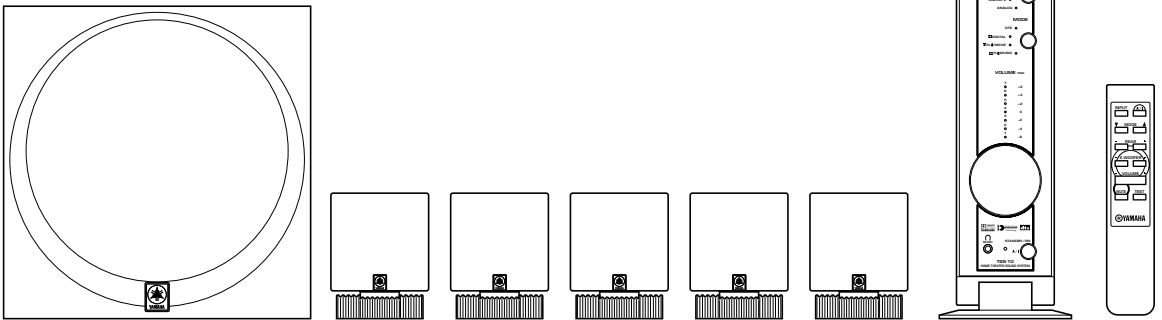


HOME THEATER SOUND SYSTEM**TSS-10**

CAUTION: READ THIS BEFORE OPERATING YOUR SYSTEM.

- 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 with at least 20 cm on the top, 10 cm on the left and right, and 10 cm at the back of the amplifier unit — away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold.
- 3 Locate this system away from other electrical appliances, motors, or transformers to avoid humming sounds. To prevent fire or electrical shock, do not place this system where it may get exposed to dripping or splashing, and never put any objects filled with liquids, such as vases, on the top of the system.
- 4 Do not expose this system to sudden temperature changes from cold to hot, and do not locate this system in a environment with high humidity (i.e. a room with a humidifier) to prevent condensation inside this system, which may cause an electrical shock, fire, damage to this system, and/or personal injury.
- 5 Avoid installing this system in a place where foreign objects and liquid might fall. It might cause a fire, damage to this system and/or personal injury. Do not place the following objects on this system:
 - Other components, as they may cause damage and/or discoloration on the surface of this system.
 - Burning objects (i.e. candles), as they may cause fire, damage to this system, and/or personal injury.
 - Containers with liquid in them, as they may cause electrical shock to the user and/or damage to this system.
- 6 Do not cover this system with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this system rises, it may cause fire, damage to this system, and/or personal injury.
- 7 Do not plug in this system to a wall outlet until all connections are complete.
- 8 Do not operate this system upside-down. It may overheat, possibly causing damage.
- 9 Do not use force on switches, knobs and/or cables.
- 10 When disconnecting the power cable from the wall outlet, grasp the plug; do not pull the cable.
- 11 Do not clean this system with chemical solvents; this might damage the finish. Use a clean, dry cloth.
- 12 Only voltage specified on this system must be used. Using this system with a higher voltage than specified is dangerous and may cause fire, damage to this system, and/or personal injury. YAMAHA will not be held responsible for any damage resulting from use of this system with a voltage other than specified.
- 13 To prevent damage by lightning, disconnect the power cable from the wall outlet during an electrical storm.
- 14 Take care of this system so that no foreign objects and/or liquid drops inside this system.
- 15 When using a humidifier, be sure to avoid condensation inside this system by allowing enough spaces around this system or avoiding excess humidification. Condensation might cause a fire, damage to this system, and/or electric shock.
- 16 Do not attempt to modify or fix this system. Contact qualified YAMAHA service personnel when any service is needed. The cabinet should never be opened for any reasons.
- 17 When not planning to use this system for long periods of time (i.e. vacation), disconnect the AC power plug from the wall outlet.
- 18 Be sure to read the “TROUBLESHOOTING” section on common operating errors before concluding that this system is faulty.
- 19 Before moving this system, press STANDBY/ON to set this system in the standby mode, and disconnect the AC power plug from the wall outlet.
- 20 Be sure to only use the AC adaptor (LSE9802B1540) included with this system. Otherwise, you might cause a fire or damage to this system.
- 21 This system is designed for home use only. Never use this system in a car, etc., otherwise it may cause a malfunction of this system.

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

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.

■ 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.

IMPORTANT

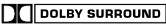


Please record the serial number of this system in the space below.
MODEL:

Serial No.:


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

CAUTION

FEATURES

- **Home Theater Sound**
This system delivers a realistic and powerful sound experience like that found in a movie theater.
- **Includes Dolby Digital, Dolby Pro Logic II and DTS Decoders**
This system can reproduce the sound field of the software with the ,  or  logo mark, and also reproduce normal 2-channel stereo sources in surround sound.
- **Virtual Surround (by using headphones) (SILENT CINEMA)**
This system also enables you to enjoy a virtual surround sound by using headphones.

■ About this manual

-  indicates a tip for your operation.
- Some operations can be performed by using the buttons on either the main unit or the remote control. In this case, the operations performed by using the remote control are described in this manual.
- This manual is printed prior to production. Design and specifications are subject to change in part for the reason of the improvement in operativity ability, and others. In this case, the product has priority.
- Some of the illustrations and names of the package contents etc. written in this manual may differ from the actual products and the names written on the package etc.

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Manufactured under license from Dolby Laboratories. “Dolby”, “Pro Logic”, and the double-D symbol are trademarks of Dolby Laboratories.

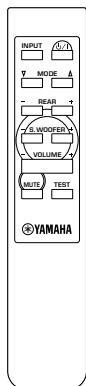


“DTS” and “DTS Digital Surround” are registered trademarks of Digital Theater Systems, Inc.

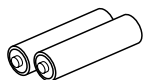
CHECKING THE ACCESSORIES

Check your package to make sure it contains the following items.

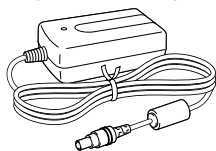
Remote control



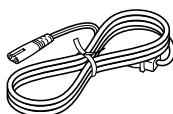
Batteries
(AAA, R03, UM-4)



AC adaptor
(LSE9802B1540)



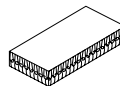
Power cable



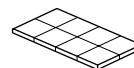
3.5 mm stereo mini/
RCA stereo pin cable



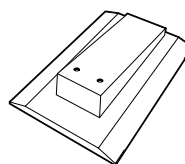
Fastener (1 set)
(for the center speaker)



Non-skid pads
(3 sets: 24 pieces)



Stand
(for the amplifier unit)



Screws
(2 pieces)



Optical cable

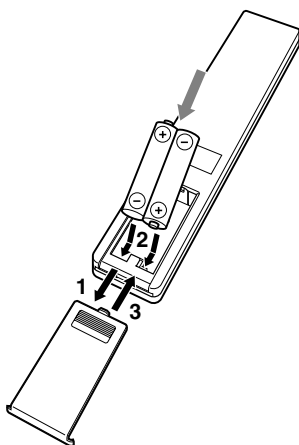


Audio pin cable



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 compartment.



Notes on batteries

- Change all of the batteries if you notice a decrease in the operating range of the remote control.
- 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 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.

1 Press the ↓ OPEN part and slide off the battery compartment cover.

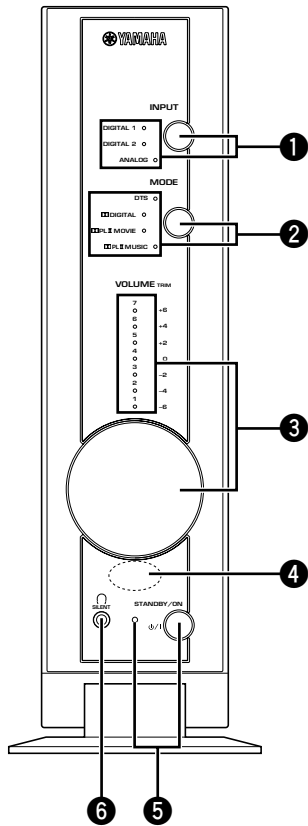
2 Insert the two batteries (AAA, R03, UM-4 type) with + and – oriented properly.

The batteries can be set only from the direction shown in the figure.

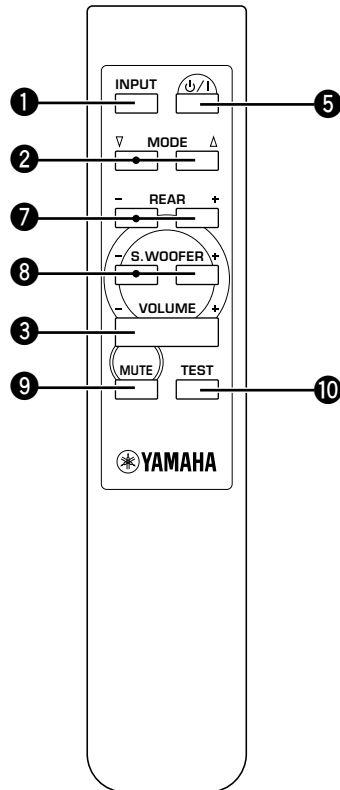
3 Slide the cover back on so that it snaps into place.

CONTROLS AND FUNCTIONS

Front panel



Remote control



1 INPUT and indicators

Press this button repeatedly to select an input source between DIGITAL 1, DIGITAL 2 and ANALOG. The current mode is shown by the lighting of the corresponding indicator.

DIGITAL 1:

Select this to reproduce source signals received at the DIGITAL INPUTS OPTICAL 1 terminal on the rear panel.

DIGITAL 2:

Select this to reproduce source signals received at the DIGITAL INPUTS OPTICAL 2 terminal on the rear panel.

ANALOG:

Select this to reproduce source signals received at the ANALOG INPUTS terminals on the rear panel.

2 MODE (Δ/∇) and indicators

Press this button (or Δ/∇) repeatedly to select the desired surround mode among **DTS**, **DIGITAL**, **PLII MOVIE**, **PLII MUSIC** and “off”. The current mode is shown by the lighting of the corresponding indicator.

* If a DTS or Dolby Digital encoded signal is inputted when **DTS** or **DIGITAL** mode is not selected, the corresponding indicator lights up dimly.

Refer to page 13 for details on each surround modes.

3 VOLUME (+/-) and indicators

Used for adjusting the overall volume level of this system. The current level is shown by the lighting of the indicators on the front panel.

VOLUME on the front panel:

Turn this control clockwise to increase the level, and counterclockwise to decrease the level.

VOLUME +/- on the remote control:

Press + to increase the level, and – to decrease the level.

4 Remote control sensor

Receives signals from the remote control.

5 STANDBY/ON (⏻/⏻) and indicator

Each press of this button changes the status of this system between standby mode and power on. When the power is on, the indicator lights up.

Standby mode

In this mode, this system will consume a small amount of power in order to receive infrared-signals from the remote control.

6 SILENT

Stereo headphones can be connected to this mini-jack for private listening. Sound output from the speakers is cut off when headphones are connected to this jack.

7 REAR +/-

These buttons are used for adjusting the sound level from the rear speakers. Press + to increase the level, and – to decrease the level.

8 S.WOOFER +/-

These buttons are used for adjusting the sound level from the subwoofer. Press + to increase the level, and – to decrease the level.

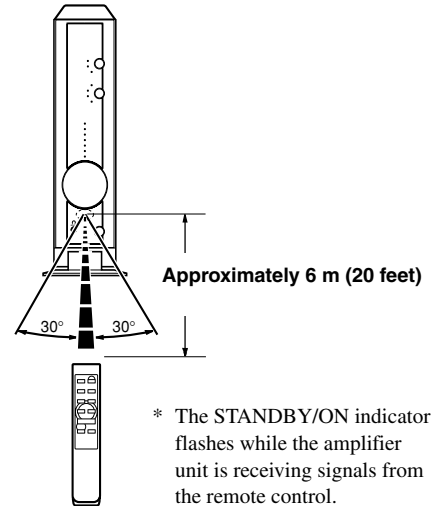
9 MUTE

Press this button to cut off sound output temporarily. Press this button again to restore sound output.

10 TEST

Press this button to reproduce a test tone from the speakers. A test tone is reproduced from each speaker in turn. The test tone is used for adjusting volume balance among all the speakers. The adjustment is made by pressing VOLUME +/- on the remote control.

Using the remote control



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 or temperature such as near a heater, stove or bath;
 - dusty places; or
 - in places subject to extremely low temperatures.

SETTING UP THE SYSTEM

System configuration

This system includes an amplifier unit, five speakers and a subwoofer.



Amplifier unit x 1



Speaker x 5



Subwoofer x 1

The three speakers with a 3 m cable are used as front speakers and a center speaker.

The two speakers with a 10 m cable are used as rear speakers.

The role of respective speakers

The front speakers are used for reproducing main channel sound. The rear speakers are used for effect sounds, and the center speaker is for center channel sound (dialog etc.).

The subwoofer is used for reproducing sounds of low frequencies from the front, center and rear surround channels. The subwoofer also reproduces sounds of the subwoofer channel when a DTS or Dolby Digital encoded source is played.

Recommended speaker placement

Before making connections, place all speakers in their respective positions. The positioning of the speakers is important because it controls the overall sound quality of this system.

Place the speakers depending on your listening position by following the instructions below.

* The front/center/rear speakers can be mounted on a wall. (See the next page.)

Front speakers: On both sides of and at approximately the same height as the TV.

Rear speakers: Behind your listening position or on both sides of the listening room.

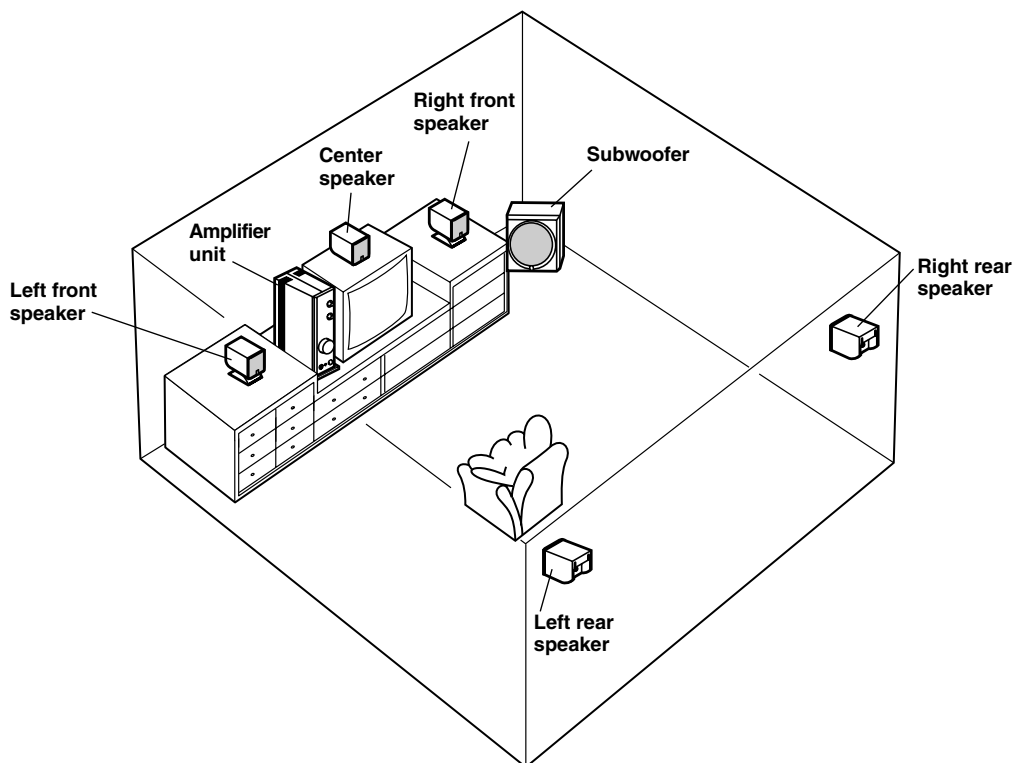
Center speaker: Precisely between the front speakers.

* The center speaker can be mounted on the monitor as shown on the next page.

Subwoofer: On the floor. The position of the subwoofer is not so critical because low bass tones are not highly directional.

Note

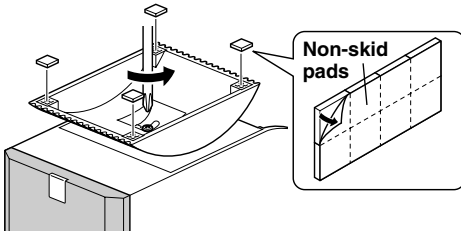
- Although the speaker system in this system is magnetically shielded, it may still affect the color on the television monitor when using this system near the television. Adjust the relative positions of this system and the television if this happens.



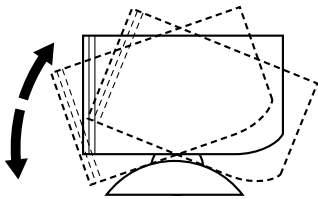
■ Adjusting the front angle of the front/center/rear speakers

The front angle of the speakers can be adjusted as shown below.

- 1 Loosen the screw on the bottom of the speaker stand.
 - * Attach the supplied non-skid pads at the four corners on the bottom of the stand for improved stability.



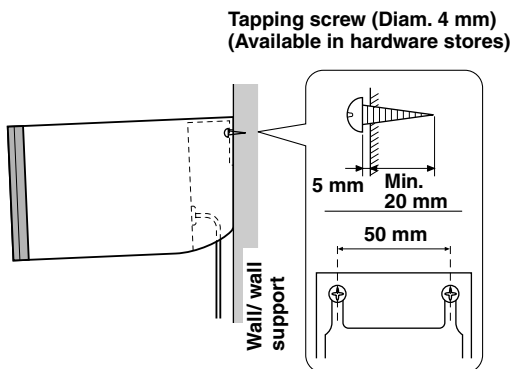
- 2 Adjust the speaker angle on the stand as you prefer, and then tighten the screw.



■ Mounting the front/center/rear speakers on a wall

The speakers can also be hung on the wall. Remove the stand from the speaker. Fasten screws into a firm wall or wall support as shown in the figure, and hang the slits on the rear of the speaker on the protruding screws.

- * Make sure that the screws are securely caught by the slits.



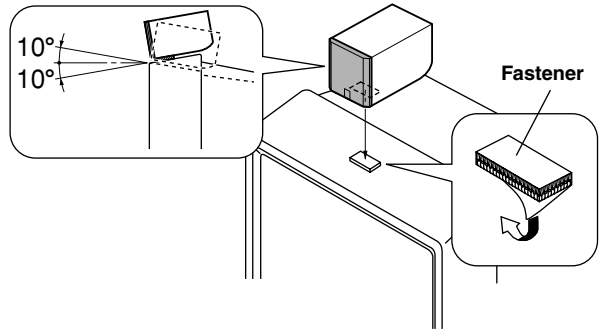
Warning

- Each speaker weighs 0.4 kg (0.9 lbs.). Do not mount them on thin plywood or a wall with soft surface material. If mounted, the screws may come out of the flimsy surface and the speakers may fall. This could damage the speakers and cause personal injury.
- Do not install the speakers on a wall with nails, adhesives, or any other unstable hardware. Long-term use and vibrations may cause them to fall.
- To avoid accidents resulting from tripping over loose speaker cables, fix them to the wall.

■ Placing a center speaker on top of the monitor

When placing the center speaker on top of the monitor, remove the stand from the speaker, and attach the provided fastener at the bottom of the speaker and on top of the monitor to prevent the speaker from falling.

- * Do not place the speaker on top of the monitor with an inclination of more than 10 degrees.



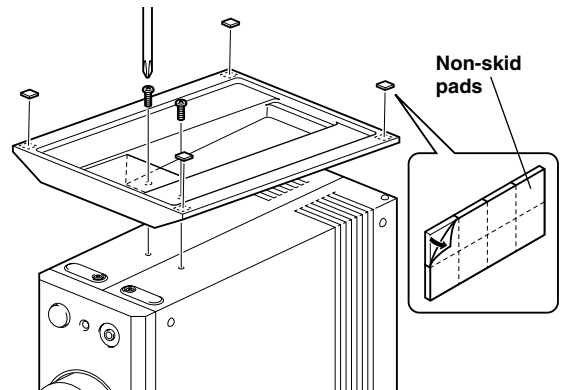
Note

- Though this speaker is a magnetically shielded type, there may be some influence on the monitor picture depending on the type of monitor or the placement of the speaker. In such a case, place the speaker further apart from the monitor until there is no influence on the monitor picture.

■ Mounting the amplifier unit on the supplied stand

For improved stability, it is recommended to mount the amplifier unit on the supplied stand with the supplied screws as shown below.

- * Attach the supplied non-skid pads at the four corners on the bottom of the stand for improved stability.



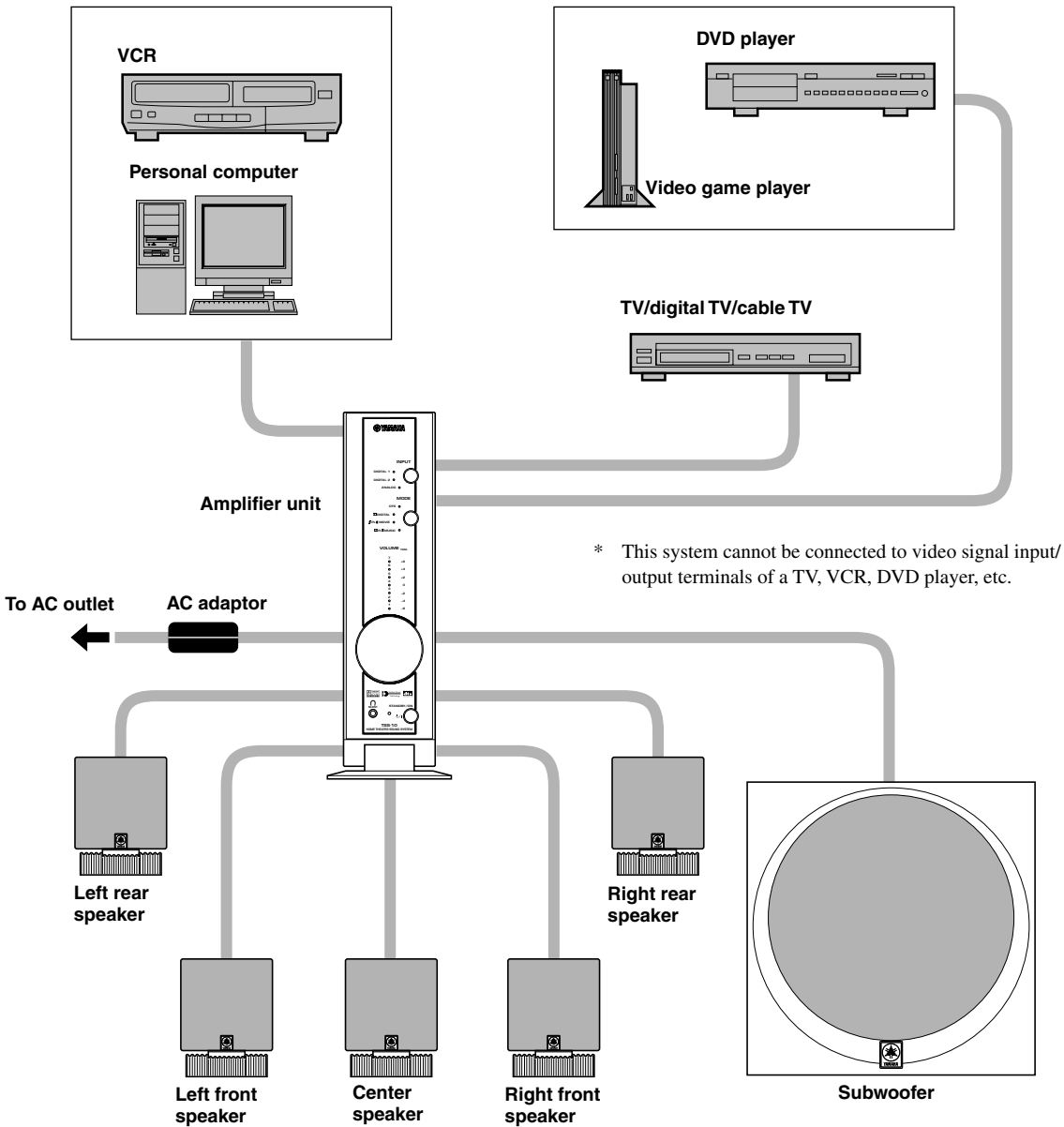
CONNECTIONS

CAUTION

Always be sure to turn off the amplifier unit and any component to be connected when making connections.

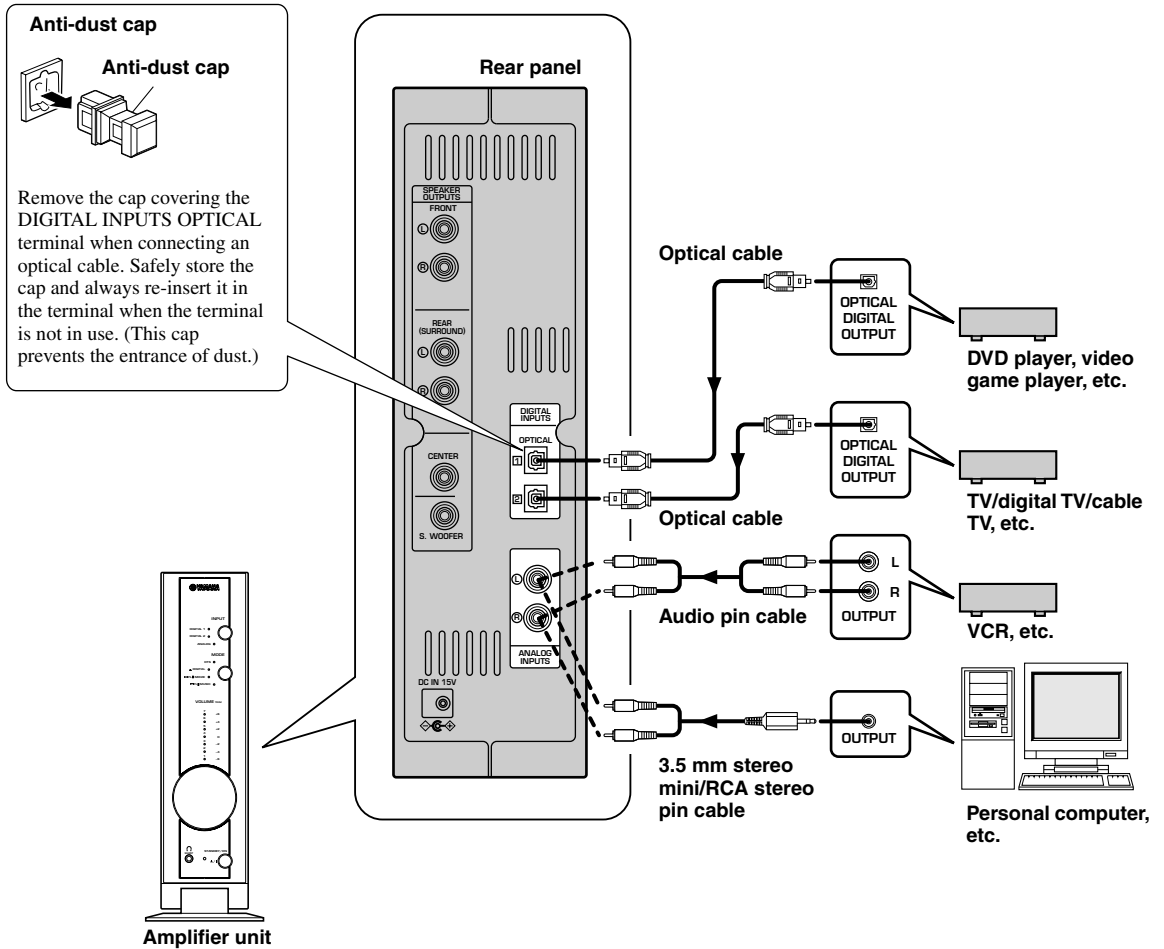
To ensure proper connections

- Connect the white plug of the connection cable to the left “L” (white) audio signal terminal and connect the red plug to the right “R” (red) terminal.
- Insert the plug securely. If the plug is not inserted securely, noise may result or sound may not be output.
- Since the method of connection and terminal names differ depending on the component being used, be sure to refer to the instruction manuals for all components being connected.
- After connections have been made, check one more time that wiring has been made properly.



Connecting audio components

- For connections, use the included or commercially available connection cables suitable for respective connections.



- Connect the optical digital output terminal on the DVD player, etc. to the DIGITAL INPUTS OPTICAL 1 (optical) digital input terminal on the amplifier unit using an optical cable. In the same way, connect the optical digital output terminal on the satellite tuner, etc. to the DIGITAL INPUTS OPTICAL 2 (optical) digital input terminal on the amplifier unit using an optical cable. These connections bring you digital sound.
- When connecting a VCR, etc. without a digital output terminal, connect the audio output terminals to the ANALOG INPUTS audio input terminals on the amplifier unit using the audio pin cable.
- When connecting a personal computer, etc. which has a 3.5 mm-stereo mini jack only for audio output, connect it to the ANALOG INPUTS audio input terminals on the amplifier unit using the 3.5 mm stereo mini/RCA stereo pin cable.

Note

- The amplifier unit has no video input terminal. To enjoy watching a source played on the DVD player etc. connected to the amplifier unit, connect the video output of DVD player to the TV.



- The TSS-10 cannot record any audio or video source.

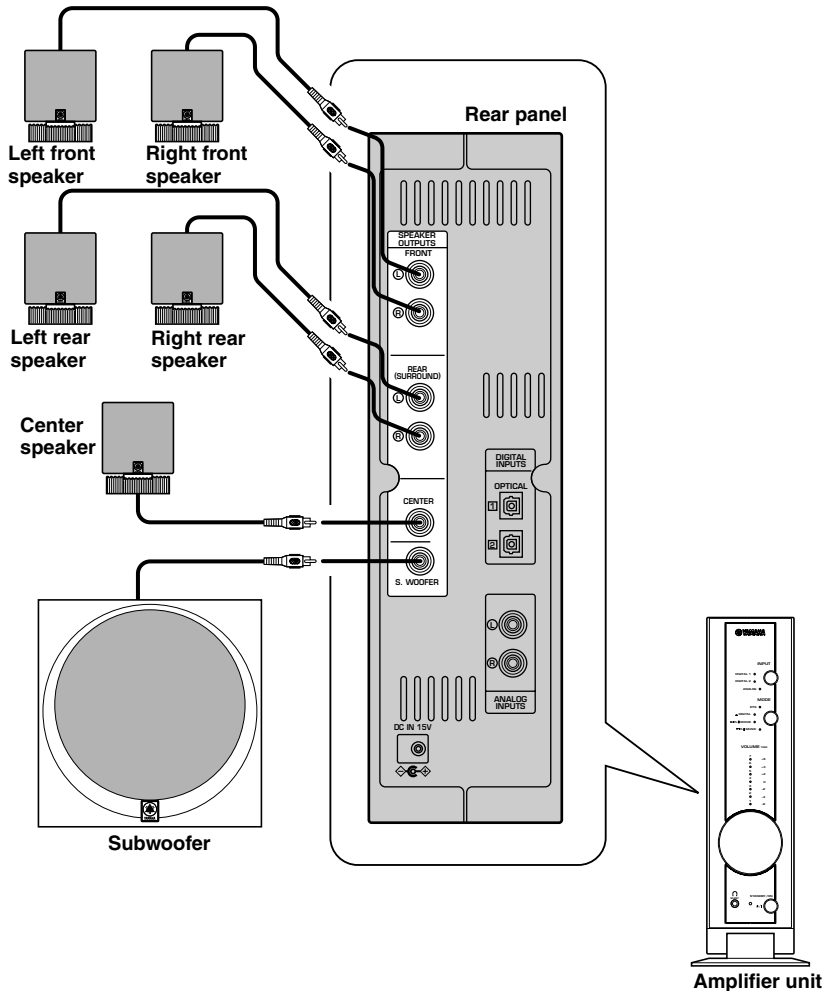
Connecting the speakers

Connect the speakers to the amplifier unit.

Connect the three speakers with a 3 m cable to the FRONT L, R and CENTER terminals. Connect the two speakers with a 10 m cable to the REAR L and R terminals. Connect the subwoofer to the SUBWOOFER terminal.

Note

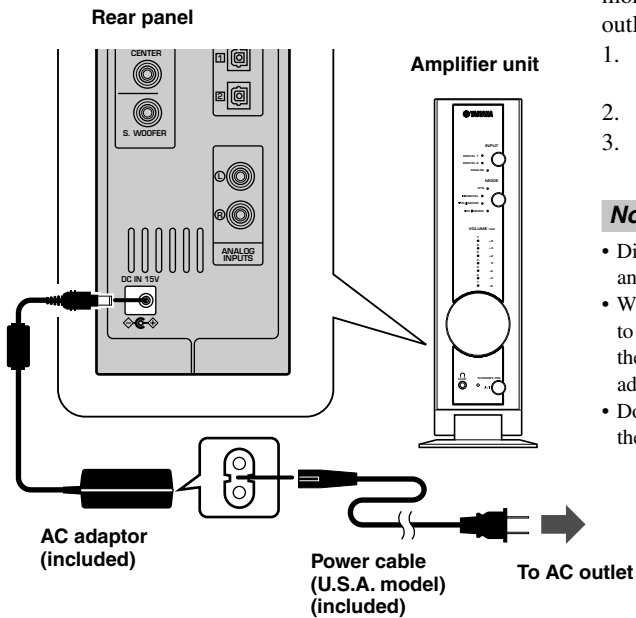
- Do not connect any speakers to the speaker terminals on the amplifier unit except for the supplied speakers.



CAUTIONS

- The SPEAKER OUTPUTS terminals on the rear of the amplifier unit are only designed for connection of the supplied speakers. Never connect these terminals to an AV amplifier or a power amplifier, as it may cause misoperation, fire and/or damage to this system.
- Secure the speaker cables so that they will not catch on hands or feet.

Connecting the power cable



Once all connections have been made, check them one more time. Finally, plug in the amplifier unit to the wall outlet in the following procedure.

1. Connect the included AC adaptor to the amplifier unit.
2. Connect the included power cable to the AC adaptor.
3. Insert the plug of the power cable into the wall outlet.

Notes

- Disconnect the power cable if you will not use this system for an extended period.
- When placing the included AC adaptor on the rack, etc., be sure to fix the adaptor on the rack, etc. to prevent it from falling. If the adaptor falls, it may cause personal injury or damage to the adaptor and/or other equipment.
- Do not connect the included AC adaptor to any unit other than the amplifier unit of this system.

ADJUSTING SPEAKER OUTPUT LEVELS

This section explains how to adjust speaker output levels using the test tone generator. When this adjustment is complete, the output level heard at the listening position should be the same from each speaker. This is important for best performance of the various decoders (Dolby Digital, Dolby Pro Logic II and DTS).

Note

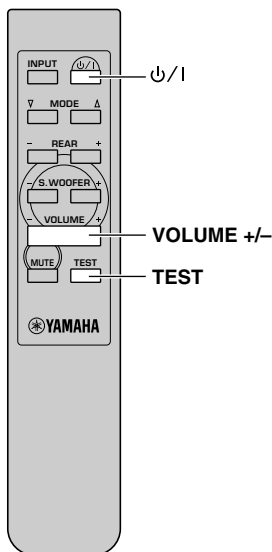
- Since this system cannot enter the test mode while headphones are connected to the amplifier unit, be sure to unplug the headphones from the SILENT jack when using the test tone.

Using the test tone

Use the test tone to balance the output levels of the speakers.

Notes

- The adjustment of each speaker output level should be made at your listening position using the remote control.
- The test tone may not be heard if the volume level of this system is too low. Confirm that the volume is set to a proper listening level.

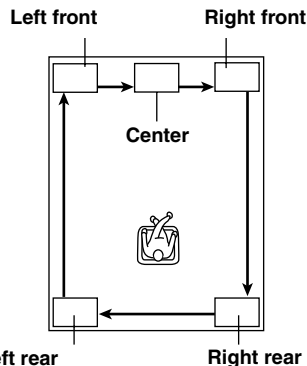


1 Press to turn on the power.

2 Press TEST to output the test tone.

The test tone is heard (in order) from the left front, center, right front, right rear and left rear speaker. The tone is produced for about 2.5 seconds from each speaker.

- All of the INPUT indicators flash while the test tone is being outputted.



3 Adjust the level of each speaker by pressing **VOLUME +/-** so that it matches the level of the front speakers.

While adjusting, the test tone is heard from the selected speakers. After - or + is released, the test tone begins travelling to another speaker again.

4 When adjustment is complete, press **TEST** to stop the test tone.

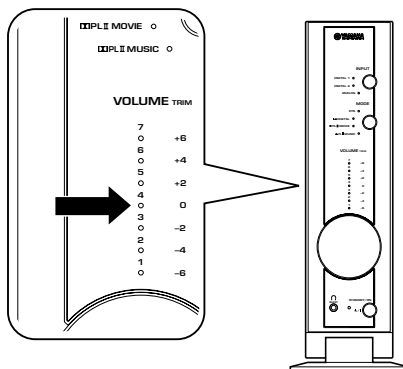
- While adjusting, the level of the selected speaker is shown by the lighting of the VOLUME indicators on the front panel. The default level is also shown by the dim lighting of the corresponding indicator.



- You can enjoy listening to the input source at the desired volume simply by turning VOLUME on the front panel or pressing VOLUME +/- on the remote control.

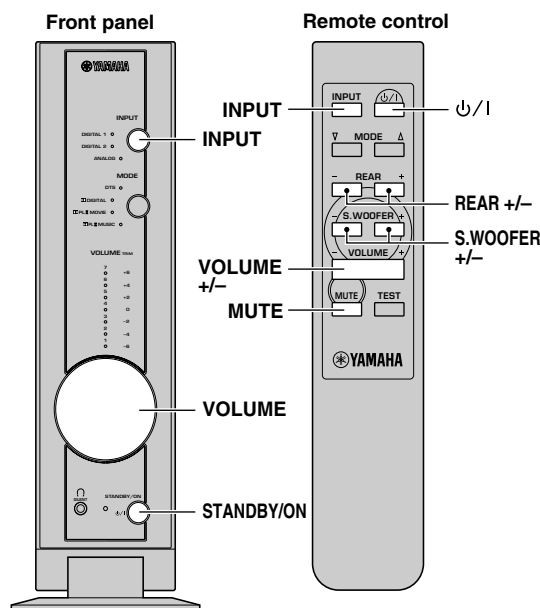
Notes

- If you press INPUT on the remote control when the test tone is outputted, the output levels of all channels are reset to the default levels.
- The levels of the left and right front speakers cannot be set over the point on the VOLUME indicator shown in the figure below.



PLAYING A SOURCE

Let's listen to sources played on the audio and video components connected to this system.



1 Press STANDBY/ON (⏻) to turn on the power.

The STANDBY/ON indicator on the front panel lights up.

2 Turn on the AV component connected to this system.

3 Press INPUT repeatedly to select the input source (DIGITAL 1, DIGITAL 2 or ANALOG).

The indicator for the selected source lights up on the front panel.

4 Start playback on the source component.

Refer to the operation instructions for the component.

5 Adjust the volume to the desired level.

The volume level is shown by the VOLUME indicators on the front panel.
Control range: 0 (minimum) to 7 (maximum)



- None of the VOLUME indicators light up when the level is "0 (minimum)".

Note

- This system can reproduce sampled digital signals (Linear PCM, Dolby Digital, DTS) of 48 kHz or lower.

To adjust the subwoofer level

While listening to a source, press

S.WOOFER – or +.

Pressing + increases and – decreases the level.



- While adjusting, the current level is shown by the lighting of the VOLUME indicators on the front panel. The default level is also shown by the dim lighting of the corresponding indicator.

Note

- The adjustment cannot be made when listening with headphones even if + or – is pressed.

To adjust the volume balance between the front and rear speakers

While listening to a source, press **REAR – or +.**

Pressing + increases and – decreases the output level of the rear speakers.



- While adjusting, the current level is shown by the lighting of the VOLUME indicators on the front panel. The default level is also shown by the dim lighting of the corresponding indicator.

Note

- The adjustment cannot be made when listening with headphones even if + or – is pressed.

To mute the sound

Press **MUTE** on the remote control.

To resume the audio output, press MUTE again.



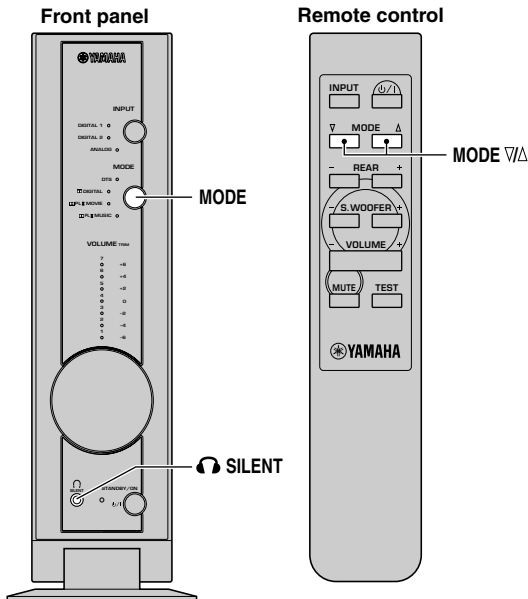
- You can also cancel mute by pressing VOLUME +/-, INPUT, MODE, etc.
- While being muted, the VOLUME indicators flash.

When you have finished using this system

Press STANDBY/ON (⏻) to set this system in the standby mode.

SELECTING THE SURROUND MODE

This system provides you with four surround modes for theaterlike surround sound enjoyment. For the best results, choose a mode appropriate for the selected audio source.



1 Play a source.

Refer to “Playing a source” on page 12 for how to play a source.

2 Press MODE repeatedly to select the desired mode.

The indicator for the selected surround mode lights up on the front panel.

- When no indicator is illuminated, no surround mode is selected.
- Not all surround modes can be selected with all input sources. Selectable surround modes depend on the input source. Refer to the table below for details.



- When no surround mode is selected, sound output is in 2-channel stereo, and no sound is outputted from the center and rear speakers.
- If DTS or **DIGITAL** encoded signals are inputted when no surround mode is selected, the multi-channel source signals are mixed down into two channels and are outputted from the front speakers only.

Feature of surround modes

Mode	Features
DTS	This mode precisely simulates the surround sound effects of DTS encoded sources without altering the original sound orientation. This mode can be selected only when the input signal is encoded with DTS and the input mode is set to DIGITAL 1 or 2.
DIGITAL	This mode precisely simulates the surround sound effects of DIGITAL encoded sources without altering the original sound orientation. This mode can be selected only when the input signal is encoded with Dolby Digital and the input mode is set to DIGITAL 1 or 2.
PL II MOVIE	This mode enables you to enjoy 2-channel stereo sources decoded into five discrete channels. This mode is suitable for movies, TV dramas, etc.
PL II MUSIC	This mode enables you to enjoy 2-channel stereo sources decoded into five discrete channels. This mode is suitable for music sources.



- When you set the amplifier unit in the standby mode, the current source and surround mode are memorized and are automatically selected when you turn on the power again.
- When you select an input source, the amplifier unit automatically selects the last surround mode used with that source.
- The acoustics of your listening room affect the surround effect. It is recommended to use a room with fewer sound reflections to maximize the surround effect.
- If a DTS or Dolby Digital encoded signal is inputted when DTS or **DIGITAL** mode is not selected, the corresponding indicator lights up dimly.

Notes

- When a monaural source is being played with **PL II MOVIE**, sound will be hardly heard from the front speakers and the rear speakers. Sound can only be heard from the center speaker.
- You cannot select **PL II MOVIE/PL II MUSIC** mode while reproducing 2-channel DTS signal.

SILENT CINEMA

You can enjoy the sound expansion similar to what you could experience from actual speakers with the SILENT CINEMA mode. The SILENT CINEMA can be used by connecting your headphones to the **SILENT** jack while enjoying surround sound by using the speakers. (When the surround mode is off, you listen to the source with normal stereo reproduction.)

Note

- The sound of LFE channel will be mixed and output from the headphone.

TROUBLESHOOTING

Refer to the chart below when this system does not function properly. If the problem you are having is not listed below or if the instruction below does not help, set this system to the standby mode, disconnect the power cable, and contact the nearest authorized YAMAHA dealer or service center.

Problem	Cause	Remedy	Refer to page
The amplifier 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 cable is not connected or the plug is not completely inserted.	Firmly connect the power cable.	10
	The amplifier unit has been exposed to a strong external electric shock (such as lightning and strong static electricity).	Set the amplifier unit in the standby mode, disconnect the power cable, plug it back in after 30 seconds, then start operating.	—
No sound.	Incorrect input cable connections.	Connect the cables properly. If the problem persists, the cables may be defective.	8 – 9
	An appropriate input source has not been selected.	Select an appropriate input source with the INPUT button.	12
	The speaker connections are not secure.	Secure the connections.	9
	The volume is turned down.	Turn up the volume.	12
	The sound is muted.	Press MUTE or any operation buttons to cancel a mute and adjust the volume.	12
No sound from the rear speakers	The level of the rear speakers is set to minimum.	Press REAR + button on the remote control to increase the level.	—
	The surround mode is off.	Select the appropriate surround mode by pressing the MODE button.	13
No sound from the center speaker when the DTS or DIGITAL mode is selected.	The source encoded with a Dolby Digital or DTS signal does not have a center channel signal.	/	—
No sound from the subwoofer.	The level of the subwoofer is set to minimum.	Press S. WOOFER + button on the remote control to increase the level.	12
A “humming” sound can be heard.	Incorrect cable connections to the ANALOG INPUTS jacks.	Firmly connect the audio plugs to the ANALOG INPUTS jacks. If the problem persists, the cables may be defective.	8
The amplifier 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 power cable from the outlet and then plug it in again after about 30 seconds.	—
There is noise interference from digital or high-frequency equipment, or the amplifier unit.	The amplifier unit is too close to the digital or high-frequency equipment.	Move the amplifier unit further away from such equipment.	
No sound from the center and rear speakers though the DTS or DIGITAL mode indicator is dimly illuminated.	Dim illumination of an indicator means that signals encoded with the corresponding format (DTS or Dolby Digital) is inputted to this system. In this case, the signals are mixed into 2 channels and reproduced from the front speakers only.	Press the MODE button for the appropriate surround format. The indicator turns bright, and the center and rear speakers reproduce sounds since the surround format is decoded.	13

Problem	Cause	Remedy	Refer to page
Though a Dolby Digital encoded source is inputted to this system and the <input type="checkbox"/> DIGITAL mode is selected, no sound is outputted from the center and rear speakers.	A Dolby Digital 2-channel encoded source is inputted to this system.	If the input source is compatible with 5.1 channels, select "5.1-channel mode" on the player which is sending signals to this system. (If the input source is not compatible with 5.1 channels, you can enjoy the source in a multi-channel mode by using the <input type="checkbox"/> PL II MOVIE or MUSIC surround mode.)	13
A DTS or Dolby Digital encoded source cannot be played in the DTS or <input type="checkbox"/> DIGITAL mode. (Neither the DTS nor <input type="checkbox"/> DIGITAL mode indicator lights up.)	The DVD player, etc. sending the playback signal to this system is not set as follows. <ul style="list-style-type: none"> • "Digital output" and "DTS or Dolby Digital mode" • "Output: Digital" and "Signal type: DTS or Dolby Digital" 	Make a proper setting on the DVD player, etc. referring to the instruction manual of the player.	—
Sound is distorted.	The level of the input signal is too high.	Turn down the output level on the connected component.	—
Noise.	The level of the input signal is too low.	Turn up the output level on the connected component.	—
	Connections are faulty or incomplete.	Make the connections again.	8 – 9
	The amplifier unit is too close to the monitor.	Place the amplifier unit away from the monitor.	—
The remote control does not work nor function properly.	Wrong distance or angle.	The remote control will function within a maximum range of 6 m (20 feet) and no more than 30 degrees off-axis from the front panel.	4
	Direct sunlight or lighting (from an inverter type of fluorescent lamp, etc.) is striking the remote control sensor of the amplifier unit.	Reposition the amplifier unit.	—
	The batteries are weak.	Replace all batteries with new ones.	2

GLOSSARY

■ Encode/Decode

When a signal or other information is processed, compressed and digitized, this is called encoding. Encoding can be used to record an extremely large amount of information on a single CD or DVD. An encoded signal cannot be listened to directly. It must be returned to its original state (i.e. audible sound) and this is called decoding.

■ Sound field

Not all sound travels from the sound source directly into the human ear, but instead reflects off of walls, ceilings and other objects to arrive at the ear slightly delayed (early reflection). It may also reflect repeatedly in a complicated manner before reaching the ear (subsequent reverberation). A human is able to perceive the size and shape of a location based on the various sounds heard in this way. The specific acoustic space of a particular building is called a sound field.

■ Dolby Surround

In movie theaters and in live theaters, the spectators are surrounded by many speakers and sound effects geared to each scene are used to make sound move from front to back and right to left. This gives the sound a three dimensional feel that surrounds the entire body. Dolby Surround is used to implement this realistic effect. Originally, the Dolby Surround system consisted of a total of four channels: two front channels (right and left), one center channel, and one rear channel. Later, two-channel stereo compatibility was added to for broadcast and video media used in the home. The ability to easily set up a home AV system capable of stereo reproduction is one of the biggest features of Dolby Surround.

■ 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 channels, 1 center channel, and 2 rear channels (instead of only 1 rear channel for conventional Pro Logic technology). A music mode is also available for 2-channel sources in addition to the movie mode.

■ Dolby Digital

Dolby Digital consists of a total of five channels: three front channels (left, center and right) and two rear channels (right and left), plus a distinct LFE channel for low frequency effect. It is therefore commonly referred to as a 5.1 channel system. Using digital compression technology for all 5.1 channels, Dolby Digital can be used for completely independent audio reproduction. Dolby Digital offers superior sound separation between each channels and a more three dimensional surround effect in comparison to the older Dolby Surround, which mixes four channels (three front and one rear) into two-channel stereo and separates them using a matrix circuit.

■ DTS (Digital Theater Systems) Digital Surround

DTS was developed to replace the analog soundtracks of movies with six discrete channels of digital soundtracks, and it is now installed in many theaters around the world. The DTS digital playback system changed the way we experienced movies in theaters with six discrete channels of superb digital audio.

DTS technology, through intense research and development has made it possible to deliver similar encode/decode discrete technology to home audio surround-sound entertainment.

DTS Digital Surround is an encode/decode system which delivers six channels of master-quality, 20-bit audio; technically, it is 5.1 channels, which means 5 full-range (left, center, right and two surround) channels, plus a subwoofer (LFE) channel (as "0.1"). It is compatible with the 5.1 speaker configurations that are currently available for home theater systems.

■ 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 channels in a Dolby Digital or DTS 5.1 channel systems.

■ SILENT CINEMA

YAMAHA has developed a natural, realistic sound effect DSP algorithm for headphones.

Parameters for headphones have been set for each surround mode so that accurate representations of all the surround modes can be enjoyed using headphones.

SPECIFICATIONS

Amplifier unit

Output Power per Channel

Front/center/rear: 6W (1 kHz, 4Ω, 10% THD)
Subwoofer: 18W (100 Hz, 4Ω, 10% THD)

Input Sensitivity 200 mV

Headphone Jack Output Level/Output Impedance

..... 450 mV/30Ω (1 kHz, 200 mV)

Frequency Response 40 Hz–20 kHz

Dimensions (W × H × D)

..... 96 mm × 281 mm × 208 mm
(3-3/4" × 11-1/16" × 8-3/16")

Weight 1.6 kg (3.5 lbs.)

Power Consumption 40 W

Standby Power Consumption Approx. 1 W

Subwoofer

Type Active Servo Processing Subwoofer System

Driver 13 cm (5") cone woofer
Magnetic shielding type

Impedance 4Ω

Dimensions (W x H x D)

..... 220 mm x 224 mm x 222 mm
(8-11/16" × 8-13/16" × 8-3/4")

Weight 3.3 kg (7.3 lbs.)

* Please note that all specifications are subject to change without notice.

Front/center/rear speakers

Type Full range speaker system
Acoustic suspension

Driver 5 cm (2") spruce cone type
Magnetic shielding type

Impedance 4Ω

Dimensions (W x H x D) ... 70 mm × 95 mm × 118 mm
(2-3/4" × 3-3/4" × 4-5/8")

Weight 0.4 kg (0.9 lbs.)

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/uses radio frequencies and, if not installed and used according to the instructions found in the users 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 by 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 (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not 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.

We Want You Listening For A Lifetime

YAMAHA and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion – and, most importantly, without affecting 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 you to avoid prolonged exposure from excessive volume levels.



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