



YST-SW005

Subwoofer System

Enceinte a Caisson de Grave



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

UNPACKING
DEBALLAGE
AUSPACKEN
UPPACKNING
DISIMBALLAGGIO
DESEMBALAJE
UITPAKKEN

After unpacking, check that the following item is contained.

Après le déballage, vérifiez que la pièce suivante est incluse.

Nach dem Auspacken überprüfen, ob das folgende Teil vorhanden ist.

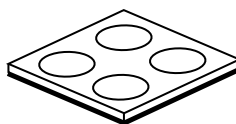
Kontrollera efter det apparaten packats upp att följande del finns med.

Verificare che l'accessorio sotto sia contenuto nell'imballaggio dell'apparecchio.

Desembale el aparato y verifique que el siguiente accesorio está en la caja.

Controleer na het uitpakken of de volgende onderdelen voorhanden zijn.

Nonskid pads
Patins anti-dérapages
Rutschfeste Auflagen
Glidskyddsdynor
Piedini antisdrucchiolevoli
Almohadillas antideslizantes
Niet-glijdende steunen



CAUTION: Read this before operating your unit.

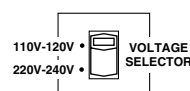
- To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- Install this unit in a cool, dry, clean place – away from windows, heat sources, sources of excessive vibration, dust, moisture and cold. Avoid sources of humming (transformers, motors). To prevent fire or electrical shock, do not expose this unit to rain or water.
- Never open the cabinet. If something drops into the set, contact your dealer.
- To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.
- Do not use force on switches, controls or connection wires. When moving the unit, first disconnect the power plug and the wires connected to other equipments. Never pull the wires themselves.
- When not planning to use this unit for a long period (ie., vacation, etc.), disconnect the AC power plug from the wall outlet.
- To prevent lightning damage, disconnect the AC power plug when there is an electrical storm.
- Since this unit has a built-in power amplifier, heat will radiate from the rear panel. Place the unit apart from the walls, allowing enough space above, behind and on both sides of the unit to prevent fire or damage. Furthermore, do not position with the rear panel facing down on the floor or other surfaces.

<For U.K., Europe and China models only>

Be sure to allow space of at least 20 cm above, behind and on both sides of the unit.

- Do not cover the rear panel of this unit with a newspaper, a tablecloth, a curtain, etc. in order not to obstruct heat radiation. If the temperature inside the unit rises, it may cause fire, damage to the unit and/or personal injury.
- Do not place small metallic objects on this unit. Otherwise, the object may fall, possibly causing an injury.
- Do not place the following objects on this unit:
Glass, china, etc.
If glass etc. falls by vibrations and breaks, it may cause personal injury.
A burning candle etc.
If the candle falls by vibrations, it may cause fire and personal injury.
A vessel with water in it
If the vessel falls by vibrations and water spills, it may cause damage to the unit, and/or you may get an electric shock.
- Do not place this unit where foreign objects such as water drips might fall. It might cause a fire, damage to this unit, and/or personal injury.
- Never put a hand or a foreign object into the YST port. When moving this unit, do not hold the port as it might cause personal injury and/or damage to this unit.
- Never open the cabinet. It might cause an electric shock since this unit uses a high voltage. It might also cause personal injury and/or damage to this unit.
- When using a humidifier, be sure to avoid condensation inside this unit by allowing enough spaces around this unit or avoiding excess humidification. Condensation might cause a fire, damage to this unit, and/or electric shock.
- Super-bass frequencies reproduced by this unit may cause a turntable to generate a howling sound. In such a case, move this unit away from the turntable.
- This unit may be damaged by using at high volume level when 20 Hz–50 Hz sine waves from a test disc, bass sounds from electronic instruments, etc. are continuously inputted to this unit, or when the stylus of a turntable touches the surface of a disc. Reduce the volume level to prevent this unit from being damaged.

- If you hear distorted noise (i.e., unnatural, intermittent “rapping” or “hammering” sounds) coming from this unit, reduce the volume level. Extremely loud playing of a movie soundtrack’s low frequency, bass-heavy sounds or similarly loud popular music passages can damage this speaker system.
- Vibration generated by super-bass frequencies may distort images on a TV. In such a case, move this unit away from the TV set
- Do not attempt to clean this unit with chemical solvents as this might damage the finish. Use a clean, dry cloth.
- Be sure to read the “TROUBLESHOOTING” section regarding common operating errors before concluding that the unit is faulty.
- **Secure placement or installation is the owner’s responsibility. YAMAHA shall not be liable for any accident caused by improper placement or installation of speakers.**
- **VOLTAGE SELECTOR (China and General models only)**
The **VOLTAGE SELECTOR** on the rear panel of this unit must be set for your local main voltage **BEFORE** plugging into the AC main supply.
Voltages are 110-120/220-240 V AC, 50/60 Hz.



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.

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.

Standby mode

If the POWER switch is set to the ON position and the AUTO STANDBY switch is set to the HIGH or LOW position, this unit turns into the standby mode when no signal is received by this unit for 7 to 8 minutes.

In this state, this unit is designed to consume a very small quantity of power.

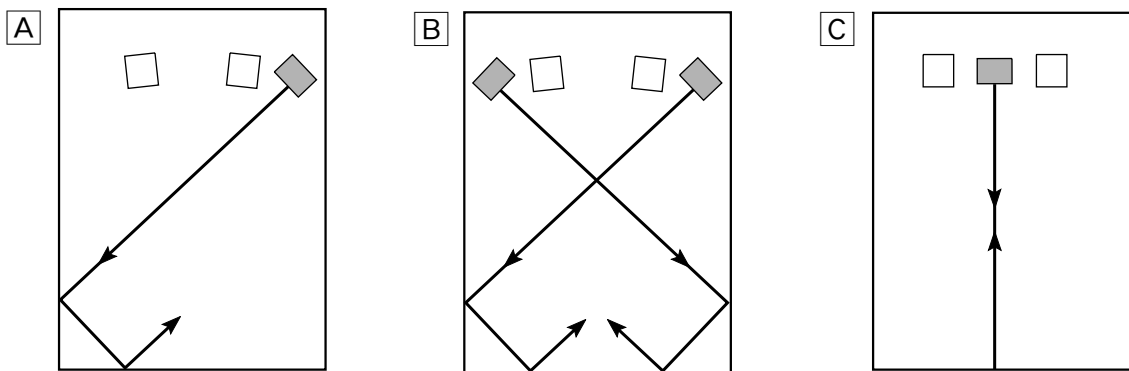
This unit features a magnetically shielded design, but there is still a chance that placing it too close to a TV set might impair picture color. Should this happen, move this unit away from the TV set.



FEATURES

- This subwoofer system employs Advanced YAMAHA Active Servo Technology which YAMAHA has developed for reproducing higher quality super-bass sound. (Refer to page 12 for details on Advanced YAMAHA Active Servo Technology.) This super-bass sound adds a more realistic, theater-in-the-home effect to your stereo system.
- This subwoofer can be easily added to your existing audio system by connecting to either the speaker terminals or the line output (pin jack) terminals of the amplifier.
- The **HIGH CUT** switch provides you with two positions (HIGH and LOW) to adjust the tone balance between the subwoofer and the main speakers.
- The **AUTO STANDBY** switch saves you the trouble of setting the **POWER** switch to the ON or OFF position.

CONTENTS

UNPACKING	Inside of Front Cover		
CAUTION	1		
FEATURES	2		
PLACEMENT	3		
CONNECTIONS	4		
Connecting to line output (pin jack) terminals of the amplifier	4		
Connecting to speaker output terminals of the amplifier	6		
CONTROLS AND THEIR FUNCTIONS	8		
		AUTOMATIC POWER-SWITCHING FUNCTION	9
		ADJUSTING THE SUBWOOFER BEFORE USE	10
		Frequency characteristics	11
		ADVANCED YAMAHA ACTIVE SERVO TECHNOLOGY	12
		TROUBLESHOOTING	13
		SPECIFICATIONS	14



( : subwoofer,  : main speaker)

One subwoofer will have a good effect on your audio system, however, the use of two subwoofers is recommended to obtain more effect.

If using one subwoofer, it is recommended to place it on the outside of either the right or the left main speaker. (See fig. [A](#).) If using two subwoofers, it is recommended to place them on the outside of each main speaker. (See fig. [B](#).) The placement shown in fig. [C](#) is also possible, however, if the subwoofer system is placed directly facing the wall, the bass effect may die because the sound from it and the sound reflected by the wall may cancel out each other. To prevent this from happening, face the subwoofer system at an angle as in fig. [A](#) or [B](#).

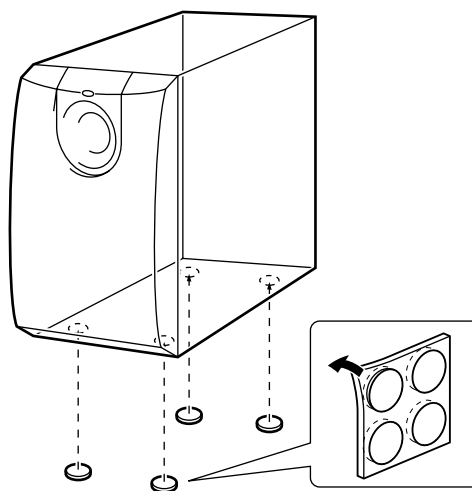
Note

There may be a case that you cannot obtain enough super-bass sounds from the subwoofer when listening at the middle of the room. This is because “standing waves” have been developed between two parallel walls and they cancel the bass sounds.

In such a case, face the subwoofer obliquely to the wall. It also may be necessary to break up the parallel surfaces by placing bookshelves etc. along the walls.

Use the nonskid pads

Put the provided nonskid pads at the four corners on the bottom of the subwoofer to prevent the subwoofer from moving by vibrations etc.



CONNECTIONS

Caution: Plug in the subwoofer and other components after all connections are completed.

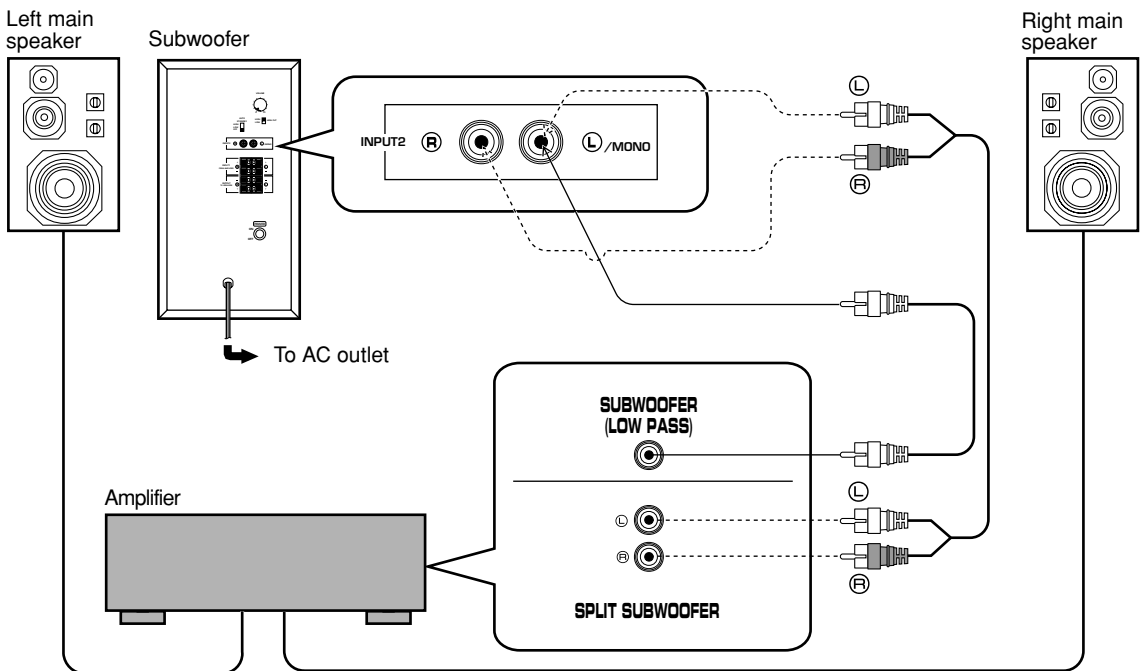
- All connections must be correct, that is to say **L** (left) to **L**, **R** (right) to **R**, “+” to “+” and “-” to “-”. Also refer to the owner’s manual for each of your components.
- Basically, connect the subwoofer to the line output (pin jack) terminal(s) of the amplifier. (Refer to pages 4 and 5 for details.) If your amplifier does not have any line output terminal, connect the subwoofer to the speaker output terminals of the amplifier. (Refer to pages 6 and 7 for details.)

Connecting to line output (pin jack) terminals of the amplifier

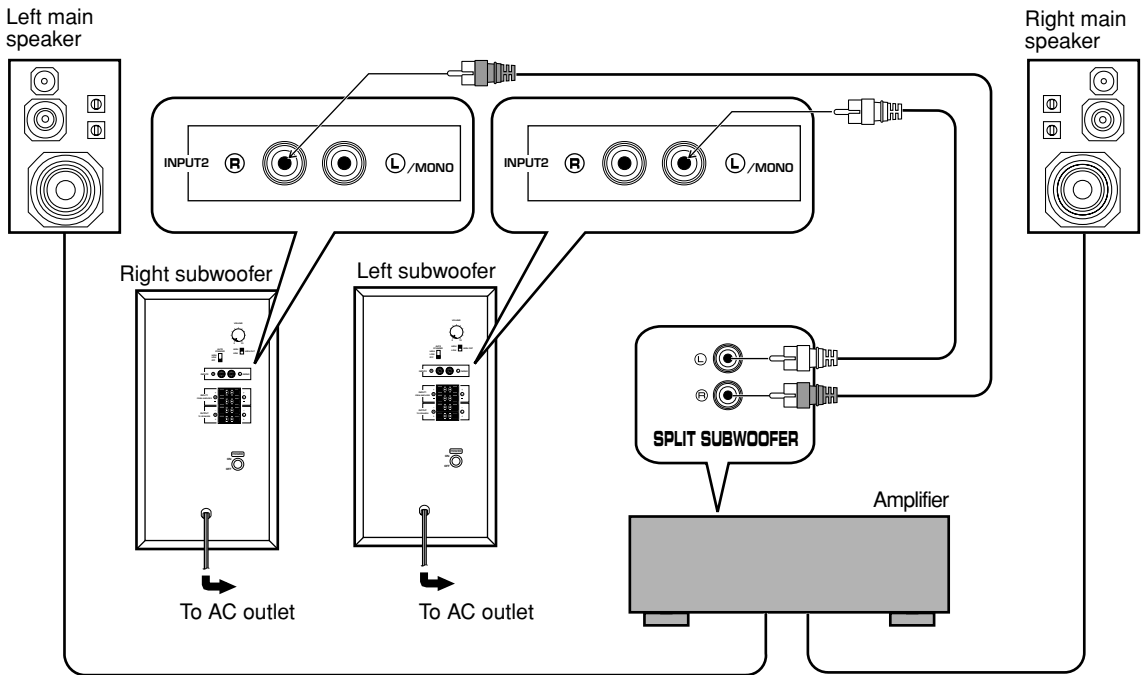
Connect the main speakers to the speaker output terminals of the amplifier.

- To connect with 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 **L/MONO INPUT2** terminal of the subwoofer.
- When connecting the subwoofer to the SPLIT SUBWOOFER terminals on the rear of the DSP amplifier, be sure to connect the **L/MONO INPUT2** terminal to the “L” side and the **R INPUT2** terminal to the “R” side of the SPLIT SUBWOOFER terminals.

■ Using one subwoofer



■ Using two subwoofers



Notes

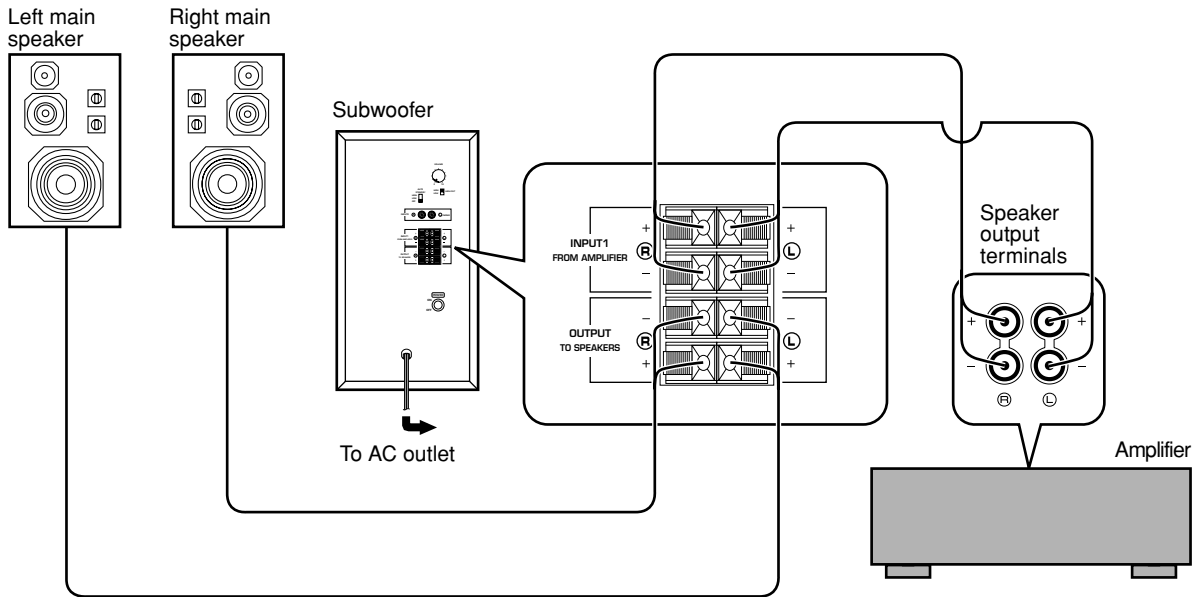
- If your amplifier has two sets of PRE OUT terminals, you can connect the subwoofer to one of those PRE OUT terminals.
- When connecting to a monaural line output terminal of the amplifier, connect the L/MONO INPUT2 terminal.

Connecting to speaker output terminals of the amplifier

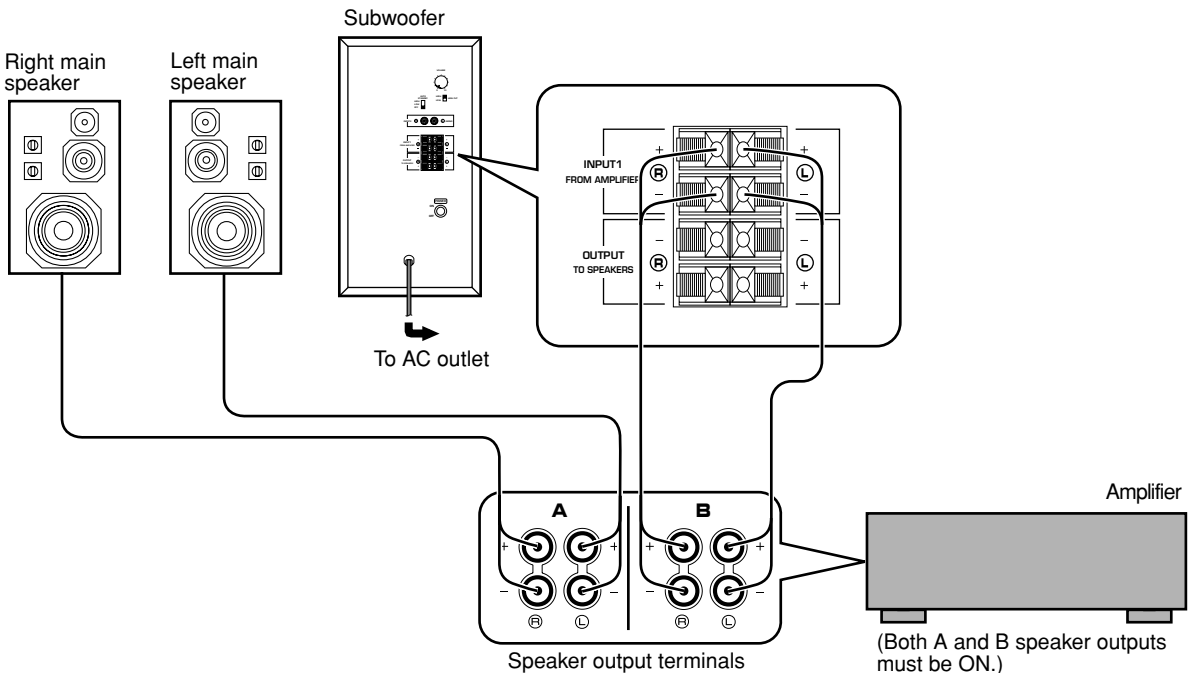
■ Using one subwoofer

If your amplifier has only one set of main speaker output terminals

Connect the speaker output terminals of the amplifier to the INPUT1 terminals of the subwoofer, and connect the OUTPUT terminals of the subwoofer to the main speakers.

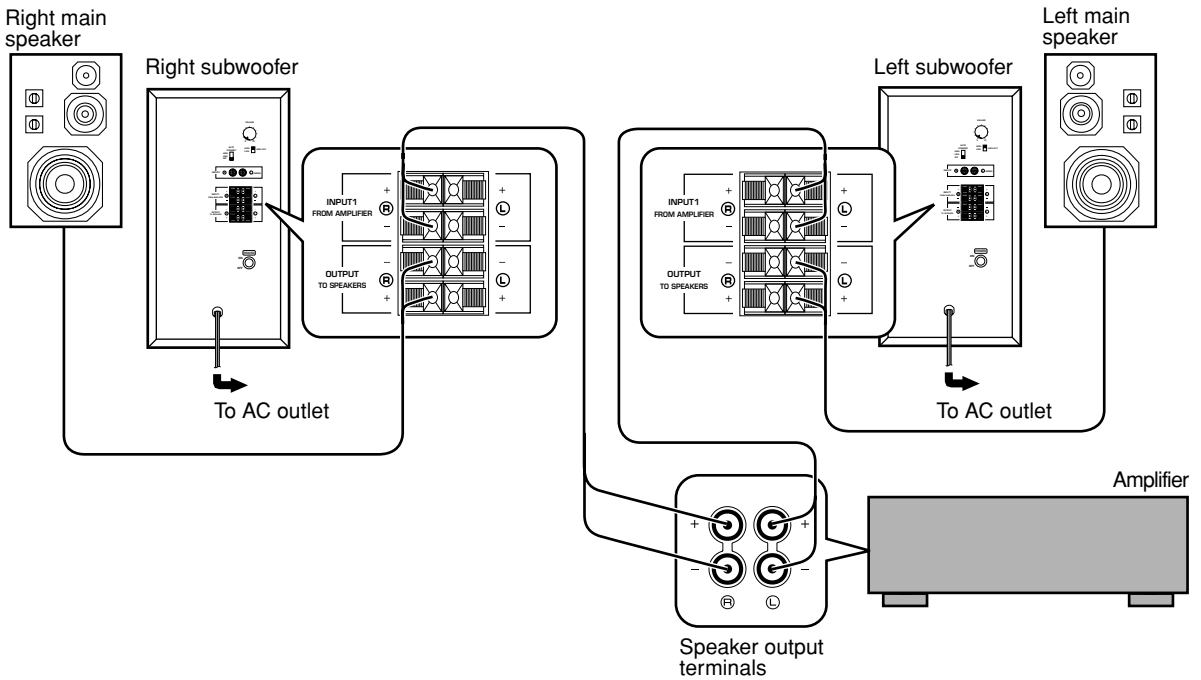


If your amplifier has two sets of speaker output terminals



■ Using two subwoofers

Connect the speaker output terminals of the amplifier to the INPUT1 terminals of the subwoofer, and connect the OUTPUT terminals of the subwoofer to the main speakers.

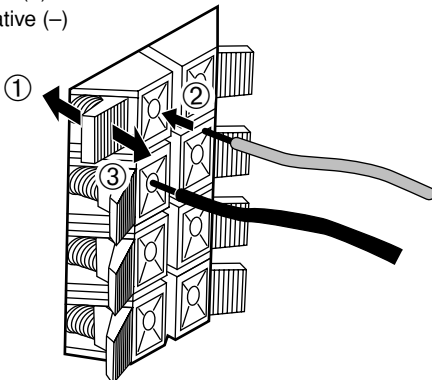


Connecting to the INPUT1/OUTPUT terminals of the subwoofer

For connections, keep the speaker cables as short as possible. Do not bundle or roll up the excess part of the cables. If the connections are faulty, no sound will be heard from the subwoofer or the speakers, or both of them. Make sure that the + and – polarity markings of the speaker cables are observed and set correctly. If these cables are reversed, the sound will be unnatural and lack bass.

How to Connect:

Red: positive (+)
Black: negative (–)

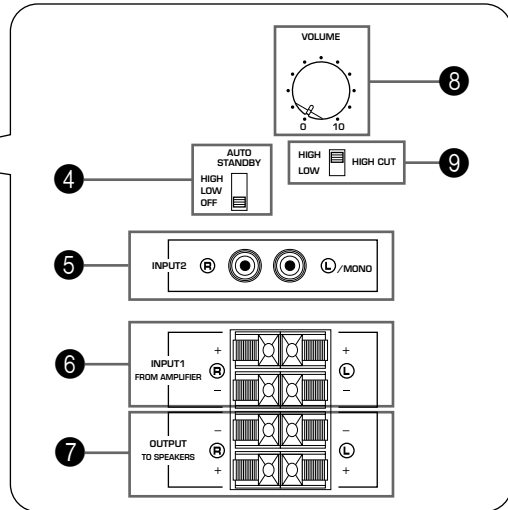
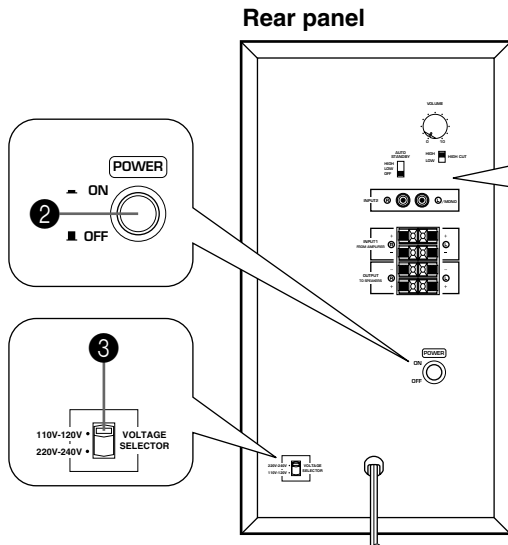
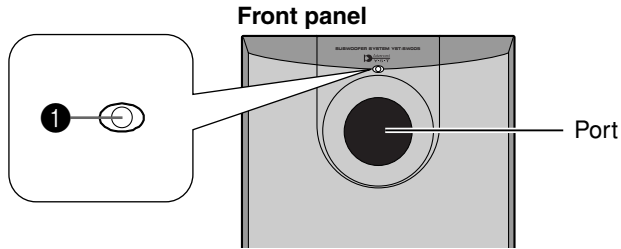


Caution

Do not let the bare speaker wires touch each other as this could damage the subwoofer or the amplifier, or both of them.

- ① Press and hold the terminal's tab, as shown in the figure.
- ② Insert the bare wire end properly into the terminal hole. [Remove approx. 10 mm (3/8") insulation from the speaker cable.]
- ③ Release your finger from the tab to allow it to lock securely on the cable's wire end.
- ④ Test the firmness of the connection by pulling lightly on the cable at the terminal.

CONTROLS AND THEIR FUNCTIONS



- 1** **Power indicator**
Lights up GREEN when the **POWER** switch (2) is pressed in to the ON position and goes off when set to the OFF position.

* Standby mode

If the **POWER** switch (2) is pressed in to the ON position and the **AUTO STANDBY** switch (4) is set to the HIGH or LOW position, this indicator lights up RED when no signal is received by the subwoofer.

- 2** **POWER** switch
Press this switch to the ON position to turn on the power of the subwoofer. When the power of the subwoofer is on, the power indicator (1) on the front panel lights up GREEN. Press this switch again to set to the OFF position to turn off the power of the subwoofer.

- 3** **VOLTAGE SELECTOR** switch
(China and General model only)
If the preset setting of the switch is incorrect, set the switch to the proper voltage range (220V-240V or 110V-120V) of your area.
Consult your dealer if you are unsure of the correct setting.

WARNING

Be sure to unplug the subwoofer before setting the VOLTAGE SELECTOR switch correctly.

- 4** **AUTO STANDBY (HIGH/LOW/OFF)** switch
This switch is originally set to the OFF position. By setting this switch to the HIGH or LOW position, the subwoofer's automatic power-switching function operates as explained on page 9. If you do not need this function, set to the OFF position.
* Make sure to change the setting of this switch only when the **POWER** switch (2) is in the OFF position.

- 5** **INPUT2** terminals
Used to input line level signals from the amplifier.

- 6** **INPUT1 (FROM AMPLIFIER)** terminals
Used to connect the subwoofer with the speaker terminals of the amplifier.

- 7** **OUTPUT (TO SPEAKERS)** terminals
Can be used for connecting to the main speakers. Signals from the **INPUT1** terminals (6) are sent to these terminals.

- 8** **VOLUME** control
Adjusts the volume level. Turn the control clockwise to increase the volume, and counterclockwise to decrease the volume.

- 9** **HIGH CUT (HIGH/LOW)** switch
Selects the high frequency cut off point. Normally, it is set to LOW, however, you may set to HIGH if necessary. Refer to page 10.

AUTOMATIC POWER-SWITCHING FUNCTION

If the source being played is stopped and the input signal is cut off for 7 to 8 minutes, the subwoofer automatically switches to the standby mode. (When the subwoofer switches to the standby mode by the automatic power-switching function, the power indicator lights up in red.)

When you play a source again, the power of the subwoofer turns on automatically by sensing audio signals input to the subwoofer.

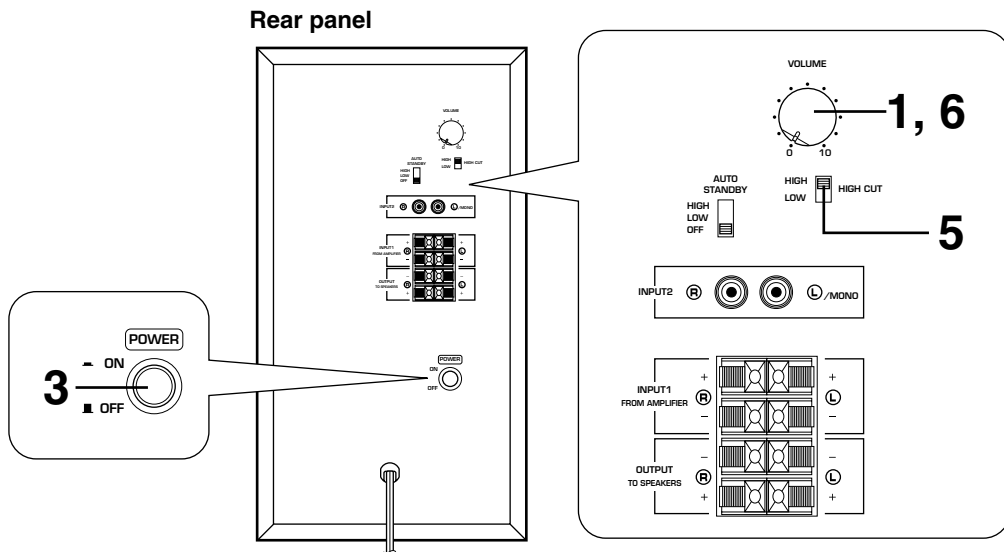
This function will operate by sensing a certain level of low frequency input signal. Usually set the **AUTO STANDBY** switch to the **LOW** position. However, if the power is not switched to **ON** or **STANDBY** smoothly, set the switch to the **HIGH** position. In the **HIGH** position, the power will turn on even with a low level of input signal. But please be aware that the subwoofer may not switch to the standby mode when there is an extremely low input signal.

- * The power might turn on unexpectedly by sensing noise from other appliances. If that occurs, set the **AUTO STANDBY** switch to the **OFF** position and use the **POWER** switch to switch the power between **ON** and **OFF** manually.
- * This function detects the low-frequency components below 200 Hz of the input signals (i.e., the explosion in the action movie, the sound of the bass guitar or the bass drum, etc.).
- * The minutes required to switch the subwoofer to the standby mode might change by sensing noise from other appliances.

This function is available only when the power of the subwoofer is on (by pressing the POWER switch).

ADJUSTING THE SUBWOOFER BEFORE USE

Before using the subwoofer, adjust the subwoofer to obtain the optimum volume and tone balance between the subwoofer and the main speakers by following the procedures described below.



- 1 Set the **VOLUME** control to minimum (0).
- 2 Turn on the power of all the other components.
- 3 Press the **POWER** switch to the ON position.
 - * The power indicator on the front panel lights up in green.
- 4 Play a source containing low-frequency components and adjust the amplifier's volume control to the desired listening level.
- 5 Set the **HIGH CUT** switch to the LOW or HIGH position.

This subwoofer is designed so that the optimum tone balance between the subwoofer and the main speakers is obtained when this switch is set to the LOW position. The tone balance may change, however, depending on the room size, the distance from the subwoofer to the main speakers, and so on. If necessary, switch it to the HIGH position.

- 6 Increase the volume gradually to adjust the volume balance between the subwoofer and the main speakers.

Normally, set the control to the level where you can obtain a little more bass effect than when this unit is not used. If the desired response cannot be obtained, adjust the **HIGH CUT** switch and the **VOLUME** control again.

Notes

- Once the volume balance between the subwoofer and the main speakers is adjusted, you can adjust the volume of your whole sound system by using the amplifier's volume control.
However, if you change the main speakers to others, you must make this adjustment again.
- For adjusting the **VOLUME** control and the **HIGH CUT** switch, refer to "Frequency characteristics" on page 11.

■ Frequency characteristics

Fig. 1 shows the frequency characteristics of the subwoofer with each position (HIGH/LOW) of the **HIGH CUT** switch.

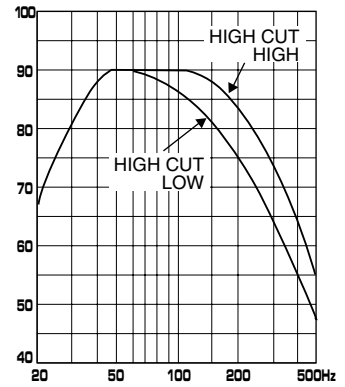


Fig. 1

Fig. 2 shows the optimum volume level with the **HIGH CUT** switch at the HIGH position, and the frequency characteristics when the subwoofer is combined with a typical 3.5" or 4" (8 cm or 10 cm) acoustic suspension, 2 way system main speakers.

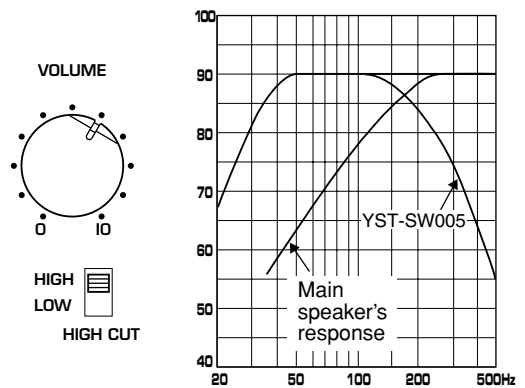


Fig. 2

ADVANCED YAMAHA ACTIVE SERVO TECHNOLOGY

The theory of Yamaha Active Servo Technology has been based upon two major 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 the Helmholtz resonance theory, be outputted from this opening as waves of great amplitude if the size of the opening and the volume of the cabinet are in the correct proportion to satisfy a certain ratio.

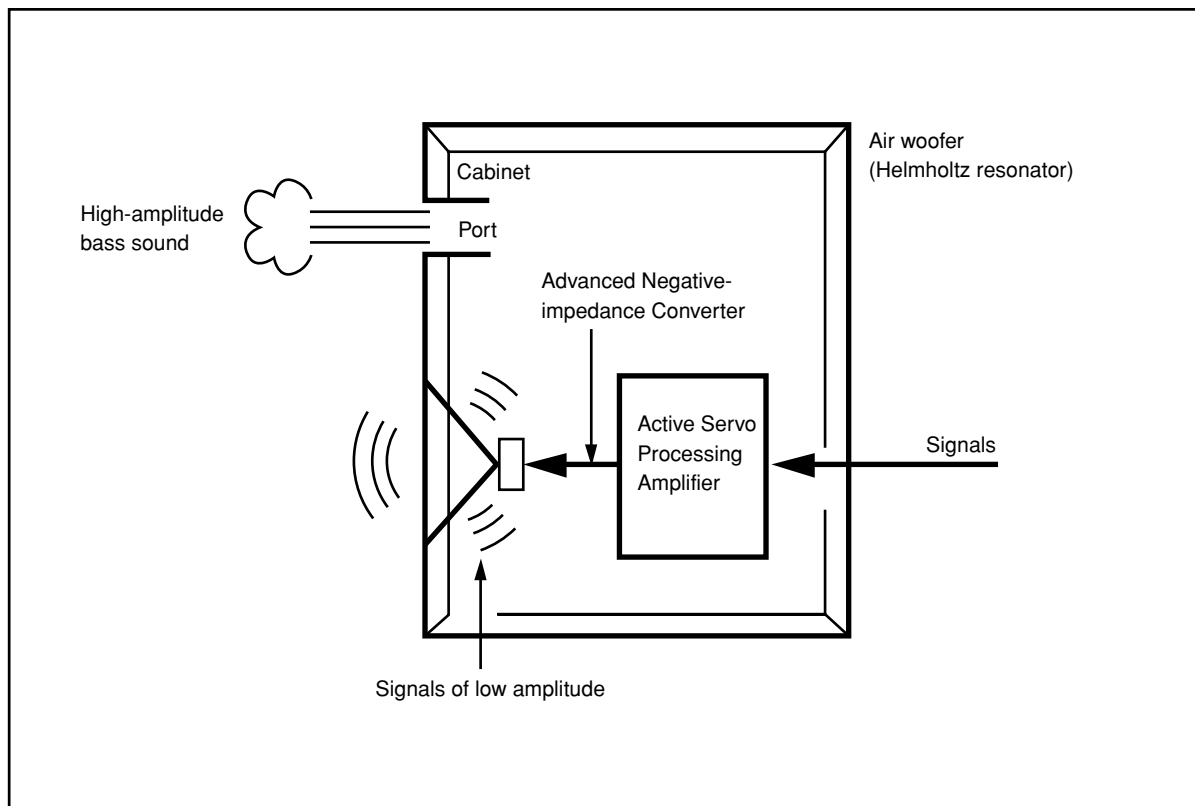
In order to accomplish this, moreover, the amplitudes within the cabinet must be both precise and of sufficient power because these amplitudes must overcome the “load” presented by the air that exists within the cabinet.

Thus it is this problem that is resolved through the employment of a new 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, a special negative-impedance output-drive amplifier for subtracting output impedance of the amplifier is used.

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 with the Helmholtz resonator, reproduce an extremely wide range of frequencies with amazing sound quality and less distortion.

The features described above, then, are combined to be the fundamental structure of the conventional Yamaha Active Servo Technology.

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



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 instructions given below do not help, disconnect the power cord and contact your authorized YAMAHA dealer or service center.

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.	Connect it 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 them securely.
Sound level is too low.	Speaker cables are not connected correctly.	Connect them correctly, that is L (left) to L, R (right) to R, "+" to "+" and "-" to "-".
	A source sound with few bass frequencies is played.	Play a source sound with bass frequencies. Set the HIGH CUT switch to the "HIGH" position.
	It is influenced by standing waves.	Reposition the subwoofer or break up the parallel surface by placing bookshelves etc. along the walls.
The subwoofer does not turn on automatically.	The POWER switch is set to the OFF position.	Set the POWER switch to the ON position.
	The AUTO STANDBY switch is set to the OFF position.	Set the AUTO STANDBY switch to the "HIGH" or "LOW" position.
	The level of input signal is too low.	Set the AUTO STANDBY switch to the "HIGH" position.
The subwoofer does not turn into the standby mode automatically.	There is an influence of noise generated from external appliances etc.	Move the subwoofer farther away from such appliances and/or reposition the connected speaker cables. Otherwise, set the AUTO STANDBY switch to the "OFF" position.
	The AUTO STANDBY switch is set to the OFF position.	Set the AUTO STANDBY switch to the "HIGH" position.
The subwoofer turns into the standby mode unexpectedly.	The level of input signal is too low.	Set the AUTO STANDBY switch to the "HIGH" position.
The subwoofer turns on unexpectedly.	There is an influence of noise generated from external appliances etc.	Move the subwoofer farther away from such appliances and/or reposition the connected speaker cables. Otherwise, set the AUTO STANDBY switch to the "OFF" position.

SPECIFICATIONS

Type Advanced Yamaha Active Servo Technology

Driver 16 cm (6-1/2") cone woofer
Magnetic shielding type

Amplifier Output

USA and Canada models 55 W/5Ω
Other models 50 W/5Ω

Frequency Response 30 Hz to 200 Hz

Power Supply

USA and Canada models AC 120V, 60 Hz
U.K. and Europe models AC 230V, 50 Hz
Australia model AC 240V, 50 Hz
China and General models
..... AC 110-120/220-240V, 50/60 Hz

Power Consumption 60 W
(In the standby mode: 0.8 W)

Dimensions (W x H x D) 200 mm x 365 mm x 375 mm
(7-7/8" x 14-7/20" x 14-3/4")

Weight 8.5 kg (18 lbs. 11 oz.)

Accessories Nonskid pad x 4

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

