YAMAHA

RX-V480

Natural Sound Stereo Receiver

Récepteur stéréo "Son Naturel"

Natural Sound Stereoreceiver

Natural Sound Stereoreceiver

Sintonizzatore stereo a suono naturale

Receptor estéreo de Sonido Natural

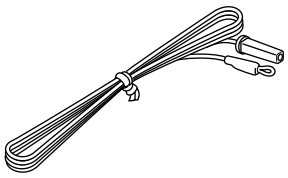
Natural Sound Stereo Ontvanger

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

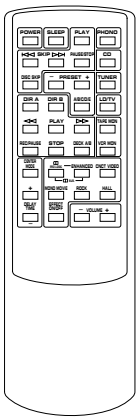
SUPPLIED ACCESSORIES
ACCESSOIRES FOURNIS
MITGELIEFERTE ZUBEHÖRTEILE
MEDFÖLJANDE TILLBEHÖR
ACCESSORI IN DOTAZIONE
ACCESORIOS INCLUIDOS
BIJGELEVERDE ACCESSOIRES

- After unpacking, check that the following parts are included.
- Après le déballage, vérifier que les pièces suivantes sont incluses.
- Nach dem Auspacken überprüfen, ob die folgenden Teile vorhanden sind.
- Kontrollera efter det apparaten packats upp att följande delar finns med.
- Verificare che tutte le parti seguenti siano contenute nell'imballaggio dell'apparecchio.
- Desembale el aparato y verificar que los siguientes accesorios están en la caja.
- Controleer na het uitpakken of de volgende onderdelen voorhanden zijn.

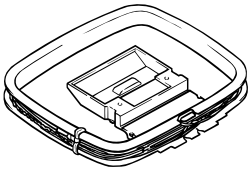
- Indoor FM Antenna
- Antenne FM intérieure
- UKW-Innenantenne
- FM inomhusantenn
- Antenna FM per interni
- Antena FM interior
- FM Binnenantenne



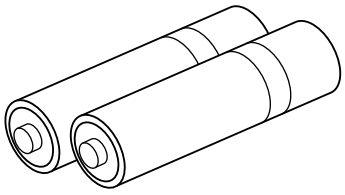
- Remote Control Transmitter
- Emetteur de télécommande
- Fernbedienungsgeber
- Fjärrkontrollsändare
- Telecomando
- Transmisor del control remoto
- Afstandbediening



- AM Loop Antenna
- Cadre-antenna AM
- MW-Rahmenantenne
- AM ramantenn
- Antenna AM ad anello
- Antena de cuadro de AM
- AM Lusantenne



- Batteries (size AA, R6, UM-3)
- Piles (taille AA, R6, UM-3)
- Batterien (Größe AA, R6, UM-3)
- Batterier (storlek AA, R6, UM-3)
- Batterie (dimensioni AA, R6, UM-3)
- Pilas (tamaño AA, R6, UM-3)
- Batterijen (maat AA, R6, UM-3)



This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

Dette apparat overholder det gaeldende EF-direktiv vedrørende radiostøj.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frequencia fijados por el Consejo Directivo 87/308 CEE.

Dit product voldoet aan de EEG normen betreffende radio-frekwentie storingen 82/499/EEG en/of 87/308/EEG.

Thank you for selecting this YAMAHA stereo receiver.

FEATURES

- **5 Speaker Configuration**
  Front: (U.S.A. model)
  65W + 65W (8Ω) RMS Output Power, 0.04% THD, 20–20,000 Hz
  (Canada model)
  55W + 55W (8Ω) RMS Output Power, 0.04% THD, 20–20,000 Hz
  (Australia, Europe, U.K. and General models)
  60W + 60W (8Ω) RMS Output Power, 0.04% THD, 20–20,000 Hz
  Center: (U.S.A. model)
  65W (8Ω) RMS Output Power, 0.1% THD, 1 kHz
  (Canada model)
  55W (8Ω) RMS Output Power, 0.1% THD, 1 kHz
  (Australia, Europe, U.K. and General models)
  60W (8Ω) RMS Output Power, 0.1% THD, 1 kHz
  Rear: 15W + 15W (8Ω) RMS Output Power, 0.7% THD, 1 kHz
- **Digital Sound Field Processor**
  4 Programs for Digital Sound Field Processing
  2 Programs Dolby Surround (DOLBY PRO LOGIC and DOLBY PRO LOGIC ENHANCED)
- **Automatic Input Balance Control for Dolby Surround**
- **Test Tone Generator for Easier Speaker Output Balance Adjustment**
- **3 Center Channel Modes (NORMAL/WIDE/PHANTOM)**
- **40-Station Random Preset Tuning**
- **Automatic Preset Tuning**
- **Preset Station Shifting Capability**
- **IF Count Direct PLL Synthesizer Tuning System**
- **Video Signal Input/Output Capability**
- **SLEEP Timer**
- **Remote Control Capability**

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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 "– ∞" before starting the audio source play. Increase the volume gradually to an appropriate level after playback 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 CUSTOMERS
THIS DIGITAL APPARATUS DOES NOT EXCEED THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATIONS OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

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.

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 WIRES IN THE MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:

Blue: NEUTRAL
Brown: LIVE

As the colours of the wires in the main 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. Make sure that neither core is connected to the earth terminal of the three pin plug.

FREQUENCY STEP switch (General Model only)
Because the interstation frequency spacing differs in different areas, set the FREQUENCY STEP switch (located at the rear) according to the frequency spacing in your area.
Before setting this switch, disconnect the AC power plug of this unit from the AC outlet.

PROFILE OF THIS UNIT

You are the proud owner of a Yamaha stereo receiver –an extremely sophisticated audio component. The Digital Sound Field Processor (DSP) built into this unit takes full advantage of Yamaha's undisputed leadership in the field of digital audio processing to bring you a whole new world of listening experiences. Follow the instructions in this manual carefully when setting up your system, and this unit will sonically transform your room into a wide range of listening environments –movie theater, concert hall, and so on. In addition, you get incredible realism from Dolby-encoded video sources using the built-in Dolby Pro Logic Surround Decoder. Rather than tell you about the wonders of digital sound field processing, however, let's get right down to the business of setting up the system and trying out its many capabilities. Please read this operation manual carefully and store it in a safe place for later reference.

Digital Sound Field Processing

What is it that makes live music so good? Today's advanced sound reproduction technology lets you get extremely close to the sound of a live performance, but chances are you'll still notice something missing: the acoustic environment of the live concert hall. Extensive research into the exact nature of the sonic reflections that create the ambience of a large hall has made it possible for Yamaha engineers to bring you this same sound in your own listening room, so you'll feel all the sound of a live concert.

What's more, our technicians, armed with sophisticated measuring equipment, have even made it possible to capture the acoustics of a variety of venues such as an actual concert hall, theater, etc. to allow you to accurately recreate one of several actual live performance environments, all in your own home.

Dolby Pro Logic Surround

The Dolby Pro Logic Surround Decoder program lets you experience the dramatic realism and impact of Dolby Surround movie theater sound in your own home. Dolby Pro Logic gets its name from its professional-grade steering logic circuitry, which provides greater effective channel separation for a much higher degree of realism than the "passive" Dolby Surround circuits found in today's typical home audio/video equipment. Dolby Pro Logic Surround provides a true center channel, so that there are four independent channels, unlike passive Dolby Surround which has in effect only three channels: left, right, and rear. This center channel allows listeners seated in even less-than-ideal positions to hear the dialog originating from action on the screen while getting a stereo effect as well.

This Dolby Pro Logic Surround Decoder employs a digital signal processing system. This system increases sound stability at each channel and minimizes crosstalk between channels compared to conventional analog Dolby signal processing.
In addition, this unit features a built-in automatic input balance control. This circuit always presents you the best surround conditions without performing manual adjustments.

Dolby Pro Logic Surround + DSP

You can also enjoy a combination of Dolby Pro Logic Surround and DSP in the sound field program " PRO LOGIC ENHANCED".
It recreates the surround effect of a movie theater, effectively duplicating its multiple surround loudspeaker system, completely surrounding the listener with the sounds of the action taking place on the screen.

SPEAKER SETTING UP FOR THIS UNIT

SPEAKERS TO BE USED

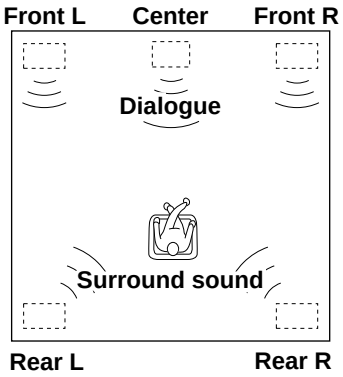
This unit is designed to provide the best sound-field quality with a 5 speaker configuration. The speakers to be used with this unit will be mainly front speakers, rear speakers, and a center speaker. (You can omit the center speaker. Refer to the "**4-Speaker Configuration**" shown below.)
The front speakers are used for the output of the main source sound and the effect sound. They will probably be the speakers of your present stereo speaker system. The rear speakers are used for the output of the effect sound. And the center speaker is used for the output of the center sound (dialog etc.) encoded with the Dolby Surround. The rear and center speakers do not need to be equal in power to the front speakers. However, all the speakers should have high enough power handling to accept the maximum output of this unit.

SPEAKER CONFIGURATION

5-Speaker Configuration

This configuration is the most effective and is the one that is recommended. In this configuration, the center speaker is necessary as well as the rear speakers. If the digital sound field program is in **DOLBY PRO LOGIC** or **DOLBY PRO LOGIC ENHANCED** mode conversations will be output from the center speaker and the ambience will be excellent.

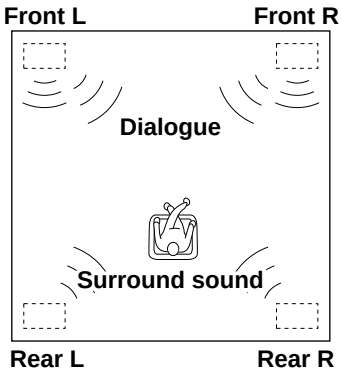
- Set the center mode to the "**NORMAL**" or "**WIDE**" position. (For details, refer to page 11.)



4-Speaker Configuration

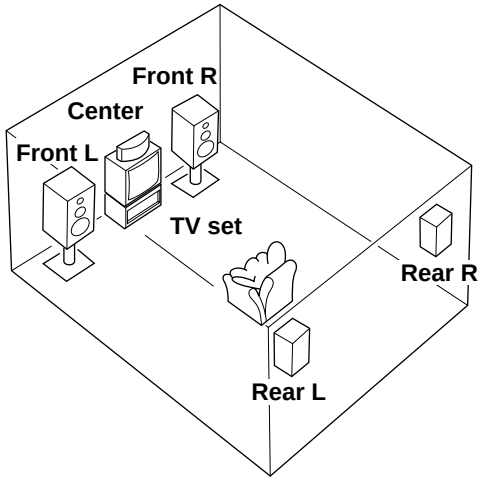
The center speaker is not used in this configuration. If the digital sound field program is in the **DOLBY PRO LOGIC** or **DOLBY PRO LOGIC ENHANCED** mode, the center sound is output from the left and the right front speakers. However, the sound effect of other programs can be the same as that of the 5-speaker configuration.

- Be sure to set the center mode to the "**PHANTOM**" position. (For details, refer to page 11.)



SPEAKER PLACEMENT

The recommanded speaker configuration, the 5-speaker configuration, will require two speaker pairs: **front speakers** (your normal stereo speakers), and **rear speakers**, plus a **center speaker**. When you place these speakers, refer to the following.



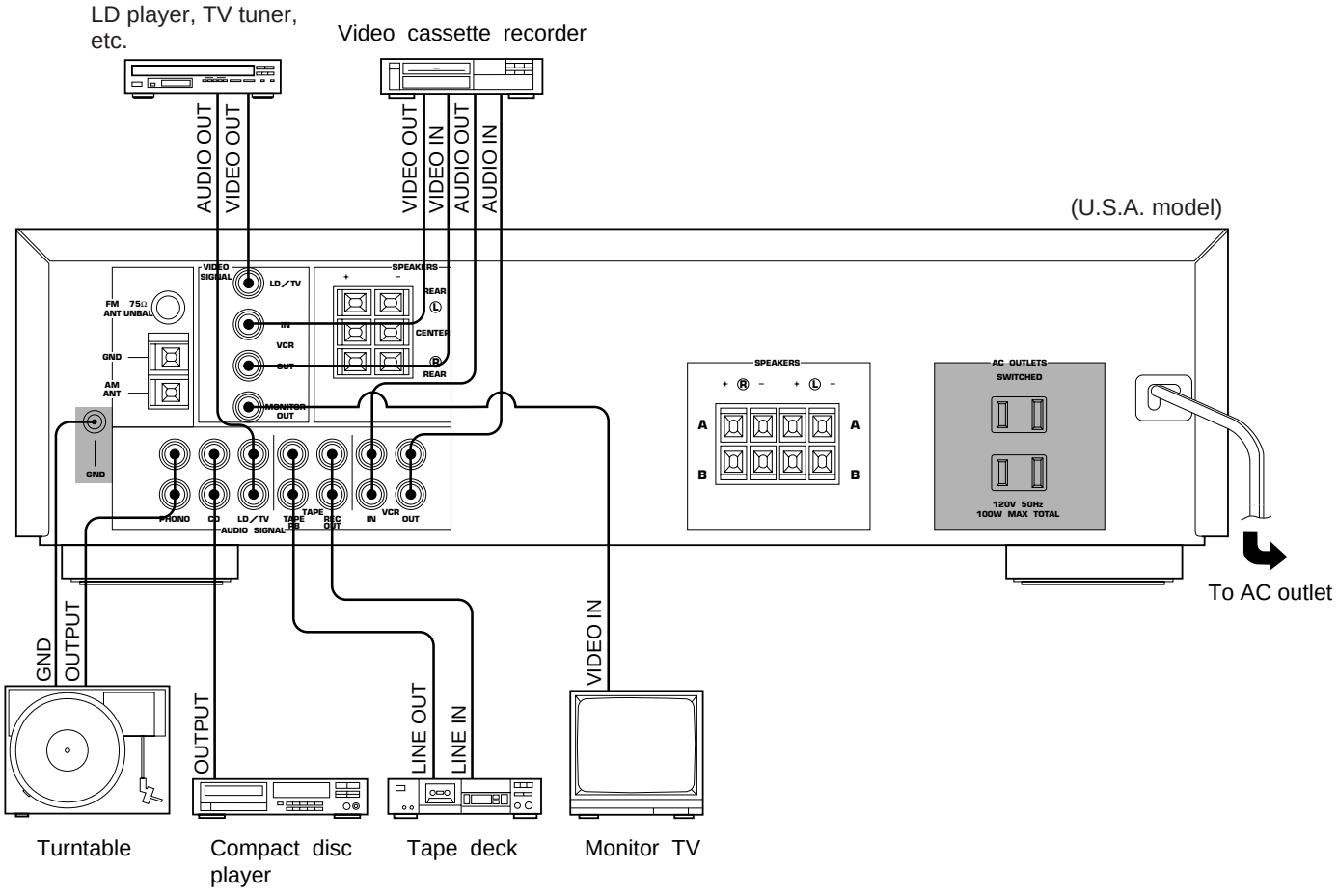
Front: In normal position. (The position of your present stereo speaker system.)
Rear: Behind your listening position, facing slightly inward. Nearly six feet (approx. 1.8 m) up from the floor.
Center: Precisely between the front speakers. (To avoid interference with TV sets, use a magnetically shielded speaker. If, however, it is not effective, keep the speaker away from TV sets.)

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.

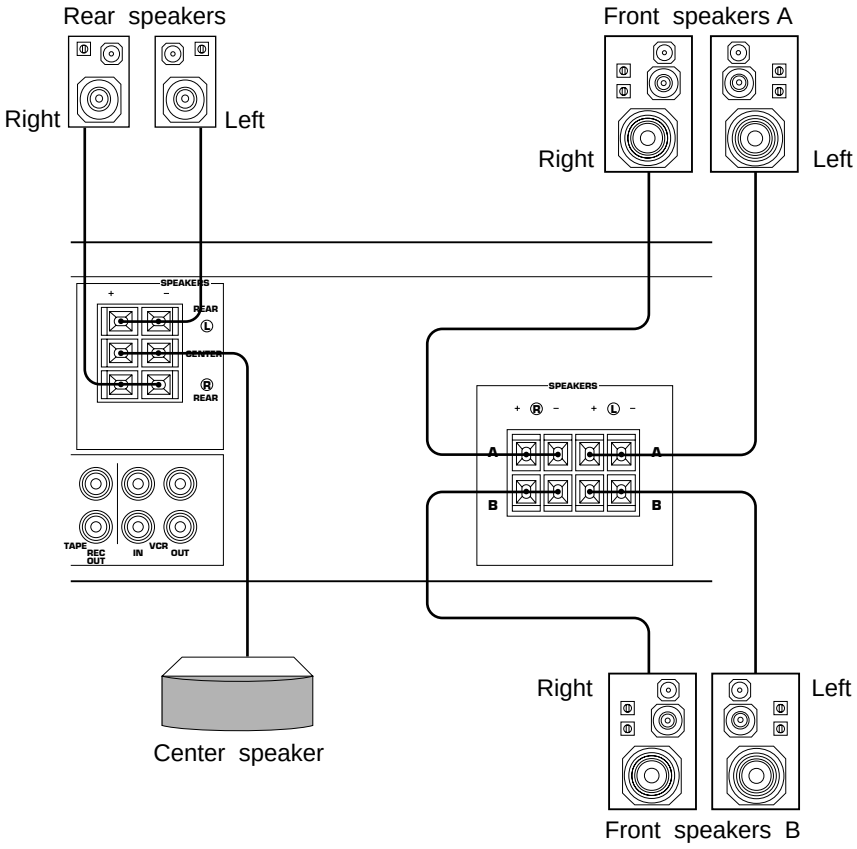
CONNECTIONS WITH OTHER COMPONENTS

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.



: Refer to "**ABOUT THE ACCESSORY TERMINALS**" on page 8.

CONNECTING SPEAKERS

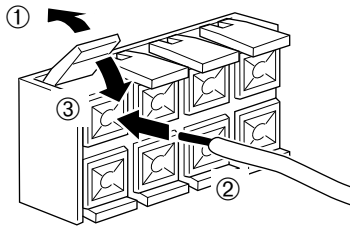


Connect the **SPEAKERS** terminals to your speakers with wire of the proper gauge, cut to be as short as possible. If the connections are faulty, no sound will be heard from the speakers. Make sure that the polarity of the speaker wires is correct, that is, + and – markings are observed. If these wires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

- Use speakers with the specified impedance shown on the rear of this unit.
- **Note for front speaker connection:**
  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.

How to Connect:

Red: positive (+)
Black: negative (–)



① Press up the tab.
② Insert the bare wire. [Remove approx. 5mm (1/4") insulation from the speaker wires.]
③ Press down the tab and secure the wire.

ABOUT THE ACCESSORY TERMINALS

AC OUTLET(S)

(U.S.A., Canada, Europe and General models)
.....2 SWITCHED OUTLETS
(Australia and U.K. models)
..... 1 SWITCHED OUTLET
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.

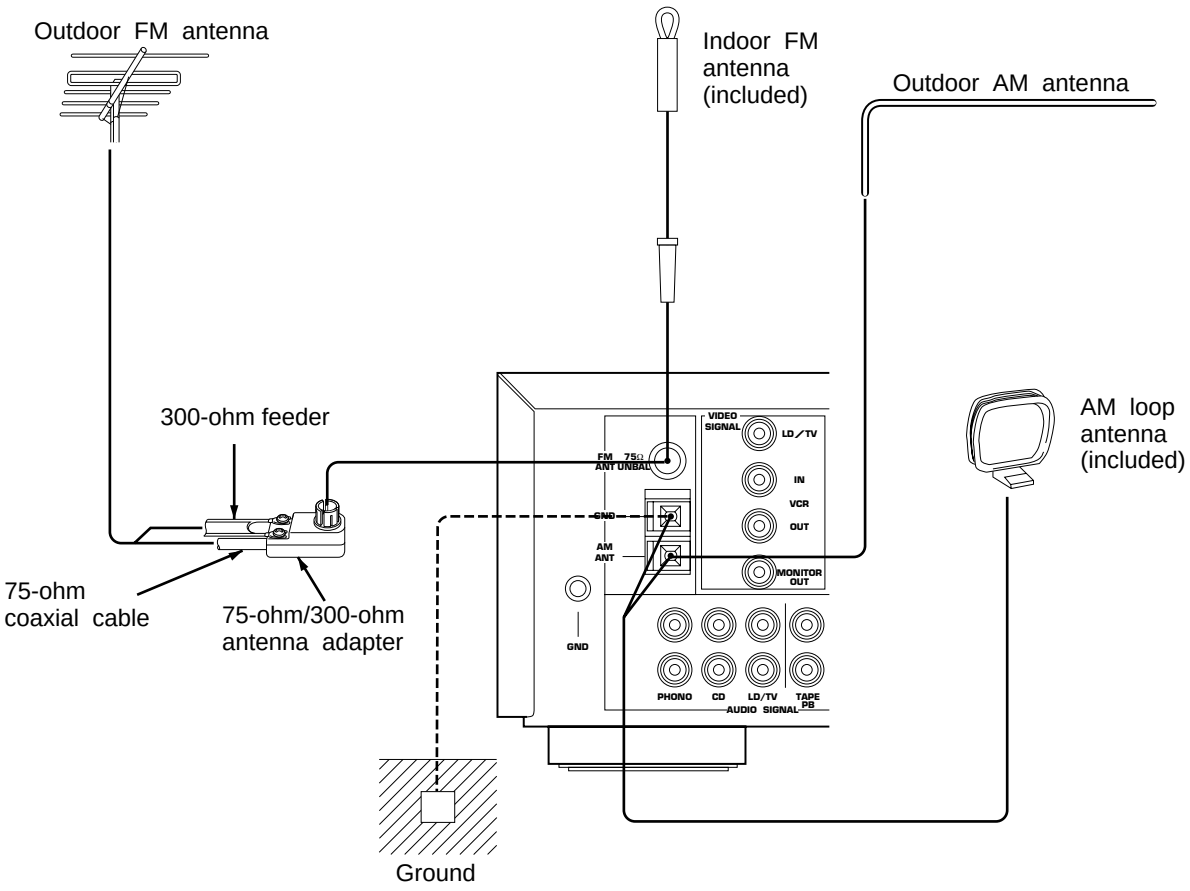
The maximum power (total power consumption of components) that can be connected to the **SWITCHED AC OUTLET(S)** is 100 watts.

GND terminal (For turntable use)

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

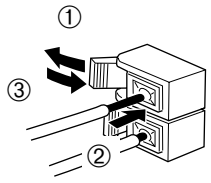
ANTENNA CONNECTIONS

- Each antenna should be connected to the designated terminals correctly, referring to the following figure.
- Both AM and FM indoor antennas are included with this unit. In general, these antennas will probably provide sufficient signal strength. Nevertheless, a properly installed outdoor antenna will give clearer reception than an indoor one. If you experience poor reception quality, an outdoor antenna may result in improvement.

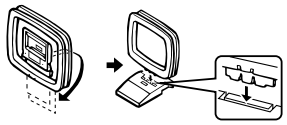


Connecting the AM loop antenna

1



2



3

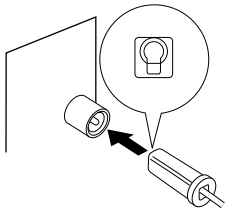
Orient so that the best reception is obtained.

* The AM loop antenna should be placed apart from the main unit. The antenna may be hung on a wall.
* The AM loop antenna should be kept connected, even if an outdoor AM antenna is connected to this unit.

GND terminal

For maximum safety and minimum interference, connect the **GND** terminal to a good earth ground. A good earth ground is a metal stake driven into moist earth.

Notes

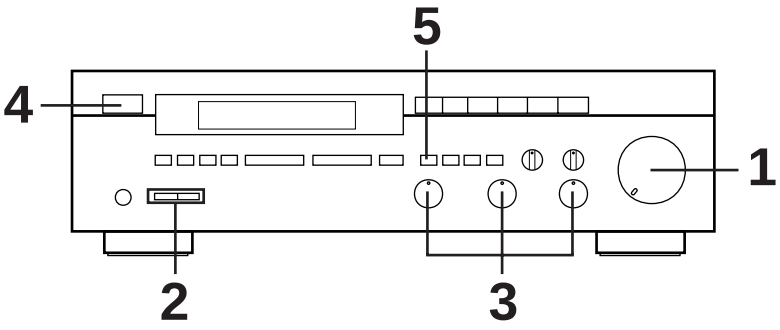


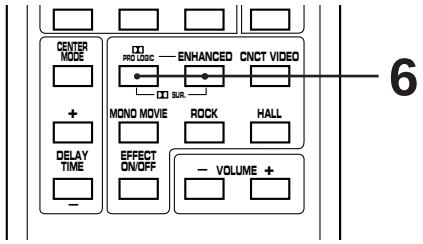
- When connecting the indoor FM antenna, make sure that the grooved part of the connector hole is facing downward.
- If you need an outdoor FM antenna to improve FM reception quality, either 300-ohm feeder or coaxial cable may be used. In locations troubled by electrical interference, coaxial cable is preferable.

ADJUSTMENT BEFORE OPERATION

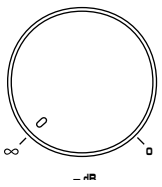
Speaker balance adjustment

This procedure lets you adjust the sound output level balance between the front, center, and rear speakers using the built-in test tone generator. With this adjustment, the sound output level heard at the listening position will be the same from each speaker. This is important for the best performance of the digital sound field processor.



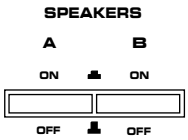


1 VOLUME



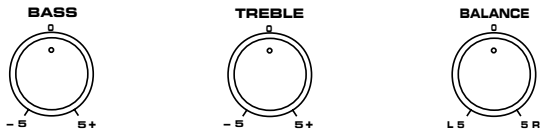
Set to the " ∞ " position.

2 Select the front speakers to be used.



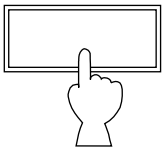
* If you use two front speaker systems, press both the A and B switches.

3



Set to the "0" position.

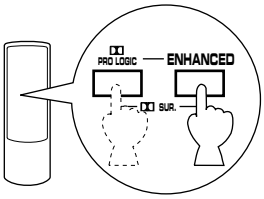
4 POWER

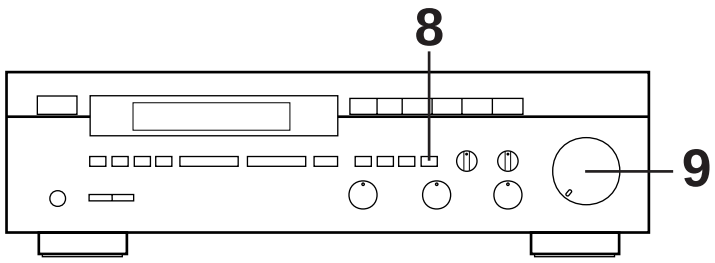


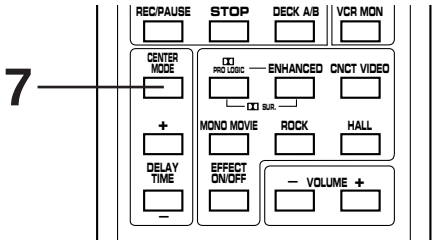
5 Turn the DSP on, so that a DSP program name appears on the display.

EFFECT

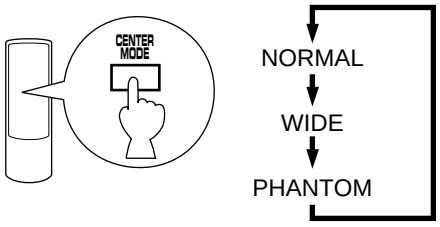
6 Select the PRO LOGIC or PRO LOGIC ENHANCED mode, so that the corresponding name is illuminated on the display.







7 Select the center channel output mode according to your speaker configuration.
(Refer to "**SPEAKER CONFIGURATION**" on page 6.)



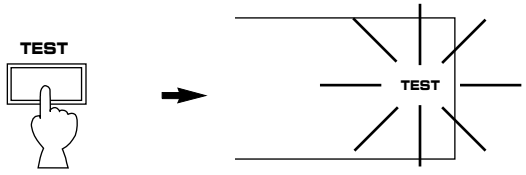
On the feature of each mode, refer to the "**Note**" shown below.

Note
In step 7, when you select the center channel output mode, note the following.

For 5 speaker configuration)
NORMAL: Select this mode when you use a center speaker that is smaller than the front speakers. In this mode, the bass tone will be output from the front speakers.
WIDE: Select this mode when you use the center speaker approximately same sized as the front speakers.

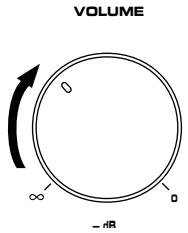
For 4 speaker configuration)
PHANTOM: Select this mode when you do not use the center speaker. The center sound will be output from the left and right front speakers.

8

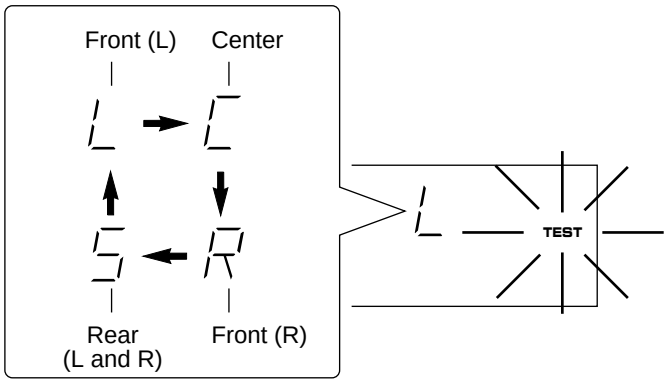


Flashes continuously.

9 Turn up the volume.

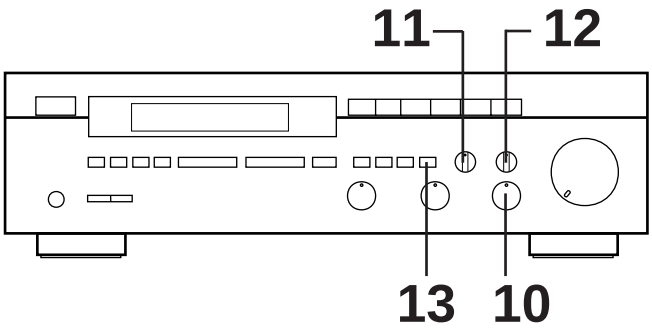


You will hear a test tone (like pink noise) from the left front speaker, then the center speaker, then the right front speaker, and then the rear speakers, for about two seconds each. The display changes as shown below.



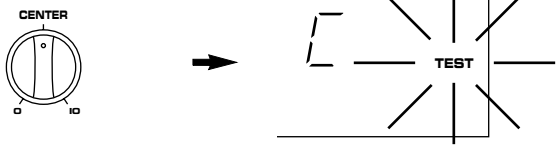
* The test tone from the left rear speaker and the right rear speaker will be heard at the same time.

CONTINUED

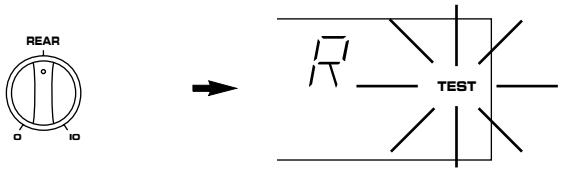


10 Adjust the **BALANCE** control so that the effect sound output level of the left front speaker and the right front speaker are the same.

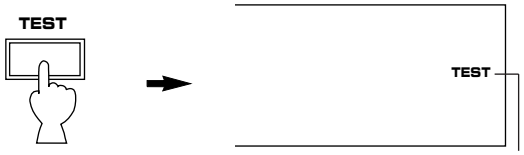
11 Make the sound output level of the center speaker the same as that of the front speakers with the **CENTER** level control.



12 Make the sound output level of the rear speakers the same as that of the front speakers with the **REAR** level control.



13 Cancel the test tone.

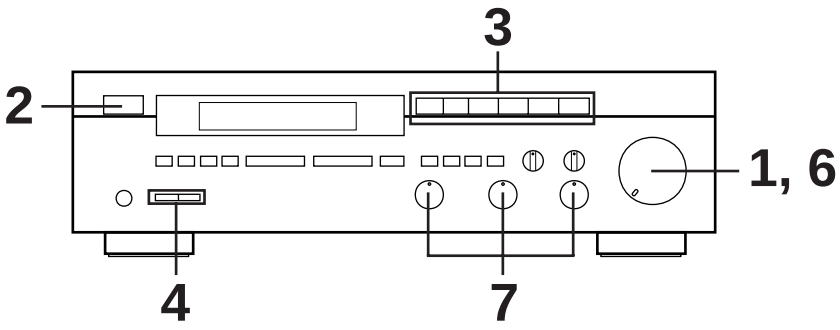


Stops flashing and disappears.

Notes

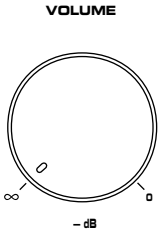
- Once you have completed these adjustments, you can adjust whole sound level on your audio system by using the **VOLUME** control (or the **VOLUME** keys on the remote control transmitter).
- If you use external power amplifiers, their volume controls may also be adjusted to achieve proper balance.
- In step 11, if the center mode is in the "**PHANTOM**" position, the sound output level of the center speaker can not be adjusted. This is because in this mode, the center sound is automatically output from the left and right front speakers.

OPERATIONS



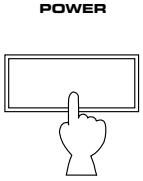
TO PLAY A SOURCE

1

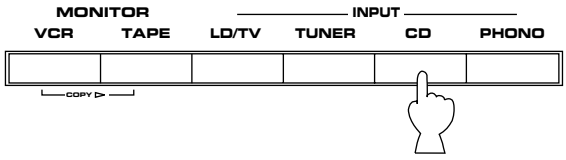


Set to the " ∞ " position.

2

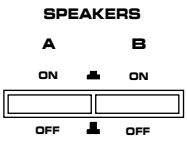


3 Select the desired input source by using the input selector switches.
(For video sources, turn the TV/monitor ON.)



* The name of the selected input source will appear in the display.

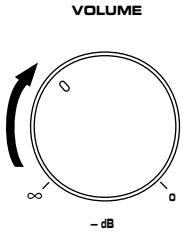
4 Select the front speakers to be used.



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

5 Play the source. (For detailed information on the tuning operation, refer to the page 16.)

6



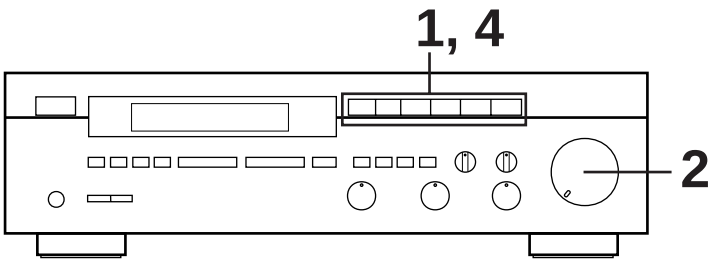
Adjust to the desired output level.

7 If desired, adjust the **BASS, TREBLE, BALANCE** controls, etc. (refer to the page 15) and use the digital sound field processor. (Refer to the page 20.)

Note

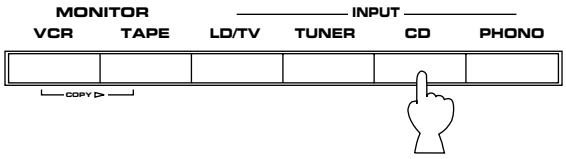
In step 3, if two or more program sources are selected at the same time (by using the input selector switches), be sure to remember the priority order of the input sources.
Priority order of sources: 1) **TAPE**, 2) **VCR**, 3) **LD/TV**, **TUNER**, **CD** or **PHONO**.

- If you select **LD/TV**, **TUNER**, **CD** or **PHONO**, be sure that neither **TAPE** nor **VCR** have been selected.
- If you select **TAPE** and **VCR** and another input selector switch at the same time, the playback result will be the video image from the VCR and the sound from the audio tape.
- If you select both **LD/TV** and **TAPE** at the same time, the playback result will be the video image from the LD player and the sound from the audio tape.
- Once you play the LD player, its video image will not be interrupted even if other input selector switches except **VCR** are selected.
- For **TAPE** and **VCR**, whenever the switch is pressed, the corresponding input source is selected or canceled alternately.



TO RECORD A SOURCE TO TAPE

1 Select the source to be recorded.

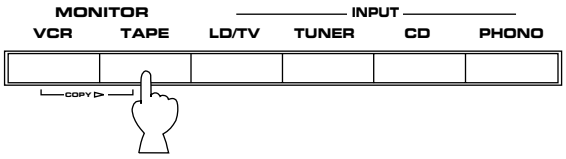


* To dub from tape to tape, refer to the "**Notes**" shown at right.
* When you select **LD/TV**, **TUNER**, **CD** or **PHONO**, make sure that neither **TAPE** nor **VCR** is also selected.

2 Play the source and then turn the **VOLUME** control up to confirm the input source. (For detailed information on the tuning operations, refer to the page 16.)

3 Set the tape deck or VCR to the recording mode.

4 To monitor the audio and/or video signals being recorded, press the input selector switch for the audio or video tape recorder being used to make the recording.



Notes

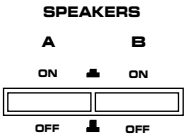
- To dub from tape to tape, only the following method of dubbing can be performed.

SOURCE		RECORDER
VCR (or tape deck) connected to the VCR terminals.	→	Tape deck connected to the TAPE terminals.

- **DSP**, **VOLUME**, **BASS**, **TREBLE** and **BALANCE** control settings have no effect on the material being recorded.

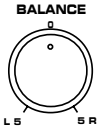
Selecting the SPEAKER system

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



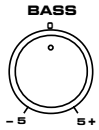
Adjusting the BALANCE control

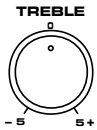
Adjust the balance of the output volume to the left and right speakers to compensate for sound imbalance caused by speaker location or listening room conditions.



Note
This control is effective only for the sound from the front speakers.

Adjusting the BASS and TREBLE controls





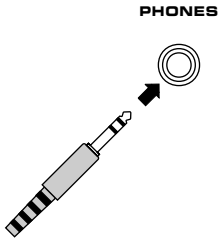
BASS : Turn this clockwise to increase (or counter-clockwise to decrease) the low frequency response.

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

Note
These controls are effective only for the sound from the front speakers.

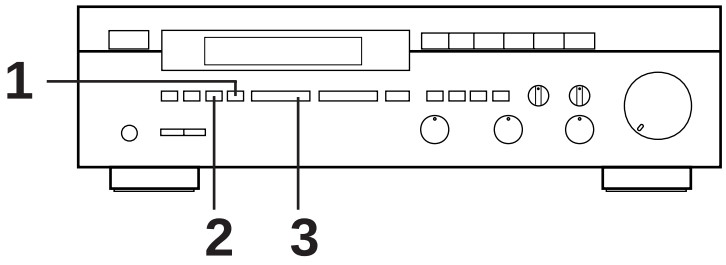
When you listen with headphones

Connect the headphones to the **PHONES** jack. You can listen to the main sound through headphones. When listening with headphones privately, set both the **SPEAKERS A** and **B** switches to the **OFF** position.



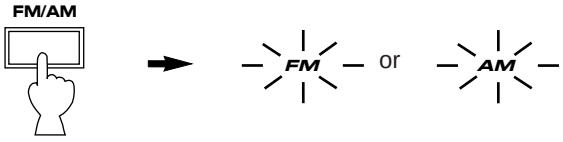
TUNING OPERATIONS

Normally, if station signals are strong and there is no interference, quick automatic-search tuning (AUTOMATIC TUNING) is possible. However, if signals of the station you want to select are weak, you must tune to it manually (MANUAL TUNING).

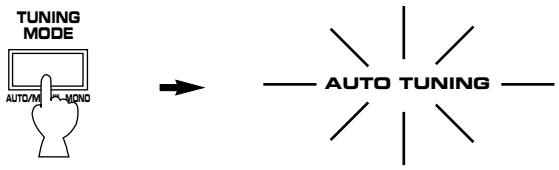


AUTOMATIC TUNING

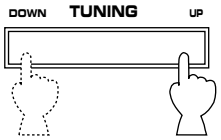
1 Select the reception band (FM or AM) while watching the display.



2



3



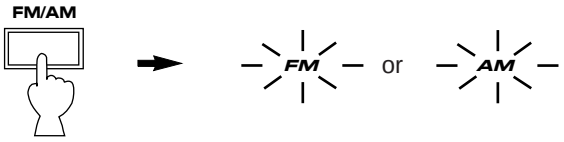
To tune to a higher frequency, press the right side once.
To tune to a lower frequency, press the left side once.

* If the station where tuning search stopped is not the desired one, press again.

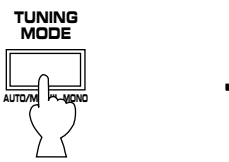
* If the tuning search does not stop at the desired station (because the signals of the station are weak), change to the MANUAL TUNING method.

MANUAL TUNING

1 Select the reception band (FM or AM) while watching the display.

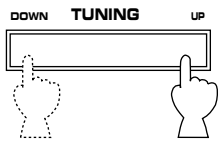


2



"AUTO TUNING" goes off.

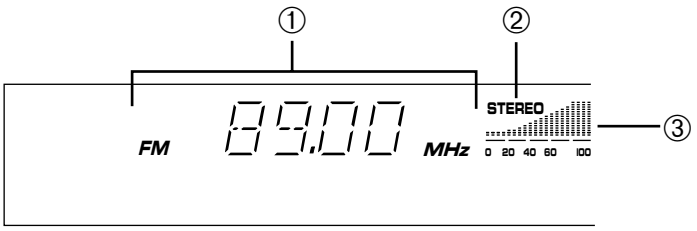
3 Tune to a desired station manually.



* To continue tuning search, press and hold the button.

Note
If you tune to an FM station manually, it is received in monaural mode automatically to increase the signal quality.

Display information

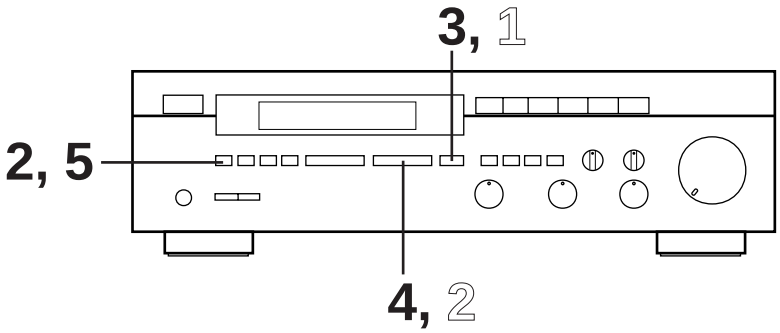


① Displays the band and frequency of the received station.
② Illuminates when an FM stereo broadcast is received in stereo.
③ Indicates the signal level of the received station.

PRESET TUNING

MANUAL PRESET TUNING

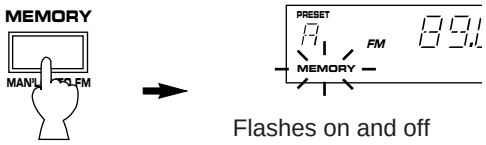
This unit can store station frequencies selected by tuning operation. With this function, you can recall any desired station by only selecting the preset station number where it is stored. Up to 40 stations (8 stations x 5 pages) can be stored.



To store stations

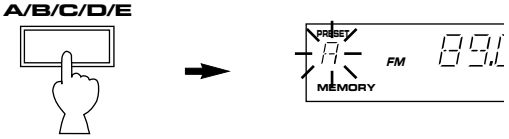
1 Tune to a desired station.
(Refer to the previous page for tuning procedures.)

2

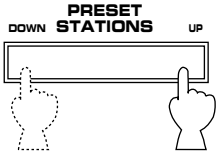


Flashes on and off for about 5 seconds.

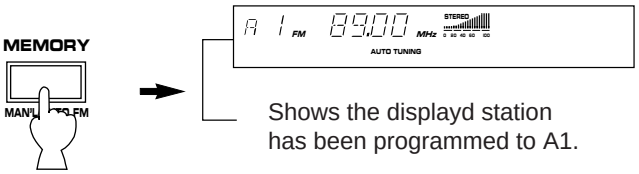
3 Select a desired page (A – E) of preset stations while watching the display.



4 Select a preset station number (1–8) while watching the display before “MEMORY” goes off from the display.



5

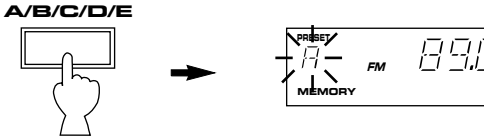


Shows the displayd station has been programmed to A1.

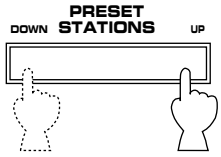
* In the same way, program other stations to A2, A3 ... A8.
* You can program more stations on other pages in the same way by selecting other pages in step 3.

To recall a preset station

1 Select the page where the preset station is stored.



2



Select the preset station number.

Notes

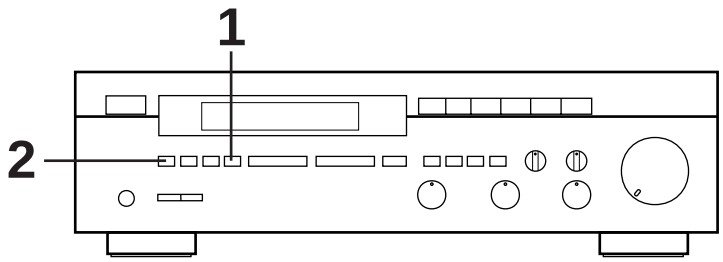
- A new setting can be programmed in place of the former one.
- For presets, the setting of the reception mode (stereo or monaural) is stored along with the station frequency.

Memory back-up

The memory back-up circuit prevents the programmed data from being lost even if the **POWER** switch is set off or the power plug is disconnected from the AC outlet or the power is cut due to temporary power failure. If, however, the power is cut for more than one week, the memory may be erased. If so, it can be re-programmed by simply following the PRESET TUNING steps.

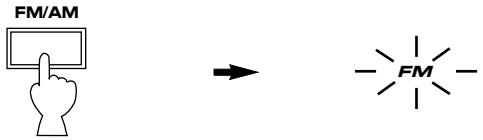
AUTOMATIC PRESET TUNING

You can also make use of an automatic preset tuning function for FM stations only. By this function, this unit performs automatic tuning and stores FM stations with strong signals sequentially. Up to 40 stations are stored automatically in the same way as in the manual preset tuning method on page 17.

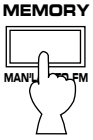


To store stations

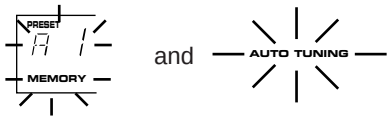
1



2



Press and hold for about 3 seconds.



Flashes. Flashes.

After 5 seconds, the automatic preset tuning begins from A1. Received stations are programmed to A1, A2 ... A8 sequentially.

* If more than 8 stations are received, they are also programmed to the preset station numbers on other pages (B, C, D and E) in that order.

If you want to store the first station received by the automatic preset tuning to a desired preset station number.

If, for example, you want to store the received first station to C5, select “C5” by using the **A/B/C/D/E** button and the **PRESET STATIONS** button soon after the display begins flashing on/off in step 2. After a few seconds, the automatic preset tuning begins. The received first station is stored to C5, and next stations to C6, C7 ... sequentially.
If stations are stored up to E8, the automatic preset tuning is finished automatically.

When the automatic preset tuning is finished

The display shows the frequency of the last preset station. Check the contents and the number of preset stations by following the procedure of the section “To recall a preset station” on page 17.

To recall a preset station

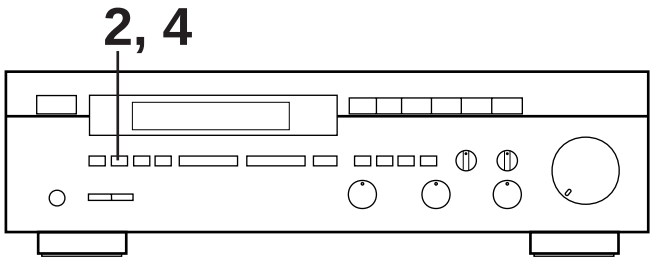
Simply follow the procedure of the section “To recall a preset station” on page 17.

Notes

- You can replace a preset station by another FM or AM station manually by simply following the procedure of the section “To store stations” on page 17.
- If the number of received stations is not enough to be stored up to E8, the search is finished automatically after searching through all frequencies.
- With this function, only FM stations with sufficient signal strength are stored automatically. If the station you want to program is week in signal strength, tune to it in monaural manually and program it by following the procedure of the section “To store stations” on page 17.

EXCHANGING PRESET STATIONS

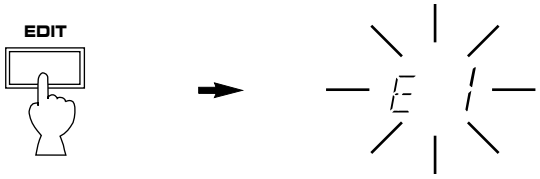
You can exchange the places of two preset stations each other by easy operations.



Example)
If you want to shift the preset station on E1 to A5, and vice versa.

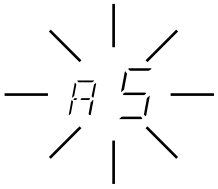
1 Recall the preset station on E1 (by following the method of “To recall a preset station” on page 17).

2



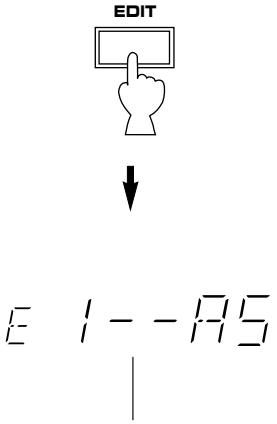
Flashes

3 Next, recall the preset station on A5 by following the same method with step 1.



Flashes

4



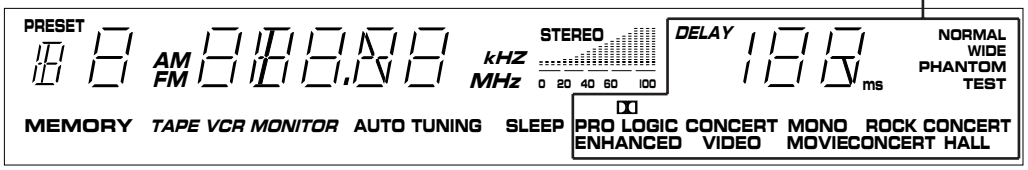
Shows the exchange of stations is completed.

USING DIGITAL SOUND FIELD PROCESSOR (DSP)

This unit incorporates a sophisticated, multi-program digital sound field processor, which allows you to expand and shape the audio sound field from both the audio and video sources, for a theater-like experience in the listening/viewing room.
This digital sound field processor has 6 programs; 4 programs for digital sound field processing and 2 programs for the Dolby Pro Logic Surround sound system (**DOLBY PRO LOGIC** and **DOLBY PRO LOGIC ENHANCED**). You can create an excellent audio sound field by selecting the suitable program and adding desired adjustments. In addition, when the digital sound field program is in the **DOLBY PRO LOGIC** or **DOLBY PRO LOGIC ENHANCED** mode, the built-in automatic input balance control functions. This presents you the best surround condition without manual adjustment.

Display

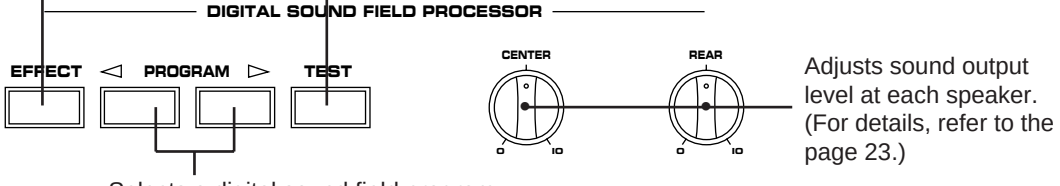
Displays your selection on the DSP or other informations.



Front Panel

Switches on/off the digital sound field processor (DSP)

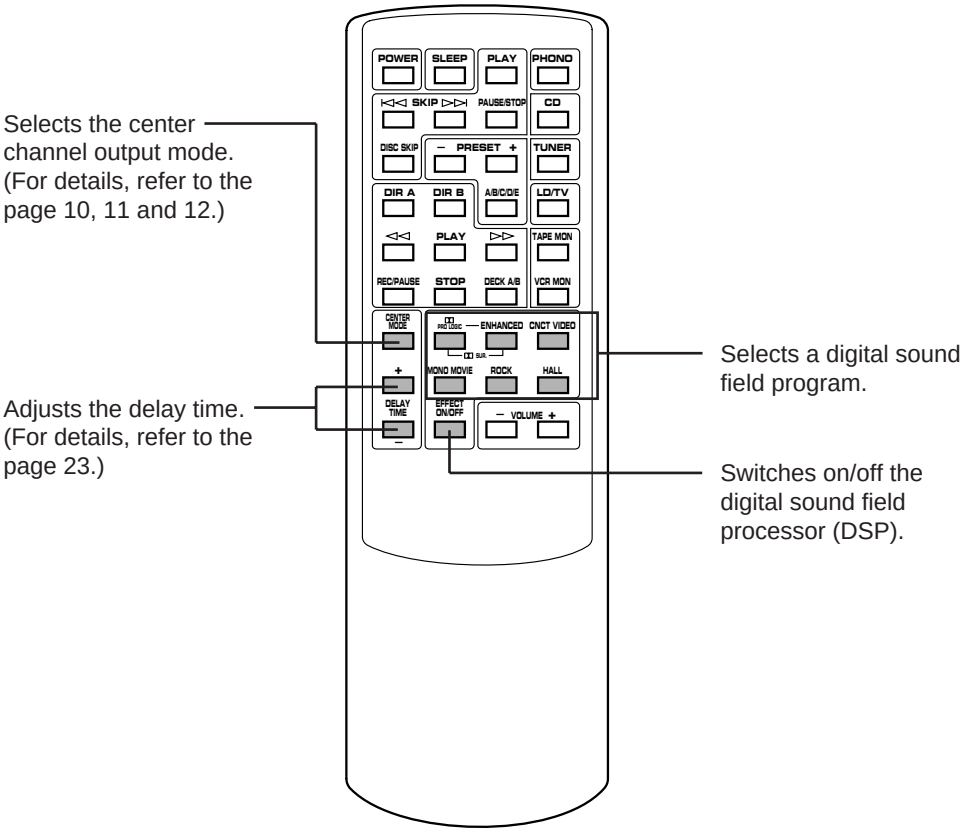
Used for speaker balance adjustment (For details, refer to the page 10, 11 and 12.)



Adjusts sound output level at each speaker. (For details, refer to the page 23.)

Selects a digital sound field program.

Remote Control Transmitter



Selects the center channel output mode. (For details, refer to the page 10, 11 and 12.)

Selects a digital sound field program.

Adjusts the delay time. (For details, refer to the page 23.)

Switches on/off the digital sound field processor (DSP).

Description of Each Sound Field Program

The following list gives brief descriptions of the sound fields produced by each of the DSP programs. Keep in mind that most of these are precise digital recreations of actual acoustic environments. The data for them was recorded at the locations described using sophisticated sound field measurement equipment.

Note

The channel level balance between the left rear effect speaker and the right rear effect speaker may vary depending on the sound field you are listening to. This is due to the fact that most of these sound field recreations are actual acoustic environments.

PROGRAM	FEATURE
PRO LOGIC	This program is effective for playback of sources encoded with the Dolby Surround. The employment of the digital signal processing system improves crosstalk and transfers the sound source more smoothly and precisely, compared to the conventional type. A stable movie sound field is recreated.
PRO LOGIC ENHANCED	This program is effective for playback of sources encoded with the Dolby Surround. Enhancing the “Normal” Dolby Pro Logic, the DSP technology simulates the multi-surround speaker systems of a 35 mm film theater, thus widening the surrounded-sound field with greater presence.
CONCERT VIDEO	This program is effective for music videos and gives excellent depth and clarity for vocals. For opera, the orchestra and stage are ideally recreated, letting you feel as if you were in an actual concert hall.
MONO MOVIE	This program is designed specifically to enhance mono source programs. Compared to a strictly mono setting, the sound image created in this mode is wider and slightly forward of the speaker pair, lending an immediacy to the overall sound. It is particularly effective when used with old mono movies, news broadcasts and dialog.
ROCK CONCERT	This program is suitable for rock music. A big, powerful sound is reproduced lively and dynamically.
CONCERT HALL	In this program, the center seems even more deeply behind the front speaker pair, creating an expansive, large hall ambience.

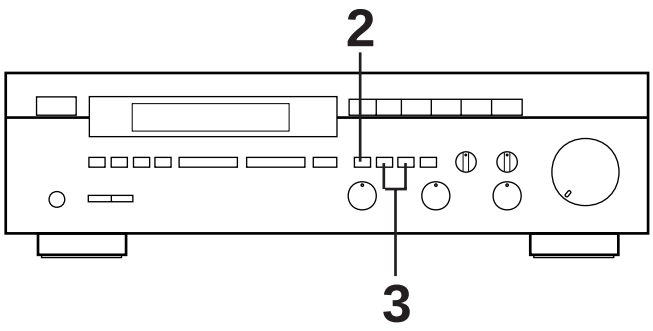
Description of Dolby Pro Logic Surround

DOLBY PRO LOGIC SURROUND: This unit employs the Dolby Pro Logic Surround system. This system is similar to professional Dolby Stereo decoders used in movie theaters. By employing a four-channel system, the Dolby Pro Logic Surround system divides the input signals into four levels: the left and right main channels, the center channel (to characterize dialog), and the rear surround-sound channels (to characterize sound effects, background noise and other ambient noise).

Dolby Surround is encoded on the sound track of commercially available video cassettes and video discs as well. When you play a source encoded with Dolby Surround on your home video system, the Dolby Pro Logic Surround mode on this unit decodes the signal and feeds the surround-sound effects. The Dolby Pro Logic Surround mode may not be always effective on video sources not encoded with Dolby Surround.

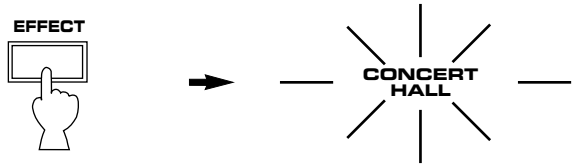
DOLBY SURROUND PRO · LOGIC

To play a source with the digital sound field processor

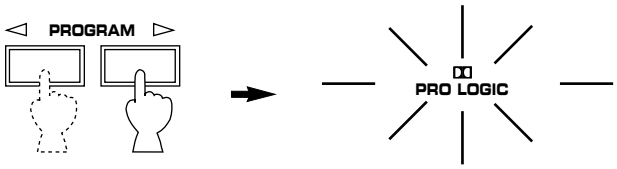


1 Follow steps 1 – 6 shown in "**OPERATIONS**" on page 13.

2 Turn the DSP on, so that a DSP program name appears on the display.



3 Select the desired program that is suitable for the source.



The selected program name is shown on the display.

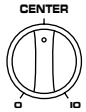
4 If desired, adjust the delay time and the output level of each speaker. (For details, refer to the corresponding descriptions on the next page.)

Notes

- If you prefer to cancel the DSP, press the **EFFECT** switch again. The sound will be the normal 2-channel stereo without surround sound effect.
- In the **CONCERT VIDEO**, **MONO MOVIE**, **ROCK CONCERT** and **CONCERT HALL** modes, no sound is heard from the center speaker.
- When a monaural sound source is played in the **DOLBY PRO LOGIC** or **DOLBY PRO LOGIC ENHANCED** mode, no sound is heard from the front speakers and the rear speakers. Sound is heard only from the center speaker. However, if the center mode is in the **PHANTOM**, the front speakers output the sound of the center speaker.
- When this unit is in the Dolby Pro Logic Surround mode, if the main-source sound is considerably altered by overadjustment of the **BASS** or **TREBLE** controls, the relationship between the center and rear channels may produce an unnatural effect.

Adjustment of the CENTER level

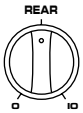
If desired, you can adjust the sound output level of the center speaker with this control even if the output level is already set in "**Speaker balance adjustment**" on page 12.



- If the digital sound field program is in the **CONCERT VIDEO, MONO MOVIE, ROCK CONCERT** or **CONCERT HALL** mode, this adjustment is unnecessary.
- Once the output level is adjusted, the level value will be the same in the **DOLBY PRO LOGIC** and **DOLBY PRO LOGIC ENHANCED** modes.
- If a digital sound field program is not used, this adjustment is unnecessary.

Adjustment of the REAR level

If desired, you can adjust the sound output level of the rear speakers with this control even if the output level is already set in "**Speaker balance adjustment**" on page 12.



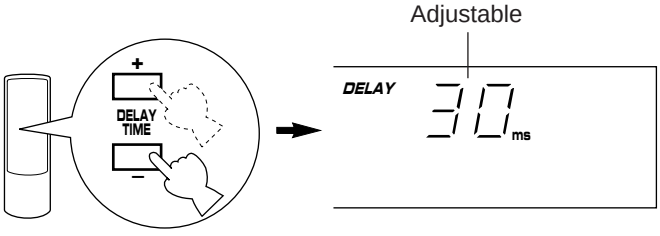
- Once the output level is adjusted, the level value will be the same in all the digital sound field programs.
- If a digital sound field program is not used, this adjustment is unnecessary.

Adjustment of DELAY TIME

You can adjust the time difference between the beginning of the source sound and the beginning of the effect sound with the **DELAY TIME** keys.
The **DELAY TIME** keys are effective with all programs.
By applying more or less delay, sound effects, background noise, and ambient noise coming at you from the rear speakers can be enhanced or subdued for extra effect.

1. **PRO LOGIC** : from 15 to 30 milliseconds (Preset value: 20 milliseconds)
2. **PRO LOGIC ENHANCED** : from 15 to 30 milliseconds (Preset value: 20 milliseconds)
3. **CONCERT VIDEO** : from 1 to 100 milliseconds (Preset value: 25 milliseconds)
4. **MONO MOVIE** : from 1 to 100 milliseconds (Preset value: 25 milliseconds)
5. **ROCK CONCERT** : from 1 to 100 milliseconds (Preset value: 15 milliseconds)
6. **CONCERT HALL** : from 1 to 100 milliseconds (Preset value: 30 milliseconds)

- By continuously pressing "+" or "–" key, the value changes continuously.
  However, the value stops changing momentarily at the preset point.



Notes

- Adding too much delay will cause an unnatural effect with some sources. Experiment with the **DELAY TIME** keys to create the effect that you find most suitable.
- The values of the DELAY TIME you set the last time will remain memorized even when the power of this unit is off. However, if the power plug cord is kept disconnected for more than two weeks, these values will be invalid.

SETTING THE SLEEP TIMER

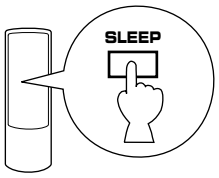
If you use the SLEEP timer of this unit, you can set this unit to be turned off automatically. When you are going to sleep while enjoying a broadcast or other desired input source, this timer function is helpful.

Notes

- The SLEEP timer can be controlled only with the remote control transmitter.
- The components on which the SLEEP timer is effective are the sources connected to a **SWITCHED OUTLET** on the rear panel of this unit.

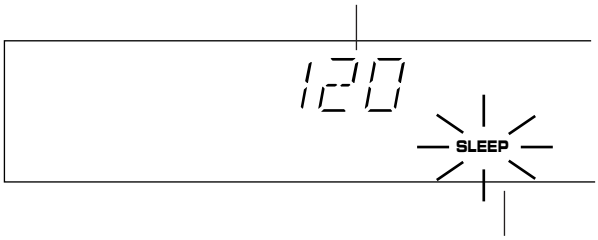
To set the SLEEP time

1



Press repeatedly.

Indicates the SLEEP time.



Flashes on and off continuously.

Select the desired SLEEP time. Whenever the **SLEEP** key is pressed, the SLEEP time will change as follows.

(Minutes)

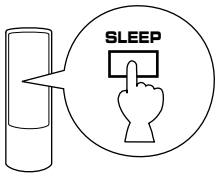
120 → 90 → 60 → 30

The SLEEP timer is OFF.
(The indication before the **SLEEP** key is pressed.)

After a while, the display returns to the indication before the SLEEP timer is set, and the “SLEEP” indicator stops flashing and illuminates.

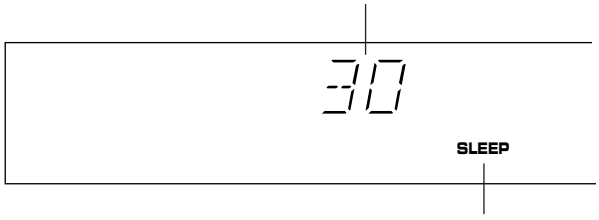
2 The unit will be turned off automatically after the passing of the SLEEP time you selected.

To cancel the selected SLEEP time



Press once when the sleep time displays 30.

Returns to the indication before the SLEEP timer is set.



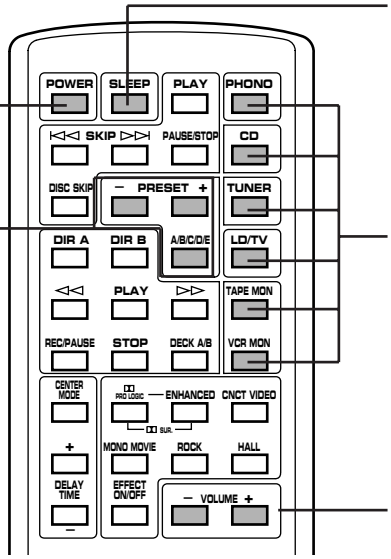
Goes off.

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, turntable 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



* Refer to "**SETTING THE SLEEP TIMER**" on the previous page.

Turns the power on/off.

Selects preset station number.
* +: Selects higher preset station number.
–: Selects lower preset station number.
A/**B**/**C**/**D**/**E**: Selects the page (A – E) of preset stations.

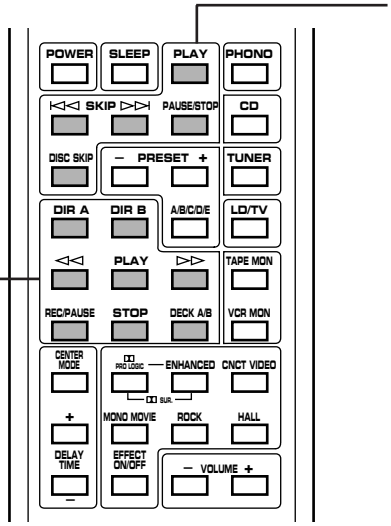
Selects input source.

Turns the master volume level up/down.

* For the DSP control keys, refer to the page 20.

For Other Component Control

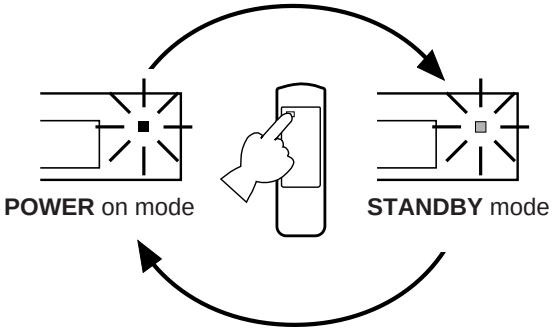
Identify the remote control transmitter keys with your component's keys. If these keys are identical, their function will be the same. On each key function, refer to the corresponding instruction on your component's manual.



Controls the the compact disc player.
* **DISC SKIP** is applicable only to a compact disc changer.

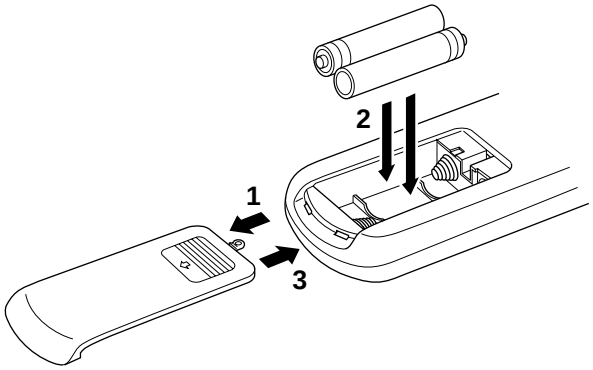
Controls the tape deck.
* **DIR A, B** and **DECK A/B** are applicable only to a double cassette tape deck.
* For a single cassette deck with automatic reverse function, pressing **DIR A** will reverse the direction of tape running.

STANDBY mode (Europe model only)
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.)



NOTES ABOUT THE REMOTE CONTROL TRANSMITTER

Battery installation



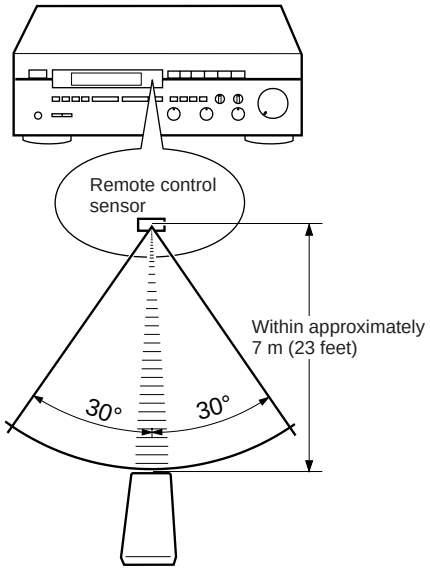
Battery replacement

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.

Remote control transmitter operation range



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
Amplifier	**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 or no picture.	Incorrect output cord connections.	Connect the cords properly. If the problem persists, the cords may be defective.
		Appropriate input selector is not pressed.	Press the appropriate input selector corresponding to the input source.
	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 connection.	Connect the cord properly. If the problem persists, the cables may be defective.
	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.
	The volume level is low while playing a record.	The record is being played on a turntable with an MC cartridge.	The player should be connected to the unit through the MC head amplifier.
	The volume level cannot be increased, or sound is distorted.	The power to the component connected to the REC OUT terminals of this unit is off.	Turn the power to the component on.
	No sound from the rear speakers.	The sound output level to the rear speakers is set to 0.	Turn up the sound output level with the REAR level control.
		The monaural sound source is played in DOLBY PRO LOGIC or DOLBY PRO LOGIC ENHANCED mode.	Select another program suitable for the monaural sound source.
	No sound from the center speaker.	The sound output level to the center speaker is set to 0.	Turn up the sound output level with the CENTER level control.
		The center mode is in PHANTOM mode.	Select NORMAL or WIDE.
		Incorrect sound field program selection.	Select the appropriate program.
		No sound field program is selected.	
FM	**FM stereo reception is noisy.**	Because of the characteristics of FM stereo broadcasts, this is limited to cases where the transmitter is too far away or the antenna input is poor.	Check the antenna connections. Try using a multiple element FM antenna.
	There is distortion and clear reception cannot be obtained even with a good FM antenna.	There is multipath interference.	Adjust antenna placement to eliminate multipath interference.
	A desired station cannot be tuned in with Auto tuning.	The station is too weak.	Use Manual tuning mode. Use a high quality directional FM antenna.
AM	**A desired station cannot be tuned in with Auto tuning.**	Weak signal or loose antenna connections.	Tighten the AM loop antenna connections and rotate it for best reception.
			Use Manual tuning mode.
	There are continuous crackling and hissing noises.	Noises will result from ligtning, fluorescent lamps, motors, thermostats and other electrical equipment.	Use an outdoor antenna and a ground wire. This will help somewhat but it is difficult to eliminate all noise.
	There are buzzing and whining noises (especially in the evening).	A television set is being used nearby.	Relocate this unit away from the TV.
Remote control transmitter	**The remote control transmitter does not work.**	Direct sunlight or lighting (of an inverter type of flourescent lamp etc.) is striking the remote control sensor of the main unit.	Change the position of the main unit.
		The batteries of this remote control transmitter are too weak.	Replace the batteries with new ones.
Others	**The sound is degraded when monitoring is performed by using the headphones connected to the compact disc player or cassette deck**	The power to this unit is off.	Turn the power to this unit on.

SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power per Channel
Front L, R
8 ohms, 20 Hz to 20 kHz, 0.04% THD
[U.S.A. model].....65W+65W
[Canada model] .....55W+55W
[Australia, Europe, U.K. and General models] .....60W+60W
Center
8 ohms, 1 kHz, 0.1% THD
[U.S.A. model] 65W
[Canada model].....55W
[Australia, Europe, U.K. and General models].....60W
Rear L, R
8 ohms, 1 kHz, 0.7% THD.....15W+15W
Dynamic Power per Channel
(by IHF Dynamic Headroom measuring method)
8/6/4/2 ohms
[U.S.A. model] 100/120/140/190W
[Canada model].....80/100/120/140W
[Australia, Europe and U.K. models] 90/110/130/150W
DIN Standard Output Power per Channel
4 ohms, 1 kHz, 0.7% THD
[Europe model only] 70W
IEC Power
8 ohms, 1 kHz, 0.04% THD
[Europe model only] 66W
Damping factor
8 ohms, 20 Hz to 20 kHz.....80
Input Sensitivity/Impedance
PHONO MM.....2.5 mV/47 k-ohms
CD/TAPE/LD·TV/VCR.....150 mV/47 k-ohms
Maximum Input Signal (1 kHz, 0.01% THD)
PHONO MM.....80 mV
Headphone Jack Rated Output/Impedance
8 ohms, 20 Hz to 20 kHz, 0.04% THD
Output Level
[U.S.A. model] 0.54V
[Canada model].....0.49V
[Australia, Europe, U.K. and General models].....0.52V
Impedance.....330 ohms
Frequency Response (20 Hz to 20 kHz)
CD/TAPE/LD·TV/VCR .....0±0.5 dB
RIAA Equalization Deviation
PHONO MM.....0±0.5 dB
Total Harmonic Distortion (20 Hz to 20 kHz)
PHONO MM to REC OUT (1V).....0.02%
CD/TAPE/LD·TV/VCR to SP OUT (30W/8 ohms) 0.02%
Signal-to-Noise Ratio (IHF-A Network)
PHONO MM (5 mV Input Shorted) .....82 dB
CD/TAPE/LD·TV/VCR (Input Shorted) .....93 dB
Residual Noise (IHF-A Network) .....140 μV
Channel Separation (Vol. –30 dB)
PHONO MM (Input Shorted 1 kHz) .....60 dB
CD/TAPE/LD·TV/VCR
(Input 5.1 k-ohms Terminated 1 kHz) .....60 dB
Tone Control Characteristics
BASS: Boost/cut .....±10 dB (50 Hz)
(Turnover Frequency) .....(350 Hz)
TREBLE: Boost/cut.....±10 dB (20 kHz)
(Turnover Frequency) .....(3.5 kHz)

FM SECTION

Tuning Range
[U.S.A., Canada and General models] .....87.5 to 107.9 MHz
[Australia, Europe, U.K. and General models].....87.5 to 108.0 MHz
50 dB Quieting Sensitivity (IHF, 75 ohms)
Mono .....1.55 μV (15.1 dBf)
Stereo .....21 μV (37.7 dBf)
Usable Sensitivity (75 ohms)
(30 dB S/N Quieting, 1 kHz, 100% mod.)
[Except Europe model] .....0.8 μV (9.3 dBf)
DIN, Mono (S/N 26 dB) [Europe model] .....0.9 μV
DIN, Stereo (S/N 46 dB) [Europe model] .....24 μV
Image Response Ratio
[Except Europe model].....45 dB
[Europe model].....80 dB
IF Response Ratio.....80 dB
Spurious Response Ratio.....70 dB
AM Suppression Ratio.....55 dB
Capture Ratio .....1.5 dB
Alternate Channel Selectivity [Except Europe model].....85 dB
Selectivity (two signals, 40 kHz Dev.)
[Europe model].....70 dB
Signal-to-Noise Ratio
(IHF) Mono/Stereo
[Except Europe model].....80 dB/75 dB
(DIN-Weighted, 40 kHz Dev.) Mono/Stereo
[Europe model].....74 dB/69 dB
Harmonic Distortion
Mono/Stereo (1 kHz) [Except Europe model] 0.1/0.2%
Mono/Stereo (40 kHz Dev.) [Europe model] 0.1/0.2%
Stereo Separation (40 kHz Dev.) .....50 dB
Frequency Response
30 Hz to 13 kHz .....0 ±0.5 dB
20 Hz to 15 kHz .....0 ±1.5 dB

AM SECTION

Tuning Range
[U.S.A., Canada and General models] .....530 to 1,710 kHz
[Australia, U.K., Europe and General models].....531 to 1,611 kHz
Usable Sensitivity .....100 μV/m
Selectivity .....32 dB
Signal-to-Noise Ratio .....50 dB
Image Response Ratio.....40 dB
Spurious Response Ratio.....50 dB
Harmonic Distortion 0.3%

AUDIO SECTION

Output Level/Impedance
FM (100% mod., 1 kHz)
[Except Europe model]...500 mV/2.2 k-ohms
[Europe model (40 kHz Dev.)] .....400 mV/2.2 k-ohms
AM (30% mod., 400 Hz)
.....150 mV/2.2 k-ohms

GENERAL

Power Supply
[U.S.A. and Canada models] .....AC 120V, 60 Hz
[Australia and U.K. models] .....AC 240V, 50 Hz
[Europe model].....AC 230V, 50 Hz
[General model] .....AC 110/120/220/240V, 50/60 Hz
Power Consumption
[U.S.A model] 220W
[Canada model] .....290 VA, 240W
[Australia, Europe, U.K. and General models].....190W
AC Outlets
2 SWITCHED OUTLETS
[U.S.A., Canada, Europe and General models] .....100W max. total
1 SWITCHED OUTLET
[Australia and U.K. models] .....100W max. total
Dimensions (W x H x D)
.....435 x 126 x 298 mm
(17-1/8" x 4-15/16" x 11-3/4")
Weight
[Canada model].....8.3 kg (18 lbs. 4 oz.)
[Except Canada model] .....8.5 kg (18 lbs. 11 oz.)
Accessories .....AM loop antenna
Indoor FM antenna
Remote control transmitter
Batteries

Specifications are subject to change without notice.

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