

# Technics

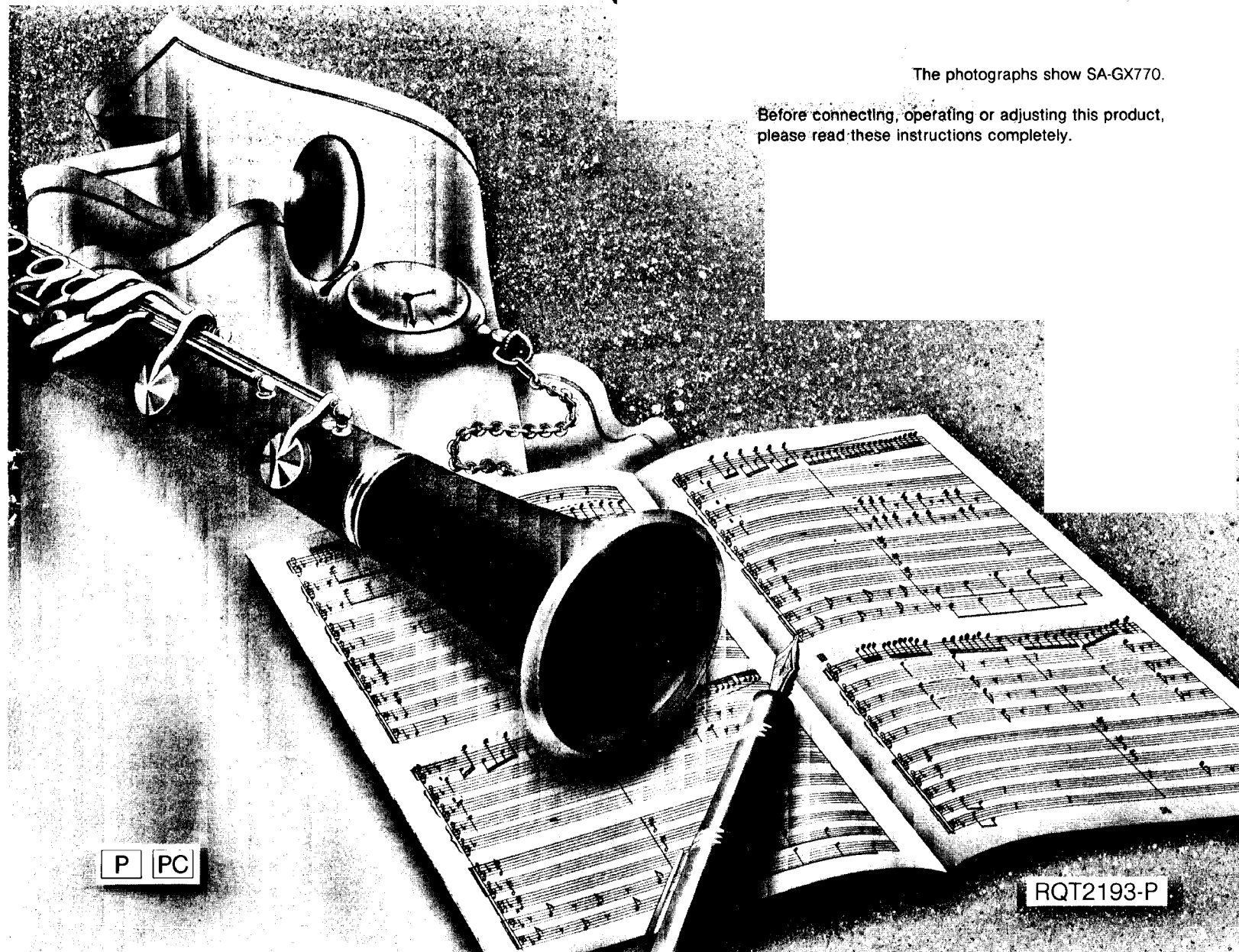
AV control stereo receiver  
SA-GX770/SA-GX670  
SA-GX470/SA-G9057

## Operating Instructions



The photographs show SA-GX770.

Before connecting, operating or adjusting this product,  
please read these instructions completely.



P PC

RQT2193-P

# Dear Customer

Thank you for purchasing this Technics product. For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to models SA-GX770, SA-GX670, SA-GX470 and SA-G9057.

These operating instructions, however, are intended primarily for model SA-GX770.

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### Before use

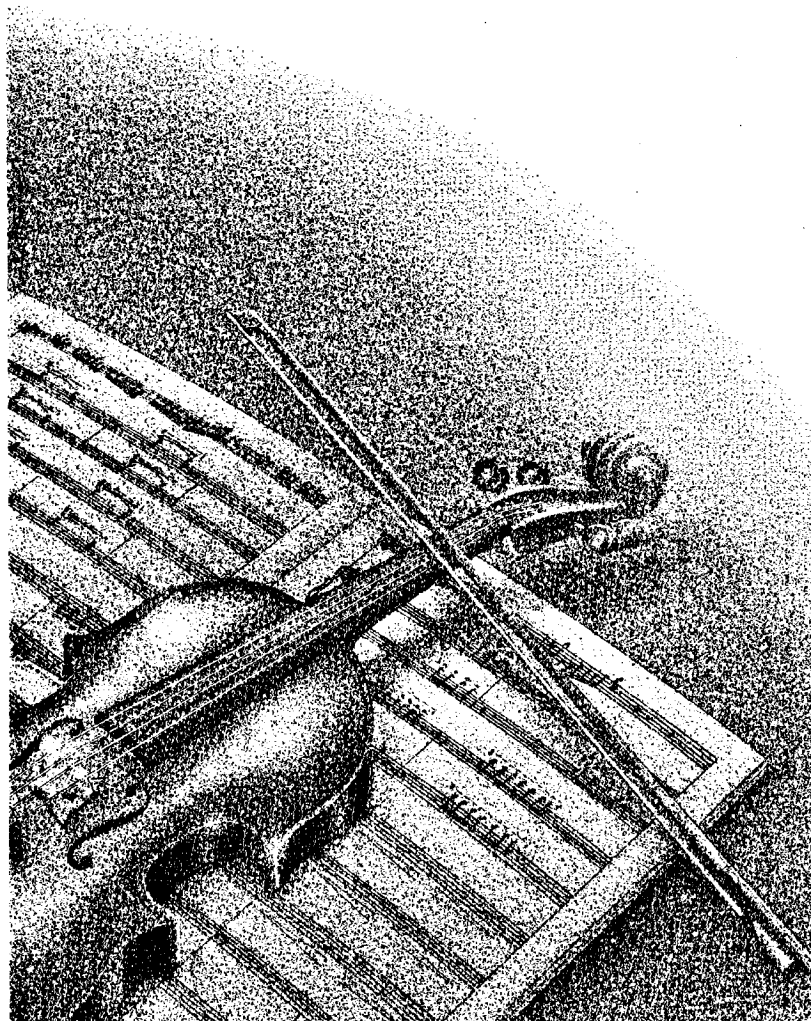
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## *Reference*

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<b>Technical specifications</b> .....	<b>Back cover</b>
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The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and retain them for future reference.

MODEL NUMBER .....

SERIAL NUMBER .....

### **CAUTION:**

Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.

### **WARNING:**

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

### **CAUTION:**

**TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.**



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user 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 the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

# Precautions

Before using this unit please read these operating instructions carefully. Take special care to follow the warnings indicated on the unit itself as well as the safety suggestions listed below. Afterwards keep them handy for future reference.

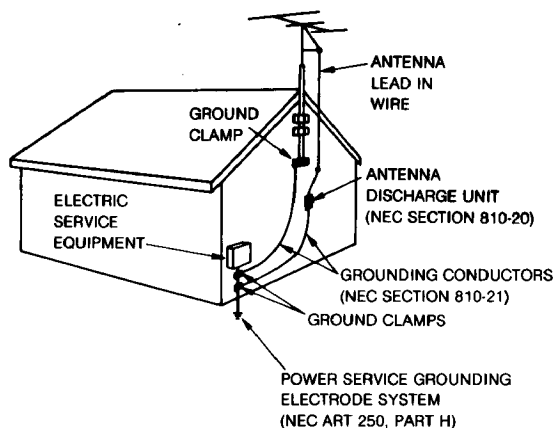
## Safety

- 1. Power Source** -- The unit should be connected to power supply only of the type described in the operating instructions or as marked on the unit.
- 2. Polarization** -- If the unit is equipped with a polarized AC power plug (a plug having one blade wider than the other), that plug will fit into the AC outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 3. Power Cord Protection** -- AC 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. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
- 4. Nonuse Periods** -- When the unit is not used, turn the power off. When left unused for a long period of time, the unit should be unplugged from the household AC outlet.

## Installation

### Environment

- 1. Outdoor Antenna Grounding** -- If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1990, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure below.



NEC--NATIONAL ELECTRICAL CODE

- 2. Water and Moisture** -- Do not use this unit near water -- for example, near a bathtub, washbowl, swimming pool, or the like. Damp basements should also be avoided.
- 3. Heat** -- The unit should be situated away from heat sources such as radiators and the like. It also should not be placed in temperatures less than 5°C (41°F) or greater than 35°C (95°F).

## Placement

- 1. Ventilation** -- The unit should be situated so that its location or position does not interfere with its proper ventilation. Allow 10 cm (4") clearance from the rear of the unit.
- 2. Foreign Material** -- Care should be taken so that objects do not fall into and liquids are not spilled into the unit. Do not subject this unit to excessive smoke, dust, mechanical vibration, or shock.
- 3. Magnetism** -- The unit should be situated away from equipment or devices that generate strong magnetism.
- 4. Stacking** -- Do not place heavy objects, other than system components, on top of the unit.
- 5. Surface** -- Place the unit on a flat, level surface.
- 6. Carts and Stands** -- The unit should be used only with a cart or stand that is recommended by the manufacturer. The unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn.
- 7. Wall or Ceiling Mounting** -- The unit should not be mounted to a wall or ceiling, unless specified in this operating instructions.



## Maintenance

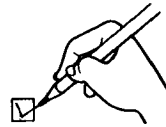
Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution.

Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

## Service

- 1. Damage Requiring Service** -- The unit should be serviced by qualified service personnel when:
  - (a) The AC power supply cord or the plug has been damaged; or
  - (b) Objects have fallen or liquid has been spilled into the unit; or
  - (c) The unit has been exposed to rain; or
  - (d) The unit does not appear to operate normally or exhibits a marked change in performance; or
  - (e) The unit has been dropped, or the enclosure damaged.
- 2. Servicing** -- The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

# Accessories



Please check and identify the supplied accessories

## Listening caution



Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer 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.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

## We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels\* is included for your protection.

\*The level used here is different from that displayed on the system's display.

### Decibel

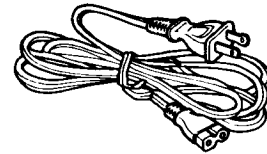
Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet

### THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

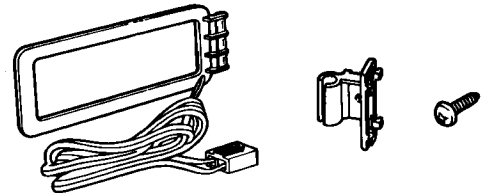
90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

- AC power supply cord ..... 1 pc.  
(For USA: SJA172-A or SJA172-1)  
(For Canada: SJA172-A or SJA172)



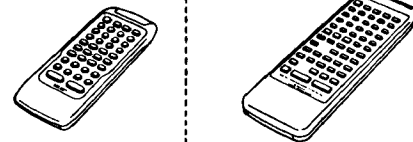
- AM loop antenna set (RSA0010)
  - AM loop antenna ..... 1 pc.
  - AM antenna holder ..... 1 pc.
  - Screw ..... 1 pc.



- FM indoor antenna (RSA0006) ..... 1 pc.

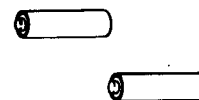


- Remote control transmitter ..... 1 pc.  
**For SA-GX470**      **For SA-GX770/SA-GX670/SA-G9057**  
(RAK-SA112MH)      (RAK-SA723MH)



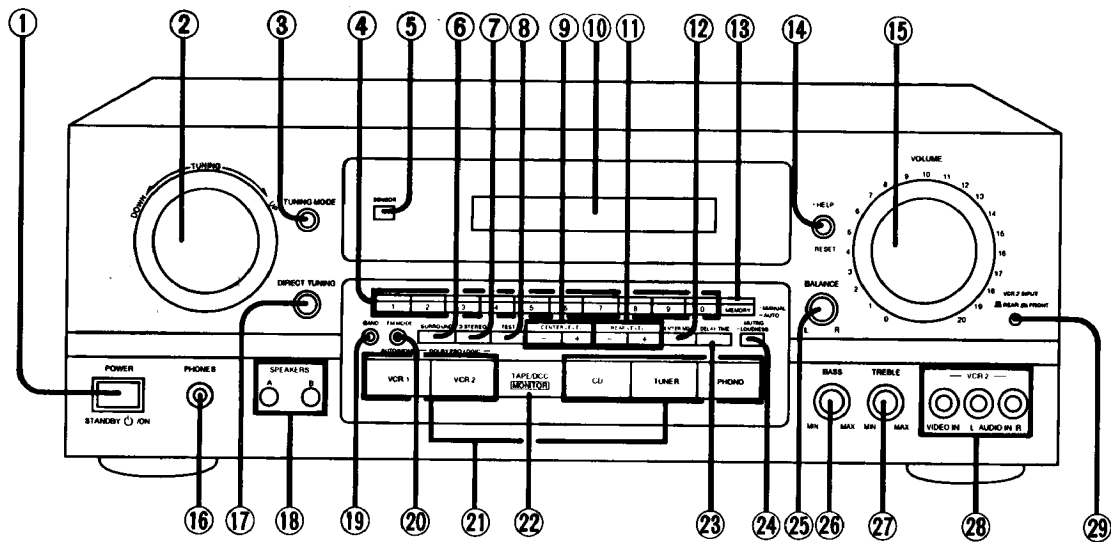
For details on remote control transmitter operation, refer to "How to use the remote control transmitter" in the separate booklet.

- Batteries (UM-4, "AAA", R03) ..... 2 pcs.



# Front panel controls

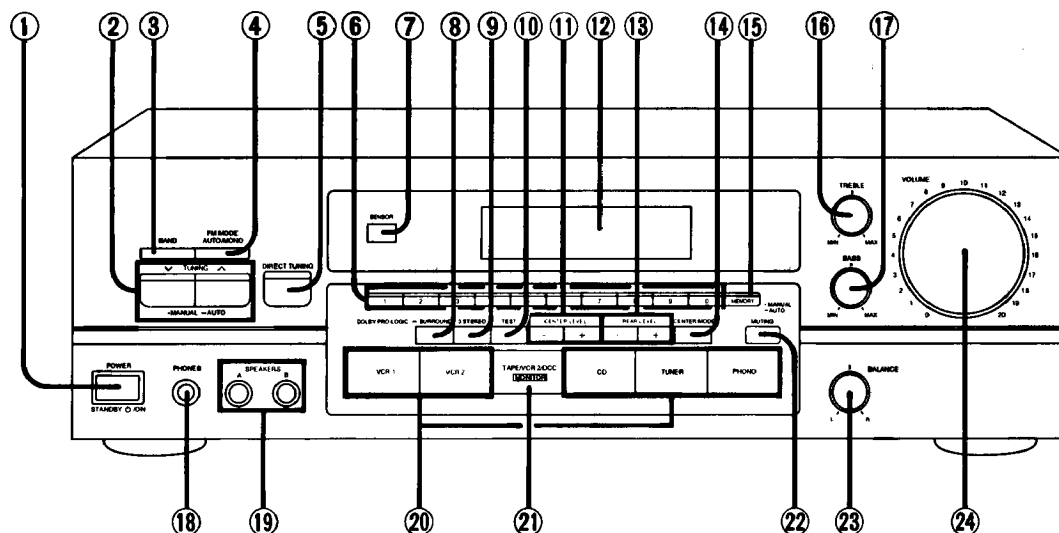
For SA-GX770/SA-GX670



No.	Name	Ref. page
①	Power switch (POWER)	14
②	Tuning control (TUNING)	17
③	Tuning mode select button (TUNING MODE)	17
④	Numeric buttons (1-0)	16,19,20
⑤	Remote control signal receptor	-
⑦	DOLBY PRO LOGIC SURROUND ON/OFF button (SURROUND)	21,22,23
⑧	DOLBY PRO LOGIC 3 STEREO ON/OFF button (3 STEREO)	21,22,23
⑧	Test signal ON/OFF button (TEST)	22
⑨	Center level adjust button (CENTER LEVEL)	22
⑩	Display	-
⑪	Rear level adjust button (REAR LEVEL)	22
⑫	Center mode select button (CENTER MODE)	21
⑬	Memory button (MEMORY)	19
⑭	Help/reset button (-HELP-RESET)	15,26
⑮	Volume control (VOLUME)	14

No.	Name	Ref. page
⑮	Headphone Jack (PHONES)	15
⑰	Direct tuning button (DIRECT TUNING)	16
⑱	Speaker select buttons (SPEAKERS)	14
⑲	Band select button (BAND)	16
⑳	FM mode select button (FM MODE)	16
㉑	Input select buttons	14
㉒	Tape/DCC monitor button (TAPE/DCC MONITOR)	14,24
㉓	Delay time adjust button (DELAY TIME)	23
㉔	Muting/loudness button (-MUTING-LOUDNESS)	15
㉕	Balance control (BALANCE)	15
㉖	Bass control (BASS)	15
㉗	Treble control (TREBLE)	15
㉘	VCR 2 front input terminals (VCR 2) SA-GX770 only	14,25
㉙	VCR 2 input select button (VCR 2 INPUT) SA-GX770 only	14,25

# For SA-GX470/SA-G9057



No.	Name	Ref. page
①	Power switch (POWER)	14
②	Tuning control (TUNING)	18
③	Band select button (BAND)	16
④	FM mode select button (FM MODE)	16
⑤	Direct tuning button (DIRECT TUNING)	16
⑥	Numeric buttons (1-0)	16,19,20
⑦	Remote control signal receptor	-
⑧	DOLBY PRO LOGIC SURROUND ON/OFF button (SURROUND)	21,22,23
⑨	DOLBY PRO LOGIC 3 STEREO ON/OFF button (3 STEREO)	21,22,23
⑩	Test signal ON/OFF button (TEST)	22
⑪	Center level adjust button (CENTER LEVEL)	22
⑫	Display	-
⑬	Rear level adjust button (REAR LEVEL)	22

No.	Name	Ref. page
⑭	Center mode select button (CENTER MODE)	21
⑮	Memory button (MEMORY)	19
⑯	Treble control (TREBLE)	15
⑰	Bass control (BASS)	15
⑱	Headphone Jack (PHONES)	15
⑲	Speaker select buttons (SPEAKERS)	14
⑳	Input select buttons	14
㉑	Tape/DCC monitor button (TAPE/DCC MONITOR)	14,24
㉒	Muting button (MUTING)	15
㉓	Balance control (BALANCE)	15
㉔	Volume control (VOLUME)	14

# Equipment connections

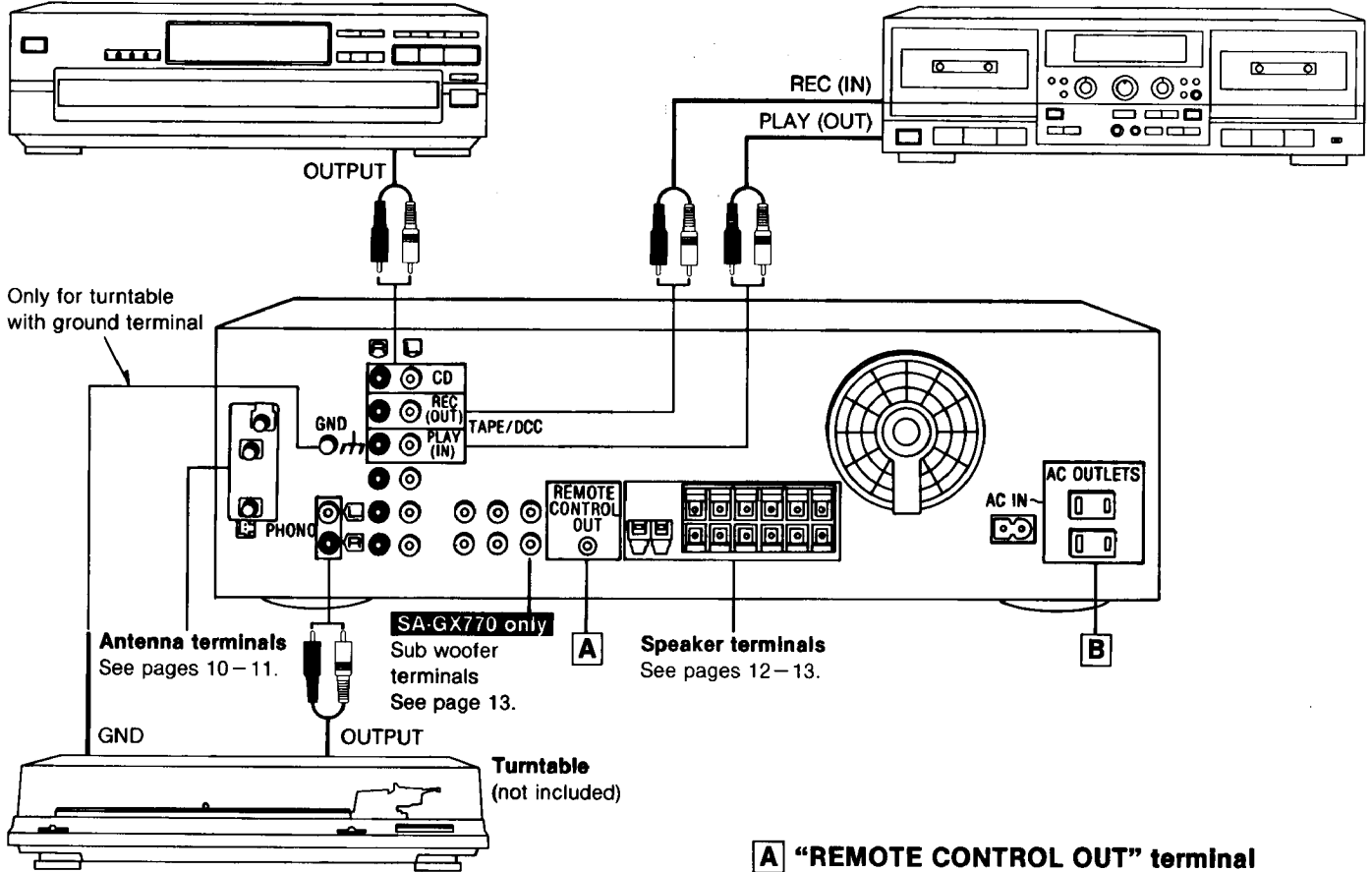
## Connecting audio equipment



**Note for SA-GX470**  
Do not place books, etc., on top of this unit so that the heat radiation vents remain unblocked.

**CD changer (or CD player)**  
(not included)

**Tape deck or digital compact cassette deck (DCC)** (not included)

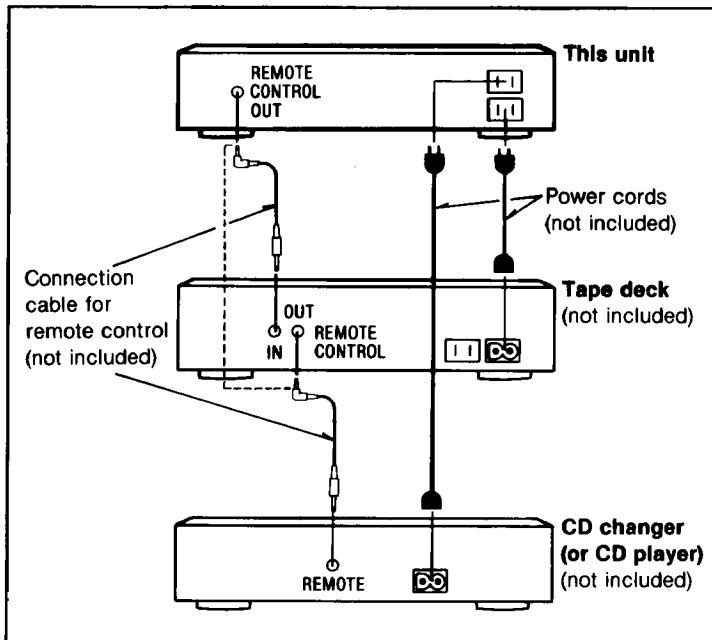


**Antenna terminals**  
See pages 10–11.

**SA-GX770 only**  
Sub woofer terminals  
See page 13.

**A** **Speaker terminals**  
See pages 12–13.

**Turntable**  
(not included)



### A "REMOTE CONTROL OUT" terminal

Connect the connection cable for remote control to a Technics tape deck and/or CD changer (or CD player) which has the appropriate remote control terminal as shown at the left.

If a tape deck is not being used, the CD changer (or CD player) can be connected directly (dotted line).

#### Note

For a tape deck and/or CD changer (or CD player) with a remote control sensor, this connection is not necessary.

### B "SWITCHED" AC outlet(s)

Power to these outlets is controlled by the power switch of this unit. Audio equipment rated up to the indicated power ratings can be connected here.

#### For proper remote-control operation

##### For SA-GX770/SA-GX670

Connect the power cords of the tape deck and CD changer (or CD player) to these outlets as shown at the left.

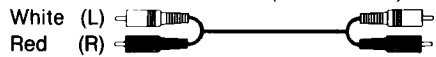
##### For SA-GX470/SA-G9057

Because there is only one AC outlet, connect the power cord of the CD changer (or CD player) to the AC outlet of the tape deck.

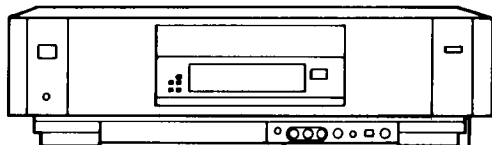


# Connecting video equipment

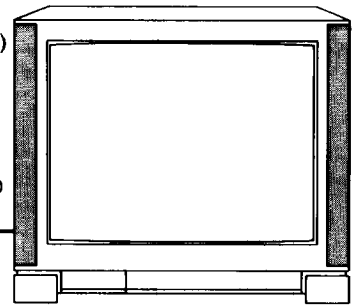
**Stereo connection cable (not included)**



**Second VCR (for playback only)**  
(not included)



**Monitor TV**  
(not included)

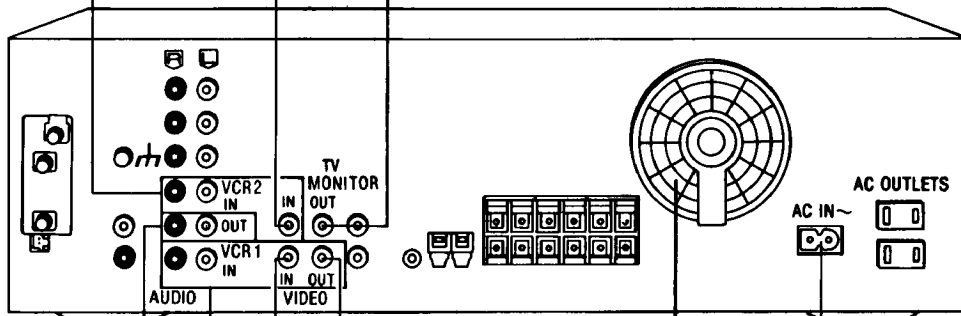


Video connection cable  
(not included)

VIDEO  
IN

AUDIO  
OUT

VIDEO  
OUT



**For SA-GX770/SA-GX670/SA-G9057**

### Cooling fan

The cooling fan operates at high power output levels only.

Video connection cables  
(not included)

AUDIO  
IN

AUDIO  
OUT

VIDEO  
OUT

VIDEO  
IN

AC IN ~  
AC OUTLETS

AC power supply cord  
(included)

Household AC outlet  
(AC 120 V/60 Hz)

Connect this cord after  
all other cables and  
cords are connected.

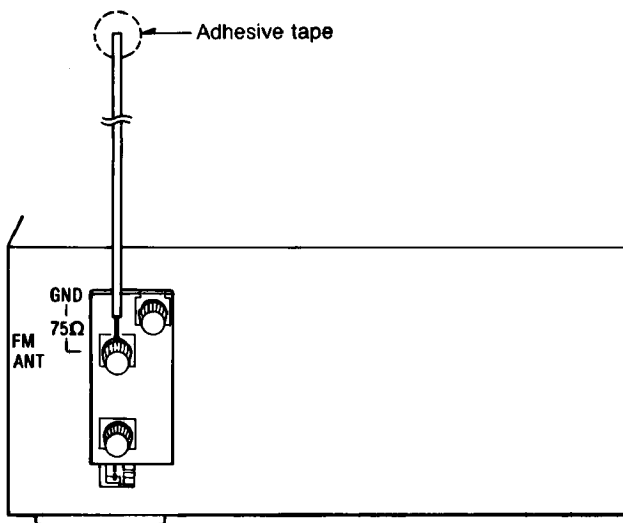
**VCR**  
(not included)

# Antenna connections

## FM indoor antenna (included)

This antenna is normally sufficient for reception of FM broadcasts.

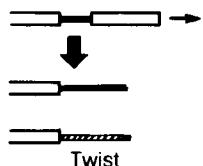
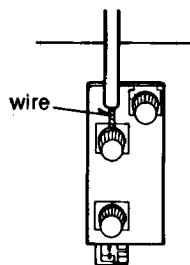
### FM indoor antenna (included)



Attach to a wall (using a tape) facing in the direction of best reception.

### How to connect an FM indoor antenna

- 1 Pull off the plastic on the tip of the antenna wire.
- 2 Twist the wire and connect as shown below.



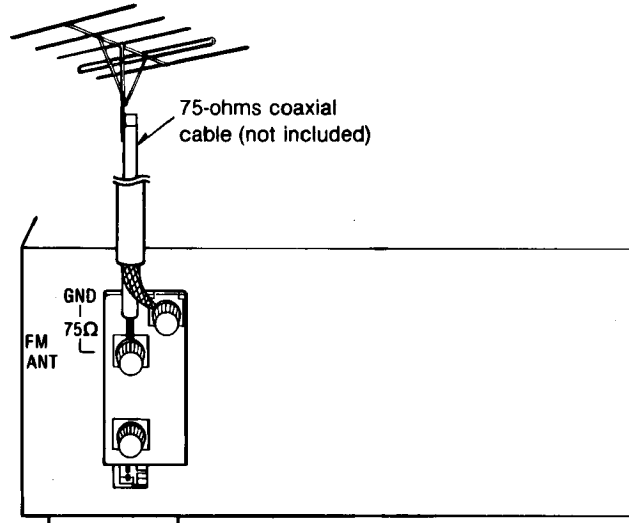
### For best reception sound quality:

An FM outdoor antenna is recommended.  
Disconnect the antenna if an FM outdoor antenna is installed.

## FM outdoor antenna (not included)

The outdoor antenna should be used when using the main unit in mountainous areas or in spaces enclosed by reinforced concrete where the FM indoor antenna (included) does not provide satisfactory reception.

### FM outdoor antenna (not included)

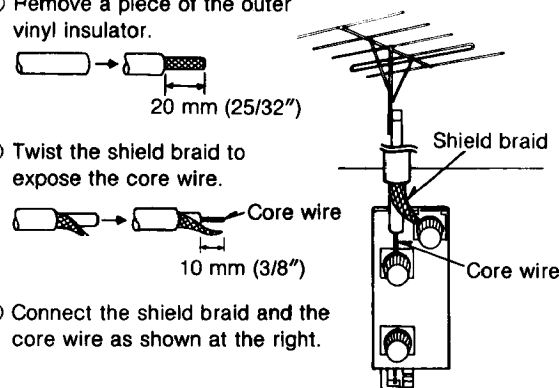


### Note

An outdoor antenna should be installed by a qualified technician only.

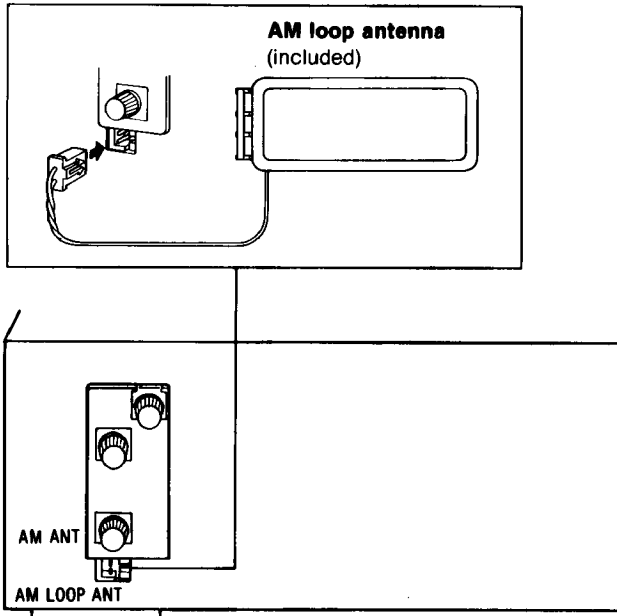
### How to connect a 75-ohms coaxial cable

- 1 Remove a piece of the outer vinyl insulator.  
20 mm (25/32")
- 2 Twist the shield braid to expose the core wire.  
10 mm (3/8")
- 3 Connect the shield braid and the core wire as shown at the right.

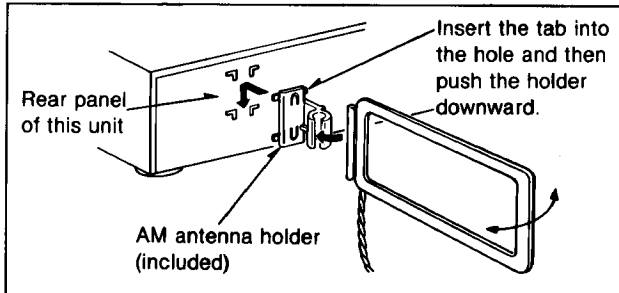


## AM loop antenna (included)

This antenna is normally sufficient for reception of AM broadcasts.



Install the AM antenna holder (included) at the rear panel of this unit and then attach the AM loop antenna to the AM antenna holder (facing in the direction of best reception).

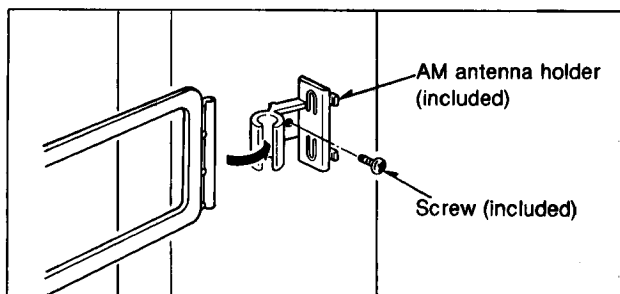


**Pay attention to the following points when mounting the antenna.**

- Do not mount it horizontally (Doing so will impair reception).
- Do not mount it close to power cords, speaker wires or metal surfaces (Doing so will result in noise).
- Do not mount it close to a tape deck. When the tape deck is being used, chirping or beeping sounds may result.

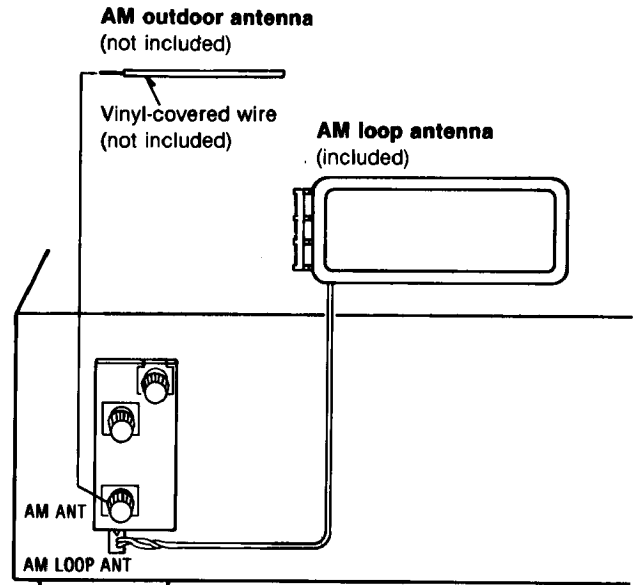
**When mounting the antenna to a column, a wall or rack**

Mount it vertically.



## AM outdoor antenna (not included)

The outdoor antenna should be used when using the main unit in mountainous areas or in spaces enclosed by reinforced concrete where the AM loop antenna (included) does not provide satisfactory reception.



Use 5 – 12 m (16 – 40 ft.) of vinyl-covered wire horizontally at the window, or convenient location.

When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

**Note**

Be sure to connect the AM loop antenna even when an outdoor antenna is used.

# Speaker connections

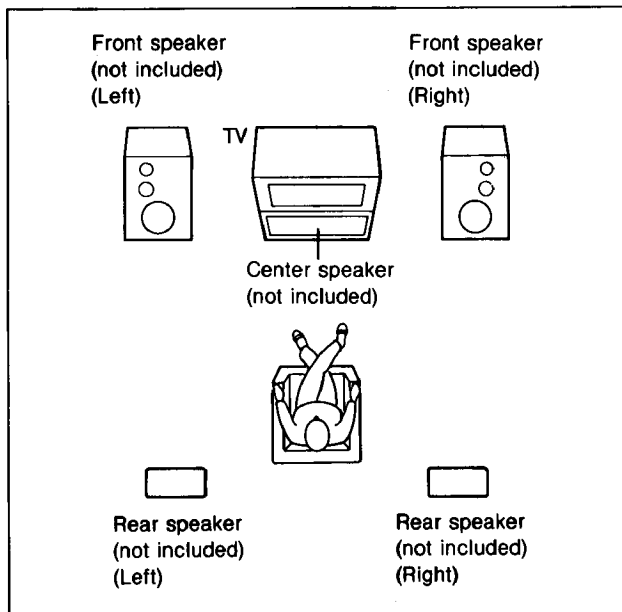
## Placement of speakers

As well as enjoying normal stereo reproduction with both the left and right front speakers connected, a center speaker and rear speakers can also be connected to the main unit in order to enjoy playback with a feeling of presence using the Dolby Pro-Logic Systems.

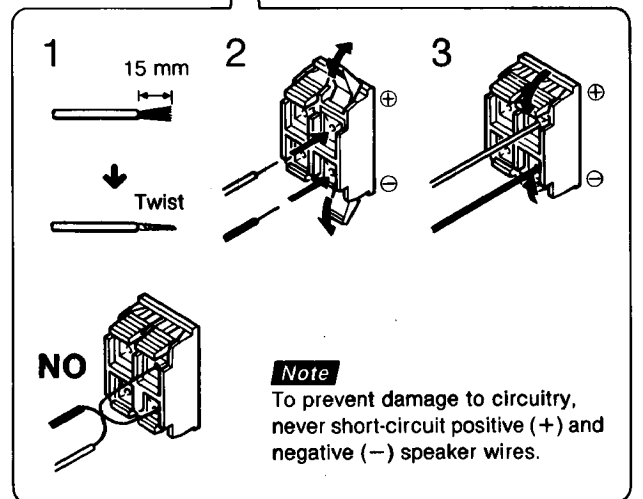
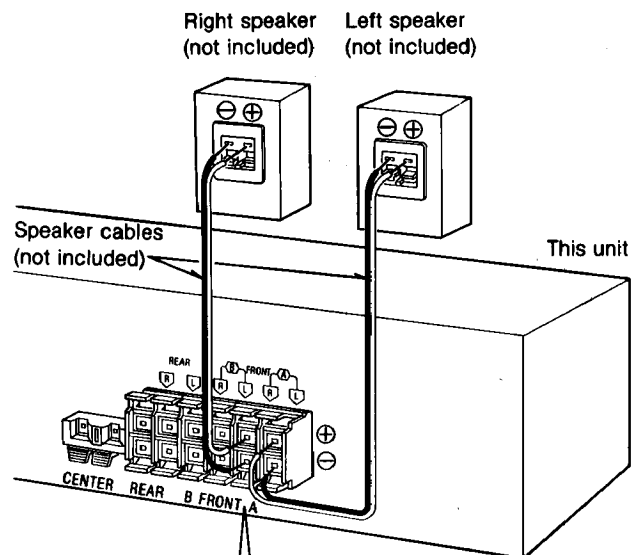
The illustration below shows where to place the speakers when enjoying sound with Dolby Pro-Logic systems.

The listening position at which the effect is the greatest is a position slightly to the rear of a center position of five-speaker systems.

However the position should be adjusted to your personal preference, because the effect varies to some degree depending upon the type of music and the music source.



## Connection of front speakers



### ■ "B" terminals

For connection to a second pair of speakers.

### ■ Speaker impedance

**For SA-GX770/SA-GX670**

**When only the "A" or only the "B" speakers are connected:**

The impedance of the speaker used with this unit must be 4–8  $\Omega$ .

#### **Note**

If 4  $\Omega$  speakers are connected, be sure to set the impedance on the main unit to LOW according to step 2 on page 14.

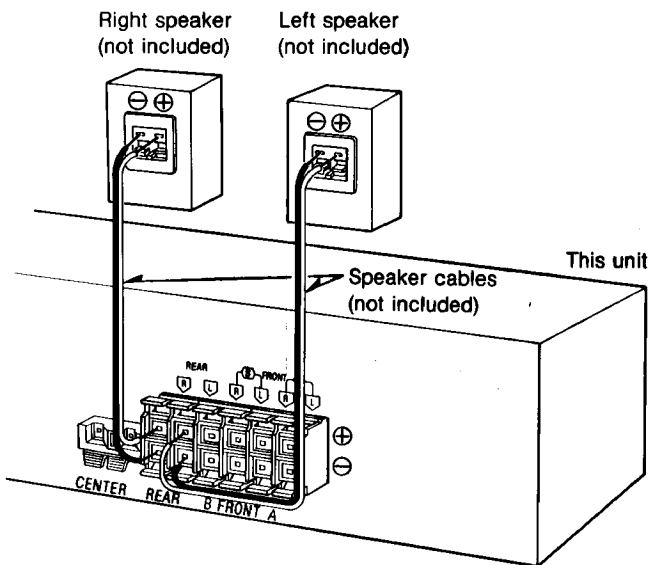
**When both the "A" and the "B" speakers are connected simultaneously:**

The impedance of the speaker used with this unit must be 8  $\Omega$ .

**For SA-GX470/SA-G9057**

The impedance of any speaker used with this unit must be 8  $\Omega$ .

## Connection of rear speakers



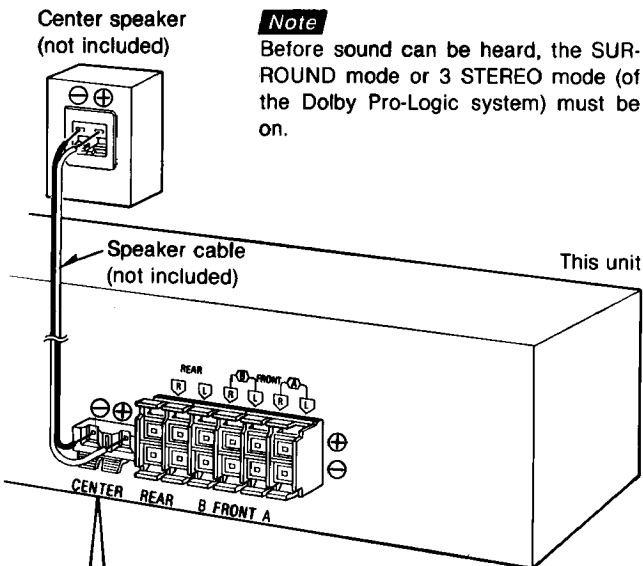
### Note

Before sound can be heard, the SURROUND mode (of the Dolby Pro-Logic system) must be on and both rear speakers must be connected.

### Speaker Impedance

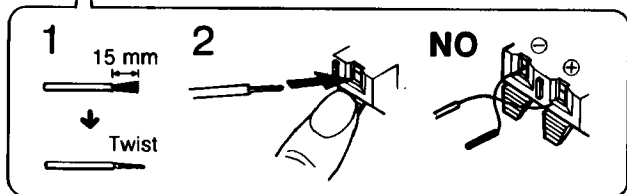
The impedance of any speaker used with this unit must be 8 Ω.

## Connection of center speaker



### Note

Before sound can be heard, the SURROUND mode or 3 STEREO mode (of the Dolby Pro-Logic system) must be on.



### Speaker Impedance

The impedance of any speaker used with this unit must be 8 Ω.

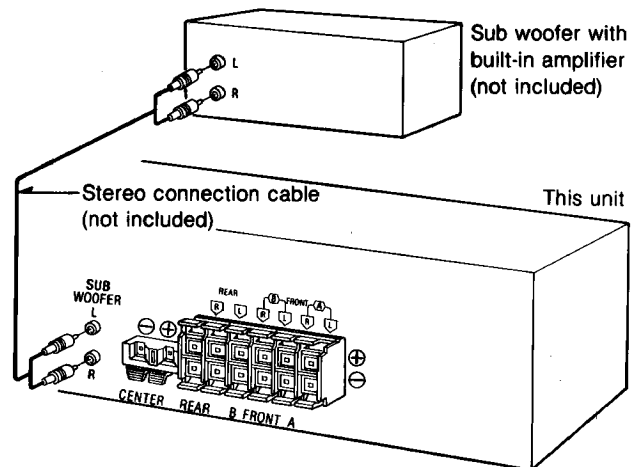
## Connection of sub woofer

### SA-GX770 only

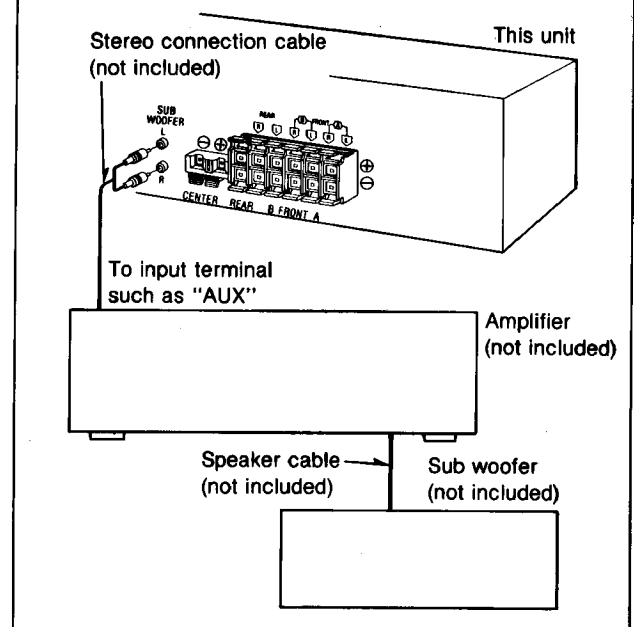
The sub woofer is connected when bass sounds are inadequately reproduced because front speakers are too small. When connected, the sub woofer can be placed in any position.

### Note

This unit has no amplifier section designed especially for the sub woofer, so it is necessary to purchase a sub woofer with a built in amplifier or buy the two separately.



## Connecting a sub woofer which does not have a built-in amplifier



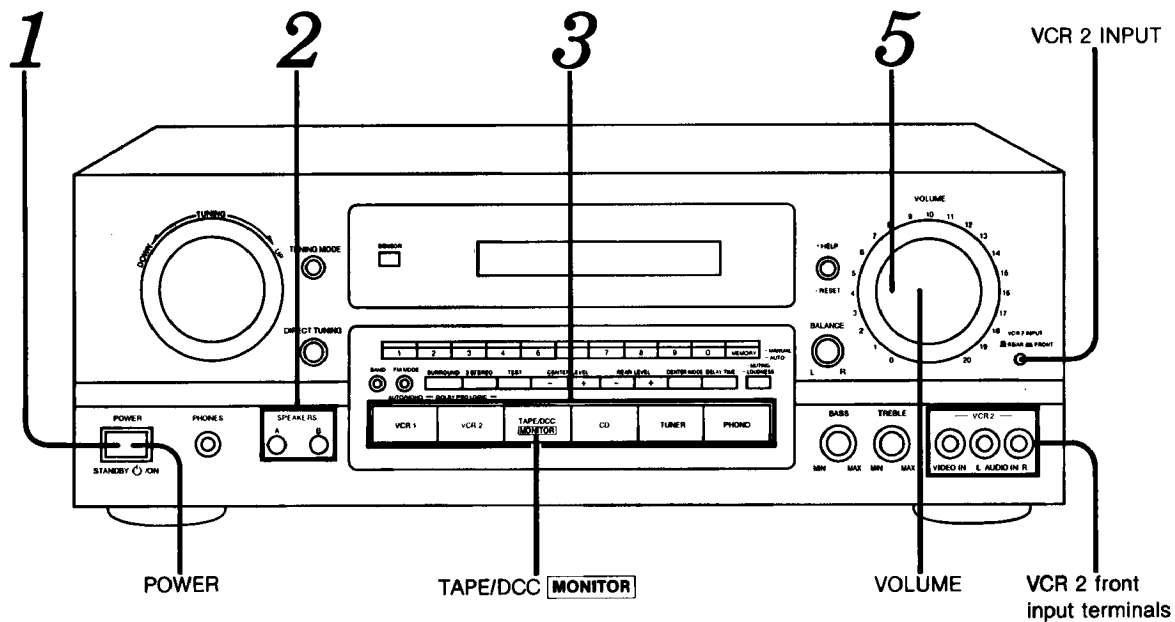
### For your reference:

The level of sound output from the sub woofer will always be at 80 Hz or less, regardless of the settings of the speaker select buttons on this unit, thus the intensity of the low frequency range will be maintained.

### When adjusting the volume of the sub woofer

After setting the volume control on the sub woofer or on the amplifier which is connected to the sub woofer, make any further adjustments with the volume control on this unit.

# Basic operations

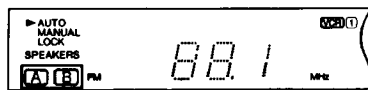


Before operation, set VOLUME to the "0" position.

**1** **POWER** Press **POWER** to switch on the power.

**2** **SPEAKERS** Press **A** and/or **B** to select the speaker system(s) to be used.

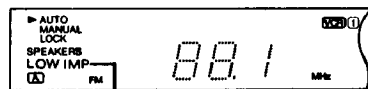
A and B refer to the speaker terminals at the rear of the unit.



Illuminates  
If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

**For SA-GX770/SA-GX670 only**

When using speakers with an impedance of 4 Ω, press either button A or button B for 4 seconds or more to set the impedance on the main unit to LOW.



Illuminates

(Press once again for 4 seconds or more to turn it off.)  
Note that when this indicator is illuminated, speakers A and B cannot both be used at the same time.

**To change a speaker:**

e.g. To use B speaker press A and the **A** indicator goes out, press B to activate the B speaker.

**3** Press to select the desired source.

**VCR 1:** To watch video tapes (VCR 1)  
**VCR 2:** To watch video tapes (VCR 2)  
**Note** For SA-GX770 only

If you use the VCR connected to the VCR 2 front input terminals, press VCR 2 INPUT to the "FRONT" position.

**TAPE/DCC:** To listen to tape or digital compact cassette (DCC)  
The tape monitor indicator will appear. (See below.)

**CD:** To listen to compact discs  
**TUNER:** To listen to radio broadcasts

**PHONO:** To listen to phono discs

**4** Start the desired source.  
(Refer to the appropriate operating instructions for details.)

**5** Turn **VOLUME** to adjust the volume level.

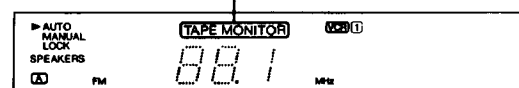
**After listening is finished**

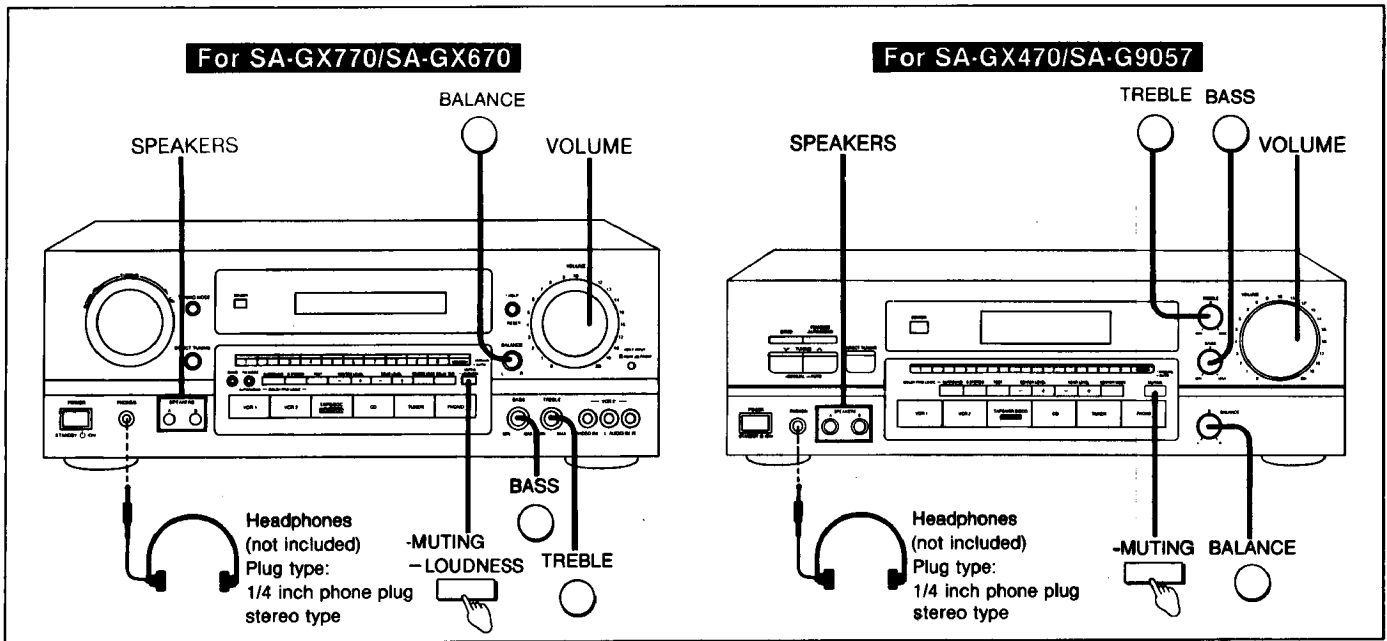
Be sure to reduce the volume level, and switch the power to the standby condition by pressing **POWER**.

## When tape monitor indicator illuminates or is flashing

This indicates that the tape monitor function of this unit is ON. To listen to sources other than a tape or DCC, be sure to turn off the indicator by pressing **TAPE/DCC MONITOR**.

Illuminates or is flashing







### To listen to a desired audio source while watching a video

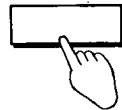
Select the desired video source and audio source in step 3 on the left.

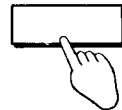
Be sure to select the video source first.

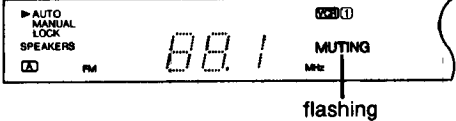
### To adjust the tone quality

-  Turn **BASS** to adjust the low-frequency sound.
-  Turn **TREBLE** to adjust the high-frequency sound.

### To mute the sound level

 **For SA-GX770/SA-GX670**  
Press **-MUTING** momentarily.

 **For SA-GX470/SA-G9057**  
Press **MUTING**.



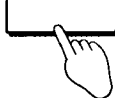
Press once again to return to the previous volume level. (The muting indicator will turn off.)

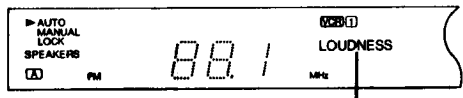
### To adjust the sound balance

 Turn **BALANCE** to adjust the left/right sound balance.

### To emphasize low-frequency sound

**SA-GX770/SA-GX670 only**

 Press **-LOUDNESS** until the "LOUDNESS" illuminates.



Press and hold the button until the "LOUDNESS" turns off to return to the previous condition.

### To listen through headphones


Use **VOLUME** to reduce the volume level, and connect the headphones.

If sound from speakers is not wanted, press **SPEAKERS (A)** and/or **(B)** to turn off the speaker select indicators.

**Note**  
Avoid listening for prolonged periods of time to prevent hearing damage.

### If sound output stops during use

**SA-GX770/SA-GX670 only**

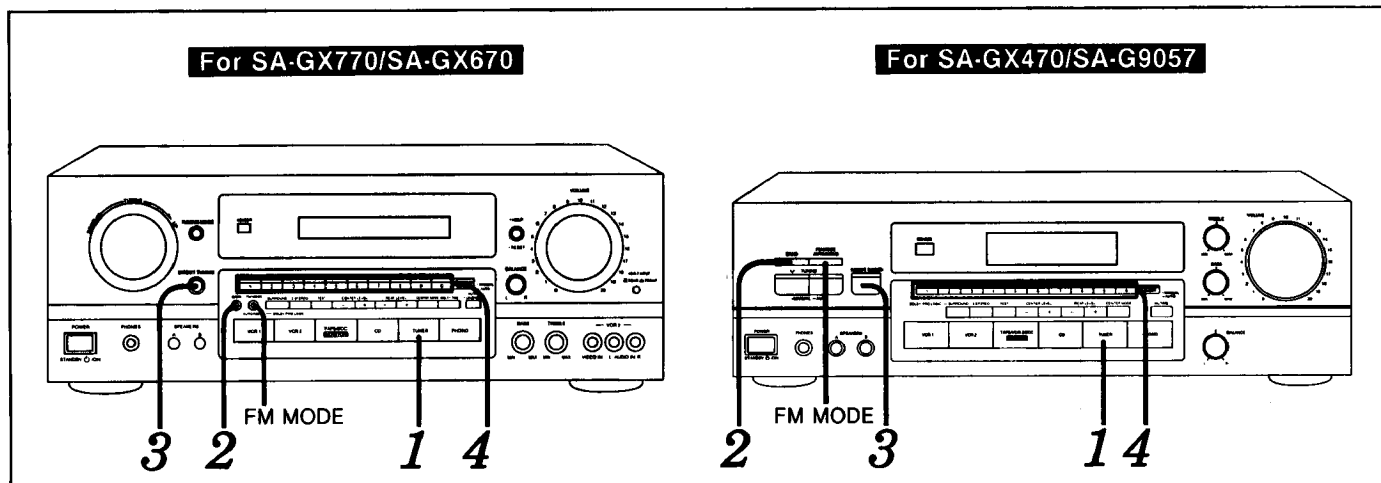
 Press **-HELP** momentarily.

The help function can be used to show details of the operations you are expected to make on the display in character form. For details, see page 26.

# Listening to radio broadcasts

## Direct access tuning

Specify the frequency using the numeric buttons to directly tune to the desired broadcast station.



The procedures described below are an example of SA-GX770/SA-GX670.

**1/** **Press TUNER.**

**2/** **Press BAND to select "FM" or "AM".**

Illuminates

**3/** **Press DIRECT TUNING.**

While cursor display is flashing (approx. 10 seconds)

**4/** **Press the appropriate numeric buttons to enter the frequency.**

If the frequency has been input correctly, the frequency display will blink.

If the desired FM frequency is 107.9 MHz

1 → 0 → 7 → 9

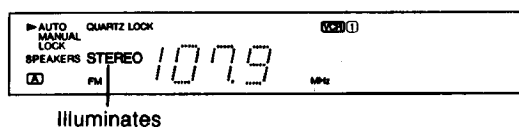
Illuminates when tuned

**Note**

1. If no button is pressed while the cursor display is flashing, the display will return to the frequency which is currently being received. To re-specify the frequency, repeat the procedure from step 3.
2. If the frequency has not been input correctly, an error message will be displayed. In this case, re-enter the frequency.

### When the FM stereo broadcast is received:

This unit will automatically switch to FM stereo reception and the FM stereo indicator will illuminate.



### If noise is excessive in the FM stereo mode

Press FM MODE. (The FM stereo indicator will switch off.) The broadcast will be monaural, but noise will be reduced. If the button is pressed once more, stereo mode will be resumed.

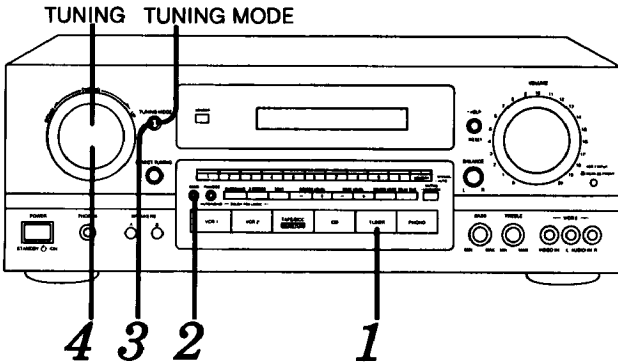





## Sequential tuning **For SA-GX770/SA-GX670**

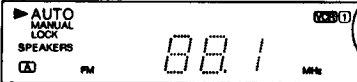

If the frequency is not known, use the tuning control for searching.

### Auto tuning

This automatically searches for broadcast stations which provide strong signal reception.



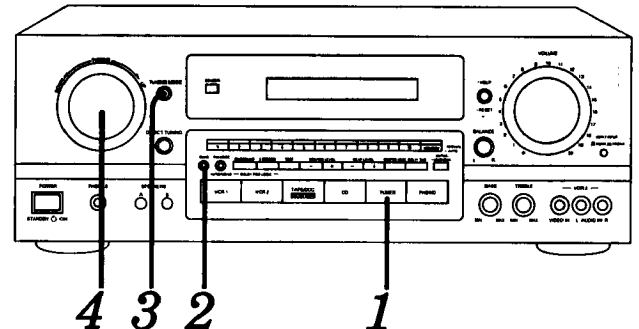
- 1**  **Press TUNER.**
- 2**  **Press BAND to select "FM" or "AM".**
- 3**  **Press TUNING MODE to select "AUTO".**  
 The ► mark points to AUTO.
 





- 4**  **Turn TUNING until the frequency begins to change.**  
 Automatically stops when a broadcast station is found.
 

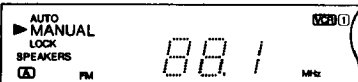

**Note**  
Tuning may stop automatically if any jamming is encountered.

### Manual tuning

The frequency will change only by the amount that the tuning control is turned.

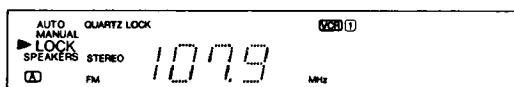


- 1**  **Press TUNER.**
- 2**  **Press BAND to select "FM" or "AM".**
- 3**  **Press TUNING MODE to select "MANUAL".**  
 The ► mark points to MANUAL.
 


- 4**  **Turn TUNING to tune to the desired broadcast.**  
 Turn until the desired broadcast station is obtained.  
**Tuning intervals**  
 FM: 200 kHz interval  
 AM: 10 kHz interval

### To lock a broadcast station being received

Press TUNING MODE to select "LOCK".  
The ► mark points to LOCK.

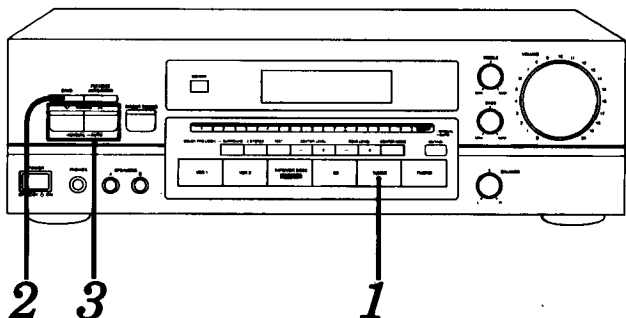


During this display, the frequency will not change even if TUNING is turned.

## Sequential tuning

For SA-GX470/SA-G9057

If the frequency is not known, use the tuning buttons for searching.



**1** **TUNER** Press **TUNER**.

**2** **BAND** Press **BAND** to select "**FM**" or "**AM**".

**3** **TUNING** Press **∨** or **∧** to tune to the desired broadcast.

**Tuning intervals**  
 FM: 200 kHz interval  
 AM: 10 kHz interval

If either button is pressed and held down until the frequency begins to change, the broadcast stations can be tuned automatically when a broadcast station is found.

**Note**  
 Tuning may stop automatically if any jamming is encountered.

## Preset tuning

By presetting the desired broadcast stations into the memory channels of this unit, broadcast stations can be selected simply by pressing numeric button(s). (Refer to page 20 for tuning.)

### Before presetting

#### How many broadcast stations can be preset?

A total of 30 FM and AM stations can be preset.

#### How is presetting done?

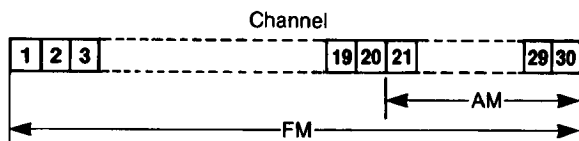
The two following methods are available.

##### • Automatic memory presetting

Automatic memory presetting allows this unit to automatically search for broadcast stations and then preset them into memory.

With this function, searching proceeds from the frequency currently being displayed and continues through higher frequencies, (up to 107.9 MHz for FM, up to 1710 kHz for AM) and broadcast stations are preset in the order in which they are located.

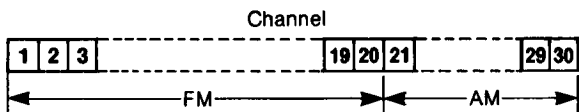
With this method, the channel ranges that can be preset into the memory for different bands (FM or AM) are set as follows.



For FM broadcast stations . . . . . 1-30  
 For AM broadcast stations . . . . . 21-30

##### If the FM stations (channels 1-30) are preset and then the AM stations (channels 21-30) are preset:

Because this unit can accommodate a total of 30 preset channels, the settings for FM channels 21-30 will be replaced by the AM settings which were subsequently preset, and the channel allotment will be as shown below.



For FM broadcast stations . . . . . 1-20  
 For AM broadcast stations . . . . . 21-30

##### • Manual memory presetting

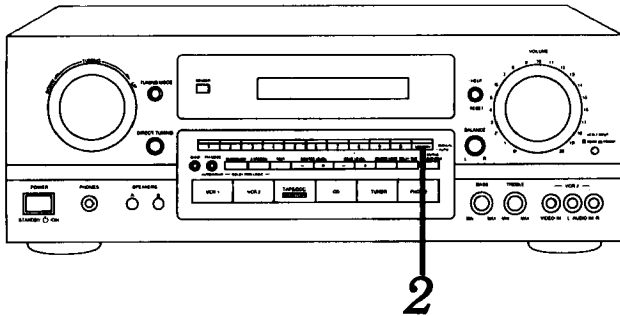
The desired broadcast stations can be preset into the desired channels by the user.

This can also be used as a method for changing selected broadcast stations that were preset in "Automatic memory presetting".

#### Please remember this:

If a new broadcast station is preset into a channel, the setting for the broadcast station which was previously entered in that channel will be automatically erased.

## Automatic memory presetting

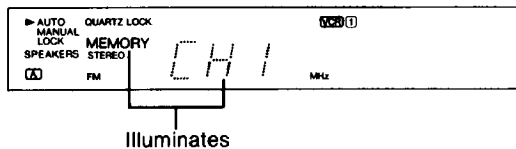


**1** Set to the frequency from which you want to start automatic memory presetting. (Follow steps 1 through 4 on page 16.)

**2** Press MEMORY until the frequency begins to change. (Automatic memory presetting will start.)  
To stop press MEMORY once again.

### When a broadcast station is preset

The memory indicator and the preset channel number will be displayed for approximately 1 second.



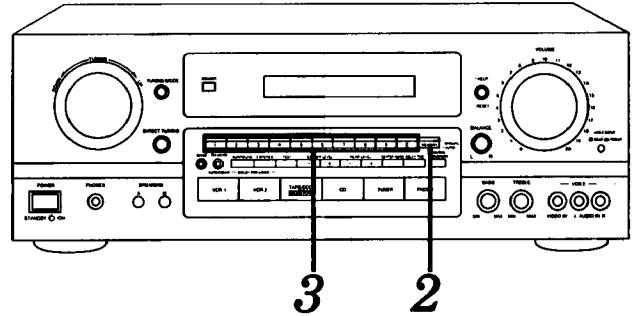
### When presetting is completed

The last broadcast station to be preset will be displayed.

#### Note

Correct presetting may not be possible in cases where the broadcast waves are too strong or too weak. In such cases, carry out presetting manually.

## Manual memory presetting



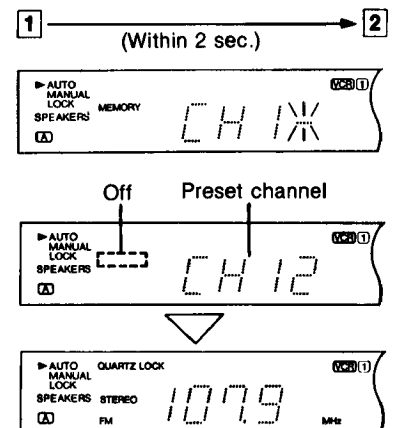
**1** Set to the desired broadcast. (Follow steps 1 through 4 on page 16 or 17 or steps 1 through 3 on page 18.) You can also set the stereo mode to the monaural position.

**2** Press MEMORY momentarily.

Illuminates

To cancel the memory function, press MEMORY again.

**3** Specify the desired channel to be preset using the numeric button(s) (completes presetting). (Example: Channel 12)



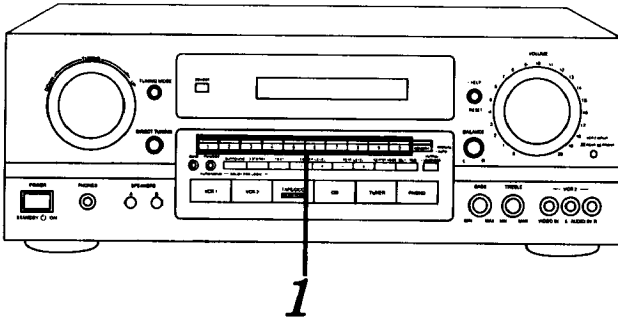
### To continue presetting

Repeat steps 1 through 3.

# Listening to radio broadcasts

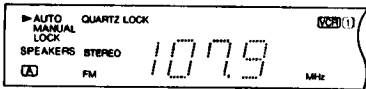
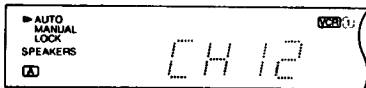
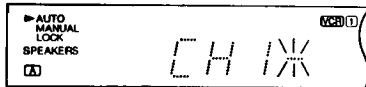
## Preset tuning (continued)

### To listen to preset broadcast stations



**1** 1 2 3 4 5 6 7 8 9 0 Specify the preset channel using the numeric button(s).  
(Example: Channel 12)

1 → (Within 2 sec.) → 2



### To confirm the channel number of the broadcast station being received

Press TUNER.

(The channel number will be displayed for about one second.)

#### Note

The channel number is not displayed if you change the reception frequency or FM mode setting.

#### For your reference:

Even if the power is switched to the standby condition or the power cord is disconnected from the household AC outlet, the contents of the memory will continue to be stored for approximately one month.

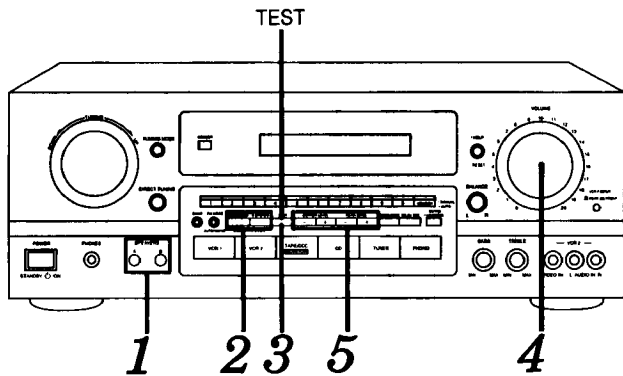
#### If frequency presettings are accidentally erased

Make the frequency presettings once again.

The power cord should remain connected for one hour or more for the memory back-up to be effective.

## Adjusting the output level of each speaker

In order to reproduce the feeling of movement of the sound and clear orientation of sound, it is important to correctly adjust the output levels of each speaker. Adjust to the correct levels while listening to the test signal.



**1** Press **A** or **B** to select the speaker system to be used.

ILLUMINATES

**2** Press **SURROUND** or **3 STEREO** to turn on the desired mode.

For SURROUND mode

OR

For 3 STEREO mode

Press once again to turn it off.

**3** Press **TEST** to output a test signal.

Test signal sounds sequentially as follows:

For SURROUND mode

```

    Front speaker (left) → Center speaker (right)
    ↑                       ↓
    Rear speakers (left, right) ← Front speaker (right)
    
```

For 3 STEREO mode

```

    Front speaker (left) → Center speaker (right)
    ↑                       ↓
    Front speaker (right) ← Front speaker (right)
    
```

**4** Turn **VOLUME** to set the volume level normally used for enjoying the source.

**5** Press **CENTER LEVEL (-)** or **(+)** or **REAR LEVEL (-)** or **(+)** to adjust the output level balance.

**SURROUND only**

REAR LEVEL

While standing in the listening area, adjust the output levels of each speaker until they are all identical.

[-] : Decrease the output level.  
[+] : Increase the output level.

The output levels can be varied within a range of -12 dB to +12 dB according to the output levels from the front speakers.

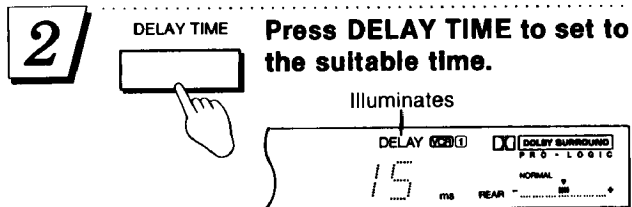
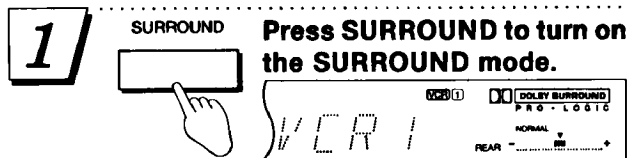
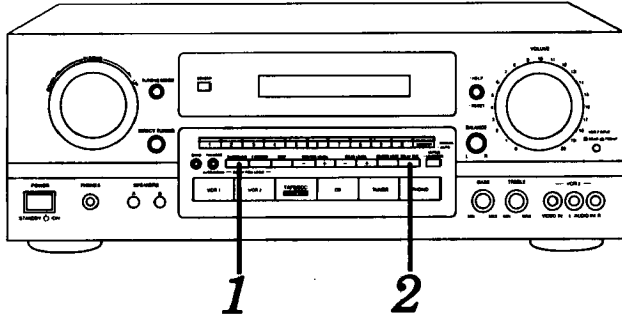
**TEST** To stop the test signal Press **TEST**.

## Adjusting the delay time

**SA-GX770/SA-GX670 only**

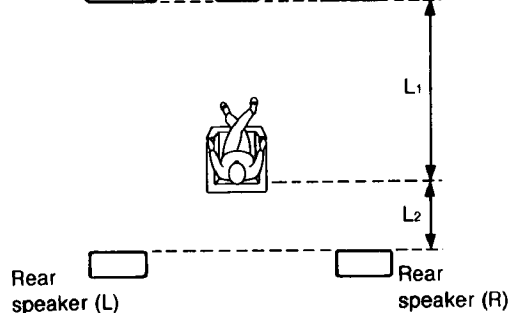
### When enjoying with SURROUND only

Adjust so that the sound from the rear speakers is correctly oriented.



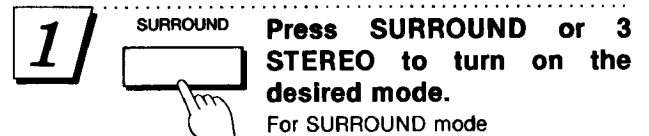
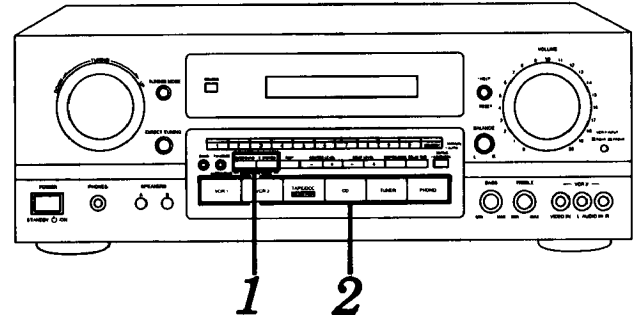
Each time the button is pressed, the delay time will increase by 5 ms. To calculate the delay time, refer to the calculation methods below.

Front speaker (L)    Center speaker    Front speaker (R)



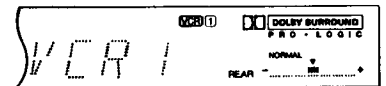
- If  $L_1 \leq L_2$   
Set to 15 ms.
- If  $L_2 < L_1$   
Start at 15 ms and increase by 5 ms for every 5 feet of difference between  $L_1$  and  $L_2$ .

## Enjoying with SURROUND or 3 STEREO

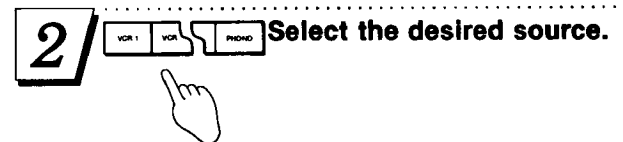
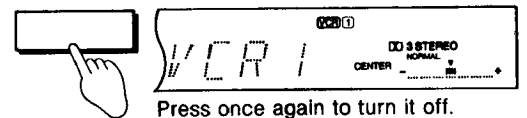


For SURROUND mode

or



For 3 STEREO mode



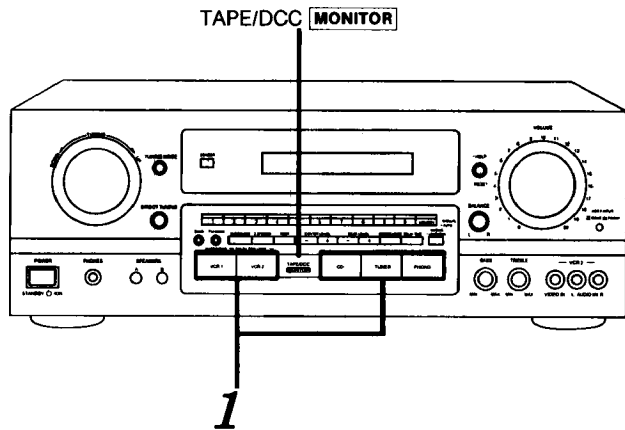
### Note

When employing SURROUND, use software which has been recorded with Dolby Surround.

# Making a recording

## Tape recording on the tape deck or digital compact cassette deck (DCC)

Before recording, prepare the tape deck or DCC for recording (recording level adjustment, etc.). See the tape deck's or DCC's operating instructions for details.



**1** Select the audio/video source to be recorded.

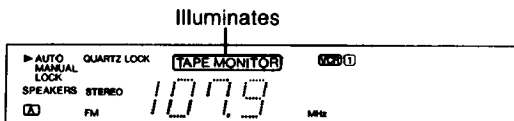
**2** Begin recording. Follow your tape deck's or DCC's operating instructions.

**3** Begin the audio/video source to be recorded.

### To check the sound recorded while recording is being made

With a tape deck with 3 heads, it is possible to check the sound recorded on the tape.

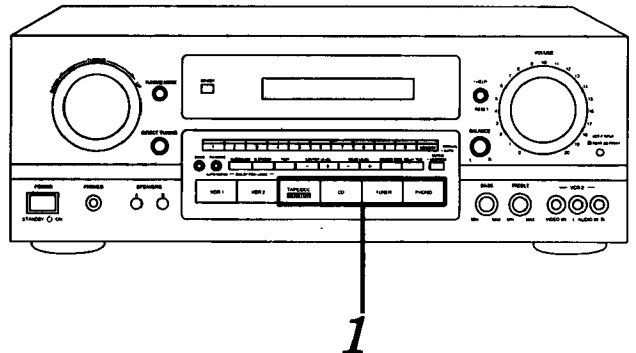
Press TAPE/DCC **MONITOR** on this unit and set the monitor button on the tape deck to "TAPE".



Press TAPE/DCC **MONITOR** once again to turn it off.

## VCR (VCR 1) recording from an audio source

Before recording, prepare the VCR (VCR1) for recording (recording level adjustment, input selector setting, etc.). See the VCR's operating instructions for details.



**1** Select the audio source to be recorded.

**2** Begin recording on the VCR 1. Follow your VCR's operating instructions.

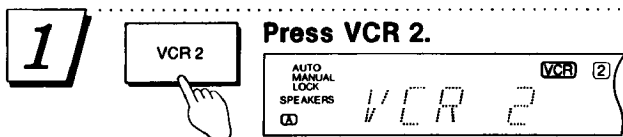
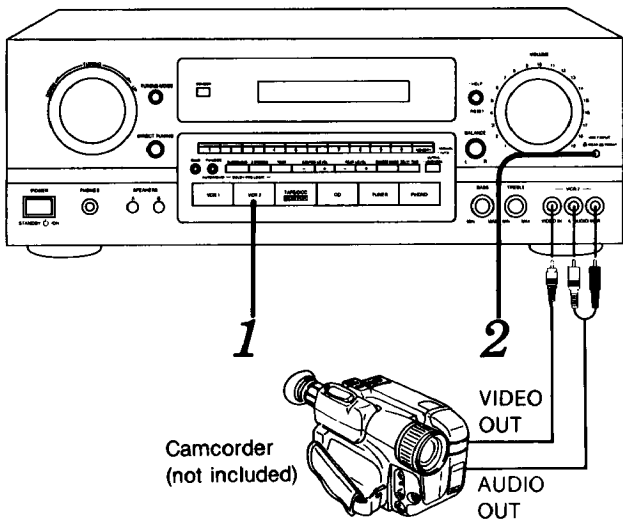
**3** Begin the audio source to be recorded.

## Recording from VCR 2 to VCR 1

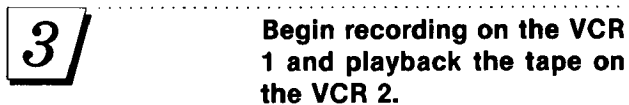
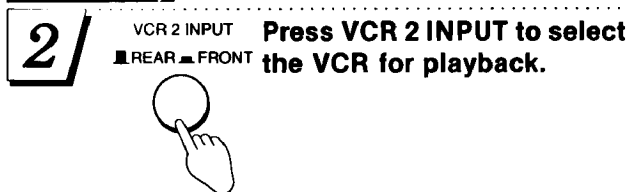
Before recording, prepare the VCR (VCR 1) for recording (recording level adjustment, etc.).  
See the VCR's operating instructions for details.

### For SA-GX770

There are VCR 2 terminals at both the front and rear of this unit. It is easier to carry out dubbing from a camcorder if it is connected to the front terminals.



### SA-GX770 only



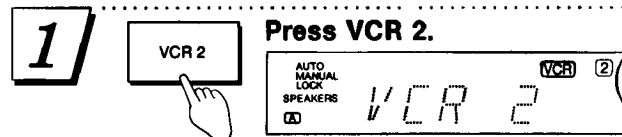
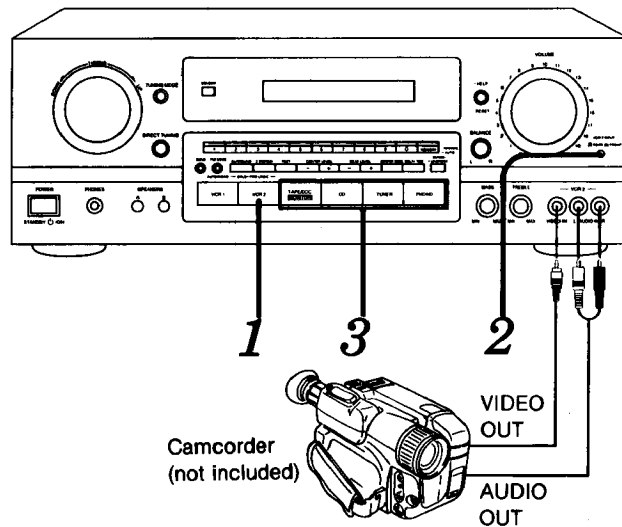
Follow your VCR's operating instructions.

### For your reference:

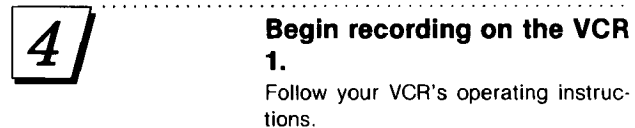
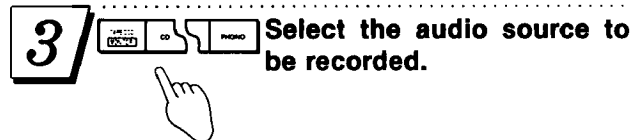
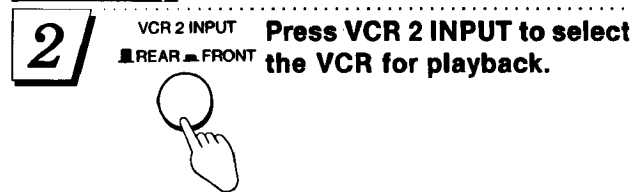
If a laser disc player is connected to the "VCR 2" terminals, recording from the laser disc player is possible by following the above procedure.

## To record picture from VCR 2 and sound from a different audio source

Before recording, prepare the VCR (VCR 1) accordingly (recording level adjustment, input selector setting, etc.).  
See the VCR's operating instructions for details.



### SA-GX770 only



### For your reference:

If a laser disc player is connected to the "VCR 2" terminals, recording a picture from the laser disc player is possible by following the above procedure.

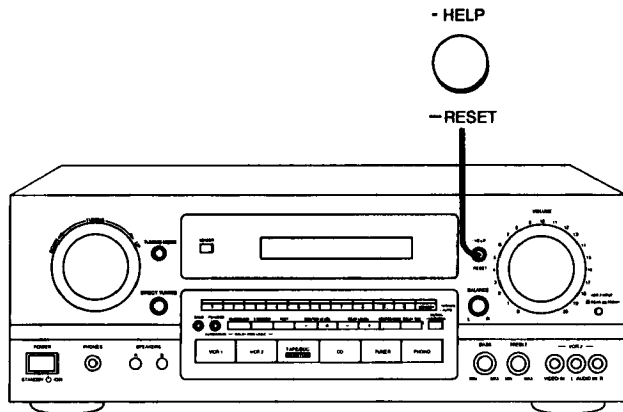


## About the **HELP** function

**SA-GX770/SA-GX670 only**

If you make a mistake in operation or if sound output stops due to some operation which was performed, the HELP function displays characters which can be useful for indicating the method by which this condition can be remedied.

If "ERROR" or scrolling characters (for instance, "TAPE MONITOR ON NOW") appears on the display during operation, carry out the following operation.



- HELP



### **Press -HELP momentarily.**

The method for remedying this condition will be displayed.

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### **For your reference:**

If the above button is pressed for a longer period until "RESET" appears on the display, the operation settings for the unit will be initialized to the settings made at the time of shipment.

However, any broadcasting stations which have been preset into memory will not be erased at this time.

## **Product service**

Do not attempt to remove the cover(s) or repair the unit yourself. Refer servicing to qualified personnel only.

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### **Product information**

For product service, product information or assistance with product operation, refer to the servicenter directory.

# Troubleshooting guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to

the directory of authorized service centers (enclosed with this unit) to locate a convenient service center, or consult your Technics dealer for instructions.  
(In U.S.A. consult MSC Authorized Servicenters for detailed instructions.)

Problem	Probable cause(s)	Suggested remedy
<b>While listening to FM broadcasts</b>		
An unusual hissing noise is heard when listening to the broadcast in stereo, but not heard when listening monaurally.	A slight noise may be heard because the method used for modulation of FM stereo broadcasts is different than that used for monaural broadcasts.	<ul style="list-style-type: none"> <li>• Try reducing the treble sound by using the treble control.</li> <li>• Try changing the location, height and/or direction of the antenna.</li> <li>• If an indoor antenna is being used, change to an outdoor antenna.</li> <li>• Try using an antenna with more elements.</li> </ul>
Noise is excessive in both stereo and monaural broadcasts.	Poor location and/or direction of the antenna. Transmitting station is too far away.	<ul style="list-style-type: none"> <li>• Try changing the location, height and/or direction of the antenna.</li> <li>• If an indoor antenna is being used, change to an outdoor antenna.</li> <li>• Try using an antenna with more elements.</li> </ul>
The FM stereo indicator or the quartz lock indicator flickers, without completely illuminating.	Poor location and/or direction of the antenna. Transmitting station is too far away.	<ul style="list-style-type: none"> <li>• Try changing the location, height and/or direction of the antenna.</li> <li>• If an indoor antenna is being used, change to an outdoor antenna.</li> <li>• Try using an antenna with more elements.</li> </ul>
Excessive distortion in the sound of stereo broadcasts.	Nearby building or mountain.	<ul style="list-style-type: none"> <li>• Try using an antenna with more elements.</li> </ul>
<b>While listening to AM broadcasts</b>		
An unusual "beat" sound is heard.	Unit is being used at the same time as the television set. Interference from adjacent broadcast signal.	<ul style="list-style-type: none"> <li>• Turn off the television set, or use this unit farther away from it.</li> <li>• Try reducing the treble sound by using the treble control.</li> </ul>
A low-pitched "hum" sound is heard when the broadcast is tuned.	The AM loop antenna connection wires are too close to the power cord. The power supply frequency from the power cord is modulated and heard from the speakers.	<ul style="list-style-type: none"> <li>• Place the antenna connection wires and the power cord farther apart.</li> <li>• Install a special outdoor antenna.</li> </ul>
A strange hissing noise is produced continuously or intermittently.	Caused by the "discharge phenomenon" and the "oscillation phenomenon" of electric appliances (such as fluorescent lights, TV, small series-type motors, rectification equipment, etc.).	<ul style="list-style-type: none"> <li>• Try placing this unit farther away from such equipment.</li> <li>• Install noise-prevention equipment on this unit or on the electric appliance.</li> </ul>
<b>Problems noted at all times</b>		
Power will not switch ON.	The power cord plug is not completely inserted.	<ul style="list-style-type: none"> <li>• Confirm that the power cord plug is connected completely.</li> </ul>
No sound is heard.	Both A and B speakers are turned OFF.	<ul style="list-style-type: none"> <li>• Select the input select button for the source to which you wish to listen and press it one or two times. (The display will scroll through the causes of the problem.) Use this display as a guide to remedy the problem.</li> <li>• Check to be sure that all connection wires are correctly connected.</li> <li>• Check to be sure that the correct selector is pressed.</li> </ul>
	The tape monitor function is ON.	
	The muting function is ON.	
	Connections are incomplete or incorrect to the speaker systems, etc.	
Sound stops during a performance, or no sound is heard when the power is switched ON. (The word "OVERLOAD" appears on the display.)	The incorrect input selector has been pressed.	<ul style="list-style-type: none"> <li>• Switch off the power, and after determining and correcting the cause, switch on the power once again.</li> <li>• Use a speaker system of the proper impedance rating.</li> </ul>
	The protection circuitry has functioned because the positive and negative speaker connection wires are "shorted"; speaker systems with an impedance less than the indicated rated impedance of this unit are used or under severe use, such as loud volume, excessive power and in an excessively hot environment.	
The DOLBY PRO LOGIC (SURROUND or 3 STEREO) indicator and speaker select indicators (A, B) are flashing. (The word "ERROR" appears on the display.)	When the Dolby Pro Logic system is ON, both A and B speakers are turned ON.	<ul style="list-style-type: none"> <li>• Turn off the Dolby Pro Logic system or one of the speakers.</li> </ul>
	When both A and B speakers are being used simultaneously, the Dolby Pro Logic system is turned ON.	<ul style="list-style-type: none"> <li>• Turn off one of the speakers.</li> </ul>

# Technical specifications (IHF'78)

## ■ AMPLIFIER SECTION

Rated minimum sine wave

RMS power output

20 Hz – 20 kHz both channels driven

0.05% total harmonic distortion

[SA-GX770] 125 W per channel (8 Ω)

[SA-GX670] 110 W per channel (8 Ω)

[SA-GX470/SA-G9057] 100 W per channel (8 Ω)

1 kHz continuous power output

both channels driven

0.05% total harmonic distortion

[SA-GX770] 130 W per channel (8 Ω)

[SA-GX670] 115 W per channel (8 Ω)

[SA-GX470/SA-G9057] 103 W per channel (8 Ω)

Total harmonic distortion

rated power at 20 Hz – 20 kHz 0.05% (8 Ω)

half power at 1 kHz 0.03% (8 Ω)

Power output at the Dolby Pro Logic operation

0.8% at 1 kHz, Front

[SA-GX770] 2 × 100 W (8Ω)

[SA-GX670] 2 × 80 W (8Ω)

[SA-GX470] 2 × 55 W (8Ω)

[SA-G9057] 2 × 60 W (8Ω)

Center

[SA-GX770] 100 W (8Ω)

[SA-GX670] 80 W (8Ω)

[SA-GX470] 55 W (8Ω)

[SA-G9057] 60 W (8Ω)

Rear

[SA-GX770] 100 W (8Ω)

[SA-GX670] 80 W (8Ω)

[SA-GX470] 30 W (8Ω)

[SA-G9057] 60 W (8Ω)

Low frequency damping factor

30 (8 Ω)

Load impedance

A or B

[SA-GX770/SA-GX670] 4 – 8 Ω

[SA-GX470/SA-G9057] 8 Ω

A and B

8 Ω

Dynamic headroom

2 dB (8 Ω)

SMPTE intermodulation distortion

0.3% (8 Ω)

Frequency response

PHONO

RIAA standard curve ±0.8 dB

CD, VCR 1, VCR 2, TAPE/DCC

7 Hz – 70 kHz, ±3 dB

Input sensitivity

PHONO

0.4 mV (3 mV, IHF '66)

CD, VCR 1, VCR 2, TAPE/DCC

27 mV (200 mV, IHF '66)

S/N (IHF A)

PHONO

70 dB (80 dB, IHF '66)

CD, VCR 1, VCR 2, TAPE/DCC

75 dB (85 dB, IHF '66)

Input impedance

PHONO

47 kΩ

CD, VCR 1, VCR 2, TAPE/DCC

22 kΩ

Tone controls

BASS

50 Hz, +10 dB to –10 dB

TREBLE

20 kHz, +10 dB to –10 dB

Loudness control (volume at –30 dB)

[SA-GX770/SA-GX670 only] 50 Hz, +9 dB

## ■ FM TUNER SECTION

Frequency range

87.9 – 107.9 MHz

Sensitivity

11.2 dBf (2 μV, IHF '58)

50 dB quieting sensitivity

MONO

18.3 dBf (4.5 μV, IHF '58)

STEREO

38.3 dBf (45 μV, IHF '58)

Total harmonic distortion

MONO

0.2%

STEREO

0.3%

S/N

MONO

75 dB

STEREO

70 dB

Frequency response

20 Hz – 15 kHz, +1 dB, –2 dB

Alternate channel selectivity

65 dB

Capture ratio

1 dB

Image rejection at 98 MHz

45 dB

IF rejection at 98 MHz

80 dB

Spurious response rejection at 98 MHz

75 dB

AM suppression

50 dB

Stereo separation

1 kHz

40 dB

10 kHz

30 dB

Carrier leak

19 kHz

–35 dB

38 kHz

–50 dB

Antenna terminals

75 Ω (unbalanced)

## ■ AM TUNER SECTION

Frequency range

530 – 1710 kHz

Sensitivity

20 μV, 330 μV/m

Selectivity

55 dB

Image rejection at 1000 kHz

40 dB

IF rejection at 1000 kHz

60 dB

## ■ VIDEO SECTION

Output voltage at 1 V Input (unbalanced)

1 ± 0.1 V<sub>p-p</sub>

Maximum input voltage

1.5 V<sub>p-p</sub>

## ■ GENERAL

Power consumption

[SA-GX770] 300 W, 385 VA

[SA-GX670] 280 W, 340 VA

[SA-GX470] 230 W, 300 VA

[SA-G9057] 255 W, 340 VA

AC 120 V, 60 Hz

Power supply

Dimensions (W × H × D)

[SA-GX770/SA-GX670] 430 × 158 × 352 mm

(16-15/16" × 6-7/32" × 13-27/32")

[SA-GX470/SA-G9057] 430 × 136 × 352 mm

(16-15/16" × 5-11/32" × 13-27/32")

Weight

[SA-GX770] 10.1 kg (22.2 lb.)

[SA-GX670] 9.5 kg (20.9 lb.)

[SA-GX470] 8.3 kg (18.3 lb.)

[SA-G9057] 8.6 kg (18.9 lb.)

Notes:

- Specifications are subject to change without notice. Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

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