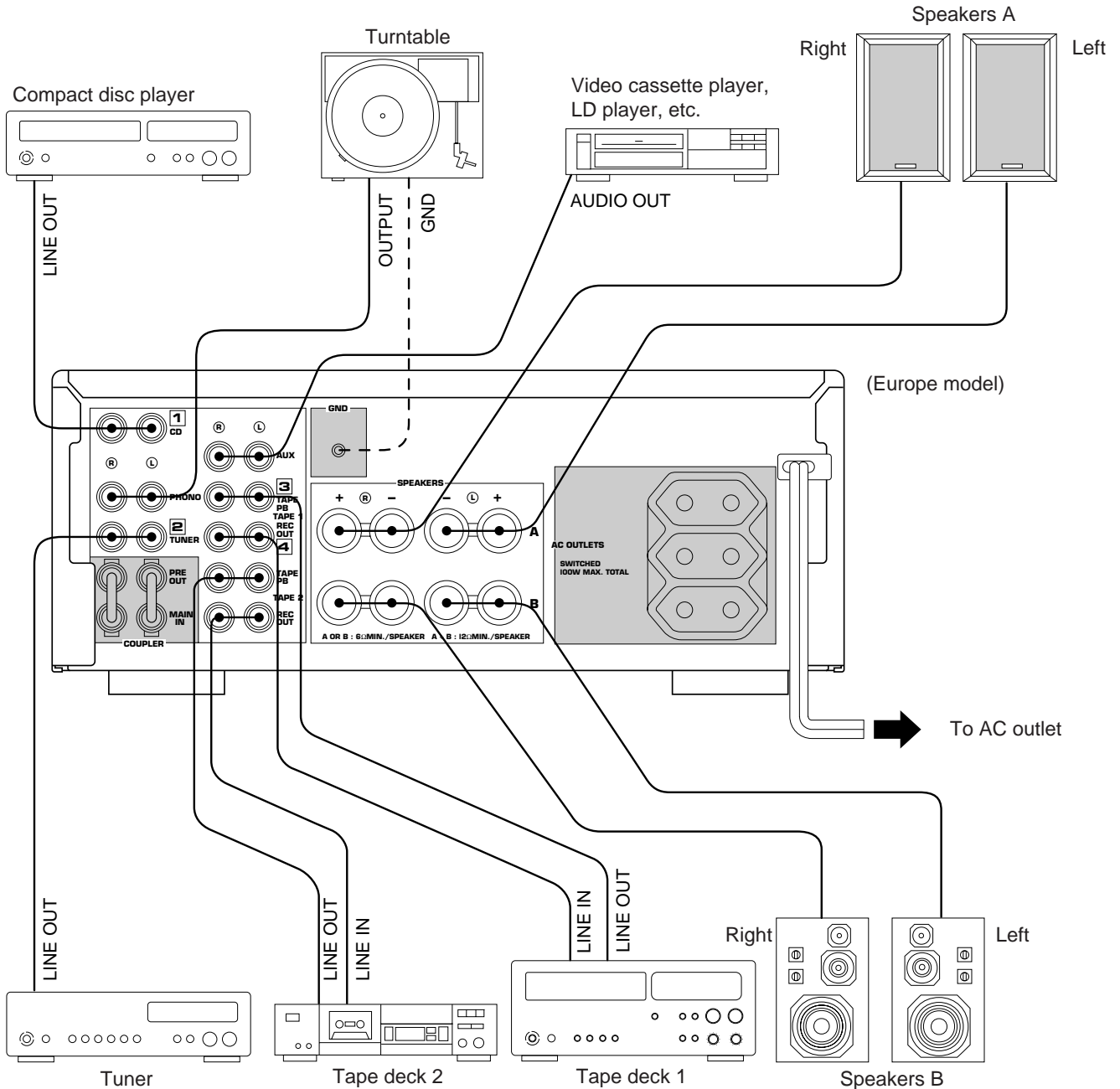
Blue: NEUTRAL
Brown: LIVE

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug. Proceed as follows: the wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED. Making sure that neither core is connected to the earth terminal of the three pin plug.

The apparatus is not disconnected from the AC power source as long as it is connected to the wall outlet, even if the apparatus itself is turned off.

CONNECTIONS

- Before attempting to make any connections to or from this unit, be sure to first switch OFF the power to this unit and to any other components to which connections are being made.
- When making connections between this unit and other components, be sure all connections are made correctly, that is to say L (left) to L, R (right) to R, “+” to “+” and “-” to “-”. Also, refer to the owner’s manual for each component to be connected to this unit.
- * For a system connection with YAMAHA CDX-10, TX-10 and KX-10, connections can be made easily by making sure to connect the output (or input) terminals of each component to the same-numbered terminals of this unit.



*  : Refer to “**ABOUT THE ACCESSORY TERMINALS**” on page 5.

CONNECTING SPEAKERS

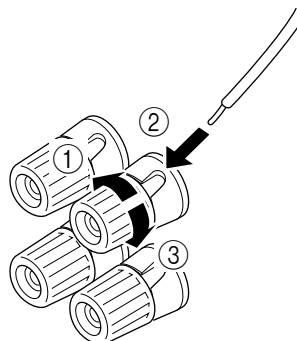
Connect the **SPEAKERS** terminals to your speakers with wire of the proper gauge, cut as short as possible. If the connections are faulty, no sound will be heard from the speakers. Make sure that the polarity of the speaker wires is correct, that is, + and – markings are observed. If these wires are reversed, the sound will be unnatural and will lack bass.

Do not let the bare speaker wires touch each other and do not let them touch the metal parts of this unit as this could damage this unit and/or speakers.

- One or two speaker systems can be connected to this unit. If you connect only one speaker system, connect it to either the **SPEAKERS A** or **B** terminals.
- Use speakers with the specified impedance shown on the rear of this unit.

How to Connect:

Red: positive (+)
Black: negative (–)



- ① Unscrew the knob.
- ② Insert the bare wire.
[Remove approx. 5mm (1/4") insulation from the speaker wires.]
- ③ Tighten the knob and secure the wire.

ABOUT THE ACCESSORY TERMINALS

AC OUTLETS (SWITCHED)

Use these to connect the power cords from your components to this unit.

The power to the **SWITCHED** outlets is controlled by this unit's **POWER** switch or the provided remote control transmitter's **POWER** key. These outlets will supply power to any component whenever this unit is turned on.

The maximum power (total power consumption of components) that can be connected to the **SWITCHED AC OUTLETS** is 100 watts.

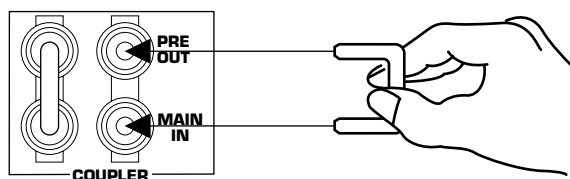
GND terminal (For turntable use)

Connecting the ground wire of the turntable to this terminal will normally minimize hum, but in some cases better results may be obtained with the ground wire disconnected.

PRE OUT/MAIN IN terminals

Removing the jumper pins enables this unit to independently perform the functions of a control amplifier and a power amplifier. These terminals are for connection of a signal-processing system such as a graphic equalizer or sound processor.

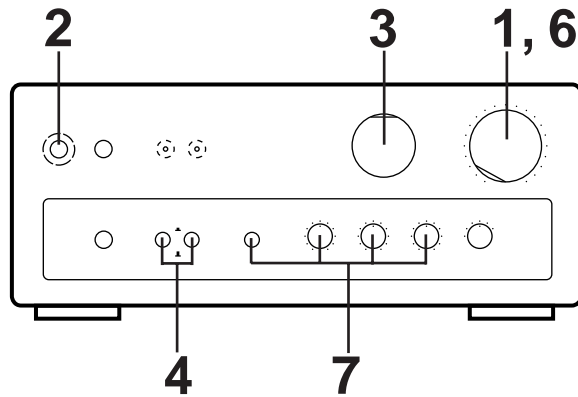
If a sound processor or other external unit is connected between these terminals, the **VOLUME** control of this unit can be used for overall adjustment of the level of sound. To connect such a unit, remove the jumper pins from the **PRE OUT/MAIN IN** terminals, connect the inputs of that unit to the **PRE OUT** terminals and its outputs to the **MAIN IN** terminals. For details, refer to the owner's manual included with the unit to be connected.



Notes

- If you will not use the **PRE OUT/MAIN IN** terminals, never remove the jumper pins from these terminals. If removed, no sound will be output from this unit.
- If you will use this unit with an external unit connected between the **PRE OUT** and **MAIN IN** terminals, make sure that the **PURE DIRECT** switch on the front panel is turned off.
- If you will use this unit as a power amplifier, connect the outputs of an external control amplifier etc. to this unit's **MAIN IN** terminals. In that case, this unit's controls will not function except the **PHONES** jack and the **SPEAKERS** switches, so use the controls on the external control amplifier to make volume adjustment etc.

OPERATIONS



TO PLAY A SOURCE

1

VOLUME

Set to the "0" position.

2

POWER

Lights up.

3 Select a desired input source.

INPUT

TAPE 1 CD TUNER
TAPE 2 PHONO
AUX

4 Select the speakers to be used.

SPEAKERS

A B
ON ON
FF OFF

* If you use two speaker systems, press both the A and B switches.

5 Play the source.

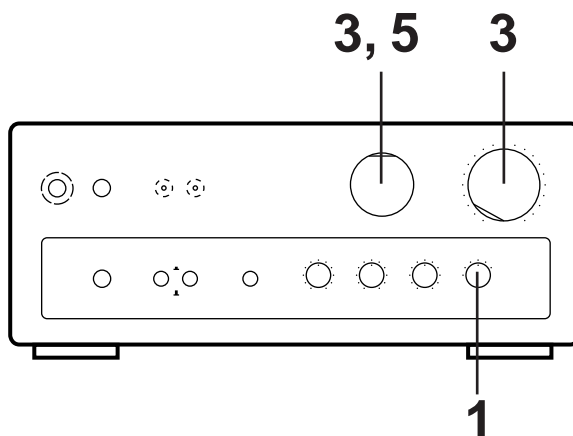
6

VOLUME

Adjust to the desired output level.

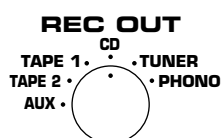
7 If desired, adjust the **BASS**, **TREBLE** and **BALANCE** controls or turn on the **PURE DIRECT** switch. (Refer to page 8.)

To turn off the power
Press the **POWER** switch again.



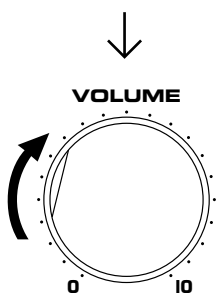
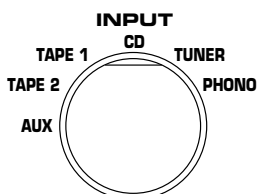
TO RECORD A SOURCE TO TAPE (OR DUB FROM A TAPE TO ANOTHER)

- 1** Select the source to be recorded.



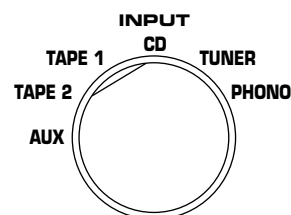
- 2** Play the source.

- 3** Confirm the source by selecting it with the **INPUT** selector and turning up the **VOLUME** control.



- 4** Set the tape deck to be used for recording in the recording mode.

- 5** To monitor the sound to be recorded, select the tape deck being used for recording with the **INPUT** selector.

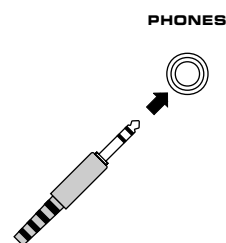


Notes

- If you want to enjoy another source while recording, select it with the **INPUT** selector.
- **VOLUME, BASS, TREBLE, BALANCE** controls and **PURE DIRECT** switch settings have no effect on the material being recorded.

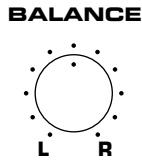
When you listen with headphones

Connect the headphones to the **PHONES** jack. When listening with headphones privately, set both the **SPEAKERS A** and **B** switches to the OFF position.



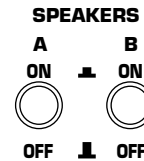
Adjusting the BALANCE control

Adjust the balance of the output volume to the left and right speakers to compensate for sound imbalance caused from speaker location or listening room conditions.

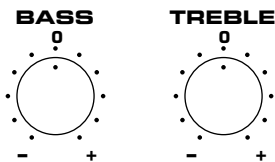


Selecting the SPEAKER system

Because one or two speaker systems can be connected to this unit, the **SPEAKERS** switches allow you to select speaker system **A** or **B**, or both at once.



Adjusting the BASS and TREBLE controls

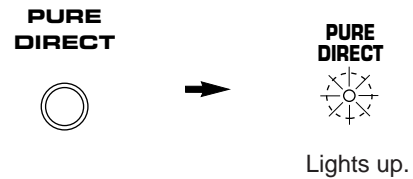


BASS : Turn this clockwise to increase (or counter-clockwise to decrease) the low frequency response.

TREBLE : Turn this clockwise to increase (or counter-clockwise to decrease) the high frequency response.

Using the PURE DIRECT switch

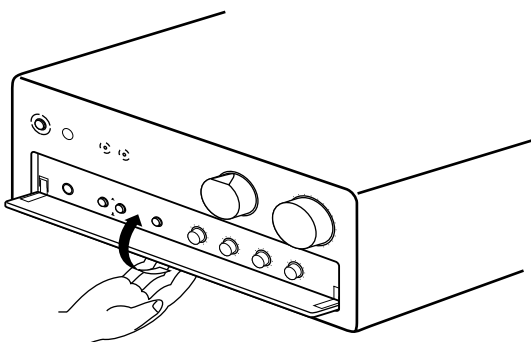
You can enjoy the purest possible sound from your audio sources by pressing this switch so that the **PURE DIRECT** indicator lights up. By doing so, the audio signal bypasses the **BASS, TREBLE, BALANCE** controls and the **PRE OUT/MAIN IN** terminals, eliminating any alterations to the audio signal.



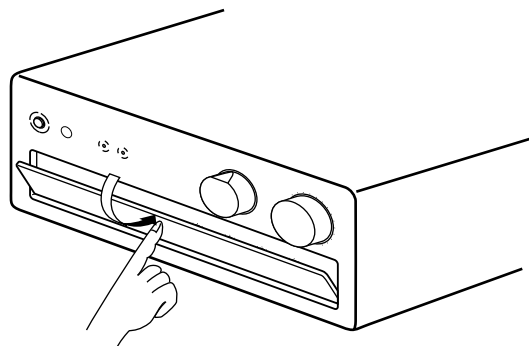
Open/close the control door

When it is not necessary to operate controls inside the control door, close the door.

To close the door



To open the door

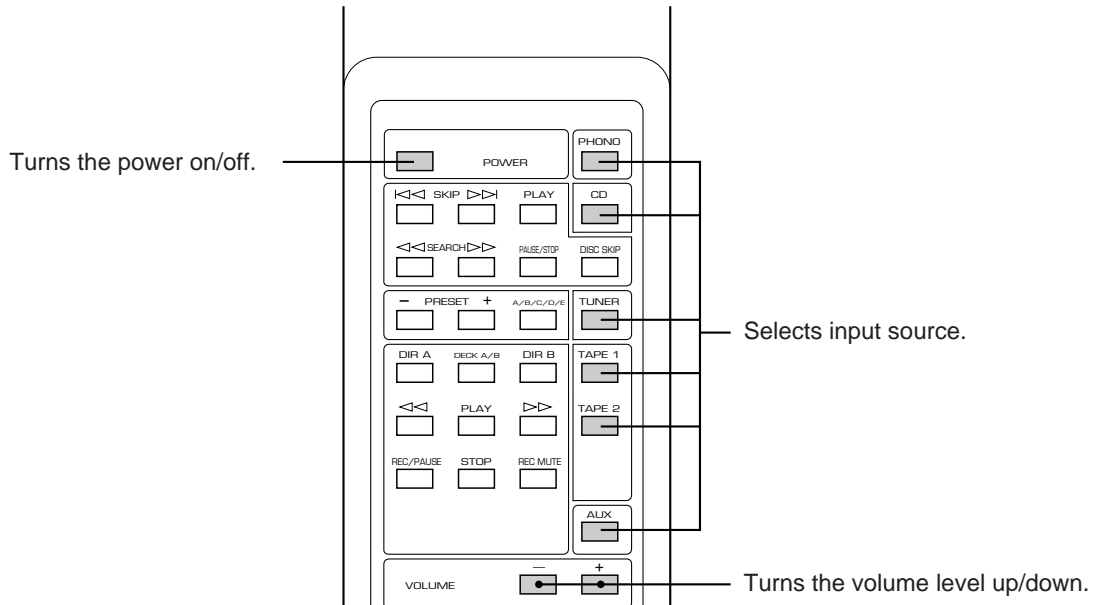


REMOTE CONTROL TRANSMITTER

The remote control transmitter provided with this unit is designed to control all the most commonly used functions of the unit. If the CD player, tuner and tape deck connected to this unit are YAMAHA components, then this remote control transmitter will also control various functions of each component.

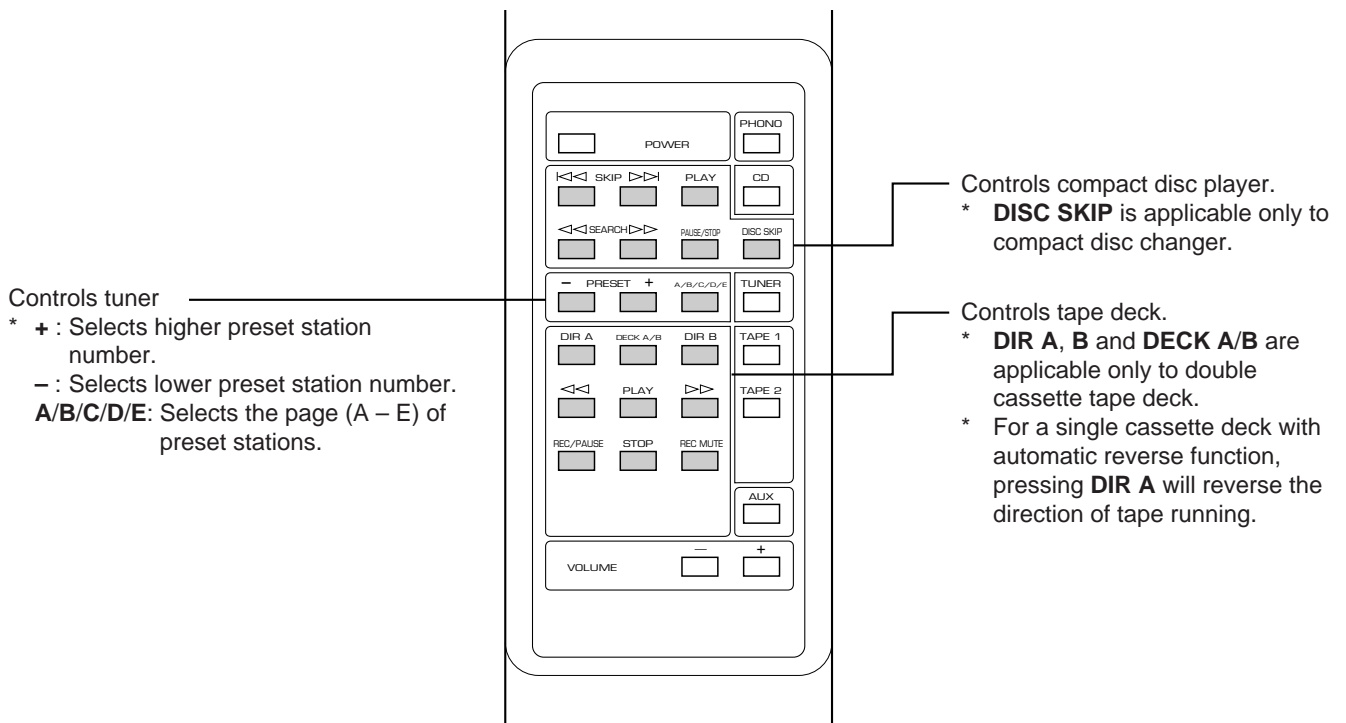
KEY FUNCTIONS

For Control of This Unit



For Other Component Control

Identify the remote control transmitter keys with your component's keys. If these keys are identical, their function will be the same. On each key function, refer to the corresponding instruction on your component's manual.

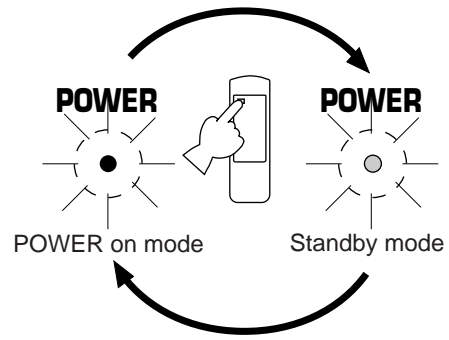


Standby mode

While the power is on, pressing the **POWER** key on the remote control transmitter switches the unit to the Standby mode. (In this mode, the indicator is half illuminated.)

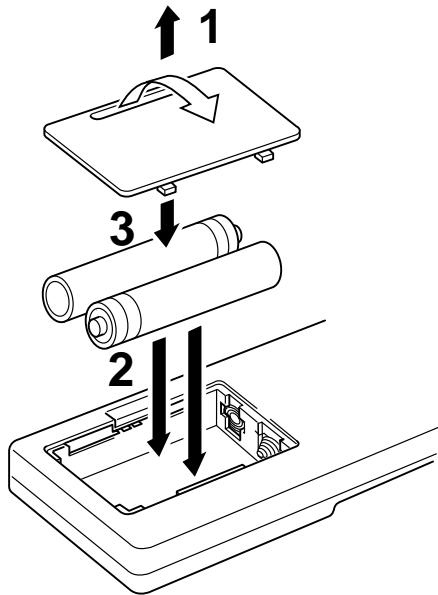
Note

The **POWER** switch on the front panel of this unit should be turned off when left unused for a long period of time.

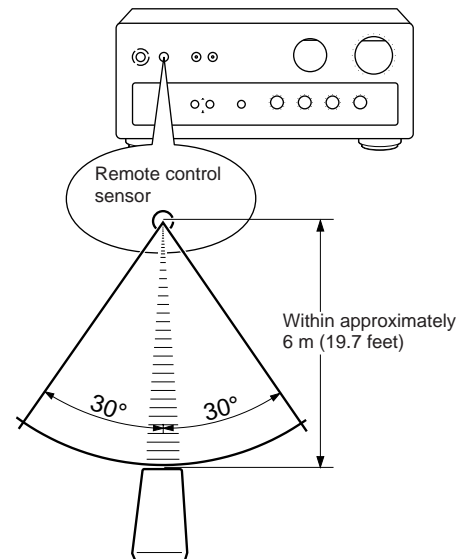


NOTES ABOUT THE REMOTE CONTROL TRANSMITTER

Battery installation



Remote control transmitter operation range



Battery replacement

If you find that the remote control transmitter must be used closer to the main unit, the batteries are weak. Replace both batteries with new ones.

Notes

- Use only AA, R6, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.

Notes

- There should be no large obstacles between the remote control transmitter and the main unit.
- If the remote control sensor is directly illuminated by strong lighting (especially an inverter type of fluorescent lamp etc.), it might cause the remote control transmitter not to work correctly. In this case, reposition the main unit to avoid direct lighting.

TROUBLESHOOTING

If the unit fails to operate normally, check the following points to determine whether the fault can be corrected by the simple measures suggested. If it cannot be corrected, or if the fault is not listed in the SYMPTOM column, disconnect the power cord and contact your authorized YAMAHA dealer or service center for help.

SYMPTOM	CAUSE	REMEDY
The unit fails to turn on when the POWER switch is pressed.	Power cord is not plugged in or is not completely inserted.	Firmly plug in the power cord.
No sound.	Incorrect output cord connections.	Connect the cords properly. If the problem persists, the cords may be defective.
	Appropriate input source is not selected.	Select an appropriate input source with the INPUT selector.
	Speaker connections are not secure.	Secure the connections.
The sound suddenly goes off.	The protection circuit has activated because of short circuit etc.	Turning the unit off and then on will reset the protection circuit.
Only one side speaker outputs the sound.	Incorrect setting of the BALANCE control.	Adjust it to the appropriate position.
	Incorrect cord connections.	Connect the cords properly. If the problem persists, the cords may be defective.
There is a lack of bass, and no ambience.	The + and – wires are connected in reverse at the amplifier or speakers.	Connect the speaker wires in the correct phase (+ and –).
Sound “hums”.	Incorrect cord connections.	Firmly connect the audio plugs. If the problem persists, the cords may be defective.
	No connection from the turntable to the GND terminal.	Make the GND connection between the turntable and this unit.
Using the BASS, TREBLE and BALANCE controls does not affect the tone.	The PURE DIRECT switch is ON.	The PURE DIRECT switch must be switched OFF to use those controls.
The remote control transmitter does not work.	Direct sunlight or lighting (of an inverter type of fluorescent lamp etc.) is striking the remote control sensor of the main unit.	Change position of the main unit.
The distance or range within which the remote control transmitter can be used decreases.	The batteries of this remote control transmitter are too weak.	Replace the batteries with new ones.

SPECIFICATIONS

Minimum RMS Output Power per Channel
 8 ohms, 20 Hz to 20 kHz, 0.03% THD70W+70W
 6 ohms, 20 Hz to 20 kHz, 0.06% THD80W+80W

Dynamic Power per Channel
 (by IHF Dynamic Headroom measuring method)
 8/6/4/2 ohms.....95/117/140/200W

DIN Standard Output Power per Channel
 (4 ohms, 1 kHz, 0.7% THD)
 [Europe model only].....100W

IEC Power (8 ohms, 1 kHz, 0.03% THD)
 [Europe model only].....77W

Power Band Width
 8 ohms, 35W, 0.03% THD.....10 Hz to 40 kHz

Damping Factor
 8 ohms, 20 Hz–20 kHz.....150

Input Sensitivity/Impedance
 PHONO MM.....2.5 mV/47 k-ohms
 CD/TUNER/TAPE/AUX150 mV/47 k-ohms
 MAIN IN1.0V/10 k-ohms

Maximum Input Signal (1 kHz, 0.005% THD)
 PHONO MM120 mV

Output Level/Impedance
 REC OUT150 mV/2.6 k-ohms
 PRE OUT.....1.0V/1.5 k-ohms

Headphone Jack Rated Output/ Impedance
 Output Level (8 ohms, 1 kHz, 0.03% THD).....0.47V
 Impedance390 ohms

Frequency Response (20 Hz to 20 kHz)
 CD/TUNER/TAPE/AUX.....0±0.5 dB
 MAIN IN0±0.5 dB

RIAA Equalization Deviation (20 Hz to 20 kHz)
 PHONO MM0±0.5 dB

Total Harmonic Distortion (20 Hz to 20 kHz)
 PHONO MM to REC OUT (3V)0.005%
 CD/TUNER/TAPE/AUX to PRE OUT (1V)0.008%
 CD/TUNER/TAPE/AUX to SP OUT (35W/8 ohms)....0.025%

Signal-to-Noise Ratio (IHF-A Network)
 PHONO MM (5 mV Input Shorted)..... 88 dB
 CD (PURE DIRECT: ON)..... 110 dB

Residual Noise (IHF-A Network)
 CD (PURE DIRECT: ON)..... 50 µV

Channel Separation (Vol. –30 dB)
 PHONO MM/MC (Input Shorted 1 kHz/10 kHz)63 dB/52 dB
 CD/TUNER/TAPE/AUX (Input 5.1 k-ohms Terminated
 1 kHz/10 kHz)65 dB/50 dB

Tone Control Characteristics
 BASS: Boost/cut±10 dB (20 Hz)
 TREBLE: Boost/cut.....±10 dB (20 kHz)

Gain Tracking Error (0 – –60dB).....3 dB

Power Supply
 [U.K. model]AC 240V, 50 Hz
 [Europe model].....AC 230V, 50 Hz
 [General model]AC 110/120/220/240V, 50/60 Hz

Power Consumption170W

AC Outlets
 SWITCHED OUTLETS100W max. total

Dimensions (W x H x D)280 x 118.5 x 388.5 mm
 (11" x 4-11/16" x 15-5/16")

Weight8.2 kg (18 lbs. 1 oz.)

AccessoriesRemote control transmitter
 Batteries

Specifications subject to change without notice.

YAMAHA

YAMAHA ELECTRONICS CORPORATION, USA 6660 ORANGETHORPE AVE., BUENA PARK, CALIF. 90620, U.S.A.
YAMAHA CANADA MUSIC LTD. 135 MILNER AVE., SCARBOROUGH, ONTARIO M1S 3R1, CANADA
YAMAHA ELECTRONIK EUROPA G.m.b.H. SIEMENSSTR. 22-34, D-2084 RELINGEN BEI HAMBURG, F.R. OF GERMANY
YAMAHA ELECTRONIQUE FRANCE S.A. 17 RUE DES CAMPANULES, LOGNES 77321 MARNE LA VALLEE CEDEX 2, FRANCE
YAMAHA ELECTRONICS (UK) LTD. YAMAHA HOUSE, 200 RICKMANSWORTH ROAD WATFORD, HERTS WD1 7JS, ENGLAND
YAMAHA SCANDINAVIA A.B. J A WETTERGRENS GATA 1, BOX 30053, 400 43 VÄSTRA FRÖLUNDA, SWEDEN
YAMAHA MUSIC AUSTRALIA PTY, LTD. 17-33 MARKET ST., SOUTH MELBOURNE, 3205 VIC., AUSTRALIA

YAMAHA CORPORATION