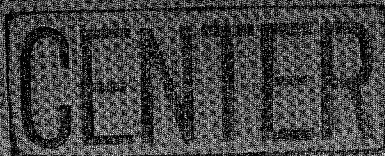


YAMAHA SR-50

*Natural Sound Processing Amplifier
Surround Stereo and Simulated Stereo Processing
Bass Extension Control, Switchable High Filter
Dual Speaker Outputs
Tape Loop with Tape Monitor Switch
25 Watts RMS per Channel, 8 ohms, 0.03% THD*



Thank you for purchasing the YAMAHA SR-50 Processing amplifier.

OWNER'S MANUAL



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SAFETY INSTRUCTIONS	1
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IMPORTANT!

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

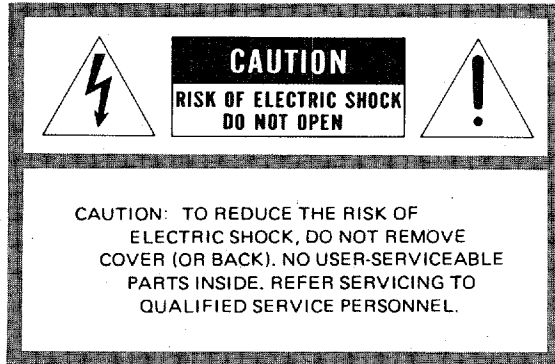
Model: **SR-50**

Serial No. _____

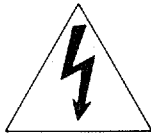
The serial number is located on the rear of the unit.
Retain this Owner's Manual in a safe place for future reference.

WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.



• Explanation of Graphical Symbols



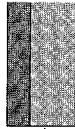
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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.

SAFETY INSTRUCTIONS

- 1 **Read Instructions** — All the safety and operating instructions should be read before the appliance is operated.
- 2 **Retain Instructions** — The safety and operating instructions should be retained for future reference.
- 3 **Heed Warnings** — All warnings on the appliance and in the operating instructions should be adhered to.
- 4 **Follow Instructions** — All operating and other instructions should be followed.
- 5 **Water and Moisture** — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- 6 **Carts and Stands** — The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 7 **Wall or Ceiling Mounting** — The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 8 **Ventilation** — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface, that may block the ventilation openings; or cabinet that may impede the flow of air through the ventilation openings.
- 9 **Heat** — The appliance should be situated away from heat sources such as radiators, stoves, or other appliances that produce heat.
- 10 **Power Sources** — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
- 11 **Power-Cord Protection** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
- 12 **Cleaning** — The appliance should be cleaned only as recommended by the manufacturer.
- 13 **Nonuse Periods** — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
- 14 **Object and Liquid Entry** — Care should be taken so that objects do not fall into and liquids are not spilled into the inside of the appliance.
- 15 **Damage Requiring Service** — The appliance should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the cabinet damaged.



16 Servicing — The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

17 Power Lines — An outdoor antenna should be located away from power lines.

18 Grounding or Polarization — The precautions that should be taken so that the grounding or polarization of an appliance is not defeated.

**CAUTION: READ THIS BEFORE
OPERATING YOUR SR-50**

1

To ensure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.

2

Install your unit in a cool, dry, clean place—away from windows, heat sources, and too much vibration, dust, moisture or cold. Avoid sources of hum (transformers, motors). To prevent fire or electrical shock, do not expose to rain and water.

3

Do not operate the amplifier upside-down. It may overheat, possibly causing damage.

4

Never open the cabinet. If a foreign object drops into the set, contact your dealer.

5

Do not place records or other objects on top of the amplifier; this will block the ventilation holes, cause the internal temperature to rise and may result in a failure.

6

Do not use force on switches, knobs or cords. When moving the set, first turn the unit off. Then gently disconnect the power plug and the cords connecting to other equipment. Never yank the cords.

7

Do not attempt to clean the unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.

8

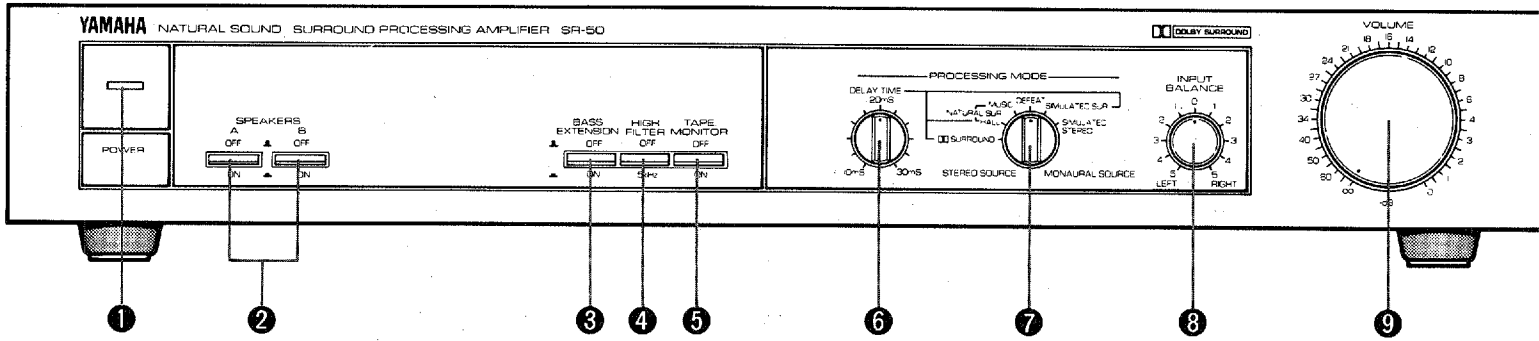
Be sure to read the “troubleshooting” section on common operating errors before concluding that your unit is faulty.

9

Do not connect audio equipment to the AC outlets on the rear panel if that equipment requires more power than the outlets are rated to provide.

SR-50

FRONT PANEL CONTROLS AND THEIR FUNCTIONS



① POWER switch and indicator

When this switch is pressed, the power turns on and the indicator above the switch lights. Pressing the switch again turns the power off.

- * Before turning power on, be sure to set the VOLUME control to the minimum position "—∞"
- * Sound output from the speakers is not produced for a few seconds after power is turned on, because of the function of the speaker protection circuitry.

② SPEAKERS A/B switches

Either of two sub speaker pairs connected to the unit can be selected.

③ BASS EXTENSION switch

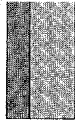
Low frequencies (around 70 Hz) can be enhanced when this switch is depressed.

④ HIGH FILTER switch


High frequencies (of 5 kHz or more), such as hiss noise, can be cut off when this switch is depressed.
* High frequencies of front speaker signal could also be cut off with some types of equipment connected.

⑤ TAPE MONITOR switch

The input from the tape deck connected to the unit can be switched ON/OFF.


**6 DELAY TIME control**


The surround effects can be controlled according to the size of your listening room.

* This control is activated when the PROCESSING MODE selector is set to "  SURROUND", "NATURAL SUR. HALL", or to "SIMULATED SUR."

7 PROCESSING MODE selector

One of five types of different surrounding effects can be selected according to the source played.

 (Dolby) SURROUND

Set to this position when the source to be played, such as a video disc, is marked with "  DOLBY SURROUND" mark.

Signals from the pre-recorded videotapes or videodiscs with this mark are encoded by a special circuit to reproduce the rear surround sound with clear localization. To play back these videos correctly, a Dolby Surround decoder is provided with this unit; this allows the user to enjoy the same sound effects and excitement as in the movie theater.

NATURAL SUR. (surround) HALL

This is the original surround effects made possible by the YAMAHA comb filter, which distributes the delayed signal to the left and right rear speakers.

The surround effect can be expanded into space by this effect.

* No sound is output from the sub speakers when the played source is monaural.

NATURAL SUR. (surround) MUSIC

Natural surround (reverberation) effects can be reproduced from ordinary stereo sources, using, YAMAHA's original surround processor circuit.

* No sound is output from the sub speakers when the played source is monaural.

DEFEAT

Normal stereo sound is played without being processed by the surround processor circuit.

SIMULATED SUR. (surround)

Natural surround (reverberation) effects can be given to monaural sources. While the front speakers reproduce ordinary monaural sound, the sub speakers reproduce the slightly delayed sound which has been distributed to the left and right speakers by the comb filter.

SIMULATED STEREO

Monaural source can be reproduced in simulated stereo through both the front and sub speakers. This feature is convenient for obtaining wide acoustic image from monaural broadcast sources.

8 INPUT BALANCE control

This is a level balance control provided in order to obtain as much reverberation component (difference signal) as possible. Switch the front speakers off, then adjust to minimize the center-position component of the sound from the sub speakers.

9 VOLUME control

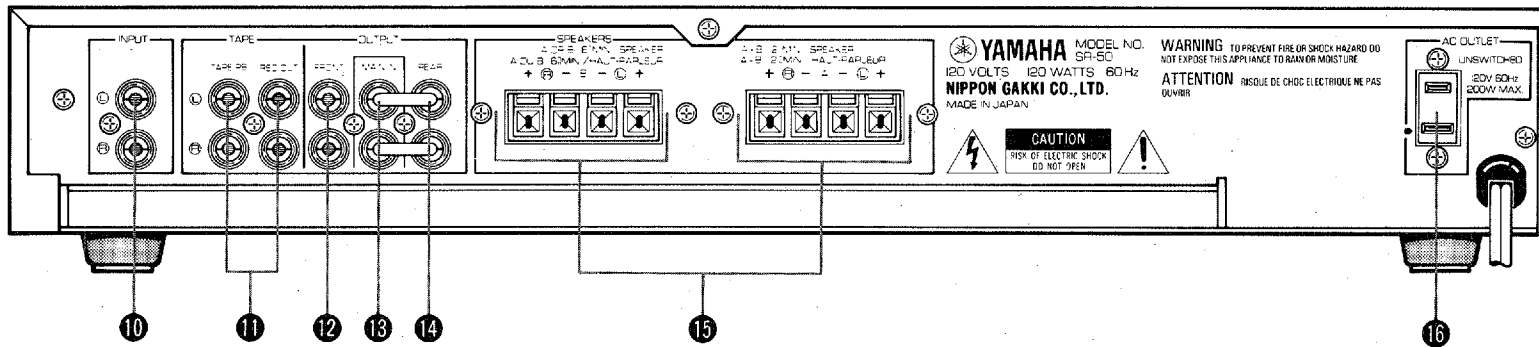
This adjusts the sound level of the sub speakers.

 SURROUND

Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

SR-50

REAR PANEL PARTS AND THEIR FUNCTIONS



⑩ INPUT jacks

Connect to the output jacks of the amplifier.

⑪ TAPE jacks

Connect a tape deck to these jacks.

Connect the TAPE PB jacks with the tape deck's LINE OUT jacks, and connect the REC OUT jacks with the tape deck's LINE IN jacks. (For details of the connection, see page 6.)

⑫ FRONT jacks

Connect to the input jacks of the amplifier.

⑬ MAIN IN jacks

These are the input terminals for the internal power amplifier. These jacks are normally connected to the REAR jacks via jumper pins. By removing the jumper pins and making connection to these jacks, this unit can be used as a power amplifier (with an effective power output of 25W + 25W).

⑭ REAR jacks

These are the output terminals for the signals processed by the surround processor circuit. These jacks are normally connected to the MAIN IN jacks via jumper pins. To drive the surround processor output using an external amplifier, remove the jumper pins and connect the amplifier to these jacks.

⑮ SPEAKERS terminals

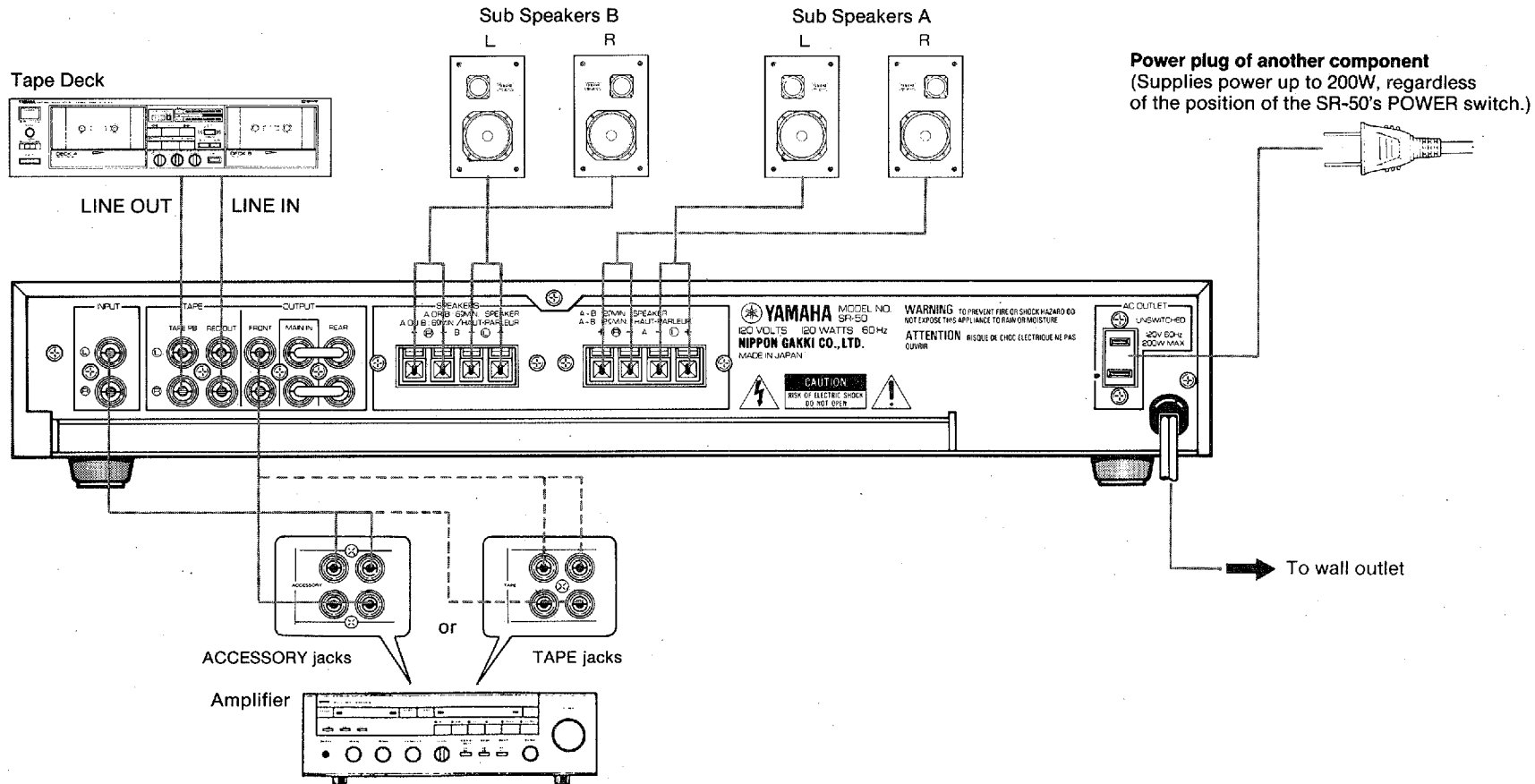
Connect the sub speakers to these terminals.

⑯ AC OUTLET

This is an auxiliary power outlet for power supply to another component. This provides a power of maximum 200W, regardless of the setting of the POWER switch on the front panel.

CONNECTIONS

Connection Diagram



SR-50

Notes on connection

- Before making any connection, be sure to turn off the power of all the components. When making connections, make sure of the left (L) and right (R) channels.
- The FRONT and REAR ACCESSORY jacks are found on some of YAMAHA's amplifiers.
- For the connection of the amplifier and other components, see the instructions provided with them.

■ CONNECTING SUB SPEAKERS

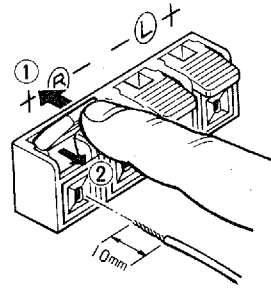
Connect the left sub speaker to the "L" SPEAKERS terminals and right sub speaker to the "R" SPEAKERS terminals. Be sure to match the polarity (+, -) of the speakers.

* When the polarity is incorrect, there will be less bass.

* Connect speakers with the specified impedance range. When connecting several speakers in parallel, be specially careful so that their combined impedance is not below the specified range.

Remove the insulation of each speaker cord by about 10 mm (0.4 in).

- (1) As shown in the figure, push up the lever above the terminal hole and insert the conductor of the speaker cord.
- (2) Pull down the lever. The cord will be locked securely.



■ CONNECTING AMPLIFIER

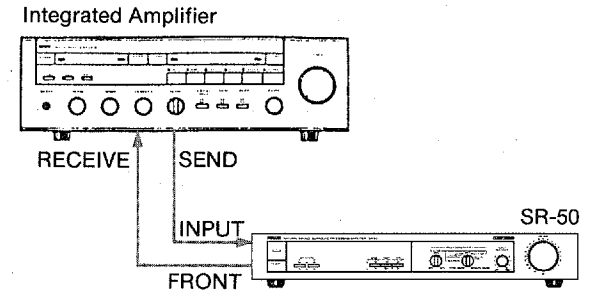
Connect correctly referring to the connection diagram. The input program source selection varies depending on the method of connection to the amplifier and on the features of the amplifier.

To connect to an integrated amplifier (with ACCESSORY jacks)

The ACCESSORY jacks are features provided with some of YAMAHA's amplifiers.

1. Connect the ACCESSORY SEND jacks to the INPUT jacks of the SR-50.
2. Connect the ACCESSORY RECEIVE jacks to the FRONT jacks of the SR-50.

With this connection, the program source is selected by the input selector on the integrated amplifier.



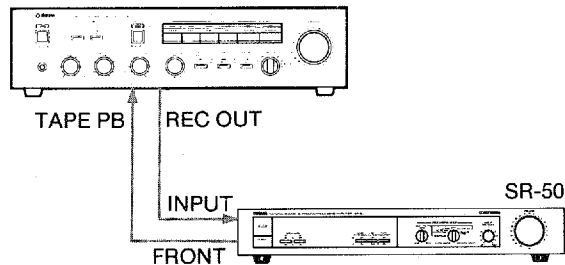
To connect an ordinary integrated amplifier

1. Connect the TAPE REC OUT jacks of the amplifier to the FRONT jacks of the SR-50.
2. Connect the TAPE PB jacks of the amplifier to the FRONT jacks of the SR-50.

The program source selection varies depending on the amplifier, as shown in the table below.

When the amplifier is provided with:	Program source is selected by:	Record setting:
REC OUT selector	REC OUT selector	Set INPUT selector to "TAPE".
TAPE MONITOR switch	INPUT selector	Set TAPE MONITOR switch to "ON".

Integrated Amplifier

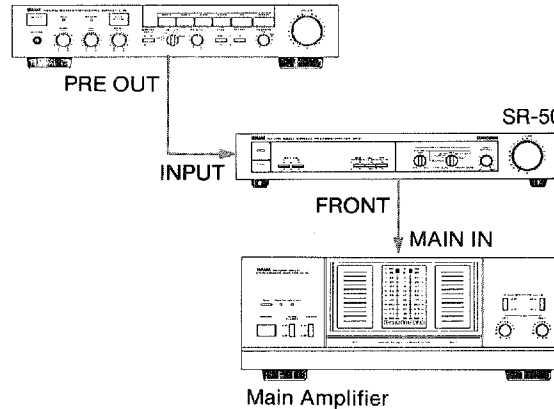


To connect to separate amplifiers:

1. Connect the PRE OUT jacks of the preamplifier to the jacks of the SR-50.
2. Connect the MAIN IN jacks of the main amplifier to the jacks of the SR-50.

With this connection, the program source is selected by the input selector of the preamplifier.

Preamplifier



NOTES:

- To turn on the power of the components, follow the order from the preamplifier, SR-50, then the main amplifier. When turning off, follow the order from the main amplifier, SR-50, then the preamplifier.
- When the SR-50 is connected with separated amplifiers, the volume of the tape deck input cannot be adjusted by the VOLUME control on the preamplifier. It should be adjusted with the input level control of the main amplifier or the output volume control of the tape deck.
- To use the Dolby surround system, connect this unit to the PRE OUT jacks of the preamplifier. With this connection, the front speaker volume level can be adjusted with the volume control of the main amplifier and the rear speaker volume level can be adjusted with the VOLUME control of this unit.

CONNECTING TAPE DECK

A tape deck can be connected to the TAPE jacks. Connect the LINE OUT jacks to the TAPE PB jacks of the SR-50, and LINE IN jacks of the tape deck to the REC OUT jacks of the SR-50.

• Tape Recording

The connected tape deck can record the program source selected by the amplifier.

* When this unit is connected between the amplifier and tape deck, equalized sound can be recorded. For details, refer to the Owner's Manual of the equalizer.

AC OUTLET

The AC outlet can supply power to an audio component with a power consumption of no more than 200W. The outlet is always ON regardless of the setting of the POWER switch on the front panel.

NOTE:

Check the power consumption of the equipment to make sure that it never exceeds 200W.

SR-50

OPERATION

* Before turning on the power of the components, check the connections again.

1. Press the POWER switch.
2. Select the sub speakers to be used with the SPEAKERS A/B switches.
3. Select a program source.

To play the program source connected to the amplifier, set the SR-50's TAPE switch to "OFF ■".

(The program source selection varies depending on the amplifier. See section "Connecting amplifier" on page 7, also the instructions provided with the amplifier.)

To use the tape deck connected to the SR-50, set the TAPE MONITOR switch to "ON ■".

4. Select the desired PROCESSING MODE according to the program source.
5. Start playing the program source.

For the operation of each component, see the instructions provided with it.

6. Adjust the volume of the sub speakers.
7. Set the BASS EXTENSION and HIGH FILTER switches as desired.

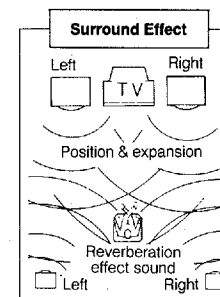
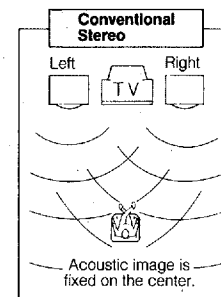
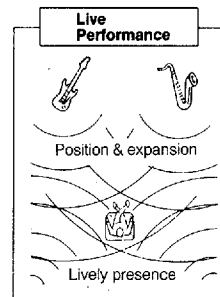
■ SURROUND EFFECTS

The SR-50 is capable of offering a sound field and presence that can not be obtained by conventional 2-channel stereo.

When you listen to a live performance, you are surrounded by direct sound from the sound sources and reverberation sound reflected from the wall or ceiling.

NOTE:

When the PROCESSING MODE selector is set to "SIMULATED STEREO", both the front-speaker and rear-speaker outputs are reproduced in simulated stereo (from monaural sources). In other cases, the front-speaker output is in ordinary stereo.

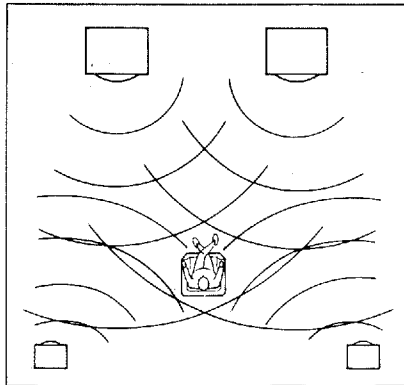




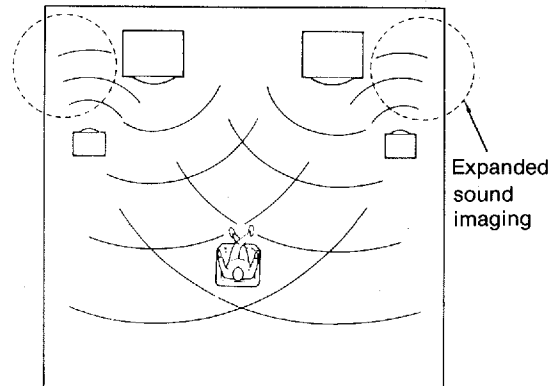
SPEAKER CONFIGURATIONS

There are many patterns for the arrangement of speaker positions, depending on the size and reverberation characteristic of listening rooms. The following diagrams show the typical configurations which offer effective surround. Other configurations are also possible to suit your personal requirement and listening room.

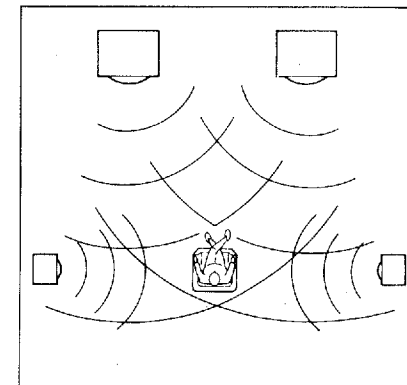
Standard configuration



Front reflective configuration



Side speaker configuration



When the left and right walls of the listening room are made of wood or concrete, this configuration will enhance the stage-like sound image by forming a wide acoustic image on the front.

SR-50

TROUBLESHOOTING

Should any trouble occur during operation, check the following before calling for service. If the trouble still remains after checking or when your trouble is not listed in the following table, turn the power off, disconnect the power cord and consult your dealer or nearest YAMAHA service center.

Symptom	Possible Cause	Remedy
No power is supplied when the POWER switch is set to ON.	<ul style="list-style-type: none"> ● The power cord may be improperly connected to the power outlet. 	<ul style="list-style-type: none"> ● Plug the power cord securely into the power outlet.
No sound is produced from the speakers.	<ul style="list-style-type: none"> ● The SPEAKERS switch may be set incorrectly. 	<ul style="list-style-type: none"> ● Set correctly.
	<ul style="list-style-type: none"> ● The VOLUME control may be set to the minimum position. 	<ul style="list-style-type: none"> ● Turn the VOLUME control clockwise.
	<ul style="list-style-type: none"> ● Jumper pins may be connected incorrectly to the jacks. 	<ul style="list-style-type: none"> ● Insert jumper pins securely into jacks.
	<ul style="list-style-type: none"> ● The amplifier and speakers may be connected incorrectly. 	<ul style="list-style-type: none"> ● Check the connections.
No sound is produced from both or either of the left and right speakers.	<ul style="list-style-type: none"> ● The amplifier and speakers may be connected incorrectly. 	<ul style="list-style-type: none"> ● Check the connections.
	<ul style="list-style-type: none"> ● The balance may be weighted too much to the L or R. 	<ul style="list-style-type: none"> ● Adjust the balance control.
The sound is unnatural, with lack of low frequencies and unstability of acoustic image.	<ul style="list-style-type: none"> ● The phases of the amplifier and speakers (+ and -) may not be coincident. 	<ul style="list-style-type: none"> ● Connect the amplifier and speakers matching the polarity (+ and -).
Humming noise is heard.	<ul style="list-style-type: none"> ● Jumper pins may be connected incorrectly. 	<ul style="list-style-type: none"> ● Insert jumper pins securely into jacks.
No sound is produced from the sub speakers.	<ul style="list-style-type: none"> ● The program source is monaural. 	<ul style="list-style-type: none"> ● Set the PROCESSING MODE selector to SIMULATED SUR. or SIMULATES STEREO.
Surround effect cannot be obtained.	<ul style="list-style-type: none"> ● There is not level difference between the right and left channels. 	<ul style="list-style-type: none"> ● Play the program source which has the distinctive right and left level difference.

PROCESSING MODE LIST

FL, FR: Front Left output and Front Right output
 RL, RR: Rear Left output and Rear Right output

	Position	Signal processing routes	Rear speaker output
Monaural Sources	SIMULATED STEREO		Different frequency bands are distributed to the left and right by the comb filter. The lowest band is distributed to the L channel and highest band to the R channel.
	SIMULATED SUR.		The monaural source sound is first delayed then distributed to the left and right by the comb filter. This makes it possible to enjoy monaural sound of TV, video recorder, etc., with surround effect.
	DEFEAT		No special signal processing is performed. The sub speakers output the same signal as the front speakers.
Stereo sources	NATURAL SUR. MUSIC		The reverberation component is distributed to the left and right rear speakers by the comb filter. This offers a natural sound expansion over a wide frequency range.
	NATURAL SUR. HALL		The reverberation component (difference signal) is delayed and distributed to the left and right by the comb filter.
	(Dolby) SURROUND		The reverberation component (difference signal) is delayed, processed by the Dolby Surround decoder, and distributed to the left and right rear speakers.

SR-50

SPECIFICATIONS

■ SURROUND PROCESSOR BLOCK

Processing Mode	Input Source	Delay Time	Frequency Response	Residual Noise	Permissible Input
<input type="checkbox"/> (Dolby) SURROUND	Stereo	10 to 30 ms (variable)	20 Hz to 6.5 kHz (delay 20 ms)	-91 dBV (IHF-A)	3.7 Vrms or more
NATURAL SUR. HALL				-87 dBV (IHF-A)	
NATURAL SUR. MUSIC		—	20 to 20 kHz	-95 dBV (IHF-A)	
DEFEAT	—	—	—	—	—
SIMULATED SUR.	Monaural	10 to 30 ms (variable)	20 Hz to 6.5 kHz (delay 20 ms)	-87 dBV (IHF-A)	3.7 Vrms or more
SIMULATED STEREO				—	

■ POWER AMPLIFIER BLOCK

Rated Output

20 Hz — 20 kHz, 0.03% THD.
 8 ohms 25W + 25W
 6 ohms 28W + 28W

Frequency Response

Main IN (20 Hz ~ 20 kHz) +0/-2 dB

Total Harmonic Distortion

MAIN IN — SP OUT 12.5W/8 ohms 0.03%

Input Sensitivity/

Input Impedance 150 mV/60 k-ohms

Residual Noise (Min. Vol.)
 (IHF-A Network) -84 dBV

Signal-to-Noise Ratio (IHF-A Network) 106 dB

Damping Factor (1 kHz, 8 ohms) 60

■ FILTER BLOCK

High Filter (5 kHz) 12 dB/oct

Bass Extension Filter (70 Hz) +7.5 dB

■ GENERAL

Supply Voltage & Frequency AC 120V, 60 Hz

Power Consumption 120W

AC Outlet UNSWITCHED x 1 (200W max.)

Dimensions (W x H x D) 435 x 70 x 384 mm
 (17-1/8 x 2-3/4 x 15-1/8 in.)

Weight 5.3 kg (11 lb 11 oz)

Accessories Connecting cord x 2

* Design and specifications subject to change without notice.

SR-50 