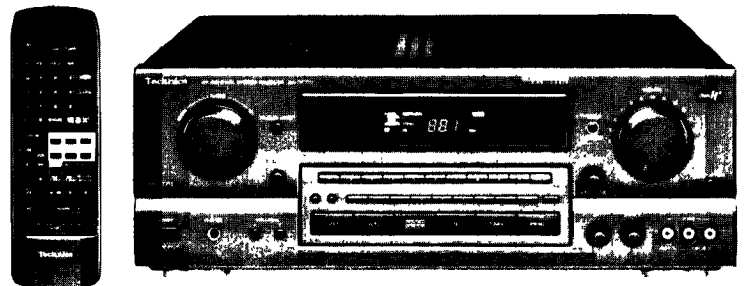# Technics

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.

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.
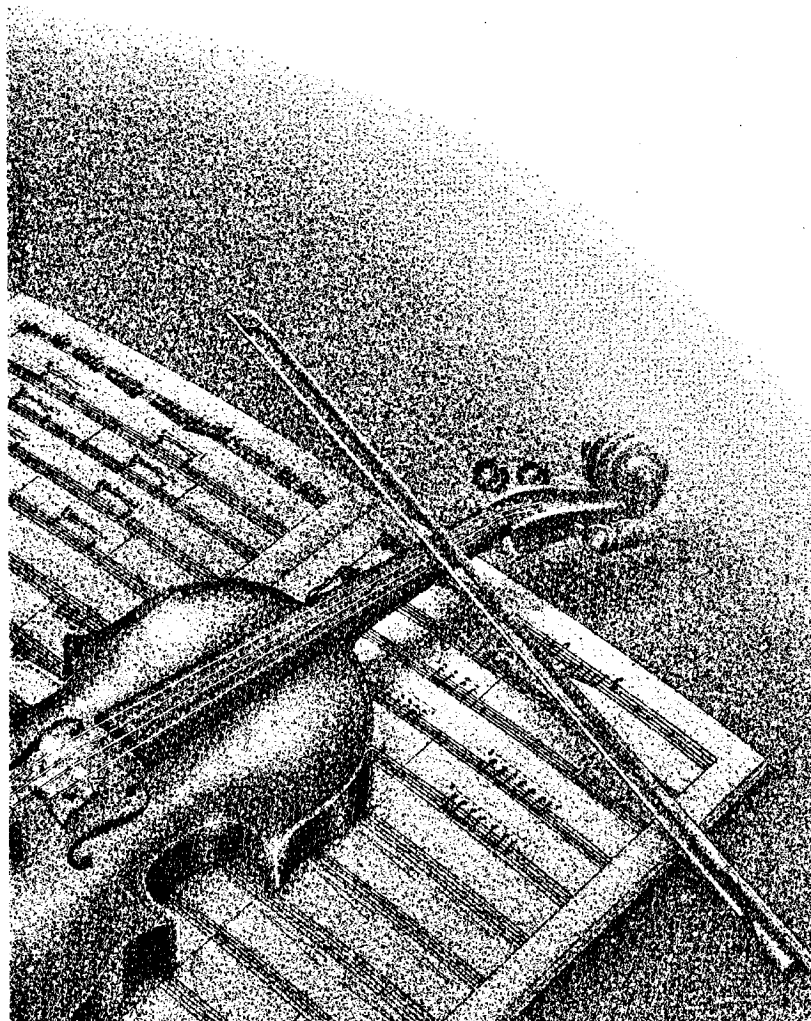
Table of contents

Before use

Connections

Listening

Adjusting the sound field

Recording

When there seems to be a problem

Reference

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.

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.
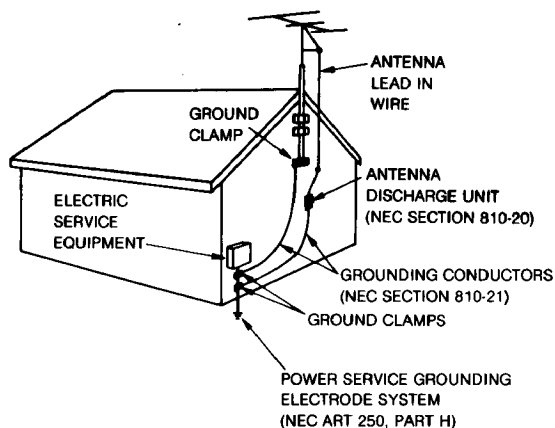
Safety

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.

ANTENNA
LEAD IN
WIRE

GROUND
CLAMP

ANTENNA
DISCHARGE UNIT
(NEC SECTION 810-20)

ELECTRIC
SERVICE
EQUIPMENT

GROUNDING CONDUCTORS
(NEC SECTION 810-21)

GROUND CLAMPS

POWER SERVICE GROUNDING
ELECTRODE SYSTEM
(NEC ART 250, PART H)

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 benzine.

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.
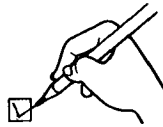
Listening caution

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

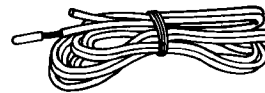Information courtesy of the Deafness Research Foundation.

Accessories

Please check and identify the supplied accessories

AC power supply cord........................1 pc.
(For USA: SJA172-A or SJA172-1)
(For Canada: SJA172-A or SJA172)
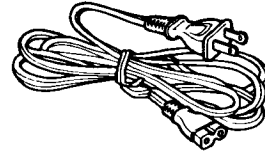
AM loop antenna set (RSA0010)
• AM loop antenna ....1 pc.
• AM antenna holder ....1 pc.
• Screw ....1 pc.
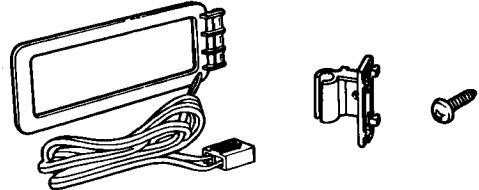
FM indoor antenna (RSA0006) ....1 pc.

Remote control transmitter ....1 pc.

For SA-GX470	**For SA-GX770/SA-GX670/ SA-G9057**
(RAK-SA112MH)	(RAK-SA723MH)
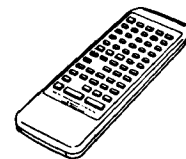
For details on remote control transmitter operation, refer to "How to use the remote control transmitter" in the separate booklet.

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

Front panel controls

For SA-GX770/SA-GX670

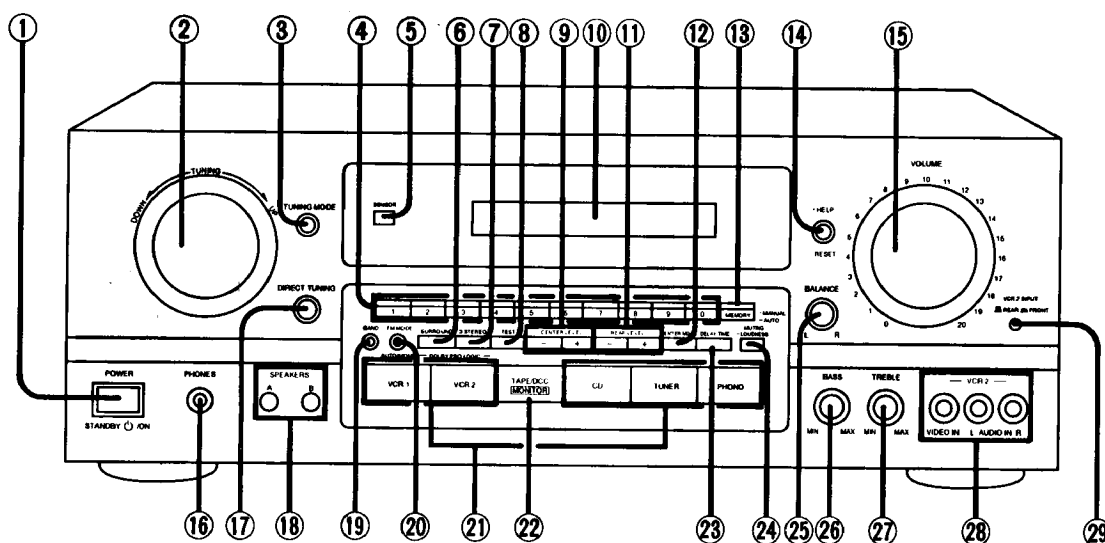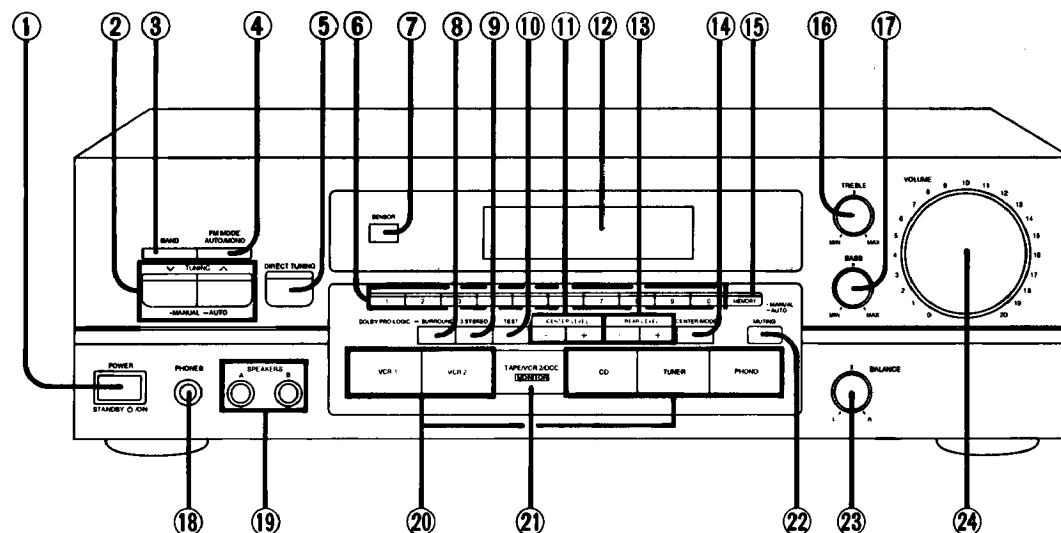| No.	Name	Ref. page
①	Power switch (POWER)	14
②	Tuning control (TUNING)	17
③	Tuning mode select button (TUNING MODE)	17
④	Numeric buttons (1–0)	16,19,20
⑤	Remote control signal receptor	–
⑥	DOLBY PRO LOGIC SURROUND ON/OFF button (SURROUND)	21,22,23
⑦	DOLBY PRO LOGIC 3 STEREO ON/OFF button (3 STEREO)	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
⑯	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

7

Connecting audio equipment

Stereo connection cable (not included)
White (L)
Red (R)

CD changer (or CD player)
(not included)

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

REC (IN)
PLAY (OUT)

OUTPUT

Only for turntable with ground terminal

CD
REC (OUT)
GND
PLAY (IN) TAPE/DCC

PHONO

REMOTE CONTROL OUT

AC OUTLETS

AC IN

Antenna terminals
See pages 10 – 11.

SA·GX770 only
Sub woofer terminals
See page 13.

A

Speaker terminals
See pages 12 – 13.

B

GND   OUTPUT

Turntable
(not included)

This unit

REMOTE CONTROL OUT

Power cords
(not included)

Connection cable for remote control
(not included)

OUT
IN REMOTE CONTROL

Tape deck
(not included)

CD changer (or CD player)
(not included)

REMOTE

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.
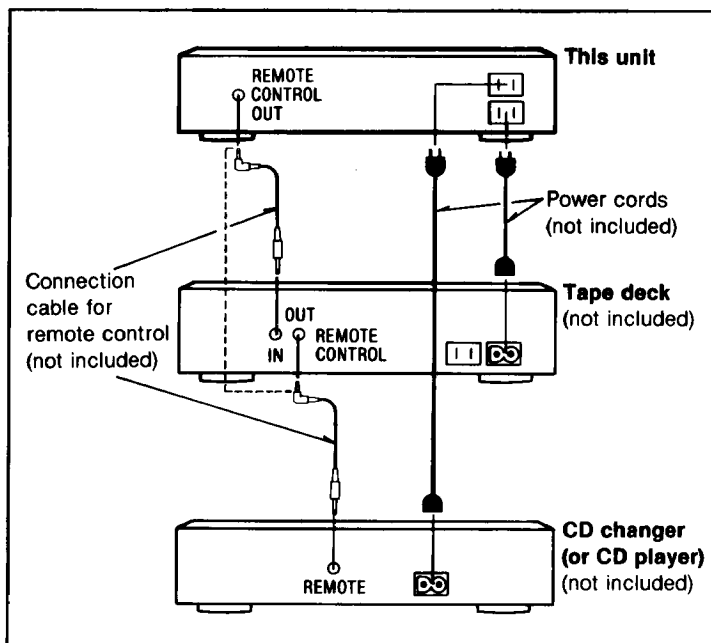
For proper remote-control operation

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.
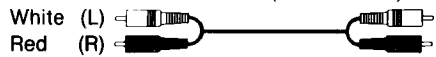
For SA·GX470/SA·G9057
Because there is only one AC outlet, connect the power cord of the CD changer (or CD player) to the AC outlet of the tape deck.
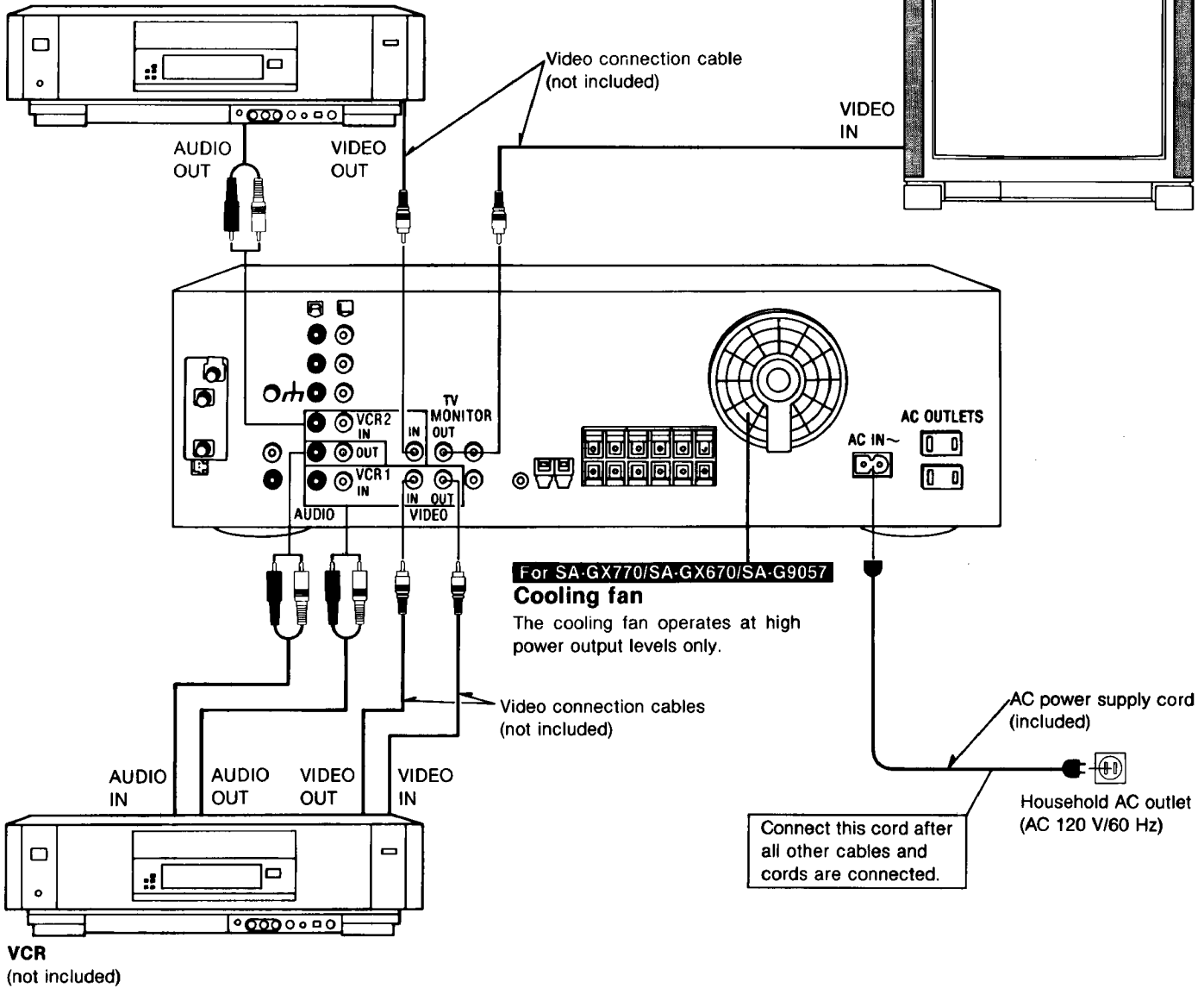
Connecting video equipment

Stereo connection cable (not included)
White (L)
Red (R)

Second VCR (for playback only)
(not included)

Monitor TV
(not included)

Video connection cable
(not included)

VIDEO
IN

AUDIO
OUT

VIDEO
OUT

TV
MONITOR
VCR2 IN OUT
IN
OUT
VCR1 IN
IN OUT
AUDIO VIDEO

AC OUTLETS
AC IN~

For SA-GX770/SA-GX670/SA-G9057
Cooling fan
The cooling fan operates at high power output levels only.

Video connection cables
(not included)

AC power supply cord
(included)

AUDIO IN | AUDIO OUT | VIDEO OUT | VIDEO IN

Household AC outlet
(AC 120 V/60 Hz)

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

VCR
(not included)

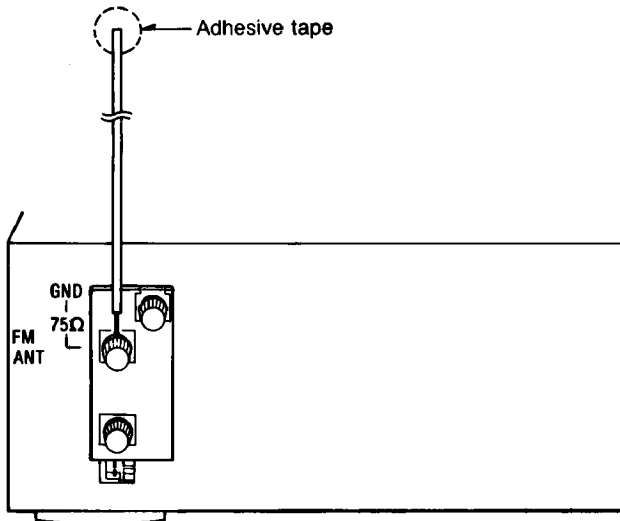## FM indoor antenna *(included)*

This antenna is normally sufficient for reception of FM broadcasts.
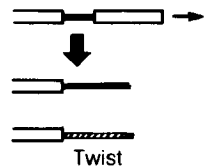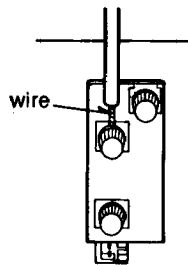
FM Indoor antenna
(included)

Adhesive tape

GND
75Ω
FM
ANT

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.
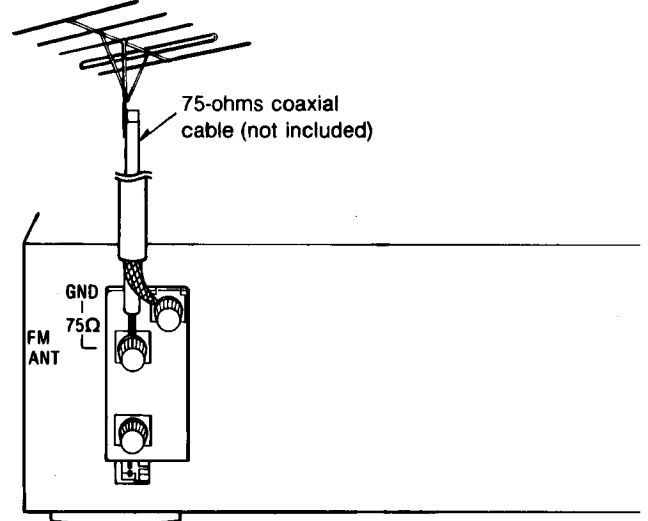
Twist

wire

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.

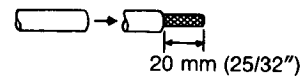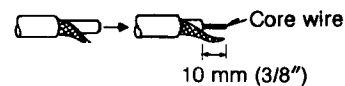**FM outdoor antenna**
(not included)

75-ohms coaxial
cable (not included)

GND
75Ω
FM
ANT

Note
An outdoor antenna should be installed by a qualified technician only.
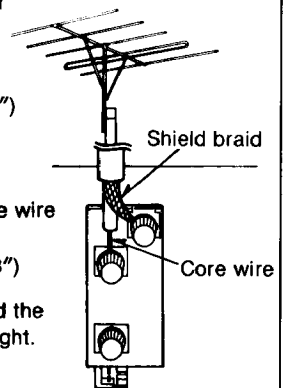
---**How to connect a 75-ohms coaxial cable**---

① Remove a piece of the outer vinyl insulator.

20 mm (25/32″)

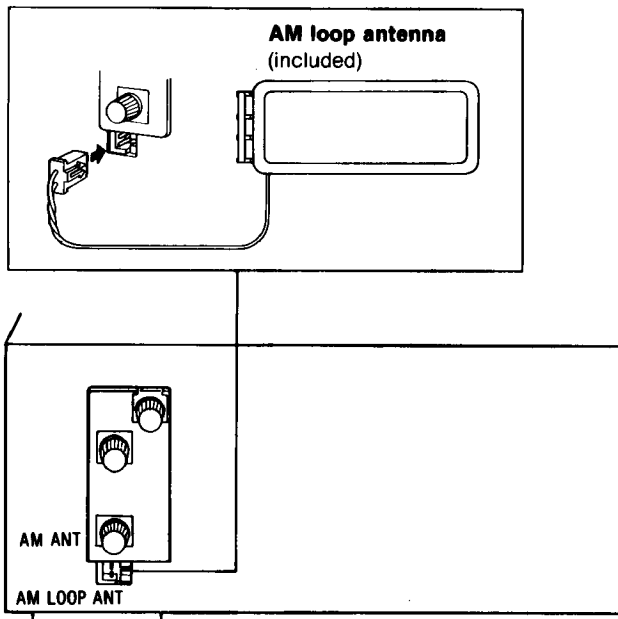② Twist the shield braid to expose the core wire.

Core wire

10 mm (3/8″)

③ Connect the shield braid and the core wire as shown at the right.

Shield braid

Core wire

AM loop antenna (included)

This antenna is normally sufficient for reception of AM broadcasts.

AM loop antenna
(included)

AM ANT
AM LOOP ANT

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).


Rear panel of this unit

Insert the tab into the hole and then push the holder downward.

AM antenna holder (included)
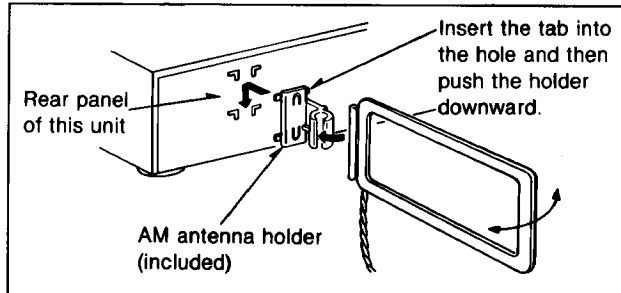
Pay attention to the following points when mounting the antenna.
• Do not mount it horizontally (Doing so will impair reception).
• Do not mount it close to power cords, speaker wires or metal surfaces (Doing so will result in noise).
• Do not mount it close to a tape deck. When the tape deck is being used, chirping or beeping sounds may result.

When mounting the antenna to a column, a wall or rack
Mount it vertically.
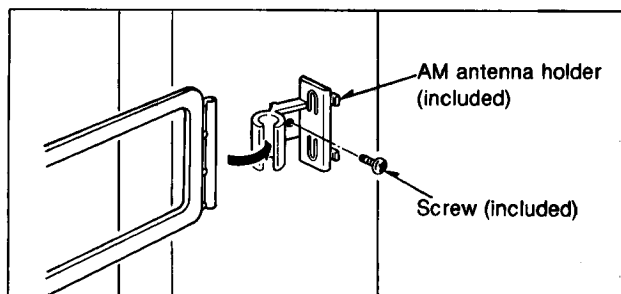
AM antenna holder (included)

Screw (included)

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.

AM outdoor antenna
(not included)

Vinyl-covered wire
(not included)

AM loop antenna
(included)

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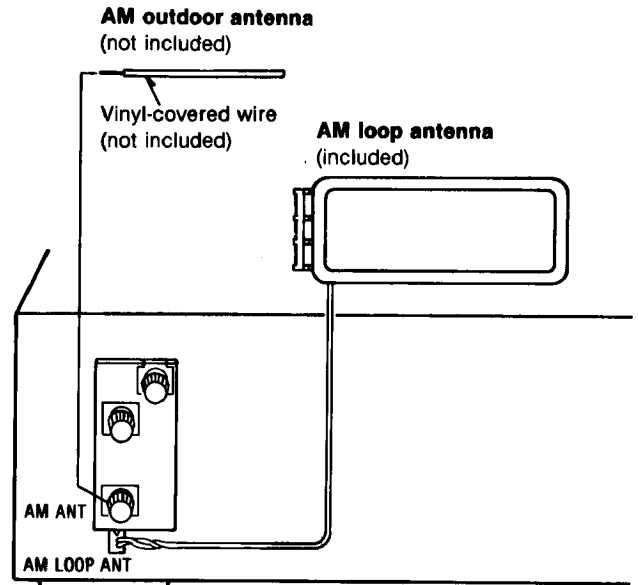
Use 5 − 12 m (16 − 40 ft.) of vinyl-covered wire horizontally at the window, or convenient location.

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.
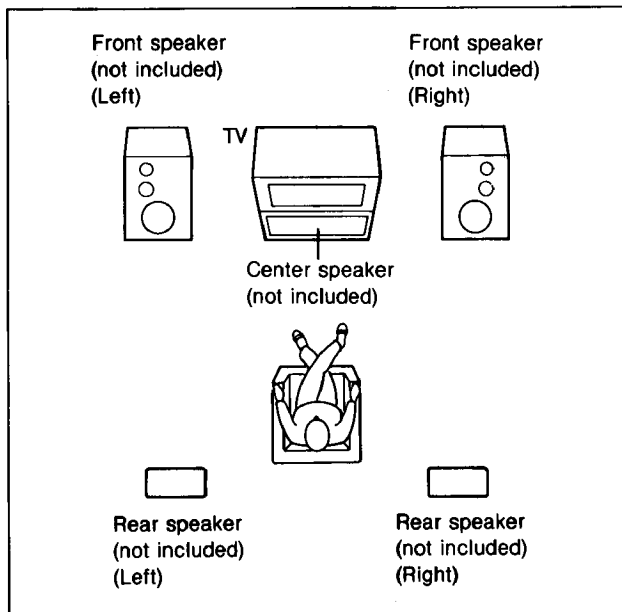
Placement of speakers

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.
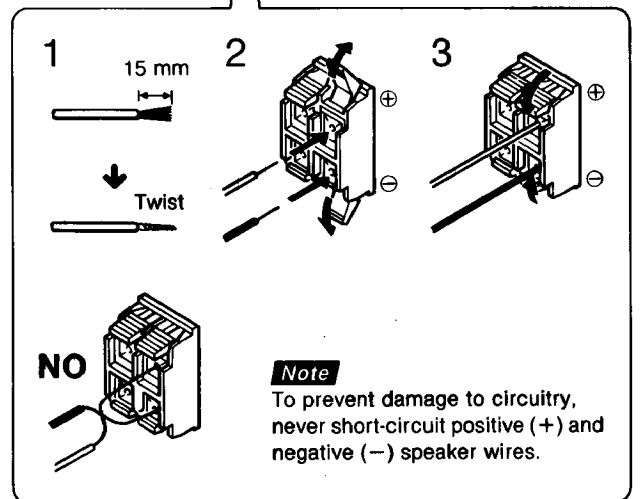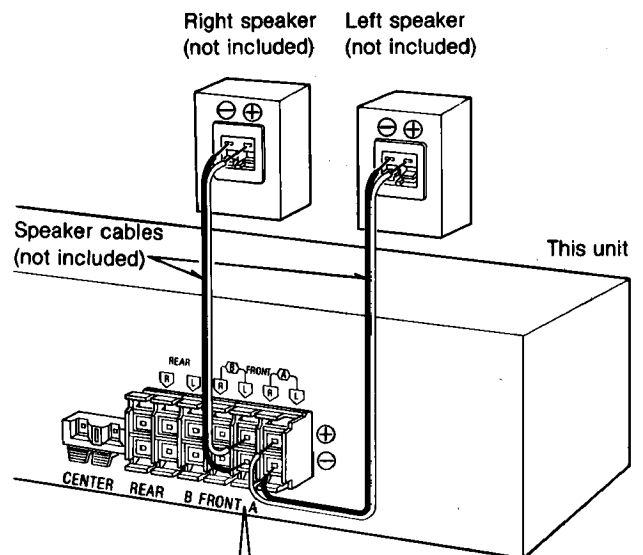
The illustration below shows where to place the speakers when enjoying sound with Dolby Pro-Logic systems.
The listening position at which the effect is the greatest is a position slightly to the rear of a center position of five-speaker systems.
However the position should be adjusted to your personal preference, because the effect varies to some degree depending upon the type of music and the music source.

Front speaker (not included) (Left)　　　Front speaker (not included) (Right)

TV

Center speaker (not included)

Rear speaker (not included) (Left)　　　Rear speaker (not included) (Right)

Connection of front speakers

Right speaker (not included)　　Left speaker (not included)

Speaker cables (not included)　　　　This unit

REAR　FRONT

CENTER REAR B FRONT A

1　15 mm　Twist

2

3

NO

Note
To prevent damage to circuitry, never short-circuit positive (+) and negative (−) speaker wires.

■ "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 Ω.

Note
If 4 Ω speakers are connected, be sure to set the impedance on the main unit to LOW according to step 2 on page 14.
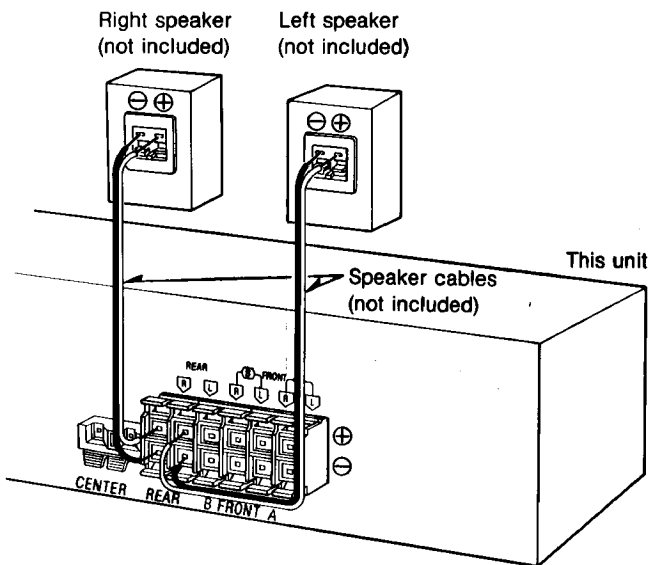
When both the "A" and the "B" speakers are connected simultaneously:
The impedance of the speaker used with this unit must be 8 Ω.

For SA·GX470/SA·G9057
The impedance of any speaker used with this unit must be 8 Ω.

Connection of rear speakers

Right speaker (not included)   Left speaker (not included)

This unit

Speaker cables (not included)

REAR   FRONT
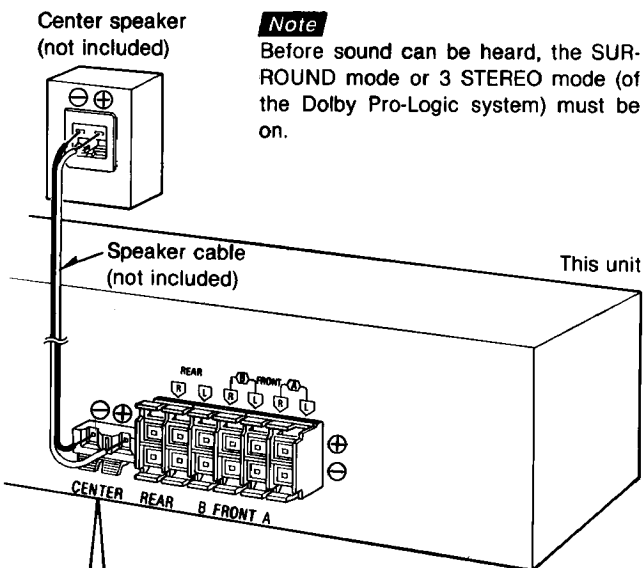
CENTER REAR B FRONT A

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.
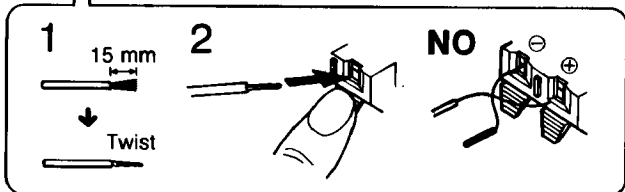
■ Speaker Impedance

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

Connection of center speaker

Center speaker (not included)

Note

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

Speaker cable (not included)   This unit

REAR   FRONT

CENTER REAR B FRONT A

1 15 mm   **2**   **NO**

Twist

■ Speaker Impedance

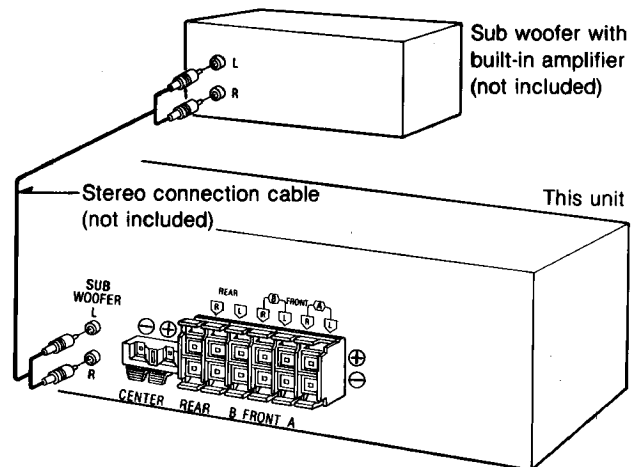The impedance of any speaker used with this unit must be 8 Ω.
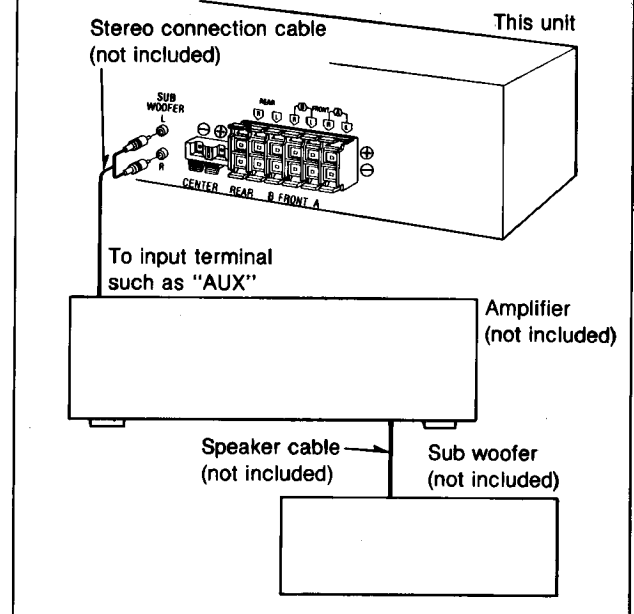
Connection of sub woofer

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.

Sub woofer with built-in amplifier (not included)

L
R

Stereo connection cable (not included)   This unit

SUB WOOFER   REAR   FRONT
L
R

CENTER REAR B FRONT A

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

Stereo connection cable (not included)   This unit

SUB WOOFER   REAR   FRONT
L
R

CENTER REAR B FRONT A

To input terminal such as "AUX"

Amplifier (not included)

Speaker cable (not included)   Sub woofer (not included)

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.
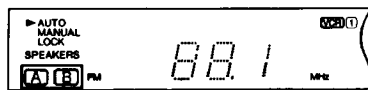
POWER   TAPE/DCC [MONITOR]   VOLUME   VCR 2 front
                                                           input terminals
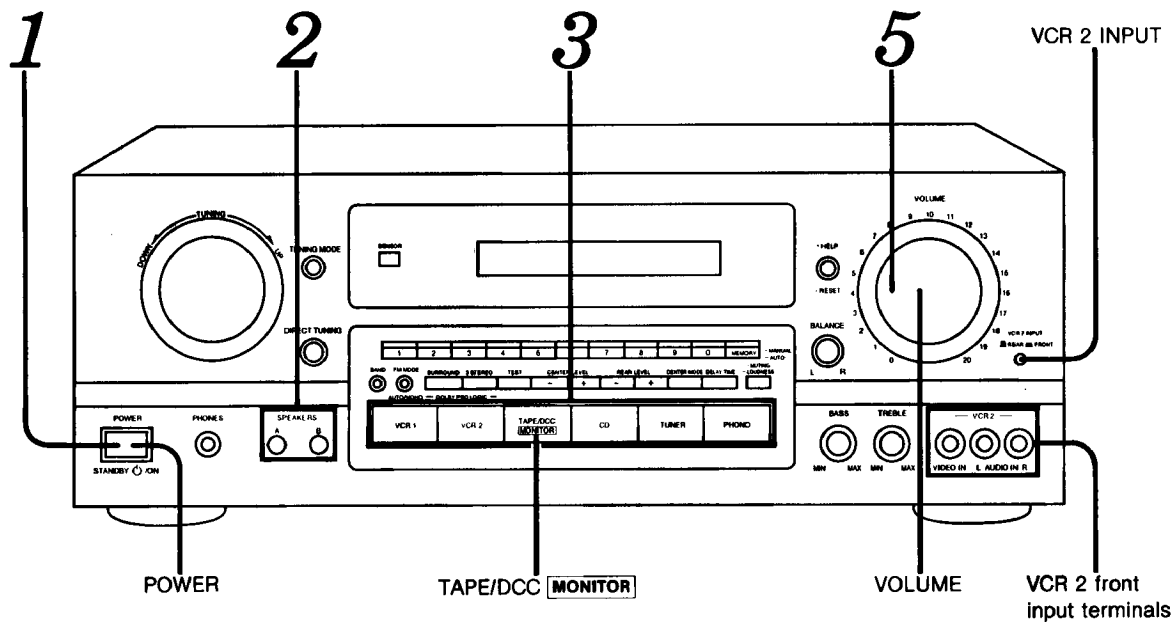
Before operation, set VOLUME to the "0" position.

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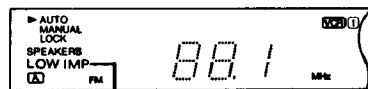A and B refer to the speaker terminals at the rear of the unit.

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
[MONITOR] 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.)

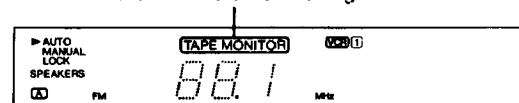**5** VOLUME **Turn VOLUME to adjust the volume level.**
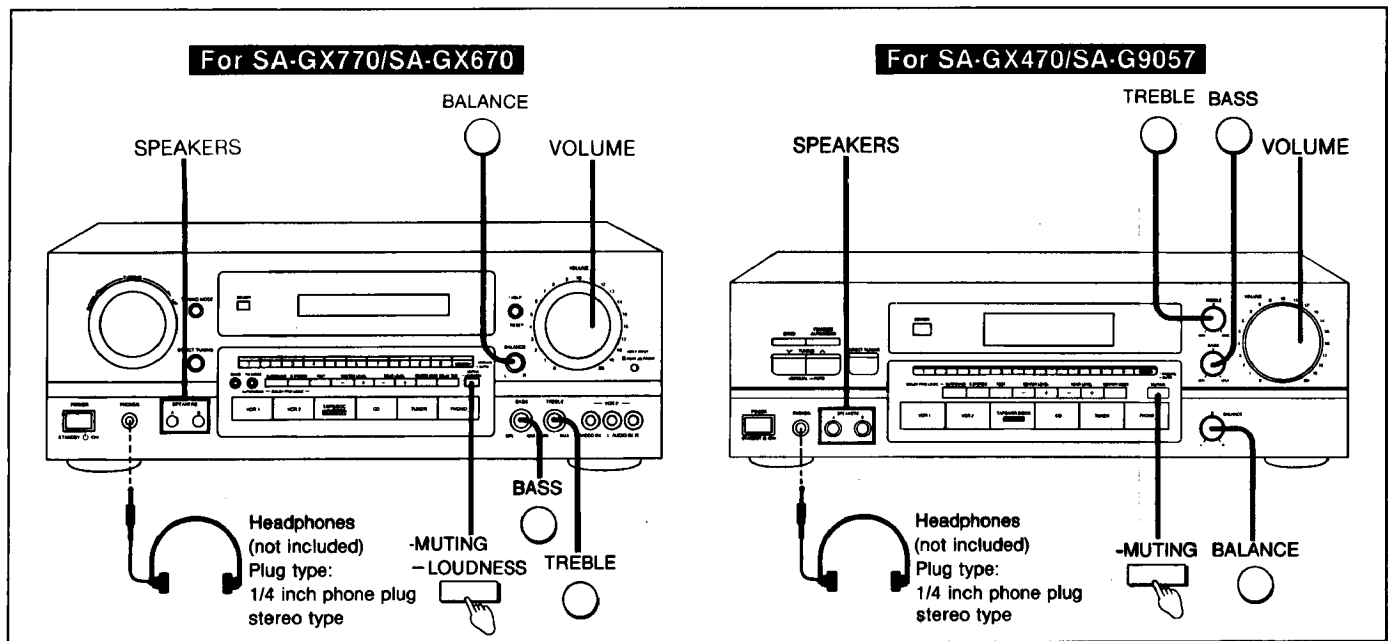
After listening is finished
Be sure to reduce the volume level, and switch the power to the standby condition by pressing POWER.

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

For SA·GX770/SA·GX670

SPEAKERS BALANCE VOLUME

Headphones (not included)
Plug type:
1/4 inch phone plug stereo type
-MUTING
-LOUDNESS TREBLE
BASS

For SA·GX470/SA·G9057

SPEAKERS TREBLE BASS VOLUME

Headphones (not included)
Plug type:
1/4 inch phone plug stereo type
-MUTING BALANCE

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.

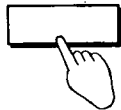Be sure to select the video source first.
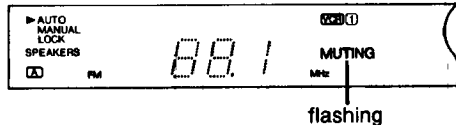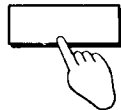
To adjust the tone quality

BASS **Turn BASS to adjust the low-fre-quency sound.**

TREBLE **Turn TREBLE to adjust the high-fre-quency sound.**

To mute the sound level

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

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

►AUTO
MANUAL
LOCK
SPEAKERS   MUTING
▣   FM   88.1   MHz

flashing

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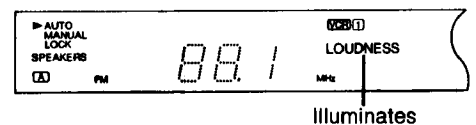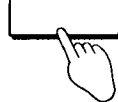
To adjust the sound balance

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

To emphasize low-frequency sound
SA·GX770/SA·GX670 only

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

►AUTO
MANUAL
LOCK
SPEAKERS   88.1   LOUDNESS
▣   FM   MHz

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

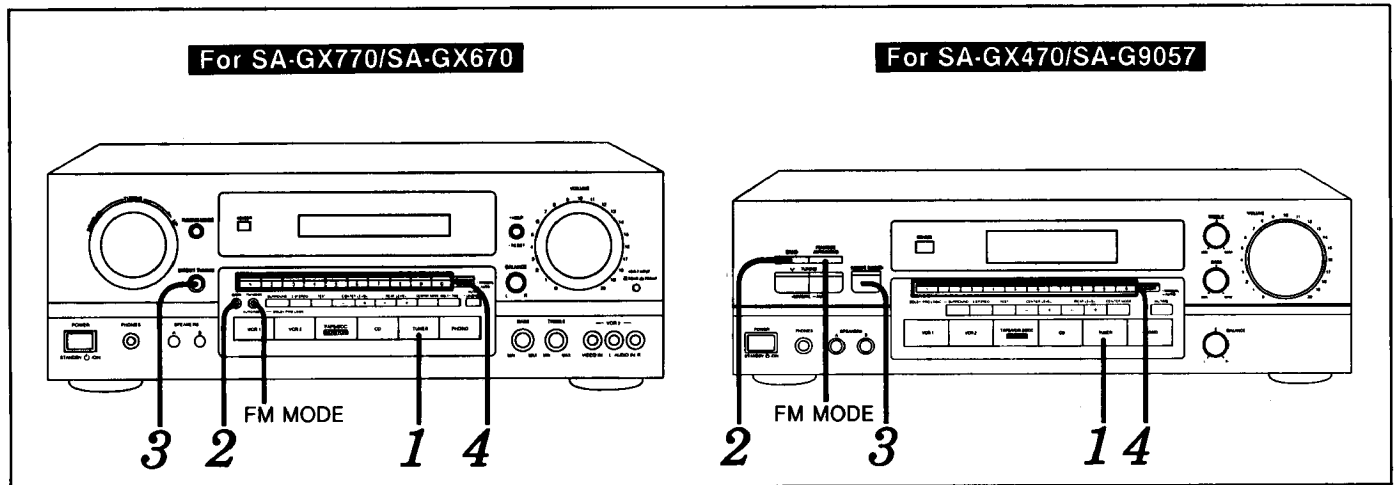- HELP **Press -HELP momentarily.**

-R 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.

15

Direct access tuning

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

For SA-GX770/SA-GX670

For SA-GX470/SA-G9057

FM MODE

3 2 1 4

FM MODE

2 3 1 4

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

1/ TUNER

Press TUNER.

2/ BAND

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

Illuminates

3/ DIRECT TUNING

Press DIRECT TUNING.

While cursor display is
flashing (approx. 10
seconds)

4/ 1 2 3 ... 9 0

Press the appropriate numeric buttons to enter the frequency.

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

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.
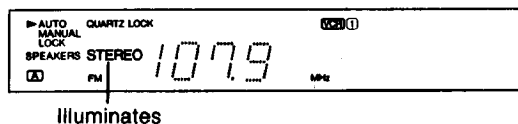
If the desired FM frequency is 107.9 MHz

1 → 0 → 7 → 9

Illuminates when tuned

When the FM stereo broadcast is received:

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

Illuminates

### 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.

TUNING   TUNING MODE

4 3 2   1

 1 | TUNER | **Press TUNER.**
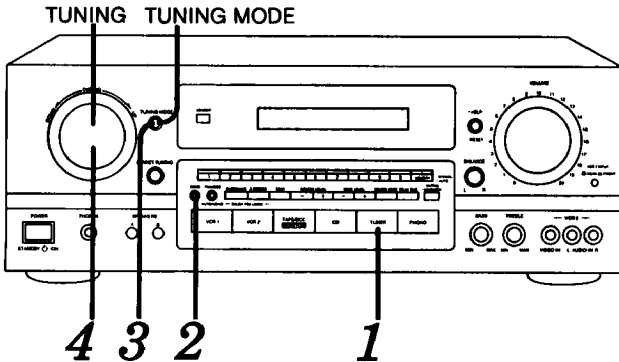
 2 | BAND | **Press BAND to select "FM" or "AM".**

 3 | TUNING MODE | **Press TUNING MODE to select "AUTO".**
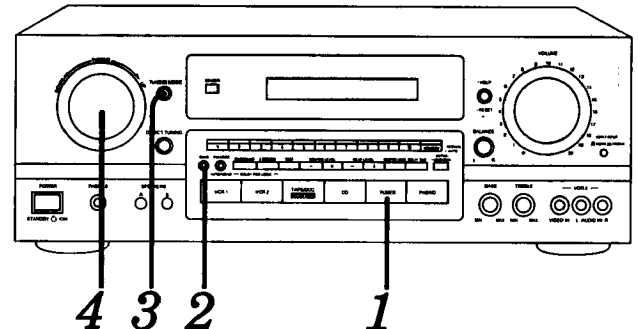
The ▶ mark points to AUTO.

```
▶AUTO
 MANUAL
 LOCK
 SPEAKERS
 Ⓐ      FM     88.1     MHz
```

 4 | TUNING | **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.

4 3 2   1

 1 | TUNER | **Press TUNER.**

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

 3 | TUNING MODE | **Press TUNING MODE to select "MANUAL".**

The ▶ mark points to MANUAL.

```
 AUTO
▶MANUAL
 LOCK
 SPEAKERS
 Ⓐ      FM     88.1     MHz
```

 4 | TUNING | **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.

```
 AUTO    QUARTZ LOCK
 MANUAL
▶LOCK
 SPEAKERS  STEREO
 Ⓐ      FM     107.9     MHz
```
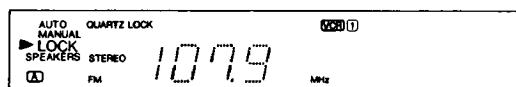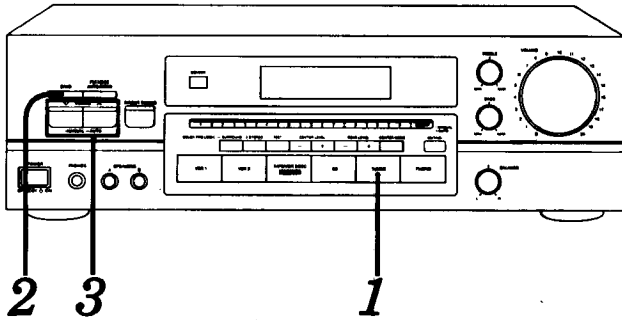
During this display, the frequency will not change even if TUNING is turned.

Sequential tuning

For SA-GX470/SA-G9057

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

2 3   1

---

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.

Channel

| 1 | 2 | 3 | ‑ ‑ ‑ | 19 | 20 | 21 | ‑ ‑ ‑ | 29 | 30 |

|◄————AM————►|
|◄————————FM————————►|
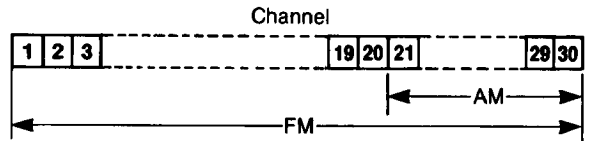
For FM broadcast stations........................1−30
For AM broadcast stations.......................21−30

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.

Channel

| 1 | 2 | 3 | ‑ ‑ ‑ | 19 | 20 | 21 | ‑ ‑ ‑ | 29 | 30 |

|◄————————FM————————►|◄————AM————►|
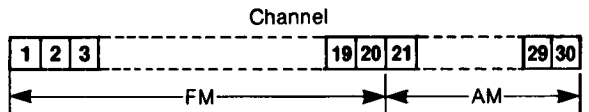
For FM broadcast stations........................1−20
For AM broadcast stations.......................21−30

• **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.


18

Automatic memory presetting

2
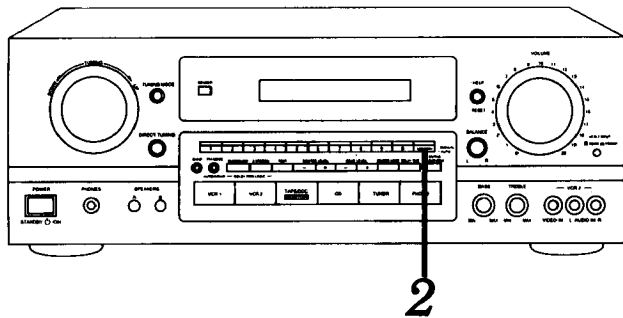
1/ Set to the frequency from which you want to start automatic memory presetting. (Follow steps 1 through 4 on page 16.)

2/ MEMORY

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.
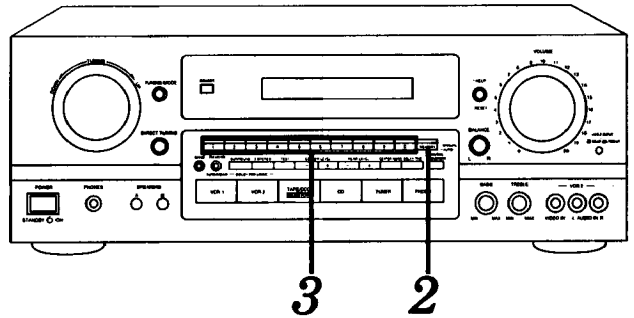

Illuminates
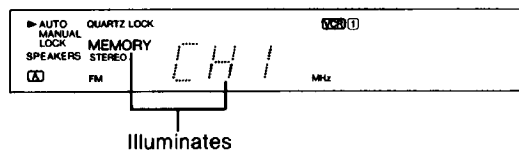
When presetting is completed
The last broadcast station to be preset will be displayed.

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

3   **2**

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/ MEMORY

Press MEMORY momentarily.

Illuminates

To cancel the memory function, press MEMORY again.

3/ 1 2 3 ... 9 0

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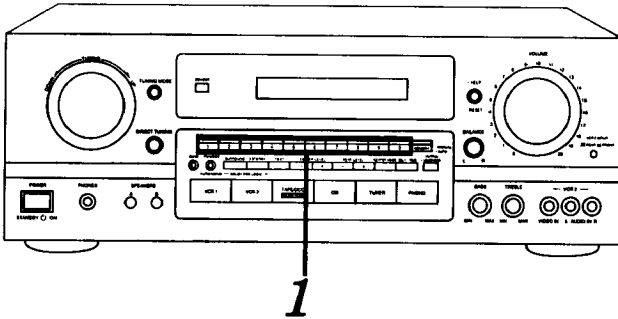(Example: Channel 12)

1 ———————→ 2
     (Within 2 sec.)
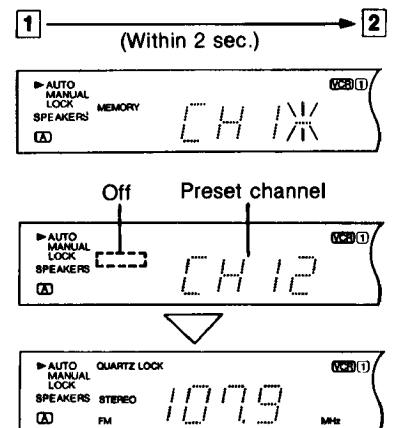
Off   Preset channel

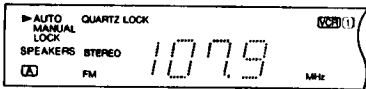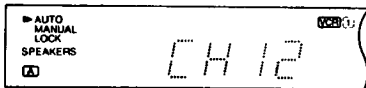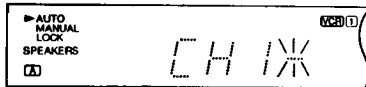### To continue presetting
Repeat steps 1 through 3.

19

Preset tuning (continued)

To listen to preset broadcast stations

1 ⟦1⟧⟦2⟦3⟧⟦9⟧⟦0⟧ **Specify the preset channel using the numeric button(s).**
(Example: Channel 12)

⟦1⟧ ————→ ⟦2⟧
(Within 2 sec.)

```
►AUTO
 MANUAL
 LOCK
SPEAKERS
         C H 1 /\
```

▽

```
►AUTO
 MANUAL
 LOCK
SPEAKERS
         C H 12
```

▽

```
►AUTO   QUARTZ LOCK
 MANUAL
 LOCK
SPEAKERS  STEREO
    FM   107.9      MHz
```

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.

Enjoying sound with DOLBY PRO LOGIC

By combining front (A or B), center and rear speakers, SUR-
ROUND mode which conveys a feeling of presence or 3 STEREO
mode which conveys a feeling of orientation can be enjoyed

SURROUND

By reproducing the feeling of depth and movement of sound,
video software or compact discs recorded with Dolby Surround
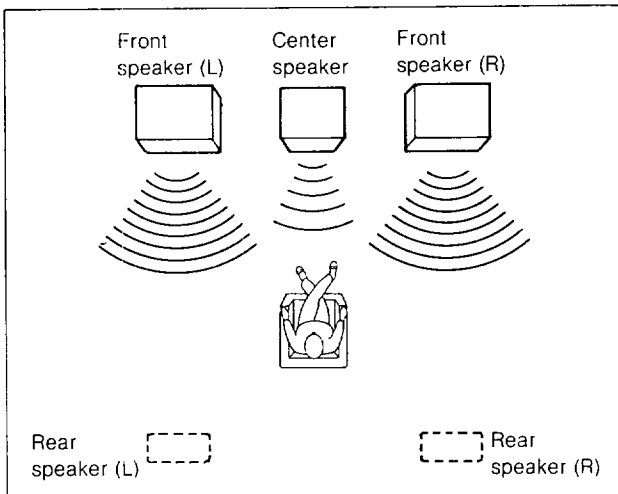provide the listener with a feeling of presence like that of a movie
theater

To enjoy SURROUND, be sure to connect the rear speakers

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

Rear speaker (L)   Rear speaker (R)
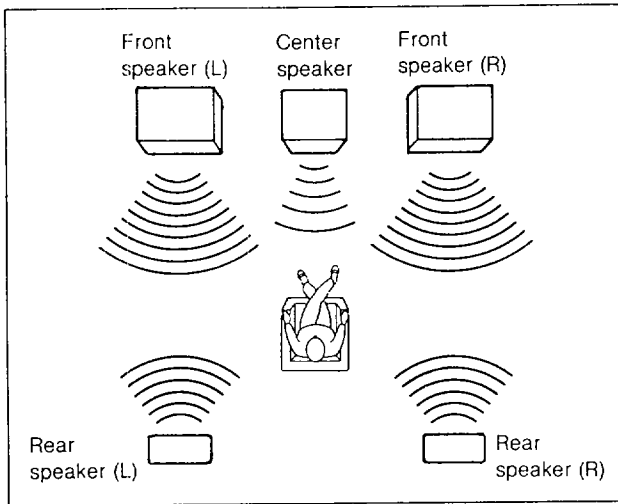
3 STEREO

Music and news programs with clear sound and a good feeling of
orientation can be enjoyed

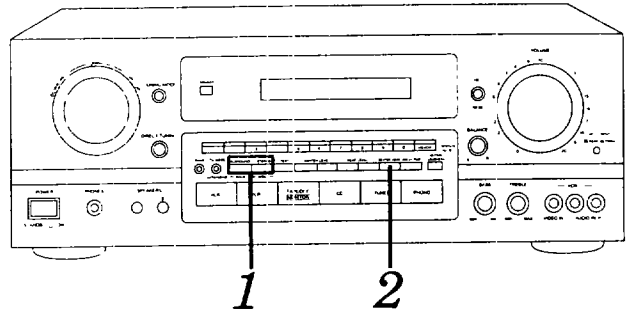To enjoy 3 STEREO, be sure to connect the center speaker

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

Rear speaker (L)   Rear speaker (R)

Setting the center mode

For Dolby Pro-Logic systems, center mode setting is necessary
to play back bass sounds effectively.
Set the center mode in accordance with the size of your center
speaker

1 SURROUND / 3 STEREO

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

For SURROUND mode

or
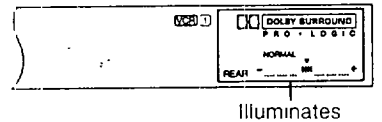
Illuminates

For 3 STEREO mode
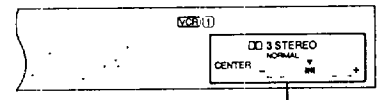
Illuminates

Press once again to turn it off

2 CENTER MODE

Press CENTER MODE to select the correct center mode.
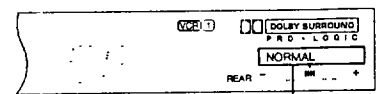
The indicator changes each time the
button is pressed.

NORMAL:
When the center speaker is smaller
than the front speakers

WIDE BAND:
When the center speaker is the same
size as the front speakers

PHANTOM: SURROUND only
When no center speaker is con-
nected

Note

In the PHANTOM mode, the sound
from the center speaker will be divid-
ed between both the left and right
front speakers

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.

TEST

1 **2 3** **5** **4**

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

AUTO
MANUAL
LOCK
SPEAKERS
[A]   *VCR 1*

Illuminates

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

For SURROUND mode

)*VCR 1* DOLBY SURROUND PRO·LOGIC NORMAL REAR

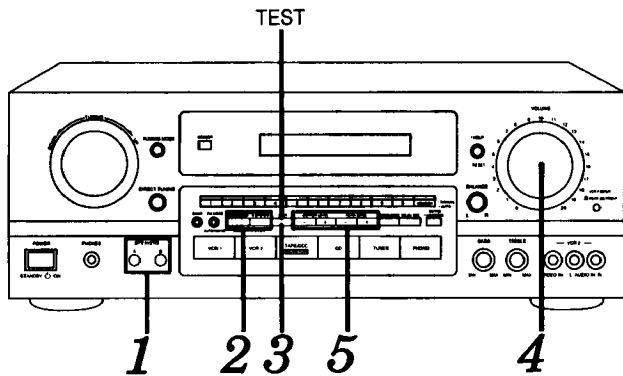**or**

3 STEREO For 3 STEREO mode

)*VCR 1* 3 STEREO CENTER NORMAL

Press once again to turn it off.

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

)*TEST* DOLBY SURROUND PRO·LOGIC NORMAL REAR

Test signal sounds sequentially as follows:

For SURROUND mode
Front speaker ———→ Center speaker
(left) |
↑   ↓
Rear speakers ←——— Front speaker
(left, right)   (right)

For 3 STEREO mode
Front speaker ———→ Center speaker
(left) |
└——— Front speaker (right) ←—┘

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

5/ CENTER LEVEL − + **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.

DOLBY SURROUND PRO·LOGIC
+3 dB NORMAL REAR

The output levels can be varied within a range of −12 dB to +12 dB according to the output levels from the front speakers.
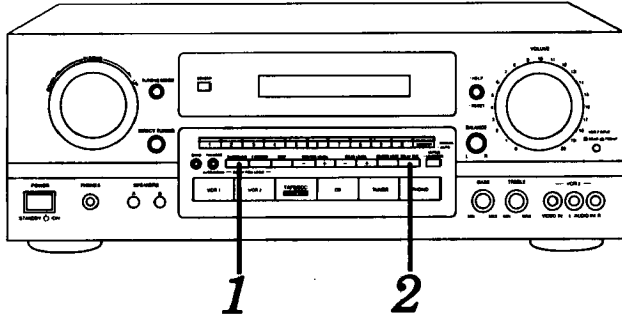
TEST **To stop the test signal**
Press TEST.

Adjusting the delay time

When enjoying with SURROUND only

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

1 SURROUND **Press SURROUND to turn on the SURROUND mode.**

VCR① DOLBY SURROUND
PRO · LOGIC

VCR 1 NORMAL
REAR − ▬ +

2 DELAY TIME **Press DELAY TIME to set to the suitable time.**

Illuminates

DELAY VCR① DOLBY SURROUND
PRO · LOGIC

15 ms NORMAL
REAR − ▬ +

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)

L₁

L₂
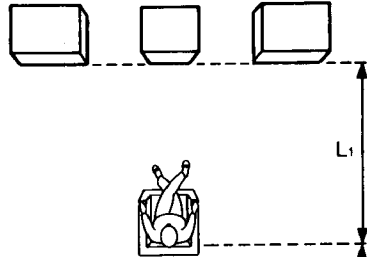
Rear speaker (L)   Rear speaker (R)

• 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
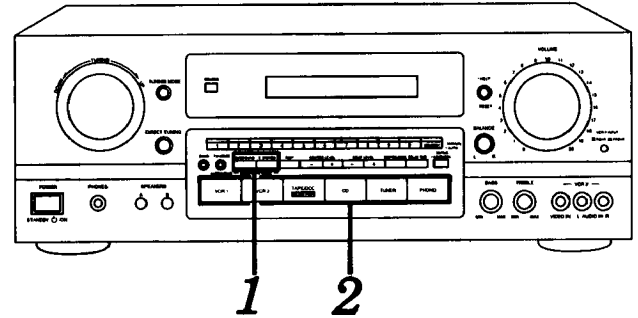
1 SURROUND **Press SURROUND or 3 STEREO to turn on the desired mode.**
For SURROUND mode

VCR① DOLBY SURROUND
PRO · LOGIC

or

VCR 1 NORMAL
REAR − ▬ +

3 STEREO For 3 STEREO mode

VCR①

VCR 1 DD 3 STEREO
NORMAL
CENTER − ▬ +

Press once again to turn it off.

2 VCR VCR PHONO **Select the desired source.**

3 **Start the desired source.**
Note
When employing SURROUND, use software which has been recorded with Dolby Surround.

23

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.).
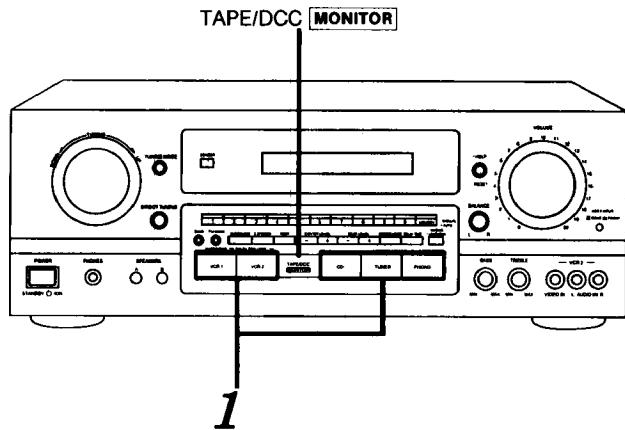See the tape deck's or DCC's operating instructions for details.

TAPE/DCC [MONITOR]

1

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".

Illuminates

AUTO QUARTZ LOCK [TAPE MONITOR] VCR①
MANUAL
LOCK
SPEAKERS STEREO
Ⓧ FM /079 MHz

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

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.).
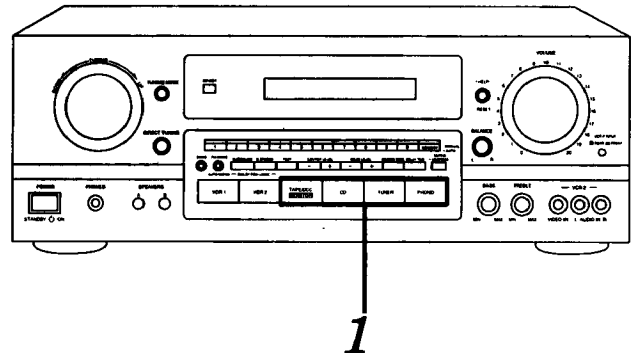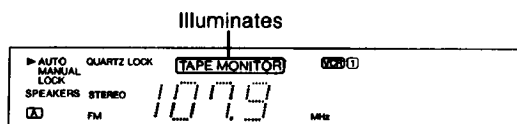See the VCR's operating instructions for details.

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.

Camcorder
(not included)

VIDEO OUT

AUDIO OUT

1/ VCR 2 — **Press VCR 2.**

SA-GX770 only

2/ VCR 2 INPUT ▮REAR ▬FRONT — **Press VCR 2 INPUT to select the VCR for playback.**

3/ **Begin recording on the VCR 1 and playback the tape on the VCR 2.**
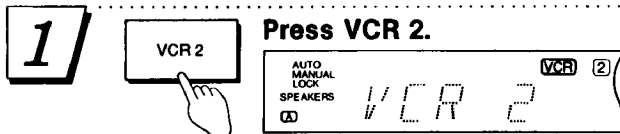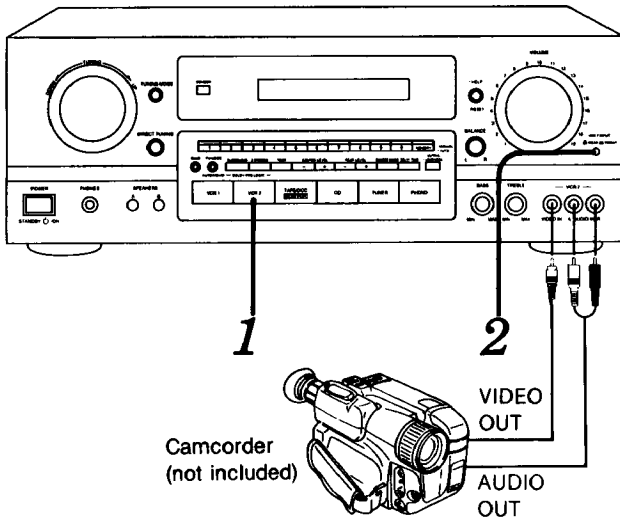
Follow your VCR's operating instructions.

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.).
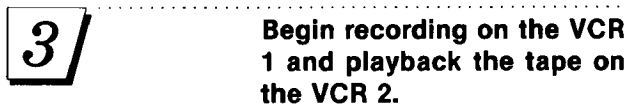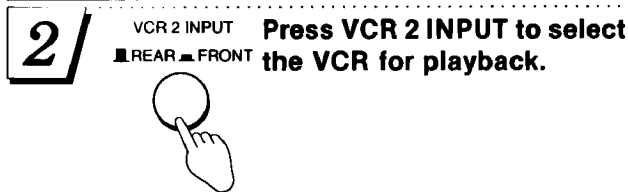See the VCR's operating instructions for details.

Camcorder
(not included)

VIDEO OUT

AUDIO OUT

1/ VCR 2 — **Press VCR 2.**

SA-GX770 only

2/ VCR 2 INPUT ▮REAR ▬FRONT — **Press VCR 2 INPUT to select the VCR for playback.**

3/ **Select the audio source to be recorded.**

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

5/ **Begin the audio source to be recorded and playback the tape on the VCR 2.**
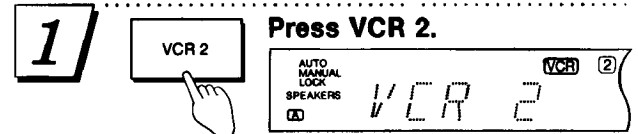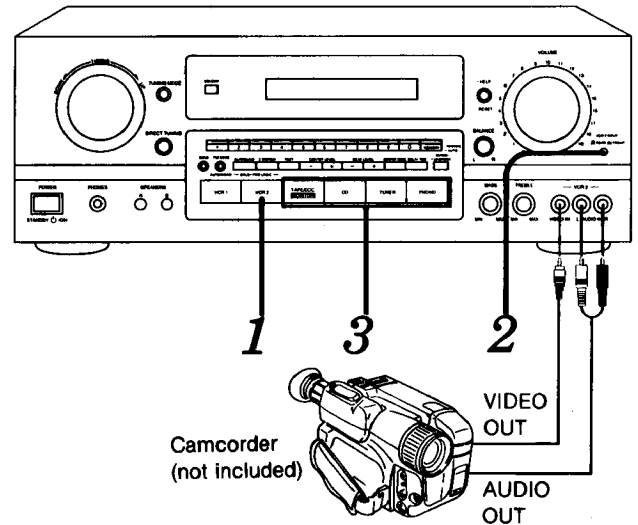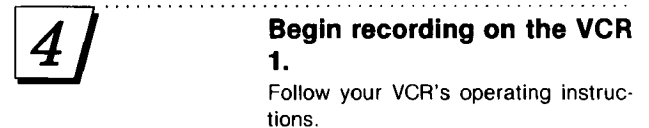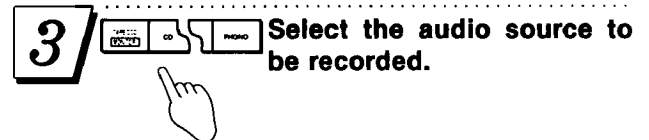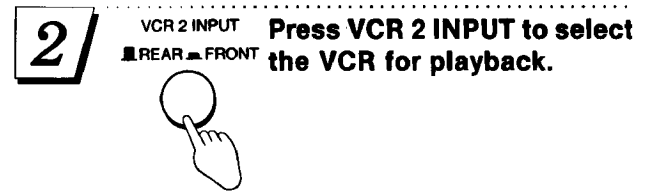
For your reference:
If a laser disc player is connected to the "VCR 2" terminals, recording a picture from the laser disc player is possible by following the above procedure.

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.
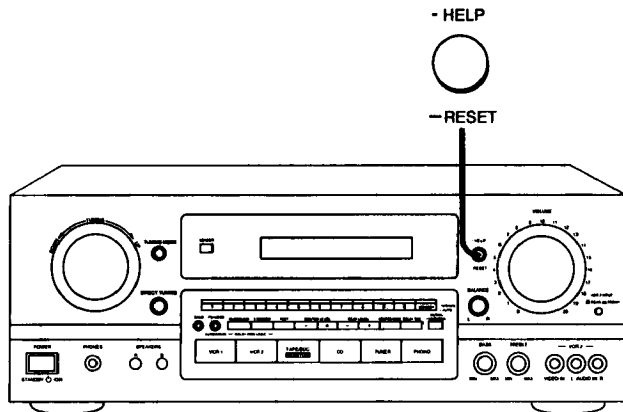
- HELP

— RESET

- HELP

Press -HELP momentarily.
The method for remedying this condition will be displayed.

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.

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

While listening to FM broadcasts

Problem	Probable cause(s)	Suggested remedy
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.	• Try reducing the treble sound by using the treble control. • Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
Noise is excessive in both stereo and monaural broadcasts.	Poor location and/or direction of the antenna.	
	Transmitting station is too far away.	
The FM stereo indicator or the quartz lock indicator flickers, without completely illuminating.	Poor location and/or direction of the antenna.	• Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
	Transmitting station is too far away.	
Excessive distortion in the sound of stereo broadcasts.	Nearby building or mountain.	

While listening to AM broadcasts

Problem	Probable cause(s)	Suggested remedy
An unusual "beat" sound is heard.	Unit is being used at the same time as the television set.	• Turn off the television set, or use this unit farther away from it.
	Interference from adjacent broadcast signal.	• Try reducing the treble sound by using the treble control.
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.	• Place the antenna connection wires and the power cord farther apart.
	The power supply frequency from the power cord is modulated and heard from the speakers.	• Install a special outdoor antenna.
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.).	• Try placing this unit farther away from such equipment. • Install noise-prevention equipment on this unit or on the electric appliance.

Problems noted at all times

Problem	Probable cause(s)	Suggested remedy
Power will not switch ON.	The power cord plug is not completely inserted.	• Confirm that the power cord plug is connected completely.
No sound is heard.	Both A and B speakers are turnd OFF.	• 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.
	The tape monitor function is ON.	
	The muting function is ON.	
	Connections are incomplete or incorrect to the speaker systems, etc.	• Check to be sure that all connection wires are correctly connected.
	The incorrect input selector has been pressed.	• Check to be sure that the correct selector is pressed.
Sound stops during a performance, or no sound is heard when the power is switched ON. (The word "OVERLOAD" appears on the display.)	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.	• Switch off the power, and after determining and correcting the cause, switch on the power once again. • Use a speaker system of the proper impedance rating.
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 turnd ON.	• Turn off the Dolby Pro Logic system or one of the speakers.
	When both A and B speakers are being used simultaneously, the Dolby Pro Logic system is turned ON.	• Turn off one of the speakers.

■ 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 Vp-p
Maximum input voltage	1.5 Vp-p

■ 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
Power supply   AC 120 V, 60 Hz
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:
1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.