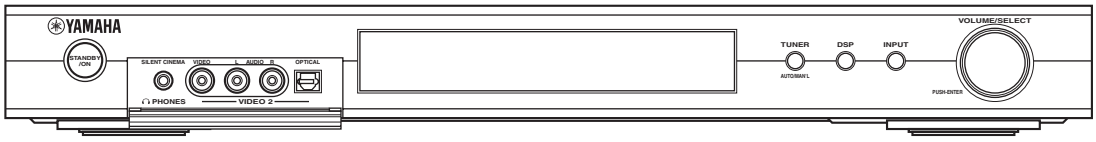
GB

AV Receiver
Ampli-tuner audio-vidéo

RX-SL80

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



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 sound system in a well ventilated, cool, dry, clean place — away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold. Allow ventilation space of at least 5 cm on the top, 5 cm on the left and right, and 10 cm on the back of this unit.**
3 **Locate this unit away from other electrical appliances, motors, or transformers to avoid humming sounds.**
4 **Do not expose this unit to sudden temperature changes from cold to hot, and do not locate this unit in a environment with high humidity (i.e. a room with a humidifier) to prevent condensation inside this unit, which may cause an electrical shock, fire, damage to this unit, and/or personal injury.**
5 **Avoid installing this unit where foreign object may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:**
   – **Other components, as they may cause damage and/or discoloration on the surface of this unit.**
   – **Burning objects (i.e. candles), as they may cause fire, damage to this unit, and/or personal injury.**
   – **Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to this unit.**
6 **Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.**
7 **Do not plug in this unit to a wall outlet until all connections are complete.**
8 **Do not operate this unit upside-down. It may overheat, possibly causing damage.**
9 **Do not use force on switches, knobs and/or cords.**
10 **When disconnecting the power cord from the wall outlet, grasp the plug; do not pull the cord.**
11 **Do not clean this unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.**
12 **Only voltage specified on this unit must be used. Using this unit with a higher voltage than specified is dangerous and may cause fire, damage to this unit, and/or personal injury. YAMAHA will not be held responsible for any damage resulting from use of this unit with a voltage other than specified.**
13 **To prevent damage by lightning, disconnect the power cord from the wall outlet during an electrical storm.**
14 **Do not attempt to modify or fix this unit. Contact qualified YAMAHA service personnel when any service is needed. The cabinet should never be opened for any reasons.**
15 **When not planning to use this unit for long periods of time (i.e. vacation), disconnect the AC power plug from the wall outlet.**
16 **Be sure to read the "TROUBLESHOOTING" section on common operating errors before concluding that this unit is faulty.**
17 **Before moving this unit, press STANDBY/ON to set this unit in the standby mode, and disconnect the AC power plug from the wall outlet.**

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

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if this unit itself is turned off. This state is called the standby mode. In this state, this unit is designed to consume a very small quantity of power.

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

Blue: NEUTRAL
Brown: LIVE

As 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.

CONTENTS

FEATURES

Built-in 5-channel original Yamaha digital power amplifier

- Minimum RMS output power
  (0.9% THD, 1 kHz, 6 Ω)
  Front: 70 W + 70 W
  Center: 70 W
  Surround: 70 W + 70 W

Sound field features

- Proprietary YAMAHA technology for the creation of sound fields
- Dolby Pro Logic/Dolby Pro Logic II decoder
- Dolby Digital/Dolby Digital + Matrix 6.1 decoder
- DTS/DTS + Matrix 6.1 decoder
- DTS 96/24 decoder
- Virtual CINEMA DSP
- SILENT CINEMA™

Sophisticated AM/FM tuner

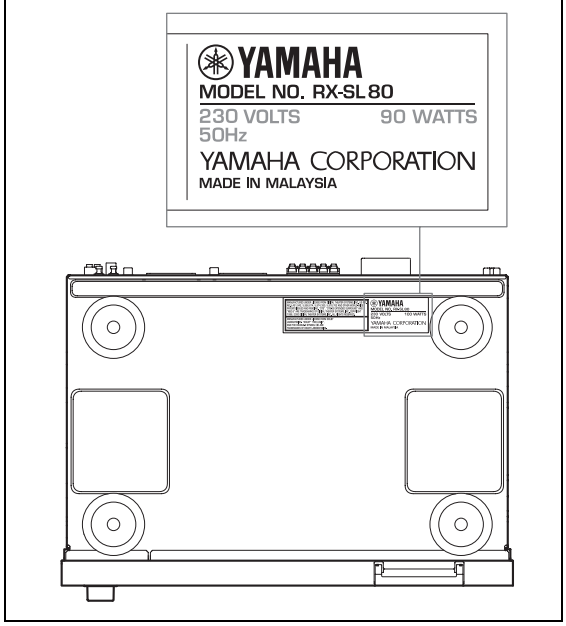
- 40-station random access preset tuning
- Automatic preset tuning

Other features

- 96-kHz/24-bit D/A converter
- "SET MENU" which provides you with items for optimizing this unit for your audio/video system
- Screen Menu display output to your TV monitor
- Slim-line design
- Optical and coaxial digital audio signal jacks
- Sleep timer
- Night listening mode
- Remote control with preset remote control codes

- ☼ indicates a tip for your operation.
- Some operations can be performed by using either the buttons on the main unit or on the remote control. In cases when the button names differ between the main unit and the remote control, the button name on the remote control is given in parentheses.
- This manual is printed prior to production. Design and specifications are subject to change in part as a result of improvements, etc. In case of differences between the manual and product, the product has priority.

- The following name plate is located on the bottom of this unit.

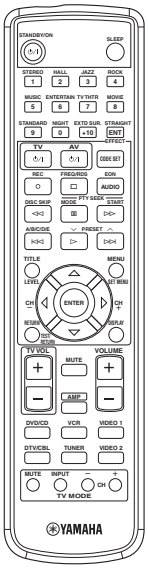


GETTING STARTED

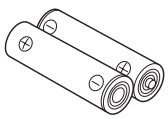
Supplied accessories

Please check that you received all of the following parts.

Remote control



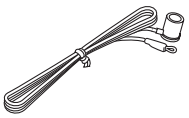
Batteries (2)
(AA, R6, UM-3)



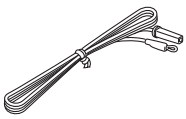
AM loop antenna

Cable tags (5 pairs)

Indoor FM antenna
(U.U.A., Canada, China, Asia and General models)

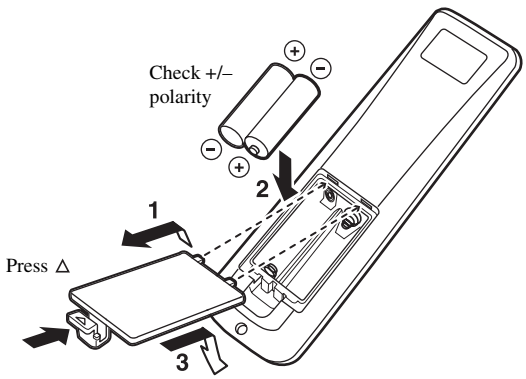


(U.K., Europe, Australia and Korea models)



Installing batteries in the remote control

Insert the batteries in the correct direction by aligning the + and – marks on the batteries with the polarity markings (+ and –) inside the battery component.



1 Remove the back cover.

2 Insert the two supplied batteries (AA, R6, UM-3) into the battery compartment.

3 Close the back cover.

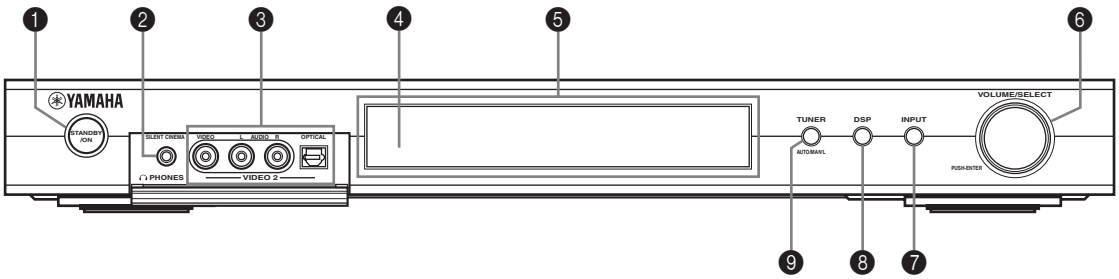
Notes on batteries

- Change all of the batteries if you notice that the operation range of the remote control has decreased.
- Do not use old batteries together with new ones.
- Do not use different types of batteries (such as alkaline and manganese batteries) together. Read the packaging carefully as these different types of batteries may have the same shape and color.
- If the batteries ran out, immediately remove them from the remote control to prevent an explosion or acid leak.
- Dispose of the batteries according to the regional regulations.
- If the batteries have leaked, dispose of them immediately. Avoid touching the leaked material or letting it come into contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.

If the remote control is without batteries for more than 3 minutes, or if exhausted batteries remain in the remote control, the contents of the memory may be cleared. When the memory is cleared, insert new batteries, set up the remote control code and program any acquired functions that may have been cleared.

CONTROLS AND FUNCTIONS

Front panel



❶ STANDBY/ON

Turns on this unit or sets it to the standby mode. When you turn on this unit, you will hear a click and there will be a 4 to 5-second delay before this unit can reproduce sound.

Note

In standby mode, this unit consumes a small amount of power in order to receive infrared-signals from the remote control.

❷ PHONES (SILENT CINEMA) jack

Outputs audio signals for headphones. When you connect headphones, no signals are output to the speakers.
All Dolby Digital and DTS audio signals are mixed down to the left and right headphone channels.

❸ VIDEO 2 jacks

Input audio and video signals from a portable external source such as a game console. To reproduce source signals from these jacks, select VIDEO 2 as the input source.

❹ Remote control sensor

Receives signals from the remote control.

❺ Front panel display

Shows information about the operational status of this unit.

❻ VOLUME/SELECT

Adjusts the volume and the tone control. Also selects stations, sound field programs or input sources (etc.) when used together with TUNER, DSP, INPUT. If no operation is performed within 5 seconds of pressing TUNER, DSP, INPUT, the VOLUME/SELECT function automatically returns to volume.

❼ INPUT

Activates the input select mode.
Activates the AM, FM or preset tuning mode when TUNER is selected as the input source.

❽ DSP

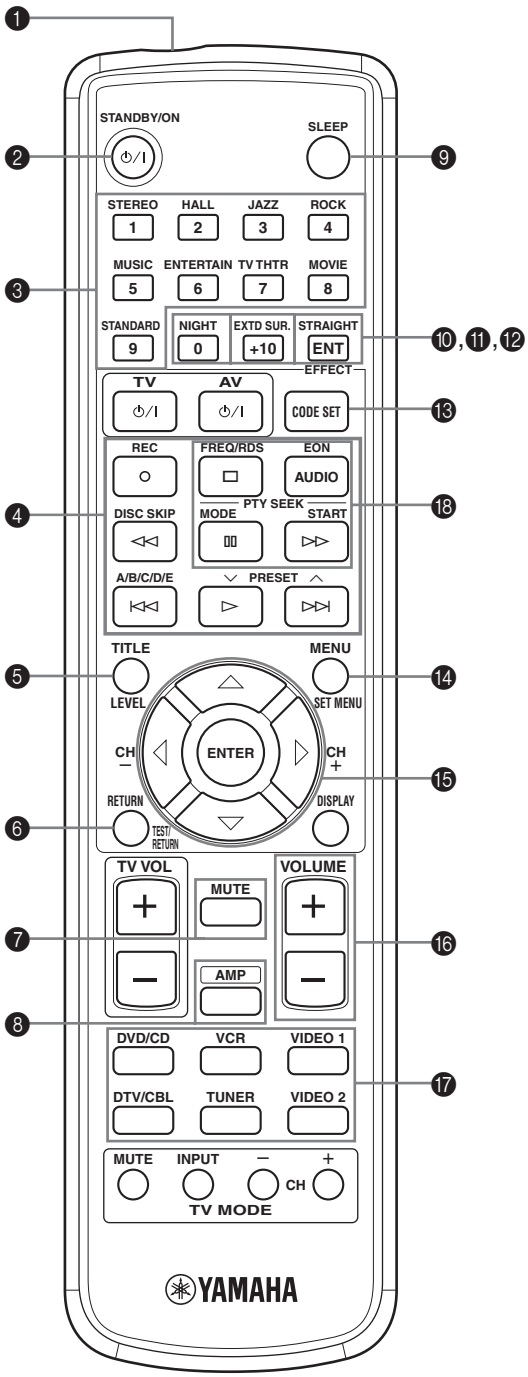
Switches between the DSP sound field, STEREO and STRAIGHT modes.

❾ TUNER (AUTO/MAN'L)

Activates the tuning mode when TUNER is selected as the input source. Press before turning VOLUME/SELECT to tune in frequencies or preset radio stations.
Switches the AM/FM tuning mode between automatic ("AUTO" indicator on) and manual ("AUTO" indicator off) tuning.

Remote control (AMP mode)

Make sure that the AMP mode is selected before starting operation.



❶ Infrared window

Outputs infrared control signals. Aim this window at the component you want to operate.

❷ STANDBY/ON

Switches the unit on and sets it in the STANDBY mode.

❸ DSP program / Numeric buttons

Use to select sound field programs or input numbers according to the current control area.

❹ Operation buttons

Provide functions such as play, stop, skip, etc. for use when operating other components.

❺ LEVEL

Selects the speaker channel to be adjusted and sets the level.

❻ TEST/RETURN

Outputs the test tone to adjust the speaker levels. Returns to the previous menu level when adjusting the SET MENU parameters.

❼ MUTE

Mutes the sound. Press again to restore the audio output to the previous volume level.

❽ AMP

Sets the remote control to the AMP mode for controlling this unit (instead of the component selected using the input selector buttons).

❾ SLEEP

Sets the sleep timer.

❿ NIGHT

Turns night listening mode on or off.

⓫ EXTD SUR.

Switches on or off the Dolby Digital + Matrix 6.1 or DTS + Matrix 6.1 decoding mode.

⓬ STRAIGHT/EFFECT

Switches the sound fields off or on. When STRAIGHT is selected, input signals (2-channel or multi-channel) are output directly from their respective speakers without effect processing.

⓭ CODE SET

Used to set up remote control codes.

⓮ SET MENU
Turns the SET MENU on or off.

⓯ Multi control section
Use to select and adjust DSP program parameters or SET MENU items.

⓰ VOLUME +/–
Increases or decreases the volume level.

⓱ Input selector buttons
Use to select the input source and change the control area.

■ U.K. and Europe models only

⓲ RDS tuning buttons

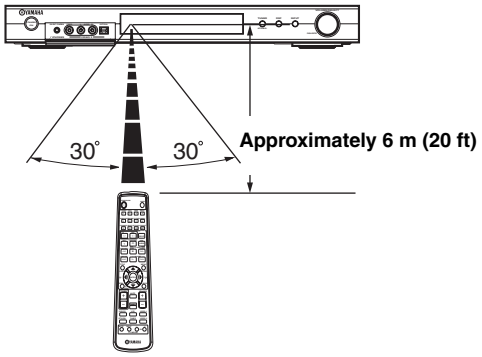
FREQ/RDS
Press this button when the unit is receiving an RDS station to cycle the display between the PS mode, PTY mode, RT mode, CT mode (if the station offers those RDS data service) and/or the frequency display.

PTY SEEK MODE
Press this button to set the unit to the PTY SEEK mode.

PTY SEEK START
Press this button to begin searching for a station after the desired program type has been selected in the PTY SEEK mode.

EON
Press this button to select a radio program type (NEWS, INFO, AFFAIRS, SPORT) to tune in automatically.

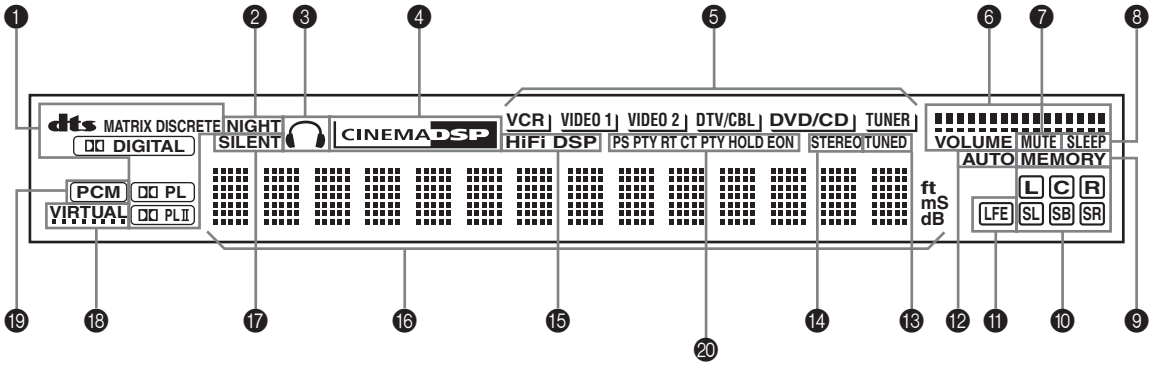
Using the remote control



The remote control transmits a directional infrared beam. Be sure to aim the remote control directly at the remote control sensor on the main unit during operation.

■ Handling the remote control
- Do not spill water or other liquids on the remote control.
- Do not drop the remote control.
- Do not leave or store the remote control in the following types of conditions:
  – high humidity such as near a bath
  – high temperature such as near a heater or stove
  – extremely low temperature
  – dusty places

Front panel display



(U.K. and Europe models only)

❶ Processor indicators
When any of this unit's decoders function, the respective indicator lights up.

❷ NIGHT indicator
Lights up when you select NIGHT LISTENING mode.

❸ Headphones indicator
Lights up when headphones are connected.

❹ CINEMA DSP indicator
Lights up when you select a CINEMA DSP sound field program.

❺ Input source indicators
A cursor lights to show the current input source.

❻ VOLUME level indicators
Indicate the volume level.

❼ MUTE indicator
Flashes while the MUTE function is on.

❽ SLEEP indicator
Lights up while the sleep timer is on.

❾ MEMORY indicator
Flashes to show a station can be stored in memory.

❿ Input channel indicators
Indicates the channel components of the input digital signal.

⓫ LFE indicator
Lights up when the input signal contains the LFE signal.

⓬ AUTO indicator
Shows that this unit is in the automatic tuning mode.

⓭ TUNED indicator
Lights up when this unit is tuned into a station.

⓮ STEREO indicator
Lights up when this unit is receiving a strong signal for an FM stereo broadcast while the "AUTO" indicator is lit.

⓯ HiFi DSP indicator
Lights up when you select a HiFi DSP sound field program.

⓰ Multi-information display
Shows the current sound field program name and other information when adjusting or changing settings.

⓱ SILENT CINEMA indicator
Lights up when headphones are connected and a sound field program is selected (see page 19).

⓲ VIRTUAL indicator
Lights up when Virtual CINEMA DSP is active (see page 35).

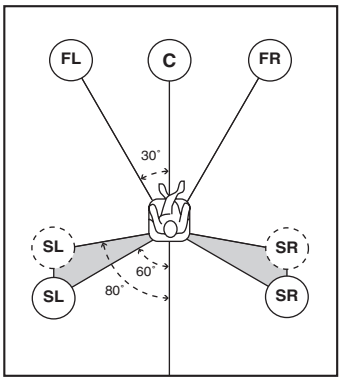
⓳ PCM indicator
Lights up when this unit is reproducing PCM (pulse code modulation) digital audio signals.

⓴ RDS indicators (U.K. and Europe models only)
The name(s) of the RDS data offered by the currently received RDS station light(s) up.
EON lights up when an RDS station that offers the EON data service is being received.
PTY HOLD lights up while searching for stations in the PTY SEEK mode.

SPEAKER SETUP

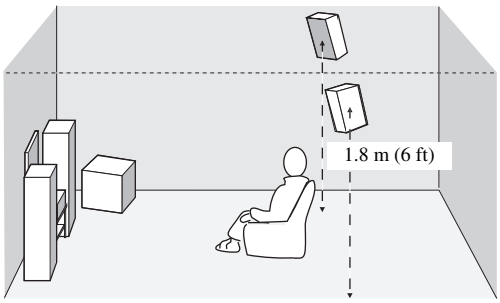
Speaker placement

You can enjoy this unit with the following speaker setup to obtain the best surround sound.



The speaker layout above shows the standard ITU-R* speaker setting. ITU-R recommends that the front left and right speakers be placed at 30° from the central listening position, and that the surround left and right speakers be placed at between 60° and 80° from the central listening position.

* ITU-R: for more information (see page 56).



Front speakers (FR and FL)

The front speakers are used for the main source sound plus effect sounds. Place these speakers an equal distance from the ideal listening position. The distance of each speaker from each side of the video monitor should be the same.

Center speaker (C)

The center speaker is for the center channel sounds (dialog, vocals, etc.). If for some reason it is not practical to use a center speaker, you can do without it. Best results, however, are obtained with the full system. Align the front face of the center speaker with the front face of your video monitor. Place the speaker centrally between the front speakers and as close to the monitor as possible, such as directly over or under it.

Surround speakers (SR and SL)

The surround speakers are used for effect and surround sounds. Place these speakers behind your listening position, facing slightly inwards, about 1.8 m (6 ft) above the floor.

Subwoofer

The use of a subwoofer, such as the YAMAHA Active Servo Processing Subwoofer System, is effective not only for reinforcing bass frequencies from any or all channels, but also for high fidelity reproduction of the LFE (low-frequency effect) channel included in Dolby Digital and DTS software. The position of the subwoofer is not so critical, because low bass sounds are not highly directional. But it is better to place the subwoofer near the front speakers. Turn it slightly toward the center of the room to reduce wall reflections.

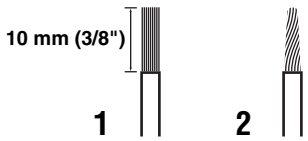
Speaker connections

Be sure to connect the left channel (L), right channel (R), "+" (colored) and "–" (black) properly. If the connections are faulty, no sound will be heard from the speakers, and if the polarity of the speaker connections is incorrect, the sound will be unnatural and lack bass.

CAUTION

- If you will use 6 ohm speakers, be sure to set this unit's speaker impedance setting to 6 ohms before using (see "IMPEDANCE SELECTOR switch" on page 10).
- Before connecting the speakers, make sure that the power of this unit is off.
- Do not let the bare speaker wires touch each other or do not let them touch any metal part of this unit. This could damage this unit and/or speakers.
- Use magnetically shielded speakers. If this type of speakers still creates the interference with the monitor, place the speakers away from the monitor.

A speaker cord is actually a pair of insulated cables running side by side. One cable is colored or shaped differently, perhaps with a stripe, groove or ridges. Connect the striped (grooved, etc.) cable to the "+" (colored) terminals on this unit and your speaker. Connect the plain cable to the "–" (black) terminals.

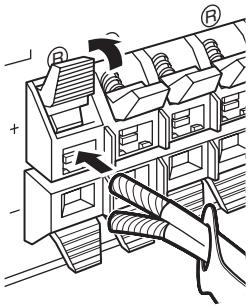


1 Remove approximately 10 mm (3/8") of insulation from each of the speaker cables.

2 Twist the exposed wires of the cable together to prevent short circuits.

3 Press and hold the tab to insert the speaker wire.

4 Return the tab to secure the wire.



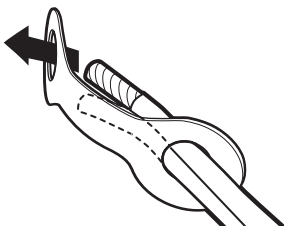
Colored: positive (+)
Black: negative (–)

■ Cable tags

5 pairs of different colored cable tags are provided with this product. The colors of the cable tags and their respective speaker cables are as follows:

- Red: Front right speaker cable
- White: Front left speaker cable
- Green: Center speaker cable
- Gray: Surround right speaker cable
- Blue: Surround left speaker cable

To make it easier to distinguish the various speaker cables, attach the colored tags to the appropriate speaker cables as shown below.

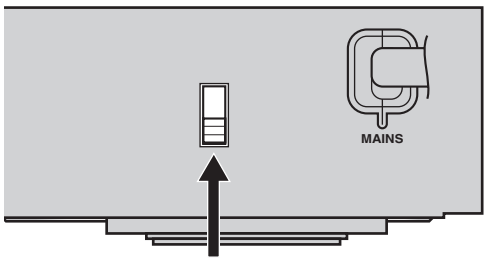


■ IMPEDANCE SELECTOR switch

CAUTION

Do not change the setting of the IMPEDANCE SELECTOR switch when the unit power is switched on, as doing so may damage the unit.

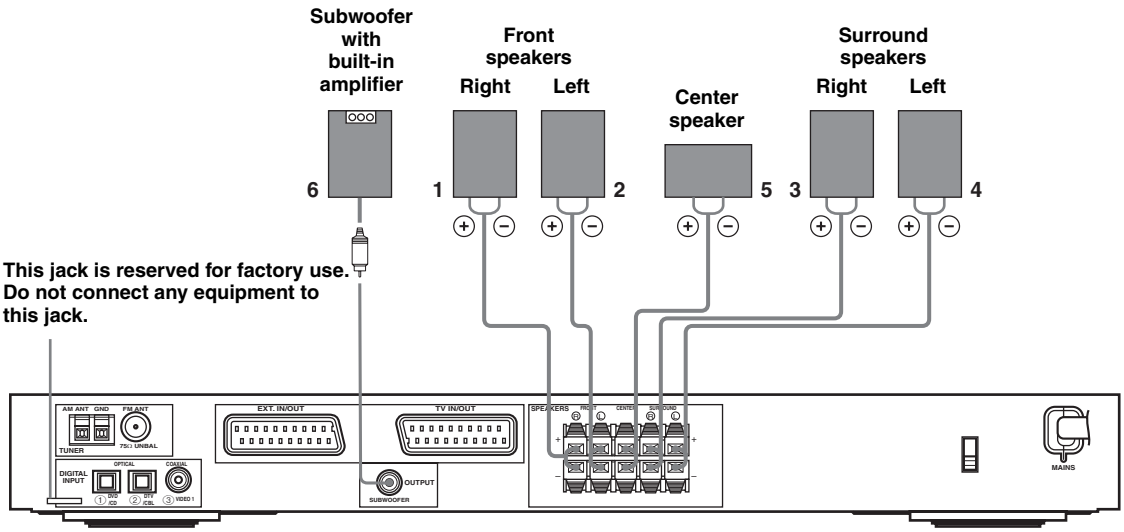
If this unit fails to turn on when STANDBY/ON is pressed on either the front panel or remote control, the IMPEDANCE SELECTOR switch may not be fully slid to either position. If this is the case, slide the switch all the way to either position when this unit is in standby mode. Be sure to move this switch only when this unit is in standby mode.
Select the switch position (top or bottom) according to the impedance of the speakers in your system.



IMPEDANCE SELECTOR switch

Switch position	Speaker	Impedance level
Top	Front	The impedance of each speaker must be 4 Ω or higher.
	Center, Surround	
Bottom	Front	The impedance of each speaker must be 6 Ω or higher.
	Center, Surround	

■ Speaker connections



■ FRONT terminals

Connect your speaker system to these terminals.

■ SURROUND terminals

Connect surround speakers to these terminals.

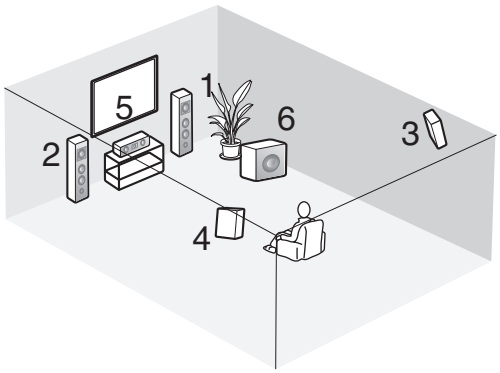
■ CENTER terminals

Connect a center speaker to these terminals.

■ SUBWOOFER OUTPUT jack

Connect a subwoofer with built-in amplifier, such as the YAMAHA Active Servo Processing Subwoofer System, to this jack.

You can easily distinguish between the cable pairs by attaching a supplied cable tag to each end of the respective speaker cable (see page 9).



Speaker layout

Notes

- If you are not using a subwoofer, allocate the signals to the front left and right speakers by changing the setting item "LFE/Bass Out" to FRONT on the SOUND menu (see page 41).
- Use the control on the subwoofer to adjust its volume level. You can also adjust the volume level using this unit's remote control (see page 37).

CONNECTIONS

Before connecting components

CAUTION

Do not connect this unit or other components to the mains power until all connections between components are complete.

- Make sure that all connections are made correctly - that is to say, L (left) to L, R (right) to R, "+" to "+" and "–" to "–". Some components require different connection methods and have different jack names. Refer to the operating instructions for each component you wish to connect to this unit.
- After you have completed all connections, check them again to make sure they are correct.
- The jack names correspond to the names on the input selector.

■ Signal directions and cable indications

audio signal direction

video signal direction

For analog signals

left analog cables

right analog cables

For digital signals

optical cables

coaxial cables

For video signals

video cables

■ Analog jacks

You can input analog signals from audio components by connecting audio pin cable to the analog jacks on this unit. Connect red plugs to the right jacks and white plugs to the left jacks.

■ Digital jacks

This unit has digital jacks for direct transmission of digital signals through either coaxial or fiber optic cables. You can use the digital jacks to input PCM, Dolby Digital and DTS bitstreams. All digital input jacks are compatible with 96-kHz sampling digital signals.

Notes

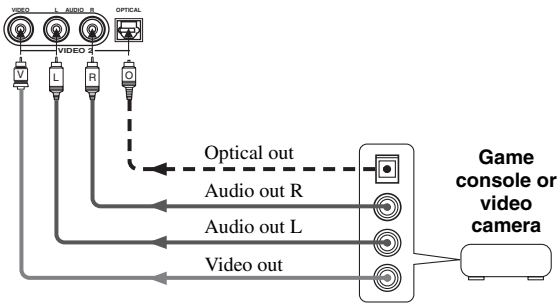
- This unit handles digital and analog signals independently. Thus audio signals input to the digital (OPTICAL or COAXIAL) jacks are not output to the analog VCR OUT (REC) jacks.
- The OPTICAL jacks on this unit conform to the EIA standard. If you use a fiber optic cable that does not conform to this standard, this unit may not function properly.

Dust protection cap

Pull out the cap from the optical jack before you connect the fiber optic cable. Do not discard the cap. When you are not using the optical jack, be sure to put the cap back in place. This cap protects the jack from dust.

■ VIDEO 2 jacks (on the front panel)

Use these jacks to connect any video source, such as a game console or video camera, to this unit.



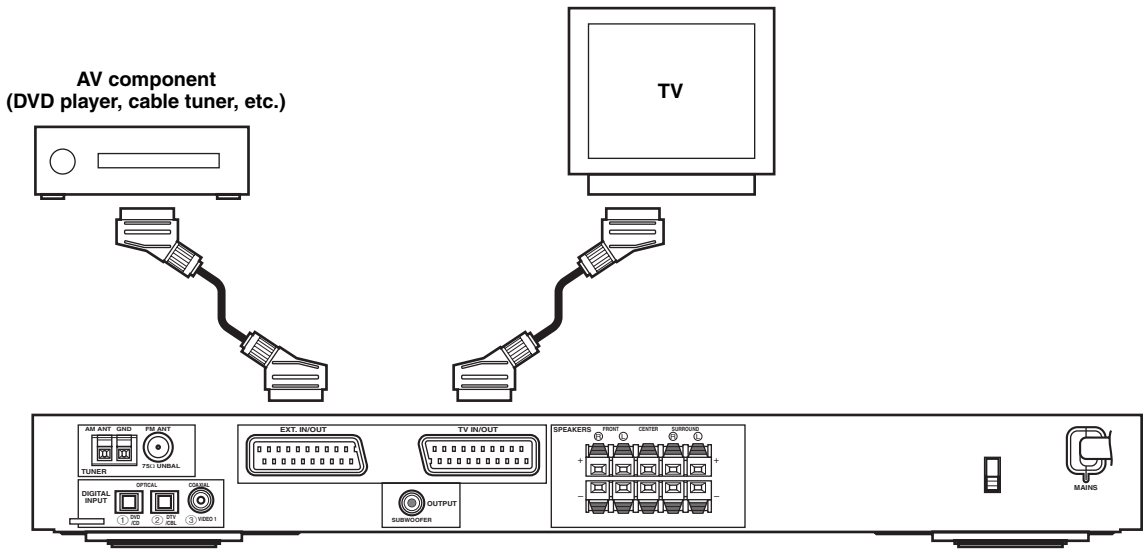
Connecting other components

■ Connecting a TV

Connect one end of the SCART cable to the TV/IN OUT connector on this unit and the other end to the SCART connector on your TV.

■ Connecting AV components

Connect one end of the SCART cable to the EXT. IN/OUT connector on this unit and the other end to the SCART connector on your AV component. You can also daisy chain several SCART components together as shown in "Digital audio connections" (page 13).

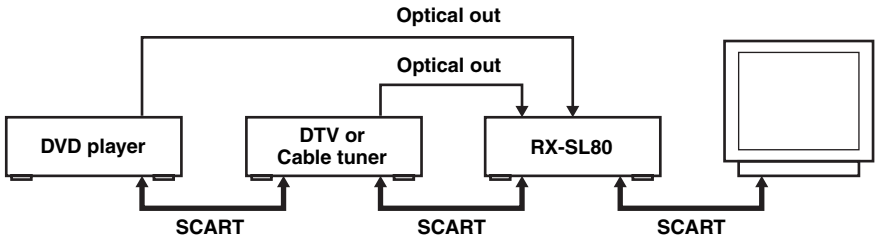


Note

Use a SCART cable to make the above connections. The SCART cable, or "Euro AV cable", supports IN/OUT signal transmission, providing you with the best possible picture and sound.

■ Digital audio connections

Connect the optical or coaxial digital output on your components to the corresponding DIGITAL INPUT jacks.
Use OPTICAL ① (DVD/CD) to connect a DVD or CD player.
Use OPTICAL ② (DTV/CBL) to connect a DTV or cable tuners.



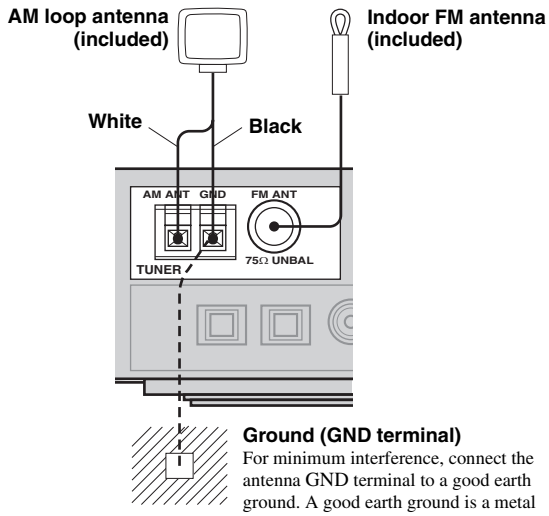
You can assign components to this unit's DIGITAL INPUT jacks using the INPUT and VOLUME/SELECT controls on the front panel (or the input selector buttons on the remote control) (page 43).

Note

You may experience some image distortion if your VCR is connected to this unit through your DVD player rather than being directly connected to this unit.

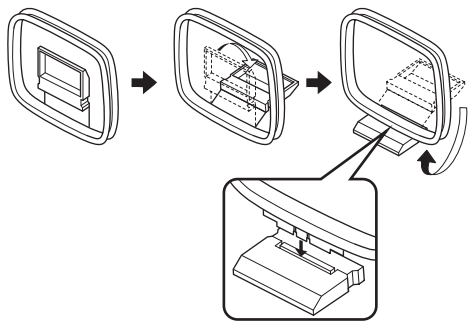
Connecting the antennas

Both AM and FM indoor antennas are included with this unit. In general, these antennas should provide sufficient signal strength. Connect each antenna correctly to the designated terminals.

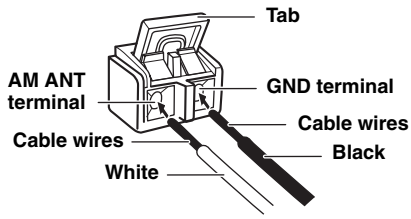


■ Connecting the AM loop antenna

1 Set up the AM loop antenna, then connect it to the terminals on this unit.



2 Lift up the tab and insert the white cord into the AM ANT terminal and the black cord into the GND terminal.



3 Orient the AM loop antenna for the best reception.

Notes

- The AM loop antenna should be placed away from this unit and all speaker cords.
- The AM loop antenna should always be connected, even if an outdoor AM antenna is connected to this unit.
- A properly installed outdoor antenna provides clearer reception than an indoor one. If you experience poor reception quality, an outdoor antenna may improve the quality. Consult the nearest authorized YAMAHA dealer or service center about outdoor antennas.

■ Frequency Step (Asia and General models only)

Because the interstation frequency spacing differs in different areas, set the FREQUENCY STEP (using SET MENU) according to the frequency spacing in your area (see page 45).

- North, Central and South America: 100 kHz/10 kHz
- Other areas: 50 kHz/9 kHz

Connecting the power

■ Connecting the AC power

After all other connections are complete, plug the power cord to an AC wall outlet.

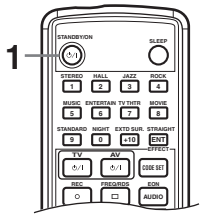
■ Memory back-up

The memory back-up circuit prevents the stored data from being lost even if this unit is in the standby mode. However if the power cord is disconnected from the AC wall outlet, or the power supply is cut for more than one week, the stored data will be lost.

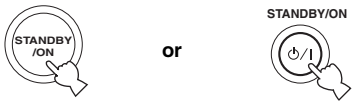
Turning on the power

When all connections are complete, turn on the power of this unit.

or



1 Press STANDBY/ON on the front panel or remote control to turn on the power of this unit.



Front panel **Remote control**

The level of the main volume, and then the current sound field program name appear in the front panel display.

2 Turn on the video monitor connected to this unit.

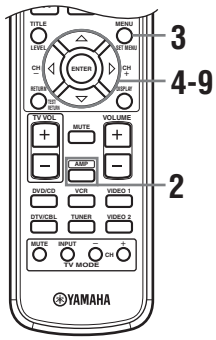
BASIC SETUP

The BASIC setup feature is a useful way to set up your system quickly and with minimal effort. The BASIC setup items are displayed on both the front panel of this unit and your video monitor. By using the Screen Menu on your video monitor, you can easily make any necessary settings.

- If you wish to configure the unit manually using more precise adjustments, use the detailed parameters in SOUND MENU (page 40) instead of using BASIC SETUP.
- Altering the parameters in BASIC SETUP may cause some of the parameters in SOUND MENU to be overwritten.
- The explanations in this document are based on the Screen Menu. The characters shown in the front panel display may differ from those on the Screen Menu.

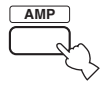
Using BASIC SETUP

■ Speaker set up



1 Switch on the receiver and video monitor.

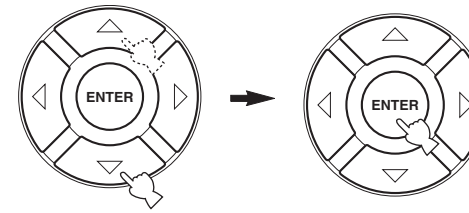
2 Press AMP.



3 Press SET MENU.

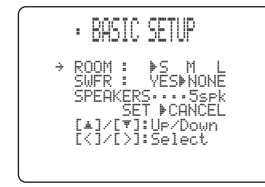
The top display appears on your video monitor.

4 Press △ / ▽ to select BASIC SETUP, then press ENTER.



5 Press △ / ▽ repeatedly to select ROOM.

Use ◁ / ▷ to select the size of the room you have installed your speakers in. Roughly speaking, the room sizes are defined as follows:



[U.S.A. and Canada models]

S (small)	16 x 13 ft, 200 sq. ft (4.8 x 4.0 m, 20 m^2)
M (medium)	20 x 16 ft, 300 sq. ft (6.3 x 5.0 m, 30 m^2)
L (large)	26 x 19 ft, 450 sq. ft (7.9 x 5.8 m, 45 m^2)

[Other models]

S (small)	3.6 x 2.8 m, 10 m^2
M (medium)	4.8 x 4.0 m, 20 m^2
L (large)	6.3 x 5.0 m, 30 m^2

6 Press △/▽ repeatedly to select SWFR.

Use ◁/▷ to select YES or NONE.

YES If you have a subwoofer in your system.
NONE If you do not have a subwoofer in your system.

7 Press △/▽ repeatedly to select SPEAKERS.

Use ◁/▷ to select the number of speakers connected to the unit. The choices vary as follows:

Choices	Display	Speakers
2 spk	L R	Front L/R
3 spk	L C R	Front L/R, Center
4 spk	L R SL SR	Front L/R, Surround L/R
5 spk	L C R SL SR	Front L/R, Center, Surround L/R

8 After you have finished the settings, press ▽ repeatedly to select SET CANCEL.

Use ◁/▷ to select SET or CANCEL, then press ENTER.

SET To apply the changes and start the test tone.
CANCEL To cancel the changes and return to SET MENU.

Use the test tone to check the speaker levels.
If you selected SET, the display changes to:

and the unit outputs a test tone from each speaker in turn.
When the test tone begins, the display changes to:

Notes

- The unit cycles the test tone around each of the speakers in turn twice.
- The indicator of the speaker currently outputting the test tone flashes in the front panel display.

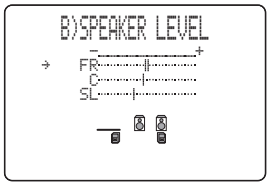
9 Press ◁/▷ repeatedly to select YES or NO, then press ENTER.

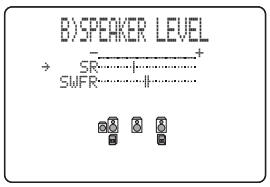
If you want to change the speaker level after you hear the test tone select "NO".

YES To return to SET MENU.
NO To enter B)SPEAKER LEVEL.

■ Speaker level B)SPEAKER LEVEL

Use this menu to compare and adjust the test tone output from each speaker to the output from the left front (or left surround) speaker so that the volume level for all speakers is identical.





Press △/▽ to select a speaker and adjust the balance using ◁/▷.

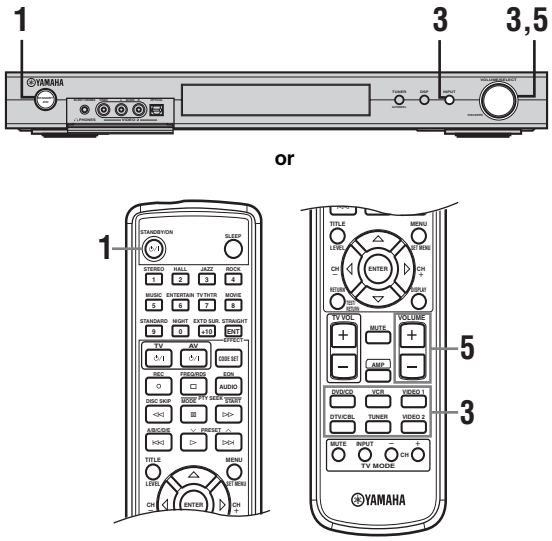
The unit outputs the test tone from the selected speaker and the left front (or left surround) speaker in turn. The indicator of the speaker currently outputting the test tone flashes in the front panel display.

FR adjusts the balance between the front left and right speakers.
C adjusts the balance between the front left and center speakers.
SL adjusts the balance between the front left and surround left speakers.
SR adjusts the balance between the surround left and surround right speakers.
SWFR adjusts the balance between the front left speaker and the subwoofer.

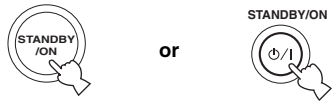
You can also make test tone setting adjustments by pressing TEST on the remote control.

Memory back-up
The memory back-up circuit prevents the stored data from being lost even if this unit is in the standby mode. However, if the power cord is disconnected from the AC outlet, or the power supply is cut for more than one week, the stored data will be lost. If so, adjust the items again.

Basic operations



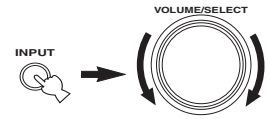
1 Press STANDBY/ON to turn on the power.



Front panel Remote control

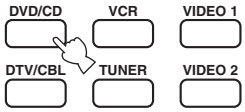
2 Turn on the video monitor connected to this unit.

3 Press INPUT, then rotate VOLUME/SELECT within 5 seconds to select the input source (or press an input selector button on the remote control).



Front panel

or



Remote control

The current input source name and input mode appear in the front panel display for a few seconds.

Selected input source Input mode

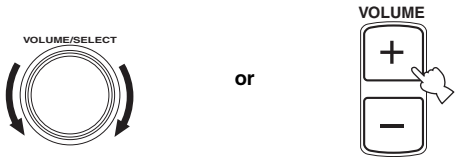
Note

If no operation is performed within 5 seconds of pressing INPUT or VOLUME/SELECT is pressed on the front panel, the function of VOLUME/SELECT switches back to volume level adjustment. If this happens, "VOLUME" appears in the front panel display for a few seconds.

4 Start playback or select a broadcast station on the source component.

Refer to the operation instructions for the component.

5 Adjust the volume to the desired output level.



Front panel Remote control

To listen with headphones (SILENT CINEMA)

The SILENT CINEMA mode allows you to enjoy multi-channel music or movie sound, including Dolby Digital and DTS surround, through ordinary headphones. SILENT CINEMA activates automatically whenever you connect headphones to the PHONES jack while listening to DSP sound field programs. The SILENT CINEMA indicator lights up in the front panel display. "SILENT CINEMA" is not effective when the Direct Stereo or 2ch Stereo program is selected, or in STRAIGHT mode.

To adjust the tone

You can adjust the tonal quality of your front left and right speakers or headphones (when connected).
Press VOLUME/SELECT on the front panel repeatedly to select TREBLE or BASS, then rotate to the right or left to increase or decrease.

- Select TREBLE to adjust the high frequency response.
- Select BASS to adjust the low frequency response.

Front panel

To cancel the tone control setting, press VOLUME/SELECT again, or press VOLUME +/– on the remote control or operate nothing for 5 seconds.

Speaker and headphone adjustments are stored independently.

Notes

- If you increase or decrease the high-frequency or low-frequency sound to an extreme level, the tonal quality of the surround speakers may not match that of the front left and right speakers.
- TONE CONTROL is not effective with the Direct Stereo program (page 34).

To mute the sound

Press MUTE on the remote control. "MUTE" blinks in the front panel display.
To resume the audio output, press MUTE again (or press VOLUME +/–). "MUTE" disappears from the display.

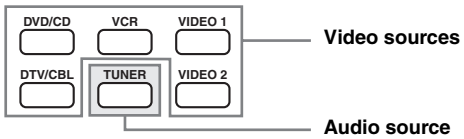
Remote control

You can adjust the muting level (see page 43).

■ Playing video sources in the background

You can combine a video image from a video source with sound from an audio source. For example, you can enjoy listening to classical music while viewing beautiful scenery from the video source on the video monitor.

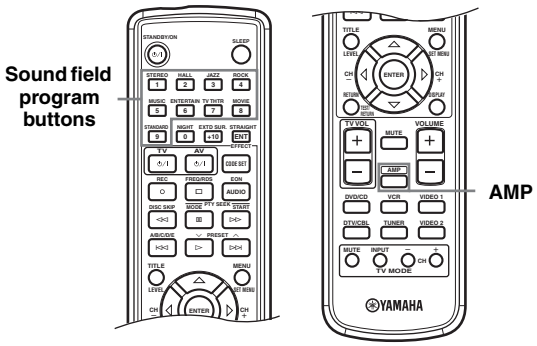
Use the input selector buttons on the remote control to select a video source, then select an audio source.



Remote control

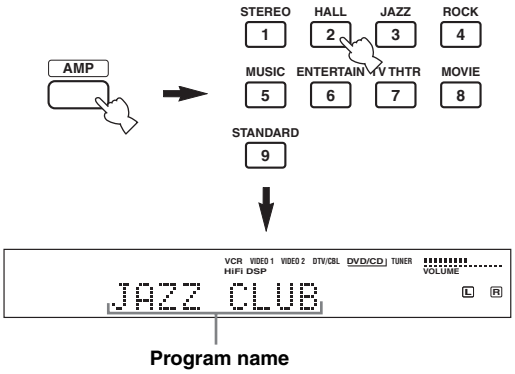
Selecting sound field programs

■ Remote control operation

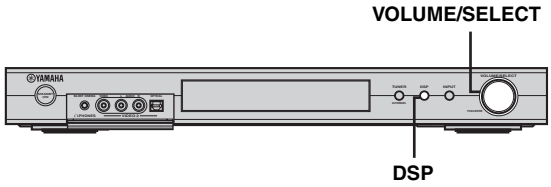


Press AMP to select the AMP mode, then press one of the sound field program buttons repeatedly to select the desired program.

The name of the selected program appears in the front panel display.

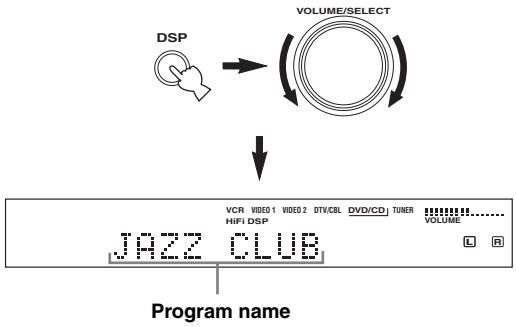


■ Front panel operation



Press DSP, then rotate VOLUME/SELECT within 5 seconds.

The name of the selected program appears in the front panel display.



Choose a sound field program based on your listening preference, and not on the name of the program.

Notes

- If no operation is performed within 5 seconds of pressing DSP on the front panel, the function of VOLUME/SELECT switches back to volume.
- After selecting a DSP program, press VOLUME/SELECT to switch the function of VOLUME/SELECT back to “volume”.
- There are 9 programs with sub-programs available with this unit. However, the selection depends on the input signal format and not all sub-programs can be used with all input signal formats.
- The acoustics of your listening room affect the sound field program. Minimize the sound reflections in your room to maximize the effect created by the program.
- When you select an input source, this unit automatically selects the last sound field program used with that source.
- When you set this unit in standby mode, it stores the current source and sound field program in memory and automatically selects them when you turn on the power again.
- If the unit receives a Dolby Digital or DTS signal when the input mode is set to AUTO, the CINEMA DSP sound field programs automatically switches to the appropriate decoding program.
- When the unit is reproducing a monaural source with PRO LOGIC, PRO LOGIC Enhanced, PRO LOGIC II Game or PRO LOGIC II Movie, no sound is output from the front and surround speakers. Sound can only be heard from the center speaker. (If CENTER SP in SPEAKER SET in the SOUND menu is set to “None”, the center channel sound is output from the front speakers.)
- Sampling frequencies higher than 48 kHz (except for DTS 96/24 signals) will be sampled down to 48 kHz, then sound field programs will be applied.

■ Night listening modes

The night listening modes are designed to improve listenability at lower volumes or at night. Choose either NIGHT:CINEMA or NIGHT:MUSIC depending on the type of material you are playing.

Press NIGHT on the remote control repeatedly to select cinema or music.

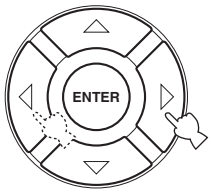
When night listening is selected, the NIGHT indicator in the front panel display lights up.

Remote control

- Select NIGHT:CINEMA when watching films to reduce the dynamic range of film soundtracks and make dialog easier to hear at lower volumes.
- Select NIGHT:MUSIC when listening to music sources to preserve ease-of-listening for all sounds.
- Select OFF if you do not want to use this function.

Press ◁/▷ to adjust the effect level while NIGHT:CINEMA or NIGHT:MUSIC is displayed.

This adjusts the level of compression.



Remote control

- Select MIN for minimum compression.
- Select MID for standard compression.
- Select MAX for maximum compression.

NIGHT:CINEMA and NIGHT:MUSIC adjustments are stored independently.

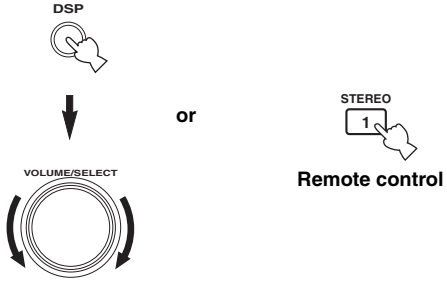
Notes

- You cannot use the night listening modes with the Direct Stereo program (even though the NIGHT indicator lights up when Direct Stereo is selected).
- The night listening modes may vary in effectiveness depending on the input source and surround sound settings you use.

■ Downmixing to 2 channels

You can enjoy 2-channel stereo playback even from multi-channel sources.

Press DSP, then rotate VOLUME/SELECT (or press STEREO on the remote control) to select 2ch Stereo.



Front panel

Remote control

- You can use a subwoofer with this program when SWFR or BOTH is selected in "BASS OUT".
- You can enjoy pure high fidelity sound from 2-channel sources when "Direct Stereo" is selected (see page 34).

■ Listening to unprocessed input signals

In STRAIGHT mode, two channel stereo sources are output from only the front left and right speakers. Multi-channel sources are decoded straight into the appropriate channels without any additional effect processing.

Press STRAIGHT/EFFECT to select STRAIGHT.

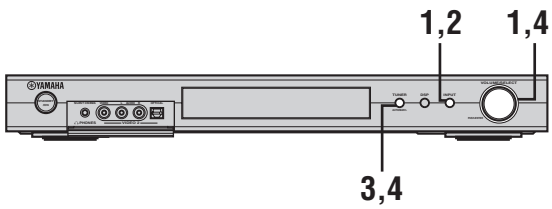
Remote control

Press STRAIGHT/EFFECT again so that "STRAIGHT" disappears from the display when you want to turn the sound effect back on.

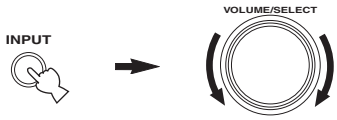
Automatic and manual tuning

There are 2 tuning methods; automatic and manual. Automatic tuning is effective when station signals are strong and there is no interference.

■ Automatic tuning



1 Press INPUT, then rotate VOLUME/SELECT within 5 seconds to select TUNER.

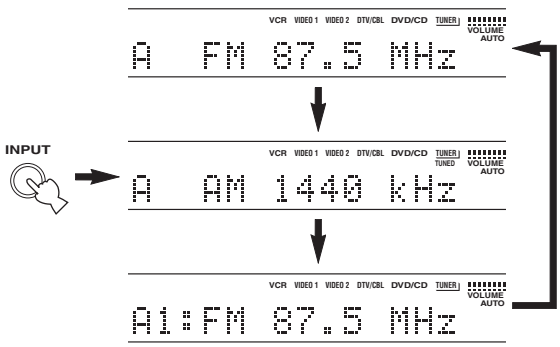


Note

If no operation is performed within 5 seconds of pressing INPUT or VOLUME/SELECT is pressed on the front panel, the function of VOLUME/SELECT switches back to volume level adjustment. If this happens, "VOLUME" appears in the front panel display for a few seconds.

2 Press INPUT repeatedly on the front panel to select the reception band you want to tune.

"FM" or "AM" and the current frequency appear in the front panel display.

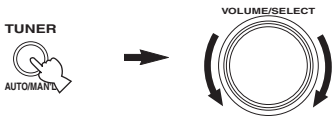


3 Hold down TUNER (AUTO/MAN'L) for more than 1 second so that the "AUTO" indicator lights up in the front panel display.

If "AUTO" is already lit up in the front panel display, you do not need to perform this step. In this case, skip to step 4.

4 Press TUNER (AUTO/MAN'L), then rotate VOLUME/SELECT within 5 seconds to begin automatic tuning.

Rotate rightward to tune to a higher frequency, or rotate leftward to tune to a lower frequency.



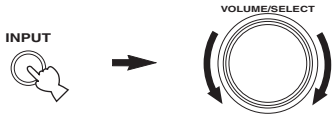
Note

When tuned into a station, the "TUNED" indicator lights up and the frequency of the received station is shown in the front panel display.

■ Manual tuning

If the signal from the station you want to select is weak, you must tune into it manually.

1 Press INPUT, then rotate VOLUME/SELECT within 5 seconds to select TUNER.

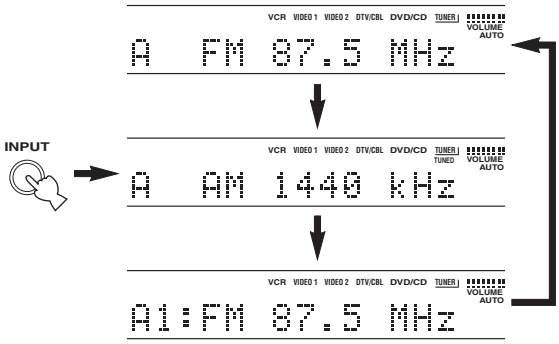


Note

If no operation is performed within 5 seconds of pressing INPUT or VOLUME/SELECT is pressed on the front panel, the function of VOLUME/SELECT switches back to volume level adjustment. If this happens, "VOLUME" appears in the front panel display for a few seconds.

2 Press INPUT repeatedly on the front panel to select the reception band you want to tune.

"FM" or "AM" and the current frequency appear in the front panel display.

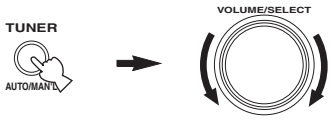


3 Hold down TUNER (AUTO/MAN'L) for more than 1 second until the "AUTO" indicator disappears from the front panel display.

If "AUTO" is not shown in the front panel display, you do not need to perform this step. In this case, skip to step 4.

4 Press TUNER (AUTO/MAN'L), then rotate VOLUME/SELECT within 5 seconds to tune into the desired station manually.

Rotate rightward to tune to a higher frequency, or rotate leftward to tune to a lower frequency.



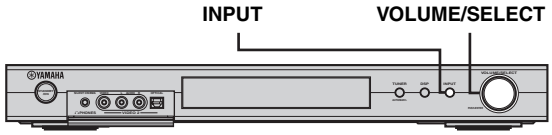
Notes

- Manually tuning to FM stations will automatically change the reception mode to monaural to increase the signal sensitivity.
- When tuned into a station, the "TUNED" indicator lights up and the frequency of the received station is shown in the front panel display.

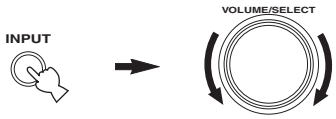
Presetting stations

■ Automatically presetting FM stations

You can use the automatic preset tuning feature to store FM stations. This function enables this unit to automatically tune in to FM stations with strong signals, and to store up to 40 (8 stations x 5 groups) of those stations in order. You can then recall any preset station easily by selecting the preset station number.



1 Press INPUT, then rotate VOLUME/SELECT within 5 seconds to select TUNER.



Note

If no operation is performed within 5 seconds of pressing INPUT or VOLUME/SELECT is pressed on the front panel, the function of VOLUME/SELECT switches back to volume level adjustment. If this happens, "VOLUME" appears in the front panel display for a few seconds.

2 Press INPUT repeatedly on the front panel to select the FM band you want to preset.

"FM" appears in the front panel display.

3 Hold down VOLUME/SELECT for more than 5 seconds.

The "AUTO" and "MEMORY" indicators flash in the display and after about 5 seconds, automatic presetting starts from the lowest frequency, proceeding to higher frequencies.

When automatic preset tuning is completed, the front panel display shows the frequency of the last preset station.

Notes

- Any stored station data existing under a preset number is cleared when you store a new station under that preset number.
- If the number of the received stations does not reach E8, automatic preset tuning automatically stops after searching all stations.
- Only FM stations with sufficient signal strength are stored automatically by automatic preset tuning. If the station you want to store is weak in signal strength, tune in to it manually in the monaural mode, and store it by following the procedure in "Manually presetting stations".

Memory back-up

The memory back-up circuit prevents the stored data from being lost even if this unit is set in the standby mode, the power cord is disconnected from the AC outlet, or the power supply is temporarily cut due to power failure. However, if the power is cut for more than one week, the preset stations may be cleared. If so, store the stations again by using the presetting station methods.

■ Manually presetting stations

You can also store up to 40 stations (8 stations x 5 groups) manually.

1 Tune into a station.

See page 22 for tuning instructions.

When tuned into a station, the front panel display shows the frequency of the station received.

2 Hold down VOLUME/SELECT for approximately 3 seconds to activate the manual preset station mode.

The colon (:) blinks and the "MEMORY" indicator flashes in the display.

Rotate VOLUME/SELECT to select a preset station number (A1 to E8) while "MEMORY" is flashing. Rotate rightward to select a higher preset station number, or rotate leftward to select a lower preset station number.

Note

When presetting an FM station, pressing VOLUME/SELECT for an extended period activates the automatic preset tuning feature (see page 24).

3 Press VOLUME/SELECT to set the selected preset station number.

The station band and frequency appear in the front panel display with the preset group and number you have selected.

Repeat steps 1 to 3 to store other stations.

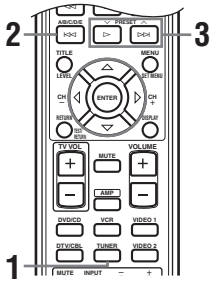
Notes

- Any stored station data existing under a preset number is cleared when you store a new station under that preset number.
- The reception mode (stereo or monaural) is stored along with the station frequency.

Selecting preset stations

You can tune into any desired station simply by selecting the preset station number under which it was stored.

■ Remote control operation



1 Press TUNER to select TUNER.

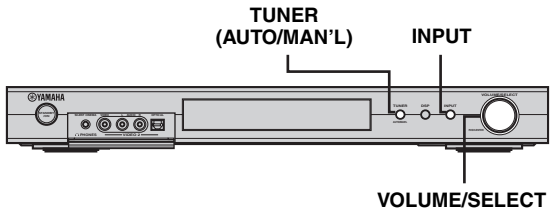
2 Press A/B/C/D/E to select the preset station group.

The preset group letter appears in the front panel display and changes each time you press the button.

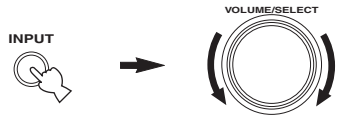
3 Press ∧ PRESET ∨ (or use the numeric buttons) to select a preset station number.

The preset group and number appear in the front panel display along with the station band, frequency and the "TUNED" indicator lights up.

■ Front panel operation



1 Press INPUT, then rotate VOLUME/SELECT within 5 seconds to select TUNER.



2 Press INPUT repeatedly to select preset tuning mode.

A colon (:) appears in the front panel display in front of the station band and frequency.

3 Press TUNER (AUTO/MAN'L).

The "TUNER" indicator flashes for about 5 seconds, and VOLUME/SELECT shifts to the preset number selection mode.

4 Rotate VOLUME/SELECT to select a preset station while the "TUNER" indicator is flashing.

Receiving RDS stations

RDS (Radio Data System) is a data transmission system used by FM stations in many countries. The RDS function is carried out among the network stations.
This unit can receive various RDS data such as PS (Program Service name), PTY (Program Type), RT (Radio Text), CT (Clock Time), EON (Enhanced Other Networks) when receiving RDS broadcasting stations.

■ PS (Program Service) mode:

The name of the RDS station being received is displayed.

■ PTY (Program Type) mode:

There are 15 program types to classify RDS stations.

NEWS	News
AFFAIRS	Current affairs
INFO	General information
SPORT	Sports
EDUCATE	Education
DRAMA	Drama
CULTURE	Culture
SCIENCE	Science
VARIED	Light entertainment
POP M	Pops
ROCK M	Rock
M.O.R. M	Middle-of-the-road music (easy-listening)
LIGHT M	Light classics
CLASSICS	Serious classics
OTHER M	Other music

■ RT (Radio Text) mode:

Information about the program (such as the title of the song, name of the singer, etc.) on the RDS station being received is displayed by a maximum of 64 alphanumeric characters, including the umlaut symbol. If other characters are used for RT data, they are displayed with under-bars.

■ CT (Clock Time) mode:

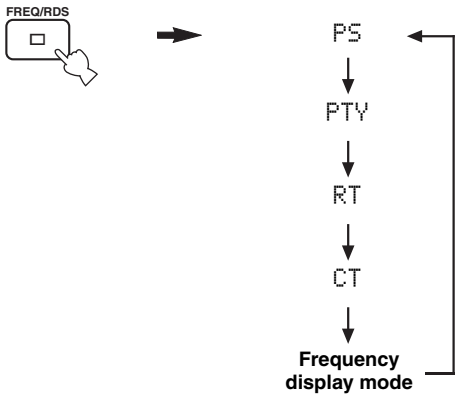
The current time is displayed and updated every minute. If the data are accidentally cut off, "CT WAIT" may appear.

■ EON (Enhanced Other Networks):

See "EON function" on the following page.

Changing the RDS mode

The four modes are available in this unit for displaying RDS data. The PS, PTY, RT and/or CT mode indicators that correspond to the RDS data services offered by the station light up in the front panel display. Press FREQ/RDS on the remote repeatedly to change the display mode among the RDS data offered by the transmitting station in the order shown below.



Notes

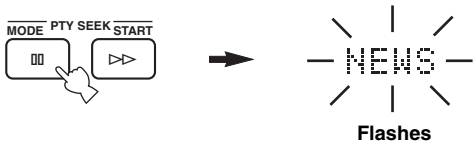
- Do not press FREQ/RDS until one or more RDS mode indicators light up in the front panel display. You cannot change the mode if you press the button prior to this. This is because this unit has not finished receiving all of the RDS data from the station.
- RDS data not offered by the station cannot be selected.
- This unit cannot utilize the RDS data source if the signal received is not strong enough. In particular, the RT mode requires a large amount of data, so it is possible that the RT mode may not be displayed even if other RDS modes (PS, PTY, etc.) are displayed.
- RDS data may not be received under poor reception conditions. In such cases, press TUNER (AUTO/MAN'L) so that the "AUTO" indicator disappears from the front panel display. Although this will change the reception mode to manual, RDS data may be displayed when you change the display to RDS mode.
- If the signal strength is weakened by external interference during the reception of an RDS station, the RDS data service may be cut off suddenly and "...WAIT" will appear in the front panel display.

PTY SEEK function

If you select the desired program type, this unit automatically searches all preset RDS stations that are broadcasting a program of the required type.

1 Press PTY SEEK MODE to set this unit in the PTY SEEK mode.

The program type of the station being received or "NEWS" flashes in the front panel display.

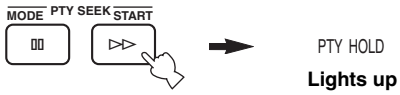


2 Press ∧ PRESET ∨ to select the desired program type.

The selected program type appears in the front panel display.

3 Press PTY SEEK START to begin searching all preset RDS stations.

The selected program type flashes and the "PTY HOLD" indicator lights up in the front panel display while searching for stations.



- The unit stops searching when it finds a station broadcasting the selected type of program.
- If the found station is not the one you desire one, press PTY SEEK START again. This unit resumes searching for another station broadcasting the same type of program.

To cancel this function

Press PTY SEEK MODE twice.

EON function

This function uses the EON data service on the RDS station network. If you select the desired program type (NEWS, INFO, AFFAIRS or SPORT), this unit automatically searches for all preset RDS stations that are scheduled to broadcast the selected type of program and switches from the station currently being received to the new station when the broadcast starts.

Note

This function can only be used when an RDS station that offers the EON data service is being received. When such a station is being received, the "EON" indicator lights up in the front panel display.

1 Check that the "EON" indicator is lit in the front panel display.

If the "EON" indicator is not lit up, tune in to another RDS station so that the "EON" indicator lights up.

2 Press EON repeatedly to select the desired program type (NEWS, INFO, AFFAIRS or SPORT).

The selected program type name appears in the front panel display.

- If a preset RDS station type starts broadcasting the selected type of program, the unit automatically switches from the program being received to that program. (EON indicator flashes.)
- When broadcasting of the selected program ends, the unit returns to the previous station (or another program on the same station).

To cancel this function

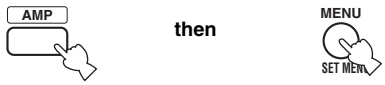
Press EON repeatedly until no program type name is shown in the front panel display.

Recording in standby mode (SCART SET setting)

When SCART SET is set to “ON”, signals can pass through this unit’s SCART connectors even if this unit is in the standby mode. This allows you to record between the connected external components (see page 45).
If you experience difficulties recording through this unit’s SCART connectors, do the following to make sure SCART SET is set to “ON”.

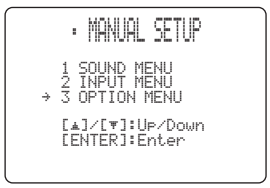
■ To change the SCART SET setting

1 Press AMP, then press SET MENU on the remote control.

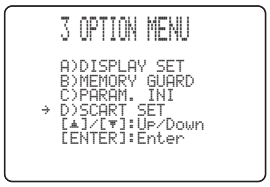


2 Press △ / ▽ to select MANUAL SETUP, then press ENTER.

3 Press △ / ▽ repeatedly to select OPTION MENU, then press ENTER.



4 Press △ / ▽ repeatedly to select SCART SET, then press ENTER.



5 Press ◁ or ▷ to select ON, then press ENTER to complete the setting and return to OPTION MENU.

Signals can pass through this unit via a SCART cable whether it is turned on or set to the standby mode.

To stop signals on the SCART bus from passing though this unit when it is in standby mode, select “OFF” in step 5.

SOUND FIELD PROGRAM DESCRIPTIONS

This unit is equipped with a variety of precise digital decoders that allow you to enjoy multichannel playback from almost any sound source (stereo or multichannel). This unit is also equipped with a YAMAHA digital sound field processing (DSP) chip containing several sound field programs which you can use to enhance your playback experience. Most of these sound field programs are precise digital recreations of actual acoustic environments found in famous concert halls, music venues, and movie theaters.

The YAMAHA CINEMA DSP modes are compatible with all Dolby Digital, DTS, and Dolby Surround sources. Set the input mode to AUTO (see page 35) to enable this unit to automatically switch to the appropriate digital decoder according to the input signal.

Notes

- This unit's DSP sound field programs are recreations of real-world acoustic environments made from precise measurements taken in the actual hall, etc. Thus you may notice variations in the strength of the reflections coming from the front, back, left and right.
- Feel free to choose a sound field program based on your listening preference, and not purely on the name of the program itself.

For movie/video sources

You can select from the following sound fields when playing movie or video sources. The sound fields marked "MULTI" can be used with multi-channel sources, like DVD, digital TV, etc. Those marked "2-CH" can be used with 2-channel (stereo) sources like TV programs, video tapes, etc.

Remote button	Program	Features	Sources
STEREO [1]	STEREO 2ch Stereo	Downmixes multi-channel sources to 2 channels (left and right) or plays back 2-channel sources as is.	MULTI 2-CH
MUSIC [5]	MUSIC VIDEO	This program lends an enthusiastic atmosphere to the sound, giving you the feeling you are at an actual jazz or rock concert.	
ENTERTAIN [6]	ENTERTAINMENT Game	This program adds a deep and spatial feeling to video game sounds.	
TV THTR [7]	TV THEATER Mono Movie	This program is provided for reproducing monaural video sources (such as old movies). The program produces the optimum reverberation to create sound depth using only the presernce sound field.	
	TV THEATER Variety/Sports	Though the presence sound field is relatively narrow, the surround sound field employs the sound environment of a large concert hall. This effect enhances the experience of watching various TV programs such as news, variety shows, music programs or sports programs.	
MOVIE [8]	MOVIE THEATER Spectacle	CINEMA DSP processing. This program creates the extremely wide sound field of a 70-mm movie theater. It precisely reproduces the source sound in detail, making both the video and the sound field incredibly real. This is ideal for any kind of video source encoded with Dolby Surround, Dolby Digital or DTS (especially large-scale movie productions).	
	MOVIE THEATER Sci-Fi	CINEMA DSP processing. This program clearly reproduces dialog and sound effects in the latest sound form for science fiction films, thus creating a broad and expansive cinematic space amid silence. You can enjoy science fiction films in a virtual-space sound field that includes Dolby Surround, Dolby Digital and DTS-encoded software employing the most advanced techniques.	
	MOVIE THEATER Adventure	CINEMA DSP processing. This program is ideal for precisely reproducing the sound design of the newest 70-mm and multichannel soundtrack films. The sound field is made to be similar to that of the newest movie theaters, so the reverberations of the sound field itself are restrained as much as possible.	
	MOVIE THEATER General	CINEMA DSP processing. This program is for reproducing sounds from 70-mm and multichannel soundtrack films, and is characterized by soft and extensive sound field.	

Remote button	Program	Features	Sources
STANDARD 9	DOLBY DIGITAL SUR. STANDARD	Standard 5.1-channel processing for Dolby Digital sources.	MULTI
	DOLBY DIGITAL SUR. ENHANCED	CINEMA DSP enhanced processing for Dolby Digital sources.	
	DTS SUR. STANDARD	Standard 5.1-channel processing for DTS sources.	
	DTS 96/24 SUR. STANDARD	Standard 5.1-channel processing for 96-kHz/24-bit DTS sources.	
	DTS SUR. ENHANCED	CINEMA DSP enhanced processing for DTS and 96-kHz/24-bit DTS sources.	
	PRO LOGIC SUR. STANDARD	Standard processing for Dolby Surround sources.	2-CH
	PRO LOGIC SUR. ENHANCED	CINEMA DSP enhanced processing for Dolby Surround sources.	
	PRO LOGIC II PLII Movie	Dolby Pro Logic II processing for movie software.	
	PRO LOGIC II PLII Game	Dolby Pro Logic II processing for game software.	

For music sources

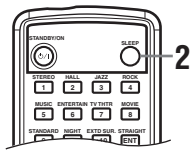
You can select from the following sound fields when playing music sources, like CD, FM/AM broadcasting, tapes, etc.

Remote button	Program	Features	Sources
HALL 2	CONCERT HALL	HiFi DSP processing. A classic shoe-box type concert hall with approximately 1700 seats. Pillars and ornate carvings create extremely complex reflections which produce a very full, rich sound.	MULTI 2-CH
JAZZ 3	JAZZ CLUB	HiFi DSP processing. This is the sound field at stage front in "The Bottom Line", a famous New York jazz club. The floor can seat 300 people to the left and right in a sound field offering a real and vibrant sound.	
ROCK 4	ROCK CONCERT	HiFi DSP processing. The ideal program for lively, dynamic rock music. The data for this program was recorded at LA's "hottest" rock club. The listener's virtual seat is at the center-left of the hall.	
ENTERTAIN 6	ENTERTAINMENT Disco	HiFi DSP processing. This program recreates the acoustic environment of a lively disco in the heart of a big city. The sound is dense and highly concentrated. It is also characterized by high-energy, "immediate" sound.	
STEREO 1	STEREO 2ch Stereo	2-channel (left and right) playback.	2-CH
	STEREO Direct Stereo	Use to output stereo sources to only the front left and right speakers without any processing.	
	STEREO 5ch Stereo	Use to increase the output stereo sources (in stereo) from all speakers. This provides a larger sound field and is ideal for background music at parties, etc.	
STANDARD 9	PRO LOGIC II PLII Music	Dolby Pro Logic II processing for music software.	

Using the sleep timer

Use this feature to automatically set this unit in the standby mode after a certain amount of time. The sleep timer is useful when you are going to sleep while this unit is playing or recording a source.

■ Setting the sleep timer



1 Select a source and start playback on the source component.

2 Press SLEEP repeatedly on the remote control to set the amount of time.

Each time you press SLEEP, the front panel display changes as shown below. The SLEEP indicator flashes while switching the amount of time for the sleep timer.

→ SLEEP 120min. → SLEEP 90min. →
SLEEP OFF ← SLEEP 30min. ← SLEEP 60min. ←

The "SLEEP" indicator lights up in the front panel display after the sleep timer has been set.

■ Canceling the sleep timer

Press SLEEP repeatedly on the remote control until "SLEEP OFF" appears in the front panel display. After a few seconds, "SLEEP OFF" disappears, and the "SLEEP" indicator goes off.

The sleep timer setting can also be canceled by pressing STANDBY on the remote control (or STANDBY/ON on the front panel) to set this unit to the standby mode.

Enjoying multi-channel software

■ Playing Dolby Digital Surround EX or DTS-ES material

Press EXTD SUR. to turn on the Dolby Digital + Matrix 6.1 or DTS + Matrix 6.1 decoder.

Remote control

The display changes AUTO → EXTD SUR.:ON → OFF each time EXTD SUR. is pressed.

AUTO: Automatically switches Dolby Digital + Matrix 6.1 and DTS + Matrix 6.1 depending on the signal. Virtual surround back speaker does not work for 5.1- channel sources.

EXTD SUR.:ON: Produces 6-channel playback of the input source using the Matrix 6.1 decoder. The virtual surround back speaker can be used when playing a 5.1- channel source.

OFF: Virtual surround back speaker does not work.

Notes

- Some 6.1-channel compatible discs do not have a signal (flag) that this unit can automatically detect. Select "Matrix 6.1" to play these kinds of discs with 6.1-channel sound.
- 6.1-channel playback is not possible even if you press EXTD SUR. in the following cases:
  – When effects are turned off.
  – When the unit is reproducing a Dolby Digital KARAOKE source.
  – When headphones are connected to the PHONES jack.
- The decoding mode resets to AUTO when you turn the power of the unit off.

Enjoying 2-channel software

Signals input from 2-channel sources can also be played back on multiple channels.

Press STANDARD on the remote control to select the decoder.

Remote control

You can select from the following modes depending on the type of software you are playing and your personal preference.

PRO LOGIC

Standard processing for Dolby Surround sources.

PRO LOGIC ENHANCED

CINEMA DSP enhanced processing for Dolby Surround sources.

PRO LOGIC II Movie

Dolby Pro Logic II processing for movie sources.

PRO LOGIC II Music

Dolby Pro Logic II processing for music sources.

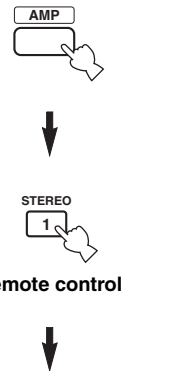
PRO LOGIC II Game

Dolby Pro Logic II processing for games.

■ Listening to high fidelity stereo sound (Direct Stereo)

Direct Stereo allows you to bypass this unit's decoders and DSP processors to enjoy pure high fidelity sound from 2-channel PCM and analog sources.

Press AMP to select the AMP mode, then press STEREO repeatedly to select "Direct Stereo".



Remote control

Notes

- To avoid unexpected noise, do not play DTS-encoded CDs in this mode.
- When multi-channel signals (Dolby Digital and DTS) are input, this unit automatically switches to the corresponding analog input. (When DTS is selected as an input mode, no sound will be heard.)
- No sound will be output from the subwoofer.
- TONE CONTROL (page 19) and SET MENU (page 38) settings are not effective.
- The front panel display automatically dims.

You can enjoy 2-channel stereo playback from multi-channel sources when "2ch Stereo" is selected (see page 21).

Virtual CINEMA DSP

Virtual CINEMA DSP allows you to enjoy DSP sound field programs without surround speakers. It creates virtual speakers to reproduce the natural sound field. If SURR L/R SP in SPEAKER SET is set to “NONE”, Virtual CINEMA DSP activates automatically whenever you select a CINEMA DSP sound field program.

Note

Virtual CINEMA DSP will not activate, even when Surround L/R is set to “None” (see page 40), in the following cases:

– When the 5ch Stereo, 2ch Stereo, Direct Stereo, or SUR. STANDARD program is selected.
– When the sound effect is turned off.
– When headphones are connected.

Selecting input modes

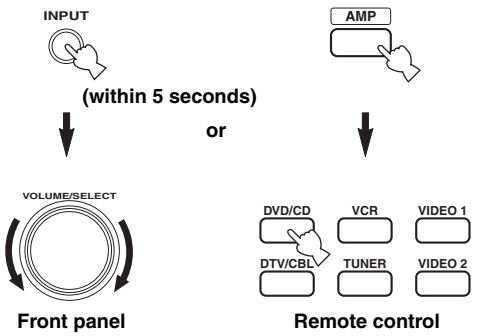
This unit comes with a variety of input jacks. Do the following to select the type of input signals you want to use.

Use this feature to designate the input mode for sources connected to the DIGITAL INPUT jacks when you turn on this unit (see page 44 for details about the input mode).

Note

You cannot change the input mode when INPUT MODE of SET MENU is set to “FIX”. In this case, change the setting to “AUTO” or “LAST” (see page 44).

1 Select the input source.



Note

If no operation is performed within 5 seconds of pressing INPUT or VOLUME/SELECT is pressed on the front panel, the function of VOLUME/SELECT switches back to volume level adjustment. If this happens, “VOLUME” appears in the front panel display for a few seconds.

2 Press INPUT repeatedly until the desired input mode is shown in the front panel display.

Front panel

Input mode

AUTO	Automatically selects input signals in the following order: 1) Digital signals* 2) Analog signals
DTS	Selects only digital signals encoded in DTS. If no DTS signals are input, no sound is output.
ANALOG	Selects only analog signals. If no analog signals are input, no sound is output.

* If this unit detects a Dolby Digital or DTS signal, the decoder automatically switches to the appropriate sound field program.

You can adjust the default input mode this unit selects when the power is turned on with the SETTING parameter in INPUT MODE (see page 44).

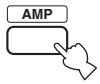
Notes

- When the SETTING parameter in INPUT MODE is set to "FIX", you cannot switch the input mode by pressing INPUT (see page 44).
- When playing a disc encoded with Dolby Digital or DTS on some LD or DVD players, there is a delay in sound output for a moment when playback resumes after a search, because the unit must select the digital signal again.
- When playing an LD source that has not been digitally recorded, the unit may not output any sound for some LD players. In this case, set the input mode to Analog.
- If you attempt to search (forward or backward) during playback of a DTS-encoded disc, noise may occur periodically. If this happens, set the input mode to DTS.
- When you play DTS-encoded CD/LDs with the input mode set to AUTO, this unit automatically switches to the DTS decoding mode. The unit remains in DTS mode (and the **dts** indicator may flash) for a few seconds after playback of the DTS source is complete. To manually release the DTS mode, press INPUT MODE to reselect AUTO.
- If the digital output data of the player has been processed in any way, you may not be able to perform DTS decoding even if you make a digital connection between this unit and the player.

■ Displaying information about the input source

You can display the type, format and sampling frequency of the current input signal.

1 Press AMP.

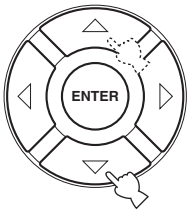


Remote control

2 Press STRAIGHT/EFFECT so that "STRAIGHT" appears in the display.

Remote control

3 Press △/▽ to display the following information about the input signal.



(Format)	Signal format display. When the unit cannot detect a digital signal it automatically switches to analog input.
in	Number of source channels in the input signal. For example, a multi-channel soundtrack with 3 front channels, 2 surround channels and LFE, is displayed as "3/2/LFE".
fs	Sampling frequency. When the unit is unable to detect the sampling frequency "Unknown" appears.
rate	Bit rate. When the unit is unable to detect the bit rate "Unknown" appears.
flg	Flag data encoded with DTS or Dolby Digital signals that cue this unit to automatically switch decoders.

Manually adjusting speaker levels

You can adjust the output level of each speaker while listening to a music source. Please note that this operation will override the level adjustments made in the Speaker Level section of BASIC SETUP (see page 17) and "Using the test tone" (page 37).

1 Press AMP to select the AMP mode.

Remote control

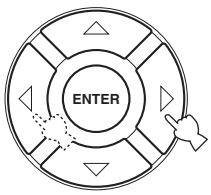
2 Press LEVEL repeatedly to select the speaker you want to adjust.

Remote control

FRONT L	Front left speaker level
CENTER	Center speaker level
FRONT R	Front right speaker level
SUR.R	Surround right speaker level
SUR.L	Surround left speaker level
SWFR	Subwoofer level

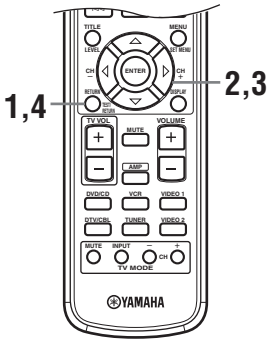
Once you press LEVEL, you can also select the speaker by pressing △ / ▽ on the remote control.

3 Press ◁/▷ to adjust the speaker output level (Control range: –10 to +10 dB).



Using the test tone

You can use the test tone feature to manually balance your speaker levels. Please note that this operation will override the level adjustments made in the Speaker Level section of BASIC SETUP (page 17). Use the test tone to set speaker levels so that the volume from each speaker is identical when heard from your listening position.



1 Press TEST/RETURN on the remote control.

The unit will output a test tone.

2 Press △ / ▽ repeatedly on the remote control to select the speaker you want to adjust.

TEST LEFT	Front left speaker
TEST CENTER	Center speaker
TEST RIGHT	Front right speaker
TEST SUR. R	Surround right speaker
TEST SUR. L	Surround left speaker
TEST SUBWOOFER	Subwoofer

3 Press ◁/▷ to adjust speaker volumes.

4 Press TEST/RETURN when you have completed your adjustment.

The test tone stops.

Note

You cannot enter test mode if headphones are connected to the PHONES jack. Remove the headphones from the PHONES jack.

SET MENU

You can use the following parameters in SET MENU to adjust a variety of system settings and customize the way this unit operates. Change the initial settings (indicated in bold under each parameter) to reflect the needs of your listening environment.

■ BASIC SETUP

Use to quickly setup basic system parameters (see page 16).

■ MANUAL SETUP

Use to manually adjust speaker and system parameters.

1 SOUND MENU

Use to manually adjust any speaker setting, alter the quality and tone of the sound output by the system or compensate for video signal processing delays when using LCD monitors or projectors.

Most of the parameters described in SOUND MENU are set automatically when you perform "BASIC SETUP" (see page 16). You can use SOUND MENU to make further adjustments.

Item	Features	Page
A)SPEAKER SET	Selects the size of each speaker, the speakers for low-frequency signal output, and the cross over frequency.	40
B)SP LEVEL	Adjusts the output level of each speaker.	41
C)SP DISTANCE	Adjusts the delay time of each speaker.	42
D)CENTER GEQ	Adjusts the tonal quality of the center speaker.	42
E)LFE LEVEL	Adjusts the output level of the LFE channel for Dolby Digital or DTS signals.	42
F)D. RANGE	Adjusts the dynamic range for Dolby Digital or DTS signals.	43
G)AUDIO SET	Customizes the muting level and audio delay.	43

2 INPUT MENU

Use to reassign digital input and select the input mode.

Item	Features	Page
A)INPUT ASSIGN	Assigns jacks according to the component to be used.	43
B)INPUT MODE	Selects the initial input mode of the source.	44

3 OPTION MENU

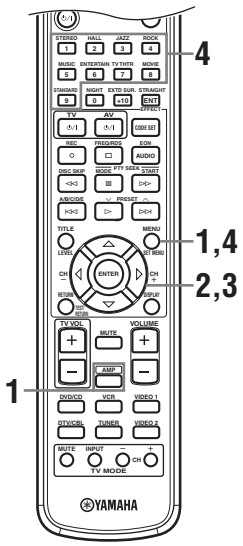
Use to adjust the optional system parameters.

Item	Features	Page
A)DISPLAY SET	Adjusts the brightness of the display and converts video signals.	44
B)MEMORY GUARD	Locks sound field program parameters and other SET MENU settings.	45
C)PARAM. INI	Initializes the parameters of a group of sound field programs.	45
D)TUNER SET	Switches frequency spacing.*a	45
D)SCART SET	Turns on this unit when a component connected using a SCART cable is turned on.*b	45

*a: D)TUNER SET is only available for Asia and General models.
*b: D)SCART SET is only available for U.K. and Europe models.

Changing parameter settings

You can enjoy good quality sound with the factory-set parameters. Although you do not have to change the initial settings, you can change some of the parameters to better suit the input source or your listening room.
Use the remote control to access and adjust each parameter.



You can change SET MENU parameters while the unit is reproducing sound.

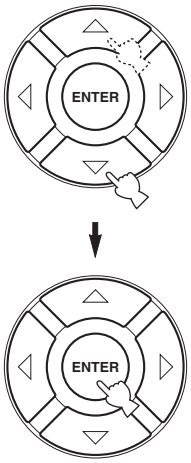
Note

You cannot change some SET MENU parameters while the unit is in either cinema or music night listening mode.

1 Press AMP, then press SET MENU to enter SET MENU.

"SET MENU" is displayed on both the monitor and front panel of this unit.
The explanations in this document are based on the Screen Menu. The characters shown in the front panel display may differ from those on the Screen Menu.

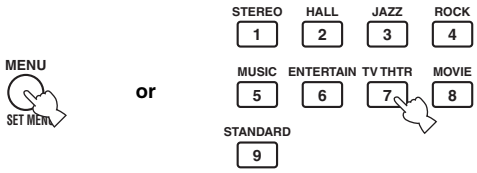
2 Press △/▽ repeatedly to select a menu, then press ENTER.



- The number of levels each menu contains may differ. If the menu you selected contains a sub menu, press ENTER to enter the desired sub menu.
- Press TEST/RETURN to return to the upper level menu.

3 Press ◁/▷ repeatedly to change the setting for the item you want to adjust.

4 To exit, press SET MENU, or just press one of the sound field program group buttons when finished.



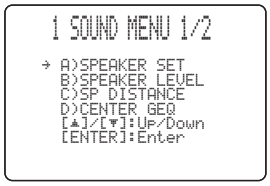
Note

You cannot change parameter values when Memory Guard is set to "ON". If you want to change the parameter values, set Memory Guard to "OFF" (see page 45).

Memory back-up
The memory back-up circuit prevents the stored data from being lost even if this unit is set in the standby mode, the power cord is disconnected from the AC outlet, or the power supply is temporarily cut due to power failure. However, if the power is cut for more than one week, the parameter values will return to the factory settings. If this happens, edit the parameter value again.

1 SOUND MENU

Use this menu to manually adjust any speaker setting.



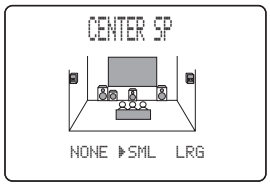
■ Speaker set A)SPEAKER SET

Use to manually adjust any speaker setting.

If you are not satisfied with the bass sounds from your speakers, you can change these settings according to your preference.

Center speaker CENTER SP

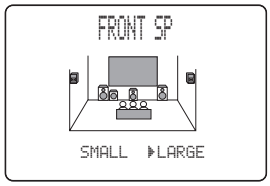
Choices: NONE, **SML**, LRG



- Select NONE if you do not have a center speaker. The unit directs all of the center channel signal to the front left and right speakers.
- Select SML if you have a small center speaker. The unit directs the low-frequency signals of the center channel to the speakers selected with "LFE/BASS OUT".
- Select LRG if you have a large center speaker. The unit directs the entire range of the center channel signal to the center speaker.

Front speakers FRONT SP

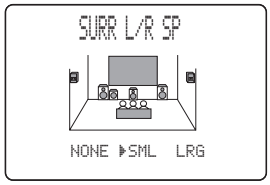
Choices: SMALL, **LARGE**



- Select SMALL if you have small front speakers. The unit directs the low-frequency signals of the front channel to the speakers selected with "LFE/BASS OUT".
- Select LARGE if you have large front speakers. The unit directs the entire range of the front left and right channel signals to the front left and right speakers.

Surround left/right speakers SURR L/R SP

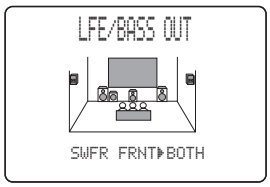
Choices: NONE, **SML**, LRG



- Select NONE if you do not have surround speakers. This will set the unit to the Virtual CINEMA DSP mode (see page 35).
- Select SML if you have small surround left and right speakers. The low-frequency signals of the surround channel are directed to the speakers selected with "LFE/BASS OUT".
- Select LRG if you have large surround left and right speakers. The entire range of the surround channel signal is directed to the surround left and right speakers.

Bass out LFE/BASS OUT

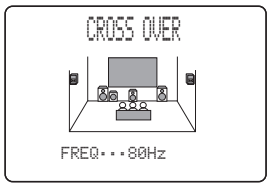
Low-frequency (bass) signals can be directed to the subwoofer and/or the front left and right speakers according to the characteristics of your system. This setting also determines the routing of the LFE (low-frequency effect) signals found in Dolby Digital or DTS sources.
Choices: SWFR, FRNT, **BOTH**



- Select SWFR if you connect a subwoofer. LFE and low-frequency signals from other channels are directed to the subwoofer according to the speaker settings.
- Select FRNT if you do not use a subwoofer. LFE and low frequency signals from other channels are directed to the front speakers according to the speaker settings (even if you have previously set front speakers to SML).
- Select BOTH if you connect a subwoofer and you want to output low-frequency signals from front channels to both the front speakers and subwoofer. LFE and low-frequency signals from other channels are also directed to the subwoofer according to the speaker settings. Use this function to reinforce low-frequency signals using the subwoofer when playing back sources such as CDs.

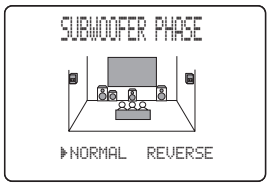
Cross over CROSS OVER

Use this feature to select a cross-over (cut-off) frequency for all low-frequency signals. All frequencies below the selected frequency will be sent to the subwoofer.
Choices: 40Hz, 60Hz, **80Hz**, 90Hz, 100Hz, 110Hz, 120Hz, 160Hz, 200Hz



Subwoofer phase SUBWOOFER PHASE

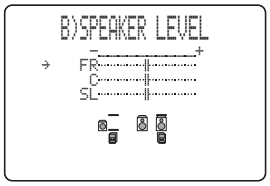
If bass sounds are lacking or unclear, use this feature to switch the phase of your subwoofer.
Choices: **NORMAL**, REVERSE



- Select NORMAL if you do not want to reverse the phase of your subwoofer.
- Select REVERSE to reverse the phase of your subwoofer.

■ Speaker level B)SPEAKER LEVEL

Use these settings to manually balance the speaker levels between the front left or surround left speakers and each speaker selected in SPEAKER SET (page 40).
Choices: –10 to +10 dB

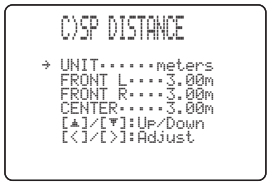


- **FR** adjusts the balance of the front left and front right speakers.
- **C** adjusts the balance of the front left and center speakers.
- **SL** adjusts the balance of the front left and surround left speakers.
- **SR** adjusts the balance of the surround left and surround right speakers.
- **SWFR** adjusts the balance of the front left speaker and subwoofer.

To calibrate, use the test tone feature (see page 37).

■ Speaker distance C)SP DISTANCE

Use this feature to manually input the distance of each speaker and adjust the delay applied to respective channel. Ideally, each speaker should be the same distance from the main listening position. However, this is not possible in most home situations. Thus, a certain amount of delay must be applied to the sound from each speaker so that all sound will arrive at the listening position at the same time.



Unit UNIT

Choices: **meters** (m), feet (ft)
Initial setting:
U.S.A. and Canada models: feet (ft)
Other models: meters (m)

- Select meters to input speaker distances in meters.
- Select feet to input speaker distances in feet.

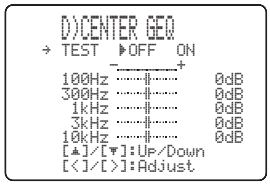
Speaker distances

Choices: 0.3 to 24.00 m (1 to 80 ft)

- **FRONT L** adjusts the distance of the front left speaker. Initial setting: 3.0 m (10.0 ft)
- **FRONT R** adjusts the distance of the front right speaker. Initial setting: 3.0 m (10.0 ft)
- **CENTER** adjusts the distance of the center speaker. Initial setting: 3.0 m (10.0 ft)
- **SURR L** adjusts the distance of the surround left speaker. Initial setting: 3.0 m (10.0 ft)
- **SURR R** adjusts the distance of the surround right speaker. Initial setting: 3.0 m (10.0 ft)
- **SWFR** adjusts the distance of the subwoofer. Initial setting: 3.0 m (10.0 ft)

■ Center graphic equalizer D)CENTER GEQ

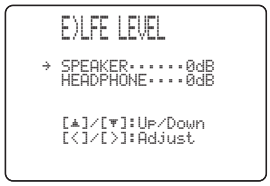
Use this feature to adjust the built-in 5-band graphic equalizer for the center channel so that the tonal quality of the center speaker matches that of the front speakers. You can make adjustments listening to the currently selected source component or a test tone.
You can adjust 5 frequency bands: 100Hz, 300Hz, 1kHz, 3kHz, 10kHz
Choices: –6 to +6 dB



- Select ON to output test tones from the front left and center speakers, and adjust the tonal quality of the center speaker.
- Select OFF to stop the test tone and output the currently selected source component.
- Press ∧ / ∨ to select a frequency band.
- Press < / > to adjust the selected frequency band.

■ Low-frequency effect level E)LFE LEVEL

Use to adjust the output level of the LFE (low-frequency effect) channel according to the capacity of your subwoofer or headphones. The LFE channel carries low-frequency special effects which are only added to certain scenes. This setting is effective only when this unit decodes Dolby Digital or DTS signals.
Choices: –20 to **0** dB



Speaker SPEAKER

Select to adjust the speaker LFE level.

Headphone HEADPHONE

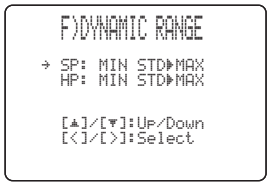
Select to adjust the headphone LFE level.

Note

Depending on the settings of “LFE LEVEL”, some signals may not be output from the SUBWOOFER OUTPUT jack.

■ Dynamic range F)DYNAMIC RANGE

Use to select the amount of dynamic range compression to be applied to your speakers or headphones. This setting is effective only when the unit is decoding Dolby Digital and DTS signals.
Choices: MIN (minimum), STD (standard), **MAX** (maximum)



Speaker SP

Select to adjust the speaker compression.

Headphone HP

Select to adjust the headphone compression.

- Select MIN if you regularly listen at low volume levels.
- Select STD for general use.
- Select MAX to preserve the greatest amount of dynamic range.

■ Audio set G)AUDIO SET

Use to customize this units overall audio settings.

Audio mute AUDIO MUTE

Use to adjust how much the mute function reduces the output volume.
Choices: **MUTE**, –20 dB

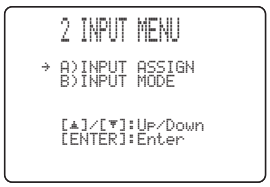
- Select MUTE to completely halt all output of sound.
- Select –20 dB to reduce the current volume by 20 dB.

Audio delay AUDIO DELAY

Use to delay the sound output and synchronize it with the video image. This may be necessary when using certain LCD monitors or projectors.
Choices: **0** to 160 ms

2 INPUT MENU

Use this menu to manually adjust any input setting.

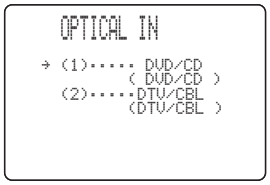


■ Input assignment A)INPUT ASSIGN

You can assign jacks according to the component to be used if this unit's initial settings do not correspond to your needs. Change the following parameters to reassign the respective jacks and effectively connect more components. Once the inputs have been reassigned, you can select the corresponding component by using INPUT on the front panel or the input selector buttons on the remote control.

For OPTICAL INPUT jacks 1 and 2

Choices: DVD/CD, VIDEO1, VCR, DTV/CBL

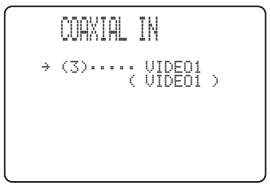


Note

OPTICAL IN(2) cannot be assigned to an item already set to OPTICAL IN(1). If you want to assign OPTICAL IN(2), change the selection for OPTICAL IN(1). If the above settings are incorrect, "– – –" appears in the display.

For COAXIAL INPUT jack 3

Choices: VIDEO1, VCR, DTV/CBL, DVD/CD

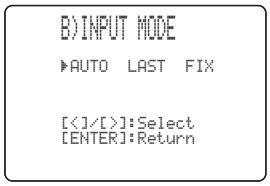


Note

COAXIAL IN(3) cannot be assigned to an item already set to OPTICAL IN(1) or OPTICAL IN(2). If you want to assign COAXIAL IN(3), change the selection for OPTICAL IN(1) or OPTICAL IN(2). If the above settings are incorrect, "– – –" appears in the display.

■ Input mode B)INPUT MODE

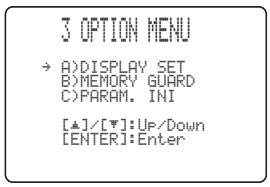
Use this feature to designate the input mode for sources connected to the DIGITAL INPUT jacks when you turn on this unit (see page 35 for details about the input mode).
Choices: **AUTO**, LAST, FIX



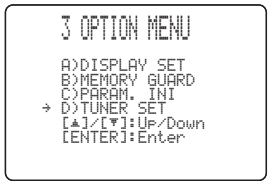
- Select AUTO if you want "Auto" to be set whenever you turn on this unit's power.
- Select LAST to set this unit to automatically select the last input mode used for that source.
- Select FIX to fix the input mode used for that source.

3 OPTION MENU

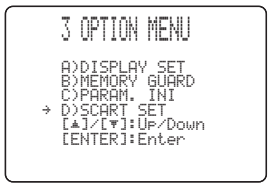
Use this menu to manually adjust the optional system settings.



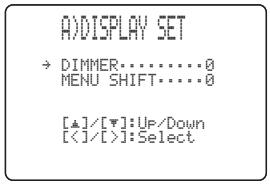
(Asia and General models)



(Europe and U.K. models)



■ Display set A)DISPLAY SET



Dimmer DIMMER

Use to adjust the brightness of the front panel display.
Choices: –4 to **0**

MENU shift MENU SHIFT

Use to adjust the vertical position of the Screen Menu.
Choices: –5 (upward) to +5 (downward)

- Press – to raise the position of the Screen Menu.
- Press + to lower the position of the Screen Menu.

■ Memory guard B)MEMORY GUARD

Use this feature to prevent accidental changes to DSP program parameter values and other system settings.
Choices: **OFF**, ON

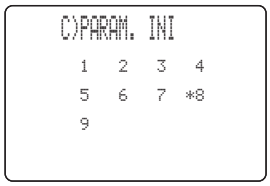
Select ON to protect:
- DSP program parameters
- All SET MENU items
- All speaker levels

Note

When "MEMORY GUARD" is set to ON, you cannot use the test tone or select any other SET MENU items.

■ Parameter initialization C)PARAM. INI

Use this feature to initialize the parameters for each sound field program within a sound field program group. When you initialize a sound field program group, all of the parameter values within that group revert to their initial settings.
Press the corresponding numeric button for the sound field program that you want to initialize.
An asterisk (*) next to a program number means that the parameter values have been changed from their initial settings.



Notes

- You cannot automatically revert to the previous parameter settings once you initialize a sound field program group.
- You cannot separately initialize individual sound field programs.
- You cannot initialize any program groups when "MEMORY GUARD" is set to ON.

■ TUNER SET D)TUNER SET

Use this feature to adjust the frequency spacing for the tuner. The new setting becomes active the next time the power is turned on.

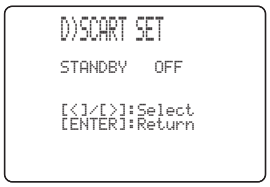
Choices: AM: 9kHz, FM: 50kHz and
AM: 10kHz, FM: 100kHz
- Select AM: 9kHz, FM: 50kHz to set the AM band to 9kHz and the FM band to 50kHz.
- Select AM: 10kHz, FM: 100kHz to set the AM band to 10kHz and the FM band to 100kHz.

Note

This feature is only available when using Asia and General models.

■ SCART SET D)SCART SET

Use this feature to select whether you want signals carried via SCART connections to pass through this unit when it is set to the standby mode.



Choices: **ON**, OFF
- Select ON if you want to allow signals to pass through this unit when it is in standby mode. (For example, if this unit is connected via its SCART connectors between your TV and VCR, the TV signals can pass through to the VCR even when this unit is in the standby mode.)
- Select OFF if you do not want signals to pass through this unit when it is in standby mode.

Note

This feature is only available when using Europe and U.K. models.

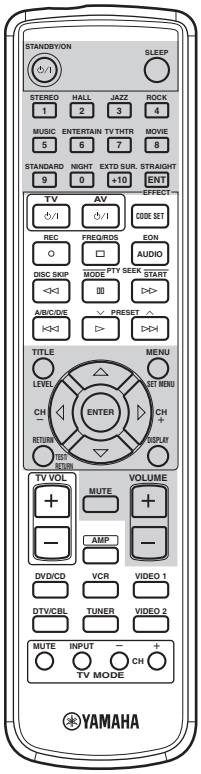
REMOTE CONTROL FEATURES

In addition to controlling this unit, the remote control can operate other A/V components made by YAMAHA and other manufacturers. To control other components, set up the remote control with the appropriate remote control codes.

Control area

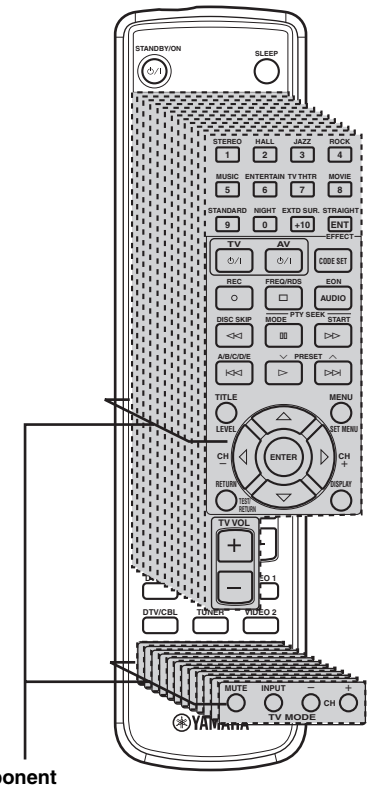
■ Controlling this unit

The shaded areas below can be used to control this unit when the AMP mode is selected. Press AMP to select the AMP mode.



■ Controlling other components

The shaded areas below can be used to control other components. Each button has a different function depending on the selected components. Select the component you want to control by pressing an input selector button. The name of the selected component appears in the display window.



Component control area

You can control up to 11 different components by setting appropriate remote control codes (see page 47).

Setting remote control codes

Once you set the appropriate remote control codes, you can use this remote to control your other components. Note that some buttons may not correctly operate the selected component. Use the input selector buttons to select the component you want to operate. The remote control automatically switches to the appropriate control mode for that component.

■ Default codes

The following table shows the default component (Library: component category) and the remote control code for each area.

Input area	Manufacturer	Code
TV (DTV/CBL)	YAMAHA	299
VCR	YAMAHA	399
DVD (DVD/CD)	YAMAHA	699

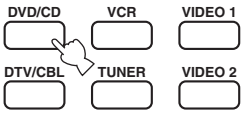
Note

You may not be able to operate your YAMAHA component even if a YAMAHA remote control code is initially set as listed above. In this case, try to set another YAMAHA remote control code.

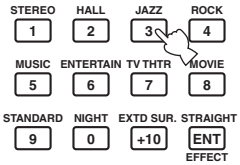
■ Setting a code

1 Hold down CODE SET while doing steps 2 and 3.

2 Press an input selector button to select the source component you want to set up.



3 Press the numeric buttons to enter the three-digit remote control code for the component to be used, then release CODE SET.



Refer to “LIST OF REMOTE CONTROL CODES” at the end of this manual.

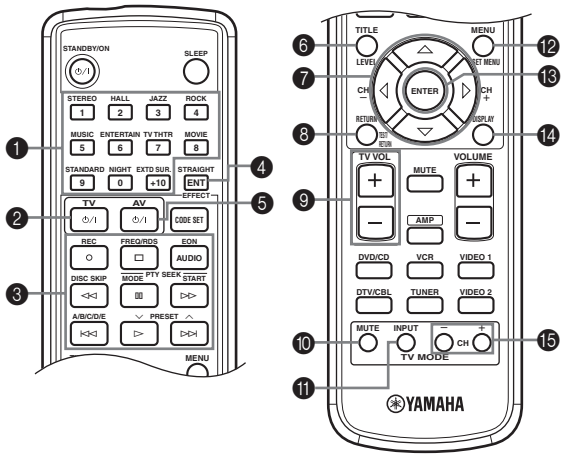
To reset an input area’s remote control code to the factory default, input the default code (see “Default codes” above) in step 3.

Notes

- If the manufacturer of your component has more than one code, try each of them until you find the correct one.
- If you wait for more than 10 seconds during step 3, the setup process is canceled. If this happens, start over from step 2.
- Replace the batteries frequently. The settings may be lost after two minutes without power supply.
- If the remote control code is successfully set, “Code Set OK” appears in the front panel display of this unit. If the setting is not successful, “Code Set NG” appears.

Controlling other components

You can operate other components if you have set the remote control code for your component in the remote control. Please note that some buttons may not operate the component as expected. When you select an input source, the remote control automatically switches to the mode for operating that component.



	DVD player	VCR	TV, digital/cable TV	Tuner
❶ 1-9, 0, +10	Numeric buttons	Numeric buttons	Numeric buttons	Preset stations (1-8)
❷ TV	TV power *2	TV power *2	TV power *2	TV power *2
❸ REC/DISC SKIP	Disc skip	Rec *3	VCR rec	
▷	Play	Play *3	VCR play	Preset down
◁◁	Search backward	Search backward *3	VCR search backward	
▷▷	Search forward	Search forward *3	VCR search forward	
AUDIO	Audio			
▯▯	Pause	Pause *3	VCR pause	
▷▷|	Skip forward			Preset up
|◁◁	Skip backward			A/B/C/D/E
□	Stop	Stop *3	VCR stop	
❹ ENT	Title/Index		Enter/12	
❺ AV	Power *1	Power *1	VCR power	
❻ TITLE	Title			
❼ △	Up			
▽	Down			
CH +/▷	Right	VCR channel up		
CH –/◁	Left	VCR channel down		
❽ RETURN	Return			
❾ TV VOL +	TV volume up *2	TV volume up *2	TV volume up *2	TV volume up *2
TV VOL –	TV volume down *2	TV volume down *2	TV volume down *2	TV volume down *2
❿ TV MUTE	TV mute *2	TV mute *2	TV mute	TV mute *2
⓫ TV INPUT	TV input *2	TV input *2	TV input	TV input *2
⓬ MENU	Menu			
⓭ ENTER	Enter			
⓮ DISPLAY	Display			
⓯ TV CH +	TV channel up *2	TV channel up *2	TV channel up	TV channel up *2
TV CH –	TV channel down *2	TV channel down *2	TV channel down	TV channel down *2

*1 This button functions only when the original remote control of the component has a POWER button.
*2 These buttons can operate your TV without switching the input if the remote control code is set in DTV/CBL.
*3 These buttons can operate your VCR without switching the input to VCR if the remote control code is set in VCR.

EDITING SOUND FIELD PARAMETERS

What is a sound field

What really creates the rich, full tones of a live instrument are the multiple reflections from the walls of the room. In addition to making the sound "live", these reflections enable us to tell where the player is situated, and the size and shape of the room in which we are sitting.

For details on how to change parameter settings, see page 39.

■ Elements of a sound field

In any environment, in addition to the direct sound coming straight to our ears from the player's instrument, there are two distinct types of sound reflections that combine to make up the sound field:

Early reflections

Reflected sounds reach our ears extremely rapidly (50 ms – 100 ms after the direct sound), after reflecting from one surface only – for example, from the ceiling or a wall. Early reflections actually add clarity to the direct sound.

Reverberations

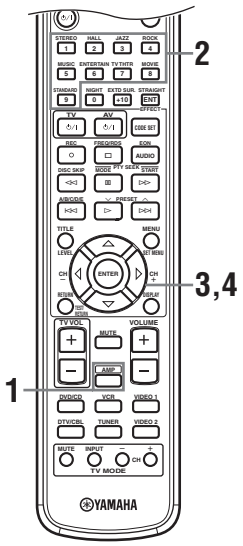
These are caused by reflections from more than one surface – walls, ceiling, the back of the room – so numerous that they merge together to form a continuous sonic "afterglow". They are non-directional, and lessen the clarity of the direct sound.

Direct sound, early reflections and subsequent reverberation taken together help us to determine the subjective size and shape of the room, and it is this information that the digital sound field processor reproduces in order to create sound fields.

If you could create the appropriate early reflections and subsequent reverberations in your listening room, you would be able to create your own listening environment. The acoustics in your room could be changed to those of a concert hall, a dance floor, or virtually any size room at all. This ability to create sound fields at will is exactly what YAMAHA has done with the digital sound field processor.

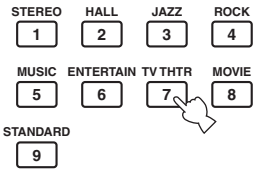
Sound field parameter descriptions

You can adjust the values of certain digital sound field parameters so the sound fields are recreated accurately in your listening room. Not all of the following parameters are found in every program.

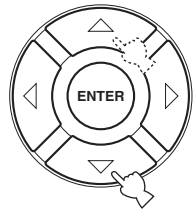


1 Press AMP on the remote control.

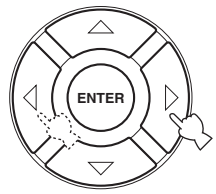
2 Press one of the sound field program group buttons to select the desired sound field program.



3 Press △/▽ repeatedly to access the sound field program parameters.



4 Press ◁/▷ repeatedly to adjust the sound field parameter.



5 To change parameter values for a different sound field, repeat steps 2 through 4.

Note

You cannot change parameter values when Memory Guard is set to "ON". If you want to change the parameter values, set Memory Guard to "OFF" (see page 45).

■ DSP LEVEL

Function: This parameter adjusts the level of all the DSP effect sounds within a narrow range.
Description: Depending on the acoustics of you listening room, you may want to increase or decrease the DSP effect level relative to the level of the direct sound.
Control range: –6 to +3 dB

■ DELAY

Function: This parameter changes the apparent distance from the source sound by adjusting the delay between the direct sound and the first reflection heard by the listener.
Description: The smaller the value, the closer the sound source seems to the listener. The larger the value, the farther it seems. For a small room, set to a small value. For a large room, set to a large value.
Control range: 1 to 99 ms

For 5ch Stereo

Function: These parameter adjusts the volume level for each channel in 5-channel stereo mode.
Control Range: 0 to 100%

■ CT LEVEL (Center level)

■ SL LEVEL (Surround left level)

■ SR LEVEL (Surround right level)

For PRO LOGIC II Music

■ PANORAMA

Function: Extends the front stereo image to include the surround speakers for wraparound effect.
Choices: OFF/ON, initial setting is OFF.

■ DIMENSION

Function: Gradually adjusts the sound field either towards the front or towards the rear.
Control range: –3 (towards the rear) to +3 (towards the front), initial setting is STD (standard).

■ CT WIDTH (Center width)

Function: Adjusts the center image from all three front speakers to varying degrees. A larger value adjusts the center image towards the front left and right speakers.
Control range: 0 (center channel sound is output only from center speaker) to 7 (center channel sound is output only from front left and right speakers), initial setting is 3.

TROUBLESHOOTING

Refer to the chart below when this unit does not function properly. If the problem you are experiencing is not listed below or if the instruction below does not help, set this unit to the standby mode, unplug the power cord from the outlet, and contact the nearest authorized YAMAHA dealer or service center.

■ General

Problem	Cause	Remedy	Refer to page
This unit fails to turn on when STANDBY/ ON is pressed, or enters in the standby mode soon after the power has been turned on.	The power cord is not connected or the plug is not completely inserted.	Connect the power cord firmly.	—
	The impedance setting is incorrect.	Set the impedance to match your speakers.	10
	The protection circuitry has been activated.	Make sure all speaker wire connections on this unit and on all speakers are secure and that the wire for each connection does not touch anything other than its respective connection.	9, 11
	This unit has been exposed to a strong external electric shock (such as lightning and strong static electricity).	Set this unit in the standby mode, disconnect the power cord, plug it back in after 30 seconds, then use it normally.	—
No sound	Incorrect input or output cable connections.	Connect the cables properly. If the problem persists, the cables may be defective.	9, 12
	Input Mode is set to DTS or ANALOG.	Select AUTO.	35—36
	No appropriate input source has been selected.	Select an appropriate input source by pressing INPUT, then rotating VOLUME/SELECT or using the input selector buttons.	18
	Speaker connections are not secure.	Secure the connections.	9
	The volume is turned down.	Turn up the volume.	—
	The sound is muted.	Press MUTE or any operation button on this unit to cancel mute and adjust the volume.	19
	If you are playing an LD source, the player may not output digital signals if the LD source was not digitally recorded.	Set the Input Mode to ANALOG.	35—36
	The Input Mode is set to ANALOG while playing a source encoded with a DTS signal.	Set the Input Mode to AUTO or DTS.	35—36
	Signals this unit cannot reproduce are being received from a source component e.g.: a CD-ROM.	Play a source whose signals this unit can reproduce.	—
The sound suddenly goes off.	The protection circuitry has been activated because of a short circuit, etc.	Check the speaker wires are not touching each other and then turn this unit back on.	—
	The sleep timer has turned the unit off.	Turn on the power, and play the source again.	—
	The sound is muted.	Press MUTE to cancel a mute.	19
Only the speaker on one side can be heard.	Incorrect cable connections.	Connect the cables properly. If the problem persists, the cables may be defective.	9, 12
	Incorrect balance settings in SET MENU.	Adjust the SPEAKER LEVEL settings.	17, 41
Only the center speaker outputs substantial sound.	When playing a monaural source with a CINEMA DSP program, the source signal is directed to the center channel, and the front and surround speakers output effect sounds.		

Problem	Cause	Remedy	Refer to page
No sound from the effect speakers.	The sound field programs are turned off.	Press STRAIGHT/EFFECT to turn them on.	21
	You are using a source or program combination that does not output sound from all channels.	Try another sound field program.	30
No sound from the center speaker.	The output level of the center speaker is set to minimum.	Raise the level of the center speaker.	17, 41
	"CENTER SP" in SET MENU is set to NONE.	Select the appropriate setting for the center speaker.	40
	One of the Hi-Fi DSP programs (except for 5ch Stereo) has been selected.	Try another sound field program.	30
No sound from the surround speakers.	The output level of the surround speakers is set to minimum.	Raise the output level of the surround speakers.	17, 41
	"SURR L/R SP" in SET MENU is set to NONE.	Select the appropriate setting for the surround left and right speakers.	40
	A monaural source is being played with STRAIGHT.	Press STRAIGHT/EFFECT to turn on the sound fields.	—
No sound from the subwoofer.	"LFE/BASS OUT" in SET MENU is set to FRNT when a Dolby Digital or DTS signal is being played.	Select SWFR or BOTH.	41
	"LFE/BASS OUT" in SET MENU is set to SWFR or FRNT when a 2-channel source is being played.	Select BOTH.	41
	The source does not contain low bass signals.		
Dolby Digital or DTS sources cannot be played. (Dolby Digital or DTS indicator in the front panel display does not light up.)	The connected component is not set to output Dolby Digital or DTS digital signals.	Make an appropriate setting following the operations instructions for your component.	—
	Input Mode is set to ANALOG.	Set Input Mode to AUTO or DTS.	35—36
A "humming" sound can be heard.	Incorrect cable connections.	Firmly connect the audio plugs. If the problem persists, the cables may be defective.	—
The volume level cannot be increased, or the sound is distorted.	The component connected to the EXT IN/OUT connector of this unit is turned off.	Turn on the power to the component.	—
The sound effect cannot be recorded.	It is not possible to record the sound effect with a recording component.		
A source cannot be recorded by a digital recording component connected to this DIGITAL OUTPUT jack.	The source component is not connected to this unit's DIGITAL INPUT jacks.	Connect the source component to the DIGITAL INPUT jacks.	12
	Some components cannot record the Dolby Digital or DTS sources.		
A source cannot be recorded by an analog component connected to the TV IN/OUT jacks.	The source component is not connected to this unit's analog TV IN/OUT jack.	Connect the source component to the analog TV IN/OUT jack.	12
The sound field parameters and some other settings on this unit cannot be changed.	"MEMORY GUARD" in SET MENU is set to ON.	Select OFF.	45

Problem	Cause	Remedy	Refer to page
This unit does not operate properly.	The internal microcomputer has been frozen by an external electric shock (such as lightning or excessive static electricity) or by a power supply with low voltage.	Disconnect the AC power cord from the outlet and then plug it in again after about 30 seconds.	—
"CHECK SP WIRES" appears in the front panel display.	Speaker cables are short circuited.	Make sure all speaker cables are connected correctly.	9
There is noise interference from digital or high-frequency equipment, or this unit.	This unit is too close to digital or high-frequency equipment.	Move this unit further away from such equipment.	—
The picture is disturbed.	The video source uses scrambled or encoded signals to prevent dubbing.		
This unit suddenly switches to the standby mode.	The internal temperature became too high and the overheat protection circuitry was activated.	Wait until this unit cools down and then turn it back on.	—
The whirring of the fan can occassionally be heard.	This unit is fitted with a fan for cooling purposes. The fan automatically operates when the temperature inside the unit becomes too hot, or when the unit is turned on.		

■ Tuner

Problem		Cause	Remedy	Refer to page
FM	**FM stereo reception is noisy.**	The characteristics of FM stereo broadcasts may cause this problem when the transmitter is too far away or the antenna input is poor.	Check the antenna connections. Try using a high-quality directional FM antenna.	14
			Use the manual tuning method.	23
	There is distortion, and clear reception cannot be obtained even with a good FM antenna.	There is multipath interference.	Adjust the antenna position to eliminate multipath interference.	—
	The desired station cannot be tuned in with the automatic tuning method.	The station is too weak.	Use a high-quality directional FM antenna.	—
			Use the manual tuning method.	23
	Previously preset stations can no longer be tuned in.	This unit has been disconnected for a long period.	Preset the stations again.	24

AM	**The desired station cannot be tuned in with the automatic tuning method.**	The signal is weak or the antenna connections are loose.	Tighten the AM loop antenna connections and orient it for best reception.	—
			Use the manual tuning method.	23
	There are continuous crackling and hissing noises.	Noises result from lightning, 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 TV set is being used nearby.	Move this unit away from the TV.	—
		The AM loop antenna is placed near the speaker cables.	Place the AM loop antenna away from the speaker cables.	—
		The AM ANT and GND cords are inserted in the wrong terminal.	Make sure the white cord is inserted into the AM ANT terminal and the black cord into the GND terminal.	14

■ Remote control

Problem	Cause	Remedy	Refer to page
The remote control does not work or function properly.	Wrong distance or angle.	The remote control will function within a maximum range of 6 m (20 ft) and no more than 30 degrees off-axis from the front panel.	6
	Direct sunlight or lighting (from an inverter type of fluorescent lamp, etc.) is striking the remote control sensor of this unit.	Reposition this unit.	—
	The batteries are weak.	Replace all batteries.	3
	The remote control code was not correctly set.	Set the remote control code correctly.	47
		Try to set the other codes of the same manufacturer.	47
	Even if the remote control code is correctly set, some models may not respond to the remote control.		

GLOSSARY

Audio formats

■ Dolby Digital

Dolby Digital is a digital surround sound system that gives you completely independent multi-channel audio. With 3 front channels (left, center, and right), and 2 surround stereo channels, Dolby Digital provides 5 full-range audio channels. With an additional channel especially for bass effects, called LFE (low frequency effect), the system has a total of 5.1-channels (LFE is counted as 0.1 channel). By using 2-channel stereo for the surround speakers, more accurate moving sound effects and surround sound environment are possible than with Dolby Surround. The wide dynamic range (from maximum to minimum volume) reproduced by the 5 full-range channels and the precise sound orientation generated using digital sound processing provide listeners with previously unheard of excitement and realism.
With this unit, any sound environment from monaural up to a 5.1-channel configuration can be freely selected for your enjoyment.

■ Dolby Pro Logic II

Dolby Pro Logic II is an improved technique used to decode vast numbers of existing Dolby Surround software. This new technology enables a discrete 5-channel playback with 2 front left and right channels, 1 center channel, and 2 surround left and right channels (instead of only 1 surround channel for conventional Pro Logic technology). Music and Game modes are also available for 2-channel sources in addition to the Movie mode.

■ Dolby Surround

Dolby Surround uses a 4 channel analog recording system to reproduce realistic and dynamic sound effects: 2 front left and right channels (stereo), a center channel for dialog (monaural), and a surround channel for special sound effects (monaural). The surround channel reproduces sound within a narrow frequency range.
Dolby Surround is widely used with nearly all video tapes and laser discs, and in many TV and cable broadcasts as well. The Dolby Pro Logic decoder built into this unit employs a digital signal processing system that automatically stabilizes the volume on each channel to enhance moving sound effects and directionality.

■ DTS 96/24

DTS 96/24 offers an unprecedented level of audio quality for multi-channel sound on DVD-Video, and is fully backward-compatible with all DTS decoders. “96” refers to a 96 kHz sampling rate (compared to the typical 48 kHz sampling rate). “24” refers to 24-bit word length. DTS 96/24 offers sound quality transparent to the original 96/24 master, and 96/24 5.1-channel sound with full-quality full-motion video for music programs and motion picture soundtracks on DVD-video.

■ DTS (Digital Theater Systems) Digital Surround

DTS digital surround was developed to replace the analog soundtracks of movies with a 6-channel digital sound track, and is now rapidly gaining popularity in movie theaters around the world. Digital Theater Systems Inc. has developed a home theater system so that you can enjoy the depth of sound and natural spatial representation of DTS digital surround in your home. This system produces practically distortion-free 6-channel sound (technically, a left, right and center channels, 2 surround channels, plus an LFE 0.1 channel as a subwoofer, for a total of 5.1-channels). The unit incorporates a DTS-ES decoder that enables 6.1- channel reproduction by adding the surround back channel to existing 5.1-channel format.

Sound field programs

■ CINEMA DSP

Since the Dolby Surround and DTS systems were originally designed for use in movie theaters, their effect is best felt in a theater having many speakers and designed for acoustic effects. Since home conditions, such as room size, wall material, number of speakers, and so on, can differ so widely, it's inevitable that there are differences in the sound heard as well. Based on a wealth of actually measured data, YAMAHA CINEMA DSP uses YAMAHA original sound field technology to combine Dolby Pro Logic, Dolby Digital and DTS systems to provide the visual and audio experience of movie theater in the listening room of your own home.

■ SILENT CINEMA

YAMAHA has developed a natural, realistic sound effect DSP algorithm for headphones.
Parameters for headphones have been set for each sound field so that accurate representations of all the sound field programs can be enjoyed on headphones.

■ Virtual CINEMA DSP

YAMAHA has developed a Virtual CINEMA DSP algorithm that allows you to enjoy DSP sound field surround effects even without any surround speakers by using virtual surround speakers.
It is even possible to enjoy Virtual CINEMA DSP using a minimal two-speaker system that does not include a center speaker.

Audio information

■ ITU-R

ITU-R is the radio communication sector of the ITU (International Telecommunication Union). ITU-R recommends a standard speaker placement which is used in many critical listening rooms, especially for mastering purposes.

■ LFE 0.1 channel

This channel is for the reproduction of low bass signals. The frequency range for this channel is 20 Hz to 120 Hz. This channel is counted as 0.1 because it only enforces a low frequency range compared to the full-range reproduced by the other 5/6 channels in Dolby Digital or DTS 5.1/6.1-channel systems.

■ PCM (Linear PCM)

Linear PCM is a signal format under which an analog audio signal is digitized, recorded and transmitted without using any compression. This is used as a method of recording CDs and DVD audio. The PCM system uses a technique for sampling the size of the analog signal per very small unit of time. Standing for "pulse code modulation", the analog signal is encoded as pulses and then modulated for recording.

■ Sampling frequency and number of quantized bits

When digitizing an analog audio signal, the number of times the signal is sampled per second is called the sampling frequency, while the degree of fineness when converting the sound level into a numeric value is called the number of quantized bits.
The range of rates that can be played back is determined based on the sampling rate, while the dynamic range representing the sound level difference is determined by the number of quantized bits. In principle, the higher the sampling frequency, the wider the range of frequencies that can be played back, and the higher the number of quantized bits, the more finely the sound level can be reproduced.

Video signal information

■ Composite video signal

With the composite video signal system, the video signal is composed of three basic elements of a video picture; color, brightness and synchronization data. A composite video jack on a video component transmits these three elements combined.

SPECIFICATIONS

AUDIO SECTION

- Minimum RMS Output Power for Front, Center, Surround
  1 kHz, 0.9% THD, 6 Ω ..... 70 W + 70 W
- Maximum Power (EIAJ) for Front, Center, Surround
  1 kHz, 10% THD, 6 Ω ..... 100 W
- Input Sensitivity/Input Impedance
  EXT IN/OUT, etc. ..... 200 mV/47 kΩ
- Output Level/Output Impedance
  EXT/TV ..... 200 mV/1.0 kΩ
  SUBWOOFER (FRONT SP: SMALL) ..... 2.0 V/1.2 kΩ
- Headphone Jack Rated Output/Impedance
  EXT IN (DVD/CD, etc.)
  1 kHz ..... 100 mV/100 Ω
- Frequency Response
  Front (EXT IN, etc.) ..... 20 Hz to 50 kHz, 0/–3 dB
- Total Harmonic Distortion (FRONT SP OUT)
  EXT IN (Effect Off), 1 kHz, 35 W/6 Ω ..... 0.04% or less
- Signal to Noise Ratio (IHF-A Network) (SP OUT)
  EXT IN (Effect Off), Input shorted, 250 mV ..... 100 dB or more
- Residual Noise (IHF-A Network)
  SP OUT, Front L/R ..... 150 μV or less
- Channel Separation (1 kHz/10 kHz)
  EXT IN, etc., Effect Off, VOL. –30 dB,
  1 kHz/10 kHz, 5.1 kΩ terminated ..... 60 dB/45 dB or more
- Tone Control Characteristics
  [Bass]
  Boost/Cut ..... ±10 dB/60 Hz
  [Treble]
  Boost/Cut ..... ±10 dB/20 kHz
- Filter Characteristics
  FRONT, CENTER, SURROUND SP SMALL (H.P.F.)
  ..... fc = 40/60/80/90/100/110/120/160/200 Hz, 12 dB/oct.
  SUBWOOFER (L.P.F.)
  ..... fc = 40/60/80/90/100/110/120/160/200 Hz, 24 dB/oct.

VIDEO SECTION

- Video Signal Type ..... NTSC/PAL
- Video Signal Level ..... 1 Vp-p/75 Ω
- Maximum Input Level ..... 1.5 Vp-p
- Signal to Noise Ratio ..... 50 dB or more
- Frequency Response (MONITOR OUT) ..... 5 Hz to 10 MHz, –3 dB

FM SECTION

- Tuning Range
  [U.S.A. and Canada models] ..... 87.5 to 107.9 MHz
  [Asia and General models] ..... 87.5/87.50 to 108.0/108.00 MHz
  [Other models] ..... 87.50 to 108.00 MHz
- Quieting Sensitivity (IHF)
  Mono (50 dB, 1 kHz, 100% MOD.) ..... 2.8 μV (20.2 dBf)
- Signal to Noise Ratio (IHF)
  Mono/Stereo ..... 73 dB/70 dB
- Harmonic Distortion (1 kHz)
  Mono/Stereo 0.5%/0.5%
- Antenna Input ..... 75 Ω unbalanced

AM SECTION

- Tuning Range
  [U.S.A. and Canada models] ..... 530 to 1710 kHz
  [Asia and General models] ..... 530/531 to 1710/1611 kHz
  [Other models] ..... 531 to 1611 kHz
- Antenna ..... Loop antenna

GENERAL

- Power Supply
  [U.S.A. and Canada models] ..... AC 120 V, 60 Hz
  [Australia model] ..... AC 240 V, 50 Hz
  [China model] ..... AC 220 V, 50 Hz
  [Korea model] ..... AC 220 V, 60 Hz
  [U.K. and Europe models] ..... AC 230 V, 50 Hz
  [Asia model] ..... AC 220-240 V, 50/60 Hz
  [General model] ..... AC 110-120 V, 50/60 Hz
- Power Consumption ..... 90 W
- Standby Power Consumption
  [U.S.A., Canada and General models] ..... 0.8 W
  [U.K. and Europe models] ..... 0.9 W/2.5 W
  [Other models] ..... 0.9 W
- Dimension (W x H x D) ..... 435 x 55.5 x 325 mm
  (17-1/8" x 2-3/16" x 12-3/4")
- Weight ..... 6.4 kg
  (14 lbs 2 oz.)

LIST OF REMOTE CONTROL CODES
LISTE DES CODES DE FABRICANT
LISTE DER HERSTELLERCODES
LISTA ÖVER TILLVERKARKODER
LISTA DEI CODICI DEI FABBRICANTI
LISTA DE CÓDIGOS DE FABRICANTES
LIJST MET FABRIKANTENCODES

TV

VCR

DVD

LIST OF REMOTE CONTROL CODES
LISTE DES CODES DE COMMANDE
LISTE DER FERNBEDIENUNGSCODES
LISTA ÖVER FJÄRRKONTROLLKODER

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YAMAHA

This product mainly uses lead-free solder.
Cet appareil utilise principalement de la soudure sans plomb.
Dieses Produkt verwendet hauptsächlich bleifreies Lot.
I den här produkten används huvudsakligen blyfri lödmetall.
Questo prodotto usa principalmente lega per saldatura senza piombo.
Este producto utiliza principalmente soldadura sin plomo.
Dit product maakt hoofdzakelijk gebruik van loodvrij soldeer.

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, 25462 RELLINGEN BEI HAMBURG, F.R. OF GERMANY
YAMAHA ELECTRONIQUE FRANCE S.A. RUE AMBROISE CROIZAT BP70 CROISSY-BEAUBOURG 77312 MARNE-LA-VALLEE CEDEX02, FRANCE
YAMAHA ELECTRONICS (UK) LTD. YAMAHA HOUSE, 200 RICKMANSWORTH ROAD WATFORD, HERTS WD18 7GQ, 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
Printed in Malaysia WD87190

U

YAMAHA

NS-P240
NS-P246

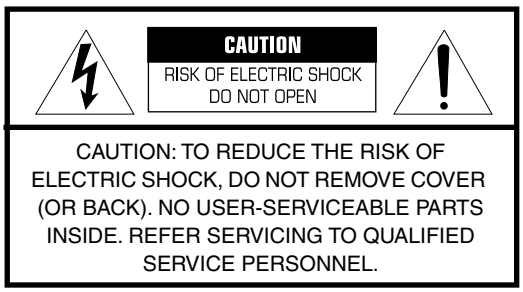
(NS-P240 / NS-P246: NX-S120 + NX-C120 + SW-P240)

HOME CINEMA 5.1CH SPEAKER PACKAGE
HOME CINEMA 6.1CH SPEAKER PACKAGE

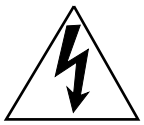
Advanced Y·S·T

OWNER'S MANUAL

IMPORTANT SAFETY INSTRUCTIONS



- Explanation of graphic symbols:



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert you to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT
Please record the serial number of this system in the space below.

Model:

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.

1. Read these instructions.
2. Retain these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near heat sources such as radiators, heat registers, stoves, or other heat-producing apparatus (including amplifiers).
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades, one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician to replace the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, or the point at which the power cord exits the apparatus.
11. Use only attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as if the power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Be sure to allow a space of at least 20 cm above, behind and on both sides of SW-P240.
16. Do not place the following objects on SW-P240:
    A vessel containing liquid.
    If the vessel falls due to vibration and the liquid spills, the unit may be damaged, and/or you may receive an electric shock.

FCC INFORMATION (for US customers)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. **IMPORTANT:** When connecting this product to accessories and/or another product, use only high quality shielded cables. Cable(s) supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.

   This equipment generates or uses radio frequencies and, if not installed and used in accordance with the instructions in the user's manual, may cause interference harmful to the operation of other electronic devices.

Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON," please try to eliminate the problem using one of the following measures:

- Relocate either this product or the device that is being affected by the interference.
- Utilize power outlets that are on different branch circuits (circuit breaker or fuse) or install AC line filter(s).
- In the case of radio or TV interference, relocate or reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to a coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this product. If you cannot locate the appropriate retailer, please contact Yamaha Electronics Corp., U.S.A.; 6660 Orangethorpe Ave; Buena Park, CA 90620.

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

For Canadian Customers
To prevent electric shock, match wide blade of plug to wide slot and fully insert.
This Class B digital apparatus complies with Canadian ICES-003.

We Want You Listening for a Lifetime

Yamaha and the Electronic Industries Association's Consumer Electronics Group want you to get the most enjoyment out of your equipment by playing it at a safe level — a level that lets the sound come through loud and clear without annoying blaring or distortion — and, most importantly, without damaging your sensitive hearing.

Since hearing damage from loud sounds is often undetectable until it is too late, Yamaha and the Electronic Industries Association's Consumer Electronics Group recommend that you avoid prolonged exposure to excessive volume levels.

Precautions

- To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- Install the speakers in a cool, dry, clean place – away from windows, sources of heat, sources of excessive vibration, dust, moisture or cold. Avoid sources of electrical humming (e.g., transformers and motors). To prevent fire or electric shock, do not expose the speakers to rain or water.
- To prevent the enclosure from warping or discoloring, do not expose the speakers to direct sunlight or excessive humidity.
- Avoid installing the speakers where foreign objects may fall onto them and/or where they may be exposed to liquid dripping or splashing.
- Do not place the following objects on top of the speakers:
  - Other components, as they might damage or discolor the surface of the speakers;
  - Burning objects (e.g., candles), as they might cause fire, damage to the speakers or personal injury;
  - Containers of liquid, as they might spill and cause electric shock to the user or damage to the speakers.
- Do not place the speakers where they are liable to be knocked over or struck by falling objects. Stable placement will also ensure better sound.
- Placing the speakers on the same shelf or rack as the turntable can result in feedback.
- Secure placement or installation is the owner's responsibility. Yamaha is not liable for accidents caused by improper placement or installation of speakers.
- If you note distortion, reduce the volume control on your amplifier. Do not drive your amplifier to the point of "clipping." Otherwise, the speakers may be damaged.
- When using an amplifier with a rated output power higher than the nominal input power of the speakers, care should be taken not to exceed the speakers' maximum input.
- Do not clean the speakers with chemical solvents as this might damage the finish. Use a clean, dry cloth.
- Do not attempt to modify or fix the speakers. Contact qualified Yamaha service personnel when service is needed. Do not open the cabinet under any circumstances.
- Please read the "Troubleshooting" section regarding common operating errors before concluding that the speakers are faulty.

For the SW-P240

- Do not operate this unit upside down. It may overheat, possibly causing damage.
- Do not use excessive force on switches, controls or connection wires. When moving this unit, first disconnect the power plug and the wires connected to other equipment. Never pull the wires themselves.
- Since this unit has a built-in power amplifier, heat radiates from the rear panel. Place the unit away from walls, allowing at least 20 cm of space above, behind and on both sides of the unit to prevent fire or damage. Furthermore, do not position the unit with the rear panel facing down on the floor or other surfaces.
- When using a humidifier, be sure to avoid condensation inside this unit by allowing enough space around the unit and avoiding excess humidification. Condensation might cause fire, damage to the unit, or electric shock.
- Do not cover the rear panel of this unit with a newspaper, tablecloth, curtain, etc. to avoid obstructing heat radiation. If the temperature inside the unit rises, it may cause fire, damage to the unit, or personal injury.
- Do not plug this unit into a wall outlet until all connections are complete.
- The voltage to be used must match that specified on the rear panel. Using this unit with a voltage higher than specified is dangerous and may cause fire, damage to the unit, or personal injury. Yamaha is not responsible for damage resulting from use of this unit with a voltage other than specified.
- To prevent damage from lightning, disconnect the AC power plug during electric storms.
- Super-bass frequencies reproduced by this unit may cause a turntable to generate audio feedback. In this case, move the unit away from the turntable.
- This unit may be damaged if certain sounds are continuously output at high volume level. For example, if 20Hz–50Hz sine waves from a test disc or bass sounds from an electronic instrument, etc. are continuously output, or if a turntable stylus touches the surface of a disc, reduce the volume level to prevent the unit from being damaged.
- If you hear distorted noise (i.e., unnatural, intermittent "rapping" or "hammering" sounds) from this unit, reduce the volume level. Extremely loud movie soundtrack low frequency, bass-heavy sounds, or similarly loud popular music passages can damage the speaker system.
- Vibration generated by super-bass frequencies may distort images on a TV. In this case, move the unit away from the TV set.
- When disconnecting the power cord from the wall outlet, grasp the plug; do not pull the cord.
- When you plan not to use this unit for a long period of time (i.e., vacation, etc.) disconnect the AC power plug from the wall outlet.
- Do not place much pressure against the subwoofer net. It may break the net or the unit may fall, resulting in injury.
- Do not place anything fragile beside the subwoofer. The air pressure produced by the subwoofer may break the objects and cause malfunction or injury.

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

Table of contents

Introduction

Thank you for choosing a Yamaha NS-P240 or NS-P246 Home Cinema 5.1/6.1 Channel Speaker System. Each of these systems include the following speakers:

- **NX-S120**
  The NX-S120 are full-range acoustic-suspension speakers. Each system includes two (2) front and two (2) surround speakers. In addition, the NS-P246 system includes an additional NX-S120 that serves as a surround back speaker.

- **NX-C120**
  The NX-C120 is a full-range acoustic-suspension center speaker.

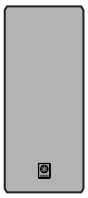
- **SW-P240**
  The SW-P240 is a subwoofer that features a built-in power amplifier. It utilizes Advanced Yamaha Active Servo Technology to reproduce extremely high quality super-bass range sounds that add a rich, realistic dimension to your home theater. (Refer to page 9 for detailed information on Advanced Yamaha Active Servo Technology.)

Package contents

Please confirm that the following items are included in the package.

Front and surround speakers
(and surround back speaker in NS-P246)

NX-S120



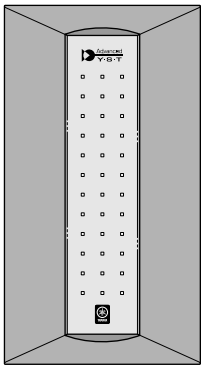
X 4 <NS-P240>
X 5 <NS-P246>

Center speaker

NX-C120

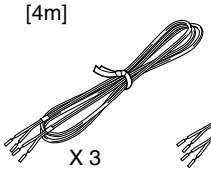
Subwoofer

SW-P240



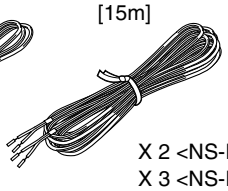
Speaker cables

[4m]



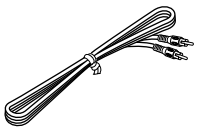
X 3

[15m]

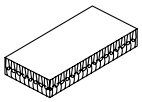


X 2 <NS-P240>
X 3 <NS-P246>

Subwoofer cable

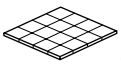


Fasteners
(for NX-C120)

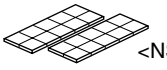


X 2

Non-skid pads
(for NX-S120)

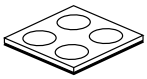


<NS-P240>

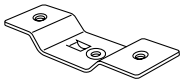


<NS-P246>

Non-skid pads
(for SW-P240)



Mounting brackets



X 4 <NS-P240>
X 5 <NS-P246>

Screws for mounting
brackets

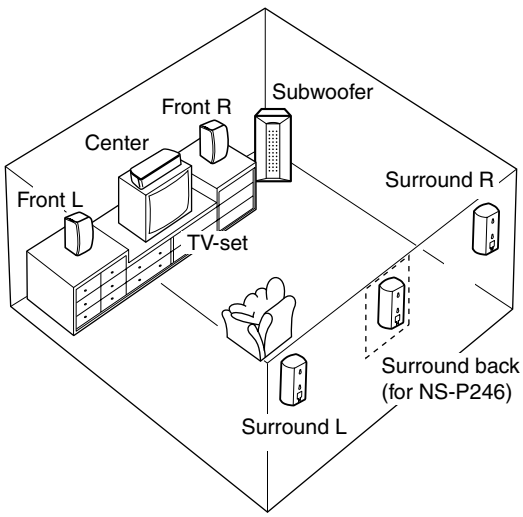
X 4 <NS-P240>
X 5 <NS-P246>

Setting up the speakers

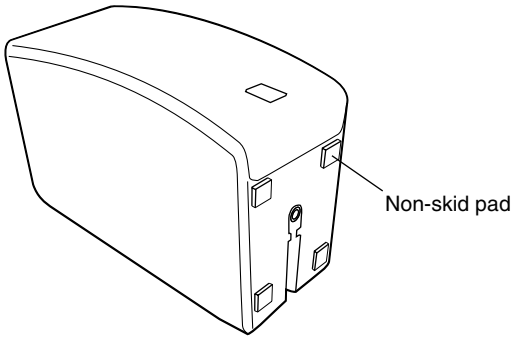
Before you connect the speakers, place each speaker in its respective location. Speaker positioning is very important as it affects the overall sound quality of the system. Place the speakers in locations that will optimize the sound quality at your listening position. Refer to the illustration below.

The position of the subwoofer is not as critical as the position of the other speakers because low bass tones are not highly directional. Refer to "Positioning the subwoofer (SW-P240)" on page 4 for more information.

Note: These speakers are magnetically shielded. However, if you place them too close to a TV, they may impair picture color. In this case, move the speakers further away from the TV.



Positioning the front and surround speakers (NX-S120)



Front speakers: Place the two front speakers on the left and right sides of the TV, at approximately the same height as the TV, facing directly forward.

Surround speakers: Place the left and right surround speakers behind your listening position, facing slightly inward, about 1.8 m (approx. 6 feet) above the floor.

Surround back speaker (for NS-P246 systems only): Position the surround back speaker behind your listening position, precisely between the surround speakers, about 1.8 m (approx. 6 feet) above the floor.

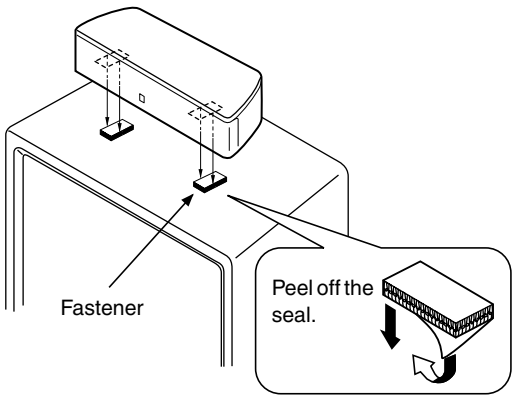
You can set the front, surround, and surround back speakers on tables or other supports, or mount them on a wall or speaker stand. (For more information, see "Mounting the front and surround speakers" on page 5.)

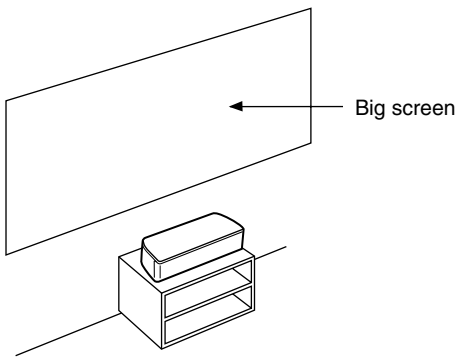
Non-skid pads: When placing the speakers on a flat surface, attach the included non-skid pads to the corners of the speaker bottoms, as shown above. The non-skid pads will prevent the speakers from sliding.

Positioning the center speaker (NX-C120)

Place the center speaker precisely between the front speakers, facing directly forward. You can place the center speaker on top of a TV (if the top of the TV is flat), on the floor beneath the TV, or in an entertainment center. Be sure to place the speaker in a stable location.

When placing the speaker on top of a TV, to prevent the speaker from falling, attach the provided fasteners at two points on the bottom of the speaker and on top of the TV, as illustrated below.





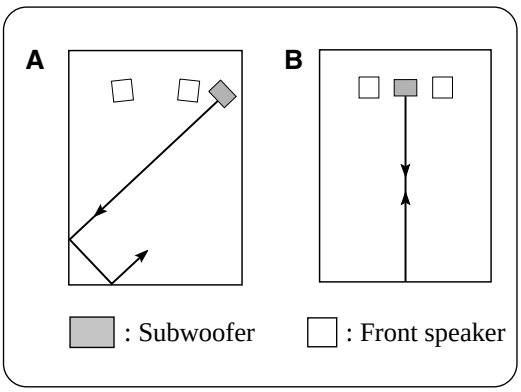
Cautions:

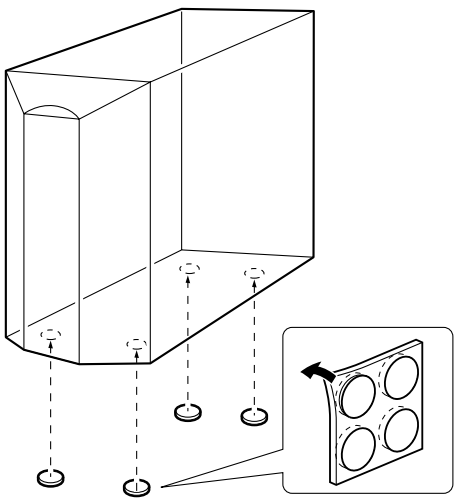
- Do not place the center speaker on a TV that has a top surface area smaller than the speaker bottom. Otherwise, the speaker may fall and cause injury.
- Do not place the center speaker on a TV that has a slanted or inclined top.
- Do not touch the adhesive surface of a fastener after you peel off the seal, as this will weaken the adhesive strength of the fastener.
- Thoroughly wipe to clean the surface where the fastener is to be applied. Note that adhesive strength will be weakened if the surface is dirty, oily or wet. Weakened adhesive may cause the center speaker to fall.

Positioning the subwoofer (SW-P240)

Although the placement of the subwoofer is not as critical as that of the other speakers, it is best to place the subwoofer outside either the right or left front speaker. (See Figure **A**.)

The placement shown in Figure **B** is also acceptable. However, in some cases, if you listen from the center of the room, the super-bass range from the subwoofer may sound weak. This is due to "standing waves" that can develop between parallel walls that effectively diminish or cancel the bass sound. In this event, face the subwoofer obliquely to the wall. It also may help to break up the parallel surface by placing bookshelves or other large objects along the wall.





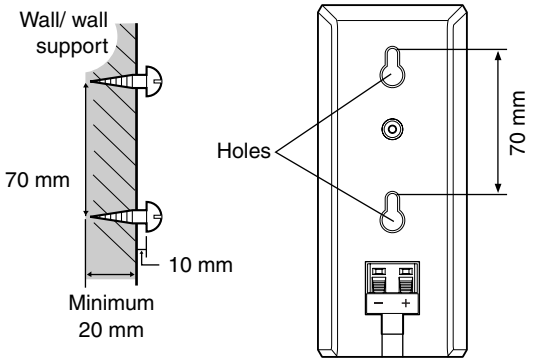
Non-skid pads: Place the included non-skid pads at the four corners of the bottom of the subwoofer to prevent the subwoofer from sliding due to vibration or minor impact.

Mounting the front and surround speakers

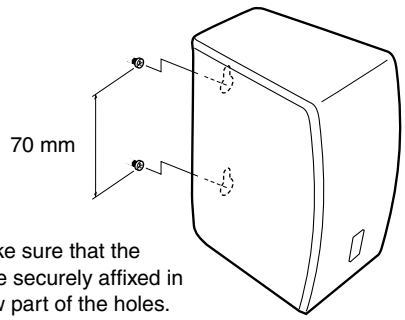
You can place the front and surround speakers (and surround back speaker in an NS-P246 system) on a shelf or rack, set them on the floor, or mount them on a wall or speaker stand.

To mount the speakers on a wall:

1. Affix screws to a firm wall or wall support as shown below. (Use tapping screws 3.5 to 4mm in diameter.)



2. Suspend the speaker by mounting the holes in the speaker's back panels on the protruding screws.



Note: Make sure that the screws are securely affixed in the narrow part of the holes.

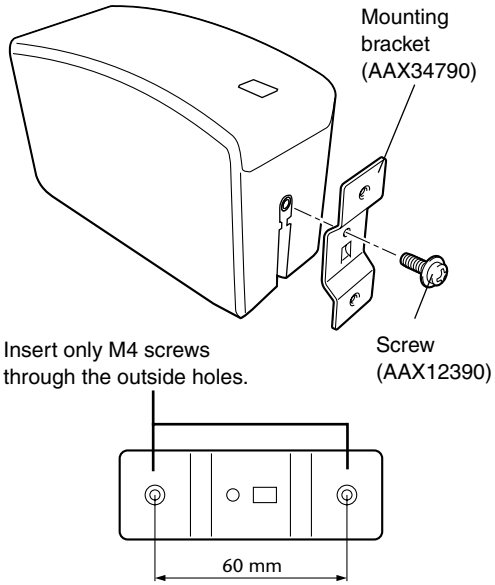
Cautions:

- Each front or surround speaker weighs 0.9 kg (2.0 lbs.). Do not mount the speakers on thin plywood or on a wall made of soft surface material. Otherwise, the screws may pull out of the surface and the speakers may fall, possibly damaging the speakers or causing personal injury.
- Do not affix the speakers to a wall using nails, adhesives, or unstable hardware. Long term use and vibration may cause the speakers to fall.
- To avoid accidents resulting from tripping over loose speaker cables, affix the cables to the wall.
- Mount the speakers in a wall location that will be unlikely to result in injury to an individual's head.

To attach to a bracket:

1. Attach a bracket (part number AAX34790) to the bottom of the speaker using a screw (part number AAX12390) such that the convex part of the bracket fits over the groove in the bottom of the speaker, as shown below.

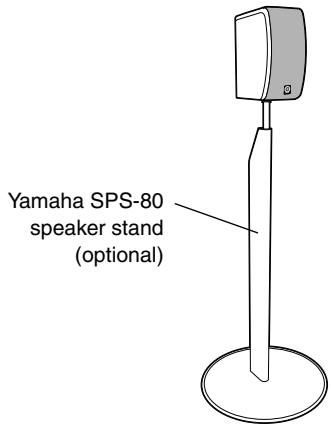
2. Mount the speaker on the speaker stand by affixing a pair of screws through the outside bracket holes.



To mount the speakers on a speaker stand:

You can mount the front, surround, and surround back speakers on a speaker stand, such as the optional Yamaha SPS-80. (For more information, refer to the instruction manual for the SPS-80.)

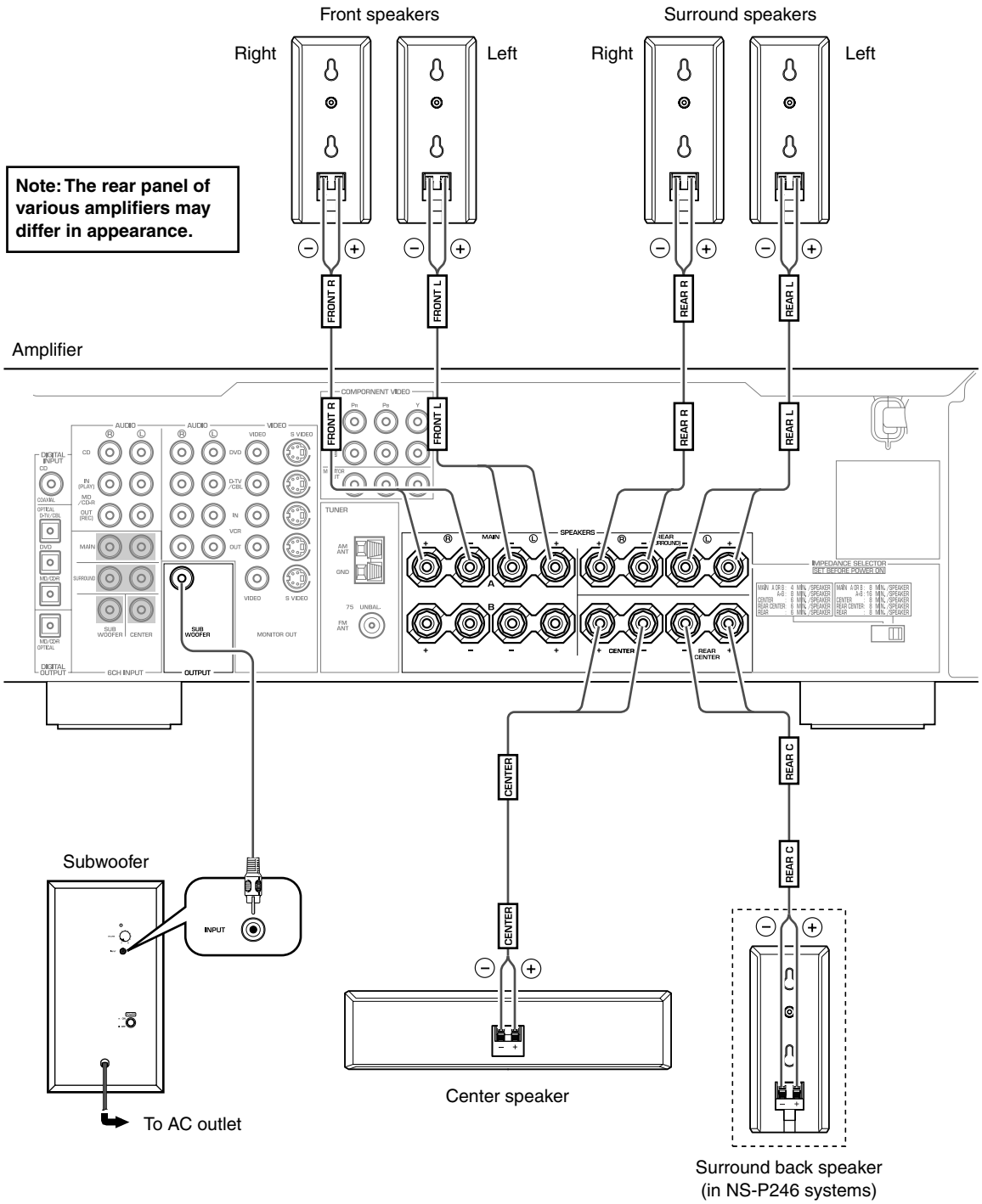
Note: The SPS-80 may be unavailable in certain regions.



Connections

Caution: Plug the power cables for the subwoofer and other audio/video components into an AC outlet only after you complete all other connections.

Basic connection example



Connecting speaker cables

Keep the speaker cables as short as possible. Do not bundle or roll up excess cable. If the connections are faulty, you will hear no sound from the speakers.

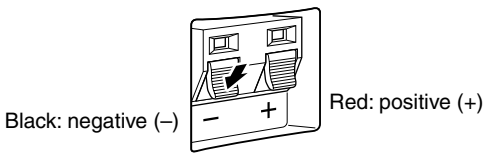
Before connecting the cables:

Remove a small amount (about 10 mm) of insulation coating from the end of each speaker cable.

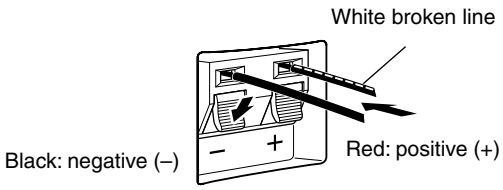
One side of the included speaker cable is marked with a broken white line; the other side is unlined. Connect the (+) terminal on the speaker to the (+) terminal on the amplifier using the cable side marked with the broken white line. Connect the (–) terminals on both components using the unlined side of the speaker cable.

Inserting the cables:

1. Press and hold the terminal tab, as shown in the figure below.



2. Insert the stripped wire core.



3. Release your finger from the tab to allow it to lock securely on the cable's wire core.

4. Test the security of the connection by pulling gently on the cable at the terminal.

Note: Do not let uninsulated speaker wires touch each other as this could damage the speaker or the amplifier.

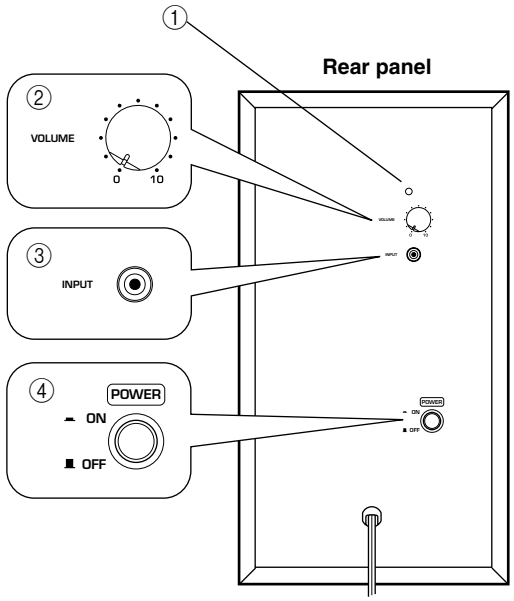
Connections:

- Connect the front, center and surround speakers (and surround back speaker for the NS-P246) to the speaker output terminals on your amplifier using the included speaker cables.
  - The included speaker cables have labels marked FRONT L, FRONT R, CENTER, REAR L, REAR R (and REAR C for NS-P246). Connect each speaker cable to the corresponding speaker as illustrated in the figure on page 6.
  - Connect each speaker making sure not to reverse the polarity (+, –). If the speaker is connected with reversed polarity, the sound will be unnatural and lack bass.
  - For the front and surround speakers only, connect one speaker to the left (marked L) terminals on your amplifier, and the other speaker to the right (marked R) terminals.
- Connect the subwoofer to the line output (pin jack) terminal(s) on the amplifier.
  - To connect to a Yamaha DSP amplifier (or AV receiver), connect the SUBWOOFER (or LOW PASS, etc.) terminal on the rear of the DSP amplifier (or AV receiver) to the INPUT terminal on the subwoofer.

Connecting components and the subwoofer to AC power

After you complete all speaker and subwoofer connections, plug the amplifier, other audio/video components, and the subwoofer into an AC outlet of appropriate voltage. Make sure the subwoofer's VOLUME control is set to 0 before proceeding to adjust the speaker balance as described on page 8.

Using the subwoofer (SW-P240)



①Power indicator

Lights up GREEN when the **POWER** switch (④) is turned ON; turns off when the **POWER** switch is turned OFF.

②VOLUME control

Adjusts the volume level. Turn the control clockwise to increase the volume, and counter-clockwise to decrease the volume.

③INPUT terminal

Input terminal for line level signals from the amplifier.

④POWER switch

Press this switch to the ON position to turn on the power to the subwoofer. When the power of the subwoofer is on, the power indicator (①) on the rear panel lights up green. Press this switch again to set it to the OFF position to turn off the power of the subwoofer.

Pre-adjusting the subwoofer volume

Before you use the subwoofer, first adjust the volume balance between the subwoofer and the front speakers by following the procedure below.

1. Set the **VOLUME** control to minimum (0).
2. Turn on the power to all other components.
3. Press the **POWER** switch to the ON position. The power indicator on the rear panel lights up green.
4. Play a source that contains low-frequency sounds. Adjust the amplifier's volume control to the desired listening level.
5. Increase the volume gradually to adjust the volume balance between the subwoofer and the front speakers. In most cases, set the control to a level at which you hear slightly more bass than when the subwoofer is not used.
6. Adjust the volume of the entire sound system using the amplifier's volume control.

- If you replace the front speakers (NX-S120) with other speakers, you must again balance the subwoofer and surround speaker volume.
- For more information on adjusting the VOLUME control, refer to "Frequency characteristics" on page 11.

Advanced Yamaha Active Servo Technology (on the SW-P240)

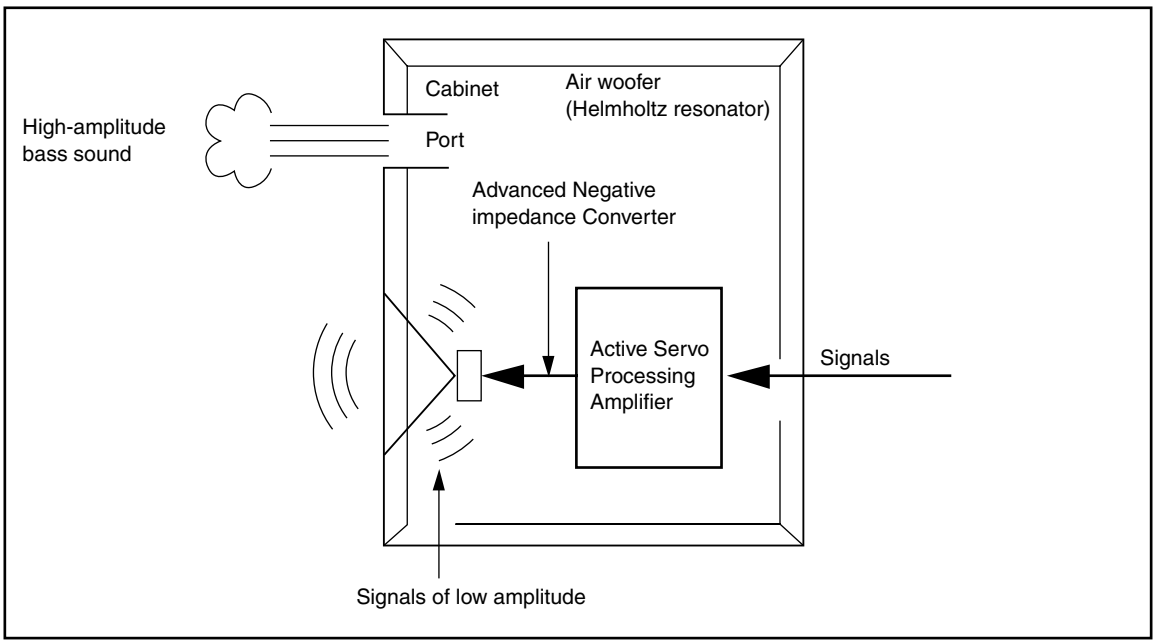
The theory behind Yamaha Active Servo Technology is based on two factors: the Helmholtz resonator and negative-impedance drive. Active Servo Processing speakers reproduce the bass frequencies through an "air woofer," which is a port or opening in the speaker's cabinet.
This opening is used instead of, and performs the functions of, a woofer in a conventionally designed speaker system.

Thus, signals of low amplitude within the cabinet can, according to Helmholtz resonance theory, be output from this opening as waves of great amplitude if the size of the opening and the volume of the cabinet are in proportion to satisfy a certain ratio. In order to accomplish this, moreover, the amplitudes within the cabinet must be both precise and of sufficient power because these amplitudes must overcome the "load" presented by the air in the cabinet.

This problem is resolved by a design in which the amplifier supplies special signals. If the electrical resistance of the voice coil could be reduced to zero, the movement of the speaker unit would become linear with respect to signal voltage. To accomplish this, the system utilizes a special negative-impedance output-drive amplifier that subtracts the output impedance of the amplifier.

By employing negative-impedance drive circuits, the amplifier is able to generate precise, low-amplitude, low frequency waves with superior damping characteristics.
These waves are then radiated from the cabinet opening as high-amplitude signals. The system can, therefore, by employing the negative-impedance output drive amplifier and a speaker cabinet featuring a Helmholtz resonator, reproduce an extremely wide range of frequencies with outstanding sound quality and low distortion.
The features described above combine to create the fundamental structure of conventional Yamaha Active Servo Technology.

Our new Active Servo Technology — Advanced Yamaha Active Servo Technology — adopts Advanced Negative Impedance Converter (ANIC) circuits, which allow the conventional negative impedance converter to dynamically vary to select an optimum value for speaker impedance variation. With these new ANIC circuits, Advanced Yamaha Active Servo Technology provides a more stable performance and improved sound pressure compared to conventional Yamaha Active Servo Technology, resulting in more natural and dynamic bass reproduction.



Troubleshooting

Refer to the chart below if the unit does not function properly. If the problem you are experiencing is not listed, or if the instructions fail to help you resolve the problem, disconnect the power cord and contact your authorized Yamaha dealer or service center.

Problem	Cause	What to Do
No sound.	Speaker cables are not connected securely.	Connect the speaker cables securely.
Sound level is too low.	Speaker cables are not connected correctly.	Connect the speaker cables correctly: L (left) to L, R (right) to R, "+" to "+" and "–" to "–".

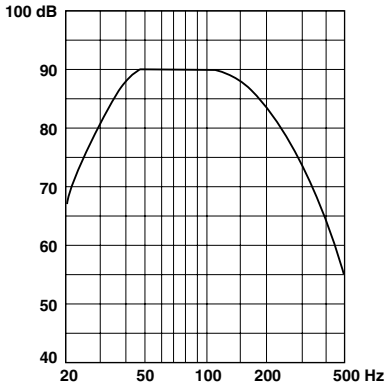
For the Subwoofer (SW-P240) only

Problem	Cause	What to Do
Power is not supplied even though the POWER switch is set to the ON position.	The power plug is not securely connected.	Turn the power switch OFF, then connect the power plug securely.
No sound.	The VOLUME control is set to 0.	Turn the VOLUME control to the right (clockwise).
	Speaker cables are not connected securely.	Connect the speaker cables securely.
Sound level is too low.	Speaker cables are not connected correctly.	Connect the speaker cables correctly: L (left) to L, R (right) to R, "+" to "+" and "–" to "–".
	You are playing a sound source that includes inadequate bass frequencies.	Play a sound source that includes more bass frequencies.
	The sound level has been diminished by standing waves.	Reposition the subwoofer, or break up the parallel wall surface by placing bookshelves or other large objects along the wall.

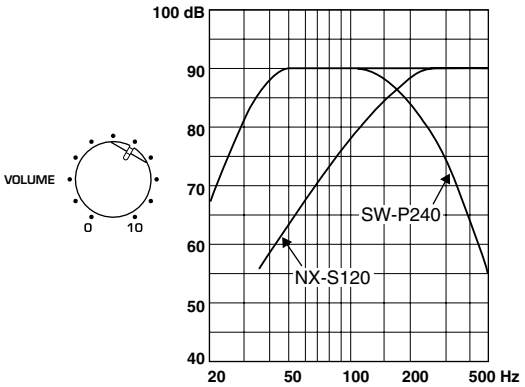
Specifications

Frequency characteristics

The following graph displays the frequency characteristics of the SW-P240 subwoofer.



The following graph displays the frequency characteristics of the SW-P240 subwoofer combined with NX-S120 speakers.



NX-S120/NX-C120

Type .....Full-range acoustic-suspension speaker system
Magnetically shielded type

Driver .....5 cm (2") full-range cone speaker x 2

Nominal Input Power..... 30 W

Maximum Input Power..... 100 W

Impedance.....6 Ω

Frequency Response ... 100 Hz – 25 kHz (–10 dB)

Sensitivity ..... 86 dB/2.83 Vm

Dimensions (W x H x D)

<NX-S120> ..... 72 mm x 170 mm x 108 mm (2-15/16" x 6-11/16" x 4-1/4")

<NX-C120> .....300 mm x 72 mm x 105 mm (11-13/16" x 2-15/16" x 4-1/8")

Weight

<NX-S120> .....0.9 kg (2 lbs.)

<NX-C120> .....1.1 kg (2 lbs. 7 oz.)

SW-P240

Type ..... Advanced Yamaha Active Servo Technology
Magnetically shielded type

Driver ..... 16 cm (6.5") cone woofer

Output Power..... 50 W (100 Hz, 5 Ω at THD=10%)

Dynamic Power.....100 W, 5 Ω

Input Impedance .....INPUT (1P RCA pin jack): 12 kΩ

Input Sensitivity..... INPUT (1P RCA pin jack): 30 mV (100 Hz, 5 Ω at 50 W)

Power Supply .....AC 120 V, 60 Hz

Dimensions (W x H x D)

.....200 mm x 365 mm x 390 mm (7-7/8" x 14-3/8" x 15-3/8")

Weight.....8.4 kg (18 lbs. 8 oz.)

Specifications are subject to change without notice.

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Printed in China (IP) WC87650