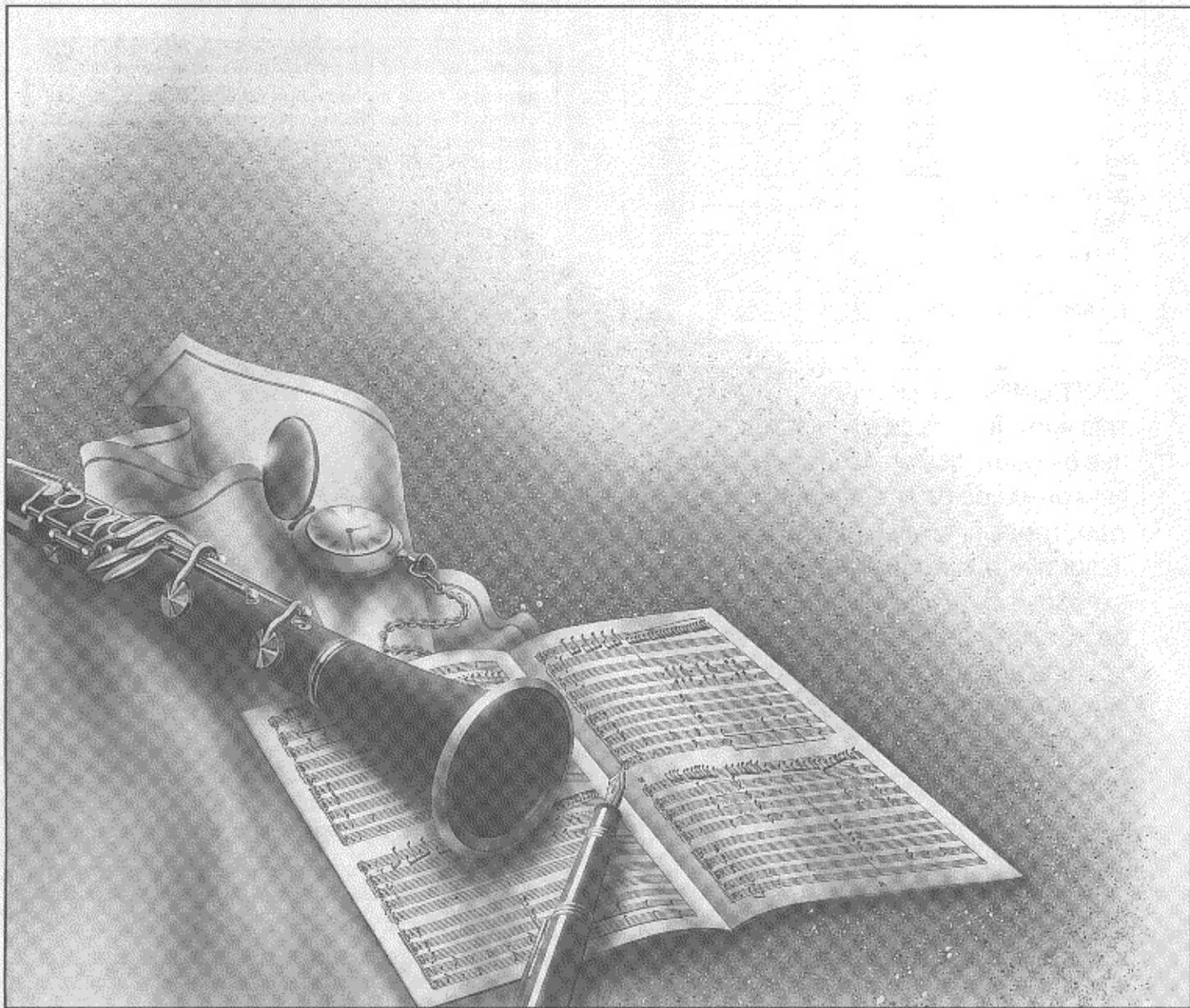# Technics®

Hi-Fi Component System

Operating Instructions

This manual explains the audio components of this system.

Model No. **SC-S345**

COMPACT disc DIGITAL AUDIO

Before connecting, operating or adjusting these components, please read these instructions completely.
Please keep this manual for future reference.

PC

Dear customer

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

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 keep for future reference.

MODEL NUMBER	SERIAL NUMBER
Receiver : SA-G90	
Graphic equalizer : SH-GE50	
Cassette deck : RS-TR180	
CD changer : SL-MC59	

User memo:

DATE OF PURCHASE _____
DEALER NAME _____
DEALER ADDRESS _____
_____
TELEPHONE NUMBER _____

CAUTION! (For SL-MC59)

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

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

WARNING:
TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPLIANCE TO RAIN, SPLASHING, DRIPPING OR MOISTURE.

Table of contents

Before use

Supplied accessories

Please check and identify the supplied accessories

☐ AC power supply cords
(long type) (RJA0065-A) ....1 pc.
(short type) (RJA0066-A) ....3 pcs.
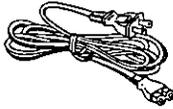
☐ Stereo connection cables
(RJL2P004B08)...5 pcs.

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

☐ AM loop antenna set (RSA0022)
AM loop antenna..1 pc.
AM loop antenna holder...............................1 pc.
Screw ....1 pc.
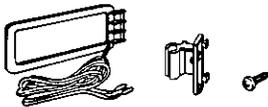
☐ Speaker cords
(REE0970) ....2 pc.

☐ Remote control
(EUR647132) ....1 pc.

☐ Batteries ....2 pcs.
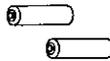
☐ Liner notes organizer
(RFA0622-K1)...1 pc.

☐ Numbered stickers sheet ....1 pc.
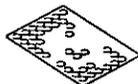
Use numbers indicated in parentheses when asking for replacement parts.

Before use

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.
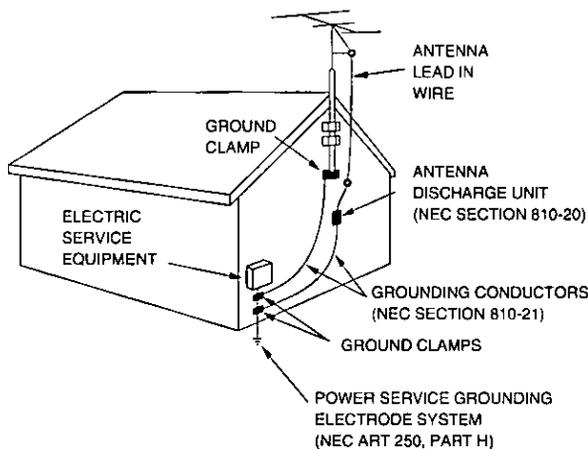3. **Power Cord Protection** – AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
4. **Nonuse Periods** – 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.


```
                          ANTENNA
                          LEAD IN
                          WIRE
            GROUND
            CLAMP
                          ANTENNA
                          DISCHARGE UNIT
   ELECTRIC                (NEC SECTION 810-20)
   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).

4. **Condensation** – Moisture may form on the lens in the following conditions...
   • immediately after a heater has been turned on.
   • in a steamy or very humid room.
   • when the unit is suddenly moved from a cold environment to a warm one.
   If moisture forms inside this unit, it may not operate properly.
   To correct this problem, turn on the power and wait about one hour for the moisture to evaporate.

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 magnetic fields.
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

(See page 60 for details.)
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 authorized service personnel.
   For the address of an authorized servicenter:
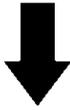   *In the U.S.A., call 1-800-211-7262 or*
   visit www.panasonic.com
   In Canada, call 905-624-5505 or
   visit www.panasonic.ca

To enjoy surround sound

Do the connections, settings, and adjustments in the order shown to enjoy surround sound with this unit's DSP features.

Connect the equipment
(➡ Page 7–10)

Center speaker

Front speaker (Left)

Front speaker (Right)

Subwoofer (not included)

30° 30°

120°

Surround speaker (Left)

Surround speaker (Right)

The front, center, and surround speakers should be placed at approximately the same distance from the listening position. The angles in the diagram are approximate.

Position and connect the speakers
(➡ Page 6, 11, 12)
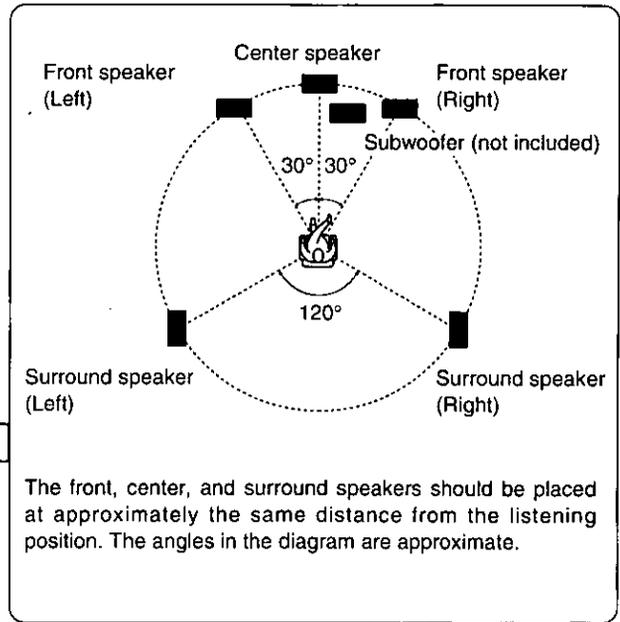
Set the distance of the speakers
(➡ Page 55, 56)

Front, Center, and Surround speaker In DISTANCE
Enter the distance of each speaker from the listening position.

Adjust the level for the speakers
(➡ Page 43, 45)

While sitting in the usual listening position, use the test signal to adjust the volume of the speakers to the same apparent level.

Sit back and enjoy the experience

A

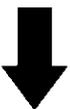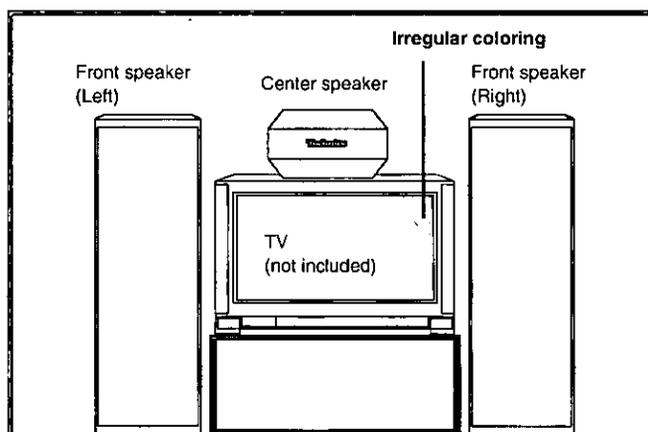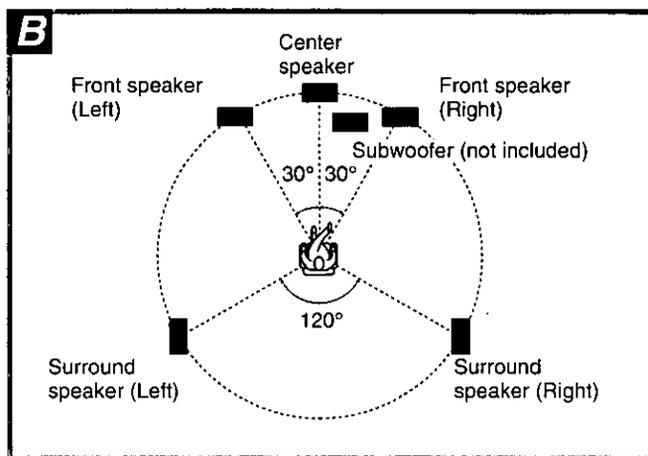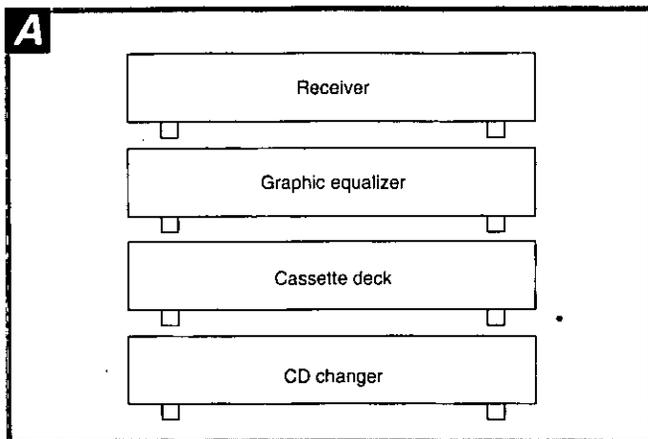| Receiver |
| Graphic equalizer |
| Cassette deck |
| CD changer |

B

Center speaker

Front speaker (Left) Front speaker (Right)

Subwoofer (not included)

30° 30°

120°

Surround speaker (Left) Surround speaker (Right)

Irregular coloring

Front speaker (Left) Center speaker Front speaker (Right)

TV (not included)

If irregular coloring occurs on your television

These speakers are designed to be used close to a television, but the picture may be affected with some televisions and set-up combinations.

If this occurs, turn the television off for about 30 minutes.

The television's demagnetizing function should correct the problem. If it persists, move the speakers further away from the television.

Placement

Placement of each unit **A**

Stack the units as shown in the illustration.

Placement of speakers **B**

The illustration shows where to place the speakers so as to best enjoy sound with the DSP modes.

Front speakers

Place on the left and right of the TV at seated ear height so that there is good coherency between the picture and sound.

Center speaker

Place underneath or above the center of the TV. Aim the speaker at the seating area.

Surround speakers

Place on the side of or slightly behind the listener, about one meter higher than ear level.

Subwoofer

The subwoofer can be placed in any position as long as it is at a reasonable distance from the TV.

Note that some experimentation can yield the smoothest low frequency performance. Placement near a corner can increase the apparent output level, but can result in unnatural bass.

The sound reproduced by a speaker is easily influenced by such factors as room acoustics and the system's location in the room. Before finally deciding where the speakers are to be placed, please read the following information carefully.

● The bass sound will be increased if the speakers are placed on the floor or close to a wall due to reverberation.
   It is therefore possible to adjust the bass sound to some extent by adjusting the speaker's distance from the wall and/or floor.
● Undesirable resonance or reverberation will occur if the speakers face a hard wall or window. Curtains or similar materials can be used to prevent this.
● Keep the speakers away from sources of heat, high humidity and direct sunlight.

Note

● Keep your speakers at least 10 mm (13/32") away from the system for proper ventilation.

Cautions on moving the CD changer

Before moving the changer to another location, be sure to remove all discs from the slots and turn off the changer.

Failure to do so will expose the compact discs and the changer to the risk of severe damage.

CAUTION

The changer mechanism automatically locks when power is turned off, to protect it against damage in transport.
Therefore, always press [POWER] and make sure "OFF" appears on the display before you unplug the changer.

Other cautions

Outside light or noise may sometimes cause the changer to detect a disc when there isn't one. However, the changer always correctly detects the disc when in the play mode no matter what.

Do not leave the front panel open. Dust or other matter getting into the changer may lead to damage or malfunctions.

Connecting system components

Receiver (SA-G90)

TAPE, EQ switch

Graphic equalizer (SH-GE50)

[TAPE]
REC PLAY
(OUT) (IN)

IN   OUT
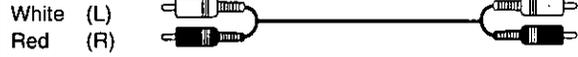[EQ]

REC(IN) PLAY(OUT)
[TAPE]

Cassette deck (RS-TR180)

[CD]

CD changer (SL-MC59)

Cooling fan

AC OUTLETS

AC IN~

AC IN~
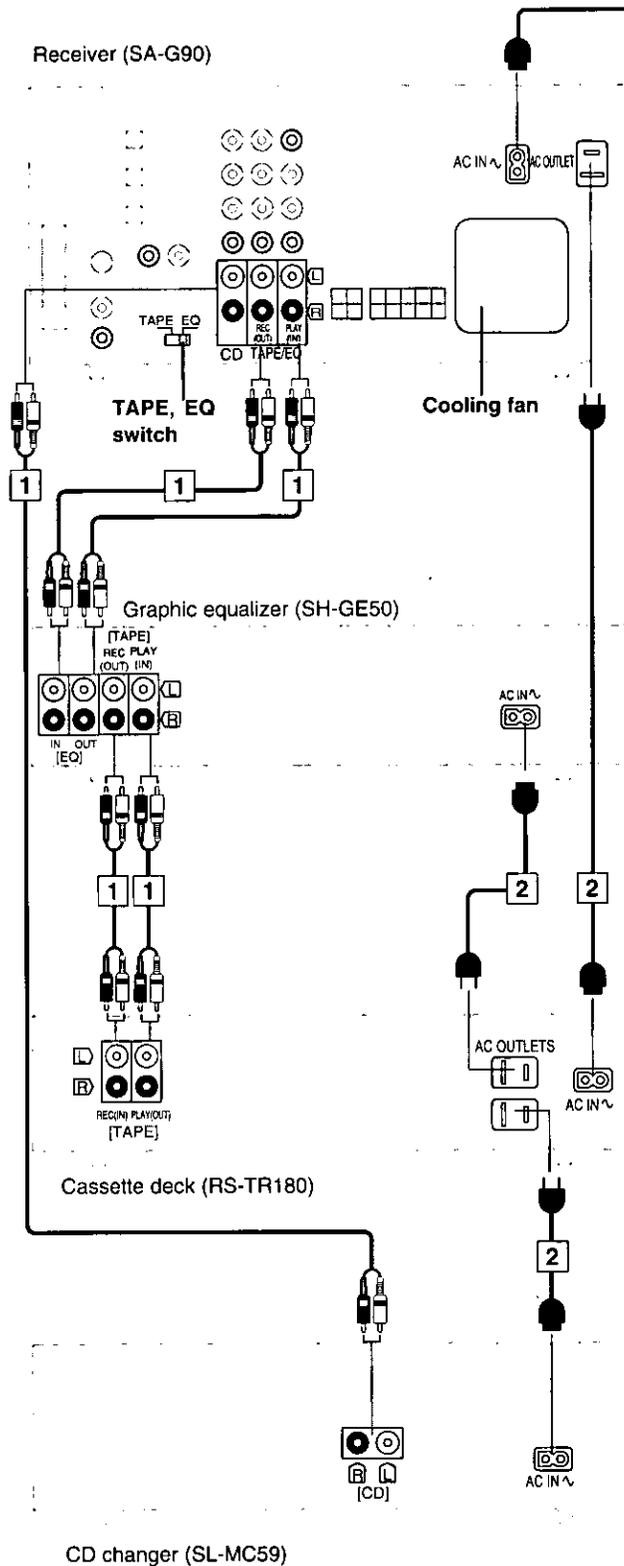
Stereo connection cable (included)
White   (L)
Red   (R)

Make connections to each component with the included cords and cables.

1 Connect the stereo connection cables (5 pcs.).

2 Connect the AC power supply cords (short type) (3 pcs.).

3 Connect the AC power supply cord (long type) (1 pc.).

AC outlets of each unit
Do not connect video equipment (such as a TV, etc.) to these outlets. (These outlets are intended for audio equipment.)
Do not exceed the indicated power ratings when connecting to these outlets.
"SWITCHED" outlet
Power is controlled by the power switch.
"UNSWITCHED" outlet
Power is always available, regardless of power switch.

TAPE, EQ switch
Make sure this is switched to EQ.
Distortion can occur if TAPE, EQ is switched to TAPE.
Cooling fan
The cooling fan operates only at high output power levels.

Note

The included AC power supply cord is for use with this unit only. Do not use it with other equipment.

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

Household AC outlet
(AC 120 V/60 Hz)

Conserving power
This system consumes 1 W even when it is turned off with [POWER, ⏻/I] on the receiver.
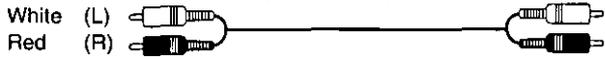To save power when the unit is not to be used for a long time, unplug it from the household AC outlet.
If the receiver is left unplugged for longer than a few weeks, all settings will revert to the factory settings. Do the settings again if this occurs.

Before use

Connections

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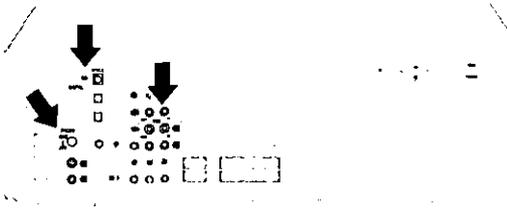White (L)
Red (R)

Optical fiber cable (not included)

For details, refer to the instruction manual of the unit to be connected.

Connecting audio and video equipment

Receiver

CD player (or CD changer) with digital output (not included)

VCR (not included)

AUDIO IN

AUDIO OUT

VIDEO IN

VIDEO OUT
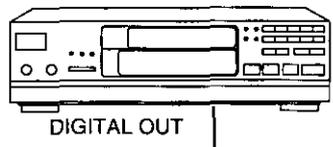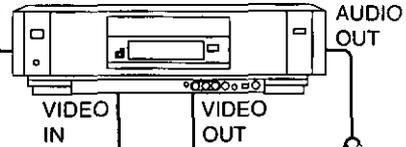
DIGITAL OUT

Connection for optical fiber cable

Dust-protection cap

- Do not bend the optical fiber cable.
- If the digital optical connector is not going to be used, be sure to attach the dust-protection cap to prevent exposure to dust.

Note

Dolby Digital RF (radio frequency) signals cannot be decoded with this unit.
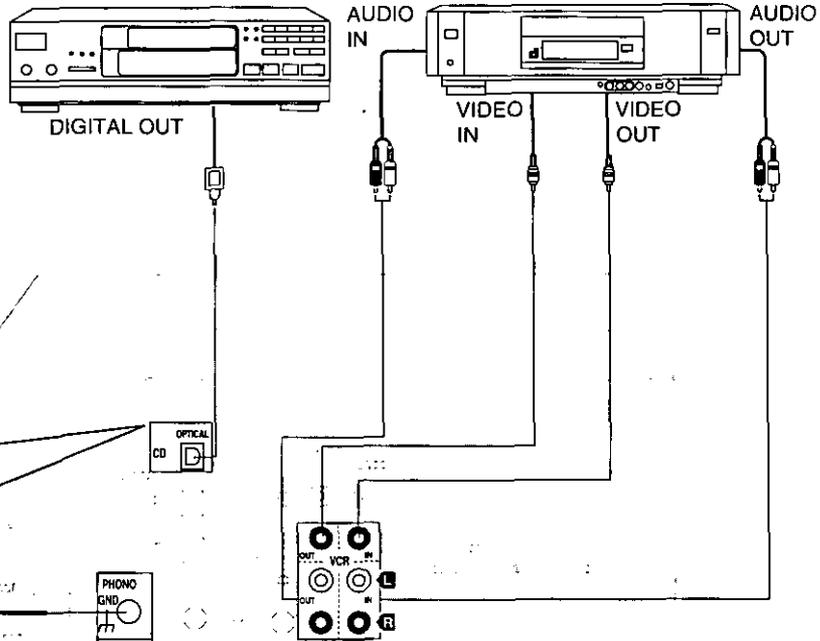
Only for turntable with ground terminal.

GND   OUTPUT

Turntable (not included)

RQT5536

Video connection cable (not included)

DIGITAL
OUT

DVD player (DVD-RV30)
(not included)

Receiver

AUDIO
OUT

VIDEO
OUT
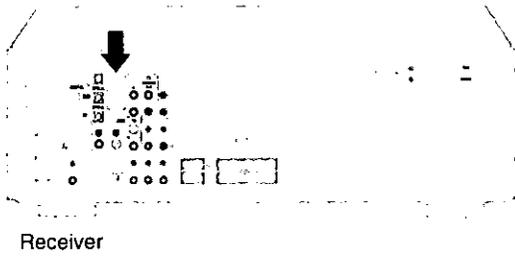
Note

Use digital connection to enjoy Dolby Digital
or DTS (➡ page 42).
Analog connection is necessary if you intend
to record the source (➡ page 39).

DIGITAL OPTICAL
DVD

OPTICAL
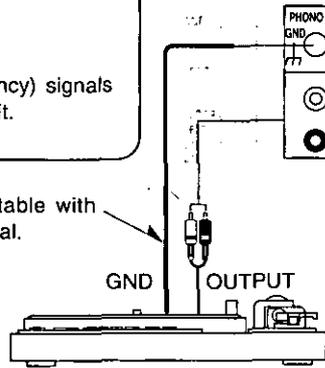TV

TV
MONITOR
OUT

R   L

DVD   TV

or

VIDEO
IN

DIGITAL
OUT

AUDIO
OUT

VIDEO
OUT

VIDEO
OUT

Satellite receiver, etc.
(not included)

AUDIO
OUT

TV or TV monitor
(not included)
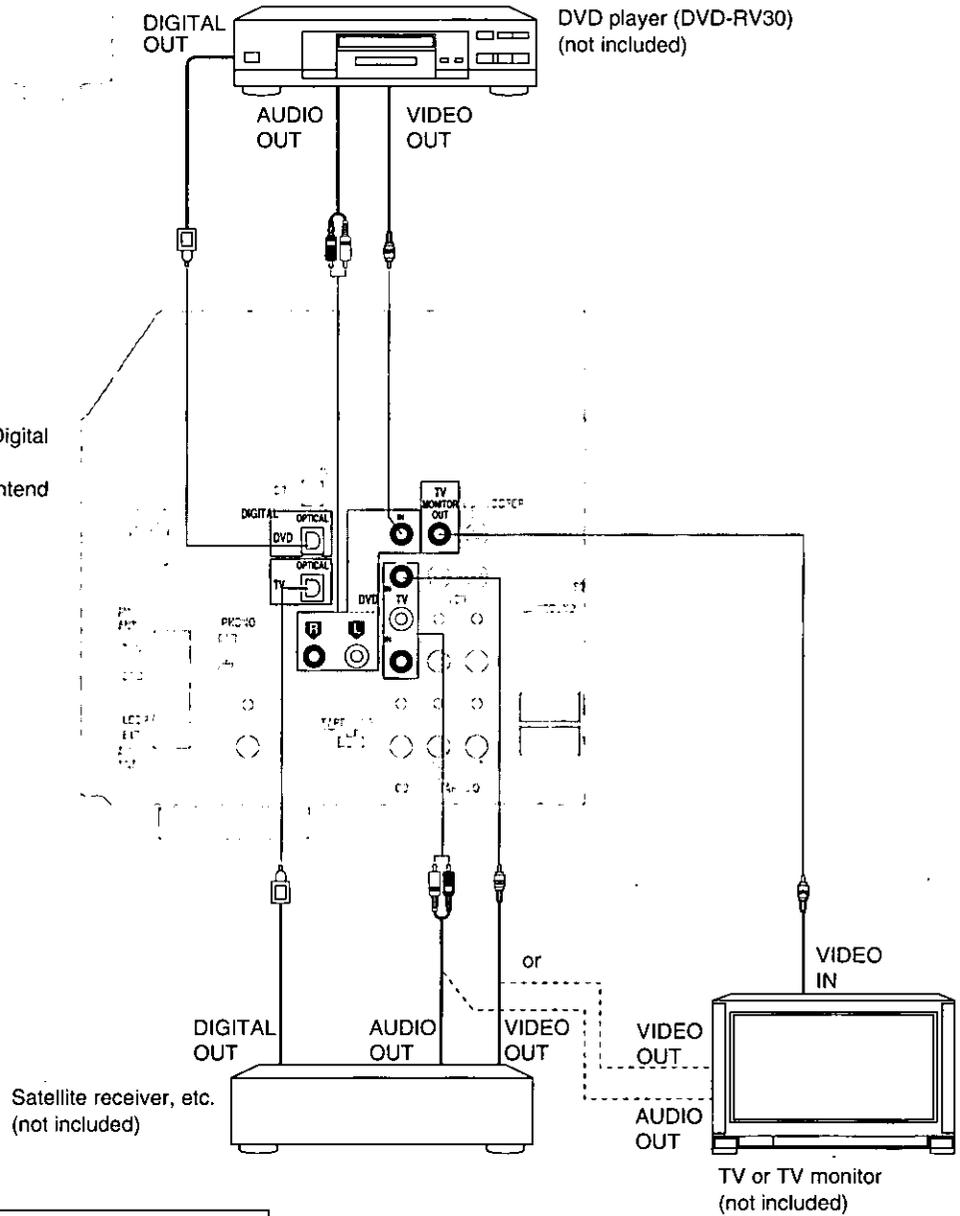
CAUTION

Do not place anything on top of the receiver or block the heat
radiation vents in any way.
In particular, do not place tape decks or CD/DVD players on the
receiver as heat radiated from it can damage your software.
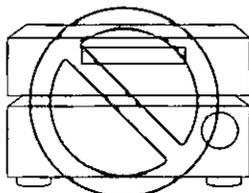
NO

Antenna connections

AM loop antenna
- Fit the AM loop antenna holder (included) onto the rear panel of this unit and then attach the AM loop antenna to the AM loop antenna holder (facing in the direction of best reception).
- Keep loose antenna cord away from other wire cords or a tapedeck.

Receiver

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

Screw
(included)
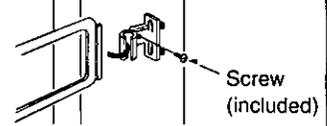
FM antenna
Fix the other end of the antenna where reception is best.

FM indoor antenna (included)

Adhesive tape
(not included)

AM loop antenna
(included)

FM
ANT
75Ω
GND
LOOP
EXT
AM
ANT

① ② ③
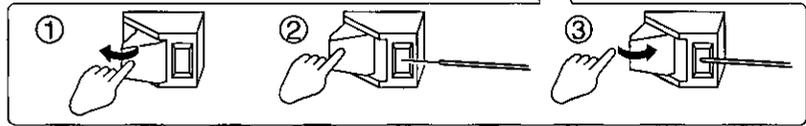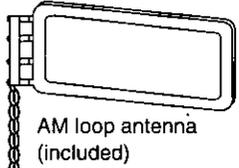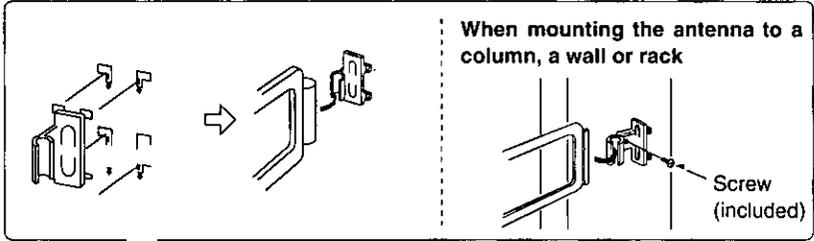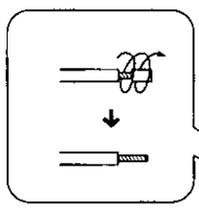
To connect an outdoor antenna

FM antenna
- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.
- Twist the coaxial cable's shield braid firmly and connect it to the GND terminal.

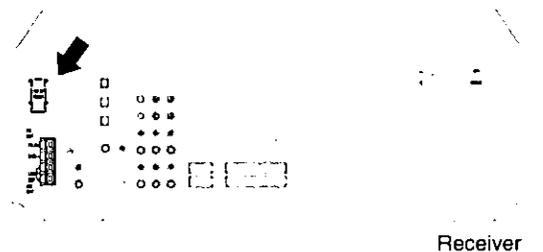#### AM loop antenna
- Run a piece of vinyl wire horizontally across a window or other convenient location.
- Leave the loop antenna connected.
- Disconnect the antenna when the unit is not in use. Do not use the antenna during an electrical storm.

FM outdoor antenna
(not included)

75 Ω coaxial cable
(not included)

20 mm (25/32")

Shield braid

10 mm (3/8")

Core wire

├──── 5–12 m ────┤
(16–40 ft)

Vinyl-covered wire
(not included)

LOOP ANT
HOLDER

FM
ANT
75Ω
GND
LOOP
EXT
AM
ANT

Before use
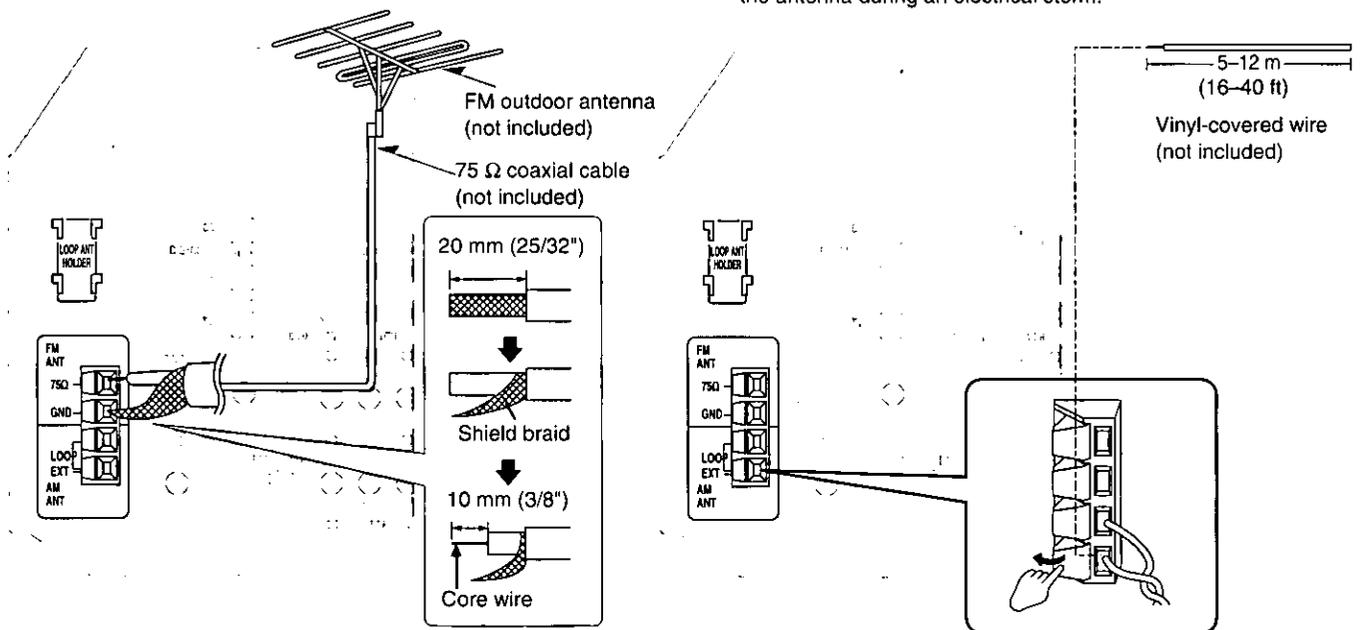
Speaker set-up

Attach the rubber feet to the speaker (small speaker)

Standing **Lying down**
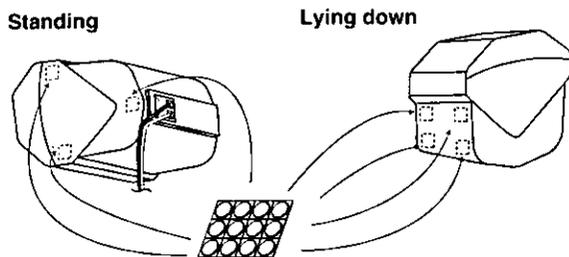
Attach these rubber feet to prevent vibration causing the speakers to move or fall over. The three small speakers can be set-up either standing or lying down.

Attaching to a wall (small speaker)

To attach vertically

Rubber feet

Screw

30-35 mm
(1-3/16" to 1-3/8")

φ 7.5-9.5 mm

7-9 mm
(9/32" to 23/64")

106 mm
(4-11/64")

Rubber feet

Screw

To attach horizontally

Screws

106 mm
(4-11/64")

Rubber feet

30-35 mm
(1-3/16" to 1-3/8")

φ 7.5-9.5 mm

7-9 mm
(9/32" to 23/64")
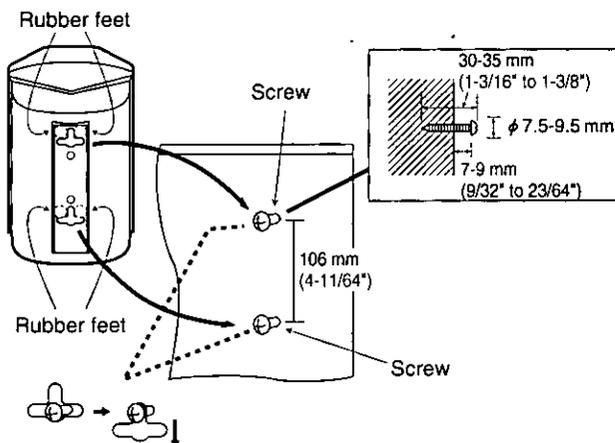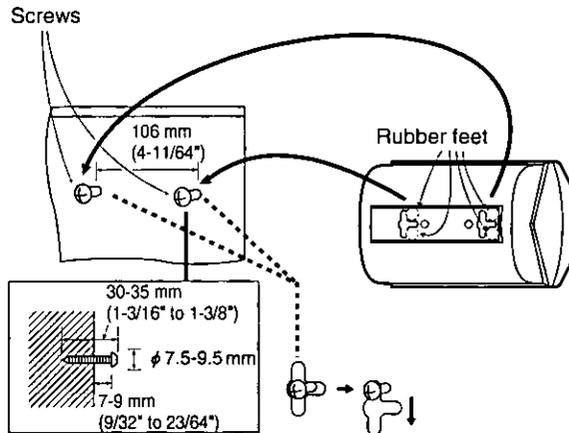
Note

Attach four rubber feet to each speaker, ensuring they do not cover the holes. Screw the wood screw into a thick and hard part of the wall.
The surface you attach the speakers to must be able to support over 10 kg (22 lb). Consult your dealer for details.

Attaching to speaker stands (small speaker)

Ensure the following conditions are met when you purchase your speaker stands.

- Screw; diameter: 5 mm, pitch: 0.8 mm, length: thickness of stand plate plus between 7 and 10 mm.
  Distance between the centers of the holes; 60 mm
- The stands must be able to support over 10 kg (22 lb).
- The stands must be stable even if the speakers are in a high position.

5 mm, Pitch 0.8 mm

60 mm
(2-23/64")
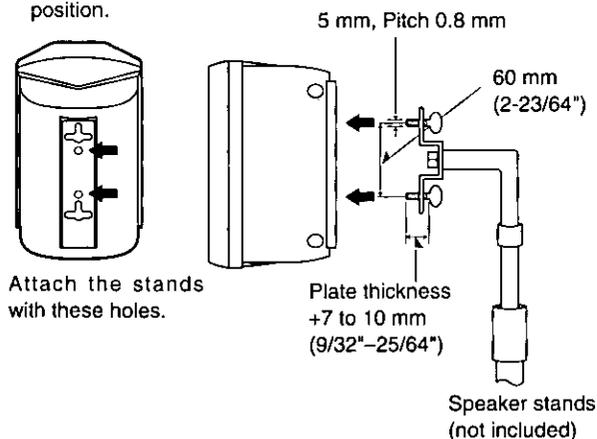
Attach the stands with these holes.

Plate thickness
+7 to 10 mm
(9/32"–25/64")

Speaker stands
(not included)

Moving the brand plate (small speaker)

You can turn the brand plate if you want to set up the small speakers laying on their sides.
Ensure the plate doesn't get caught on the net when you turn it.

Technics ⇨ Technics
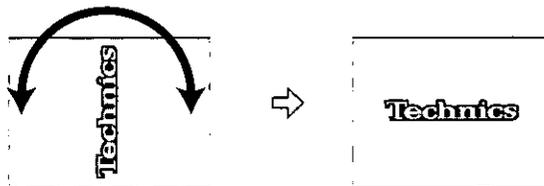
⚠ Caution

- **Use the speakers only with the recommended system. Failure to do so may lead to damage to the amplifier and/or the speakers, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.**
- **Do not attempt to attach these speakers to walls using methods other than those described in this manual.**

Speaker connections

Front speakers

SUBWOOFER

Front speaker (Right)

Front speaker (Left)

SPEAKERS

SURROUND   CENTER   FRONT

Speaker cable
(included)

Speaker cable
(included)
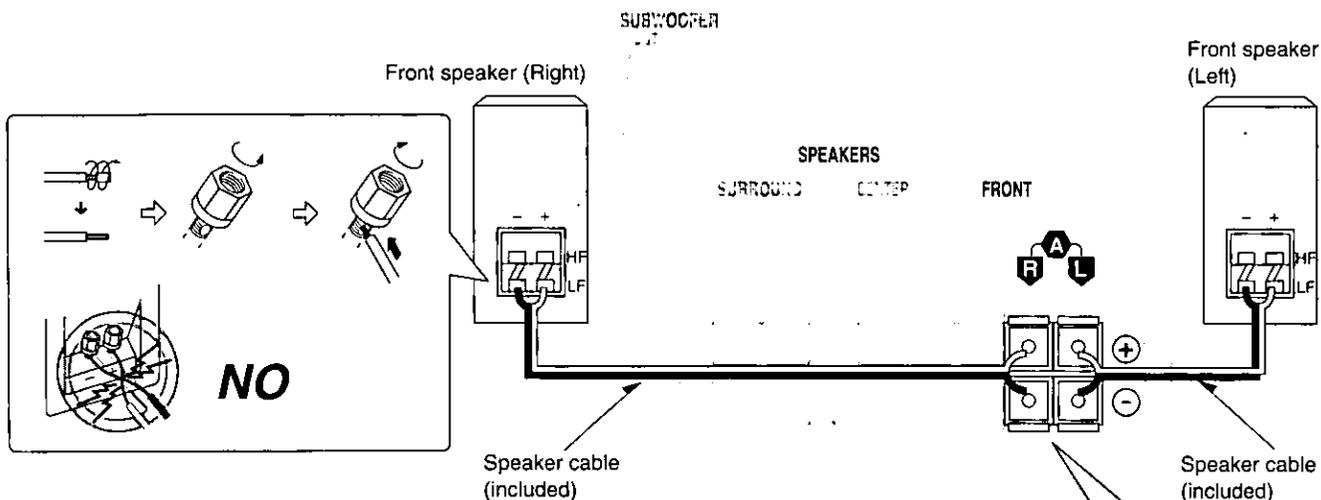
■ Protection circuitry
(For front speakers)

These units incorporate speaker protection circuitry to protect the
speaker from damage caused by excessive input or abnormal
signals; when excessive input is detected, input is automatically
interrupted.

● **If sound is interrupted or changed...**
1. Reduce the volume of the receiver.
2. Check the sound source and connections for any problems.
   If there is no problem, the protection circuitry will reset in a few
   minutes.

● **After the protection circuit is reset...**

Take care not to turn the receiver's volume up too high.

1   2   3   **NO**

Center and surround speakers

Surround speaker (Left)

SUBWOOFER
OUT

Center speaker

Surround speaker
(Right)

Speaker cables

SPEAKERS

SURROUND   CENTER   FRONT

Speaker cable
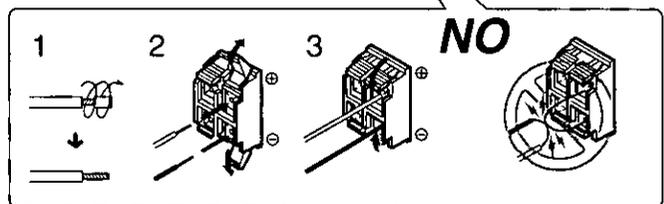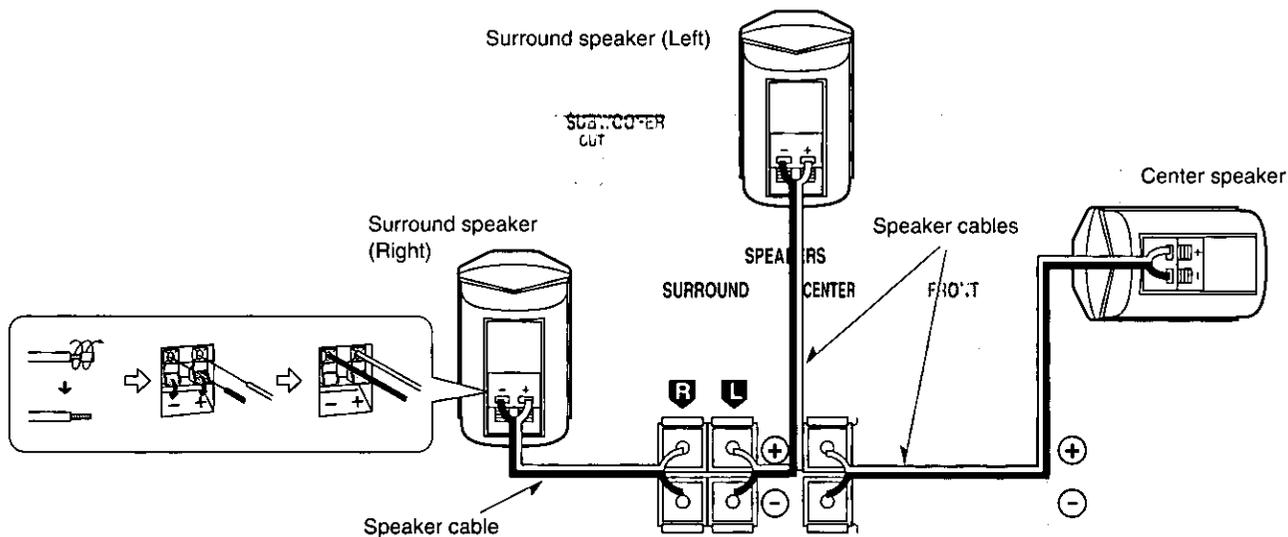
Concerning the remote control

A

(R6, AA, UM-3)

B

Receiver

Cassette deck

CD changer

Remote control signal sensor

About 7 meters (23 ft.) in front of the signal sensor. (The actual range will depend on the angle at which the remote control is used.)

Transmission window

30° 30°

C

Liner

Numbered sticker

Put two liners back-to-back inside each pocket, as shown above.
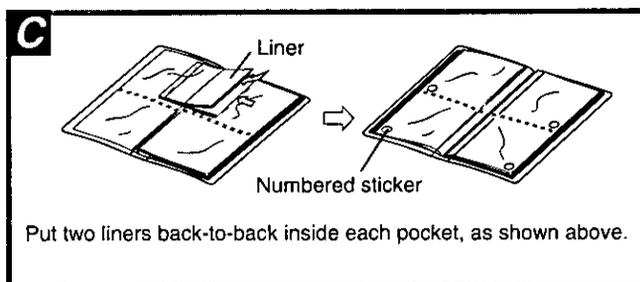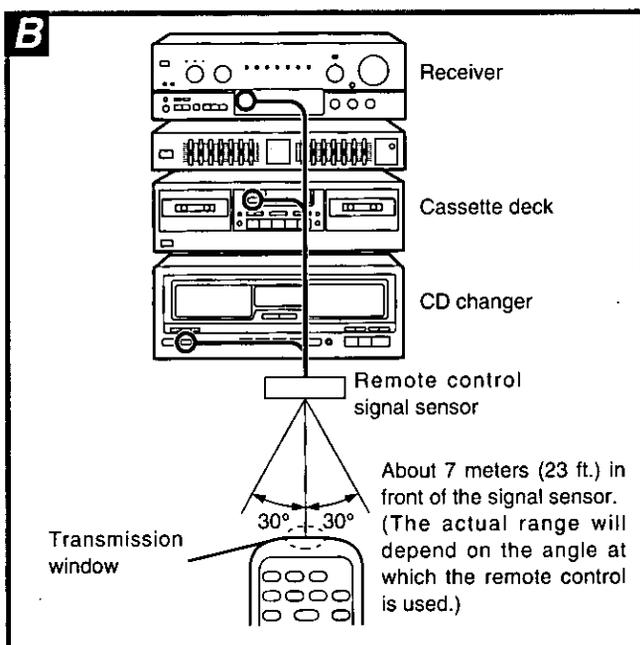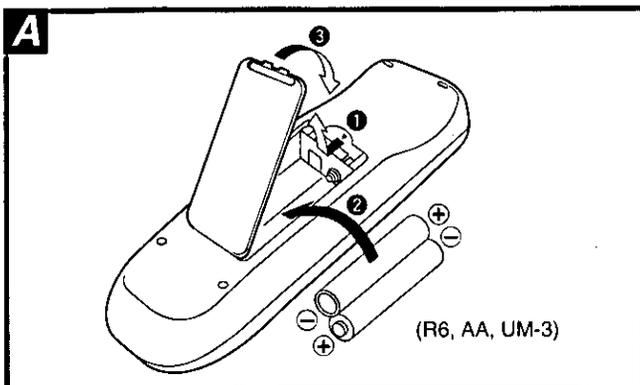
Battery installation [A]

Use of batteries

● Align the poles (+ and –) properly when inserting the batteries. Press in and down towards the minus end.
● Do not mix old and new batteries or different types of batteries.
● Do not recharge ordinary dry cell batteries.
● Do not heat or disassemble the batteries. Do not allow them to contact flame or water.
● Remove the batteries if the unit is not to be used for a long time.
● Do not keep together with metallic objects such as necklaces.
● Do not use rechargeable type batteries.
● Do not use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
If electrolyte leaks from the batteries, consult your dealer.
Wash thoroughly with water if electrolyte comes in contact with any part of your body.

Correct method of use [B]

Operation notes

● Do not place obstacles between the remote control signal sensor and remote control unit.
● Do not expose the remote control signal sensor to direct sunlight or to the bright light of a fluorescent light.
● Take care to keep the remote control signal sensor and end of the remote control unit free from dust.
● If this system is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote control a shorter distance from the system.

To prevent damage

● Never place heavy items on top of the unit.
● Do not disassemble or reconstruct the unit.
● Do not spill water or other liquids into the unit.

Concerning the liner notes organizer [C]

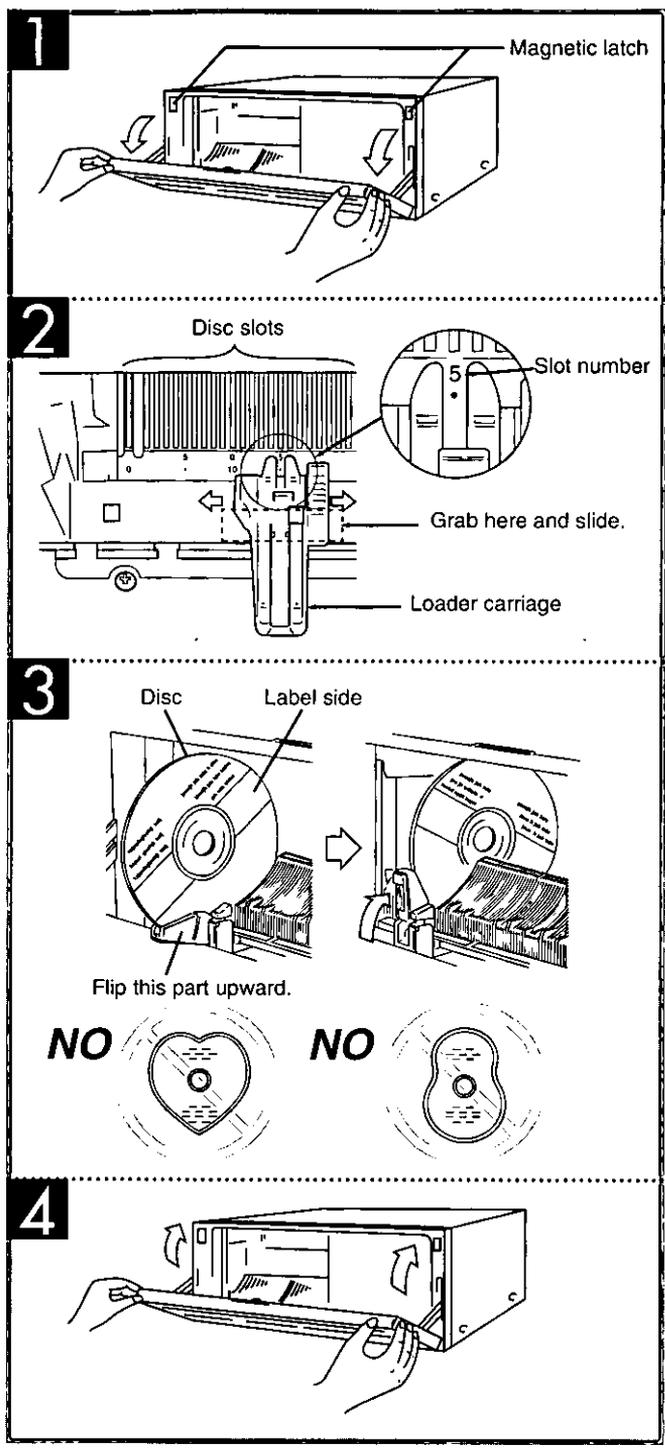Your changer comes with a liner notes organizer in which you can keep your CD liners. There are also numbered stickers to indicate slot numbers in the binder. This is a convenient way to keep track of what disc is in what slot.

1 — Magnetic latch

2 — Disc slots / Slot number / 5 / Grab here and slide. / Loader carriage

3 — Disc / Label side / Flip this part upward. / NO / NO

4

How to set discs **A**

1 **Pulling gently from both ends, open the front panel.**

Caution
- Except when setting or removing discs, keep hands out of the changer while open. You could injure yourself if somehow entangled in the internal mechanism.
- Keep cassette tapes away from the magnetic latches.

2 **Slide the loader carriage to the slot No. where the disc is to be inserted.**

Note

Slot No. 0 (SINGLE) is reserved for single disc play. (➡ page 25.)

3 **Set the disc on the loader and flip the loader upwards.**

Caution
- Do not use 3" (8 cm) discs fitted with expander rings. Expander rings could damage the disc slots.
- Do not use cleaning discs or warped discs. All of these could damage your changer.
- Do not use discs with poorly attached labels or stickers. Adhesive protruding from peeled off stickers can cause the changer to malfunction.
- Do not use irregular shape CDs (heart-shape, octagonal, etc.).
- Do not put anything other than discs in the changer.

4 **Close the front panel gently.**

Note

If you leave the front panel open while a disc is in play, the changer will stop when the disc is finished.

How to remove discs **B**

1. **Open the front panel.**
2. **Slide the loader carriage to the slot you want.**
3. **Press the eject button on the loader carriage.**

Special notes

You can set and remove discs while another disc is playing.
- Do not set a disc in the slot of the disc being played (slot flashes). The disc in play is returned to its slot when finished. If two discs somehow jam the slot, they could be damaged. When this happens, the message "TAKE OUT" will appear on the display. Remove the disc that doesn't belong in the slot and press the stop button.
- Do not open the CD front panel and press the eject button when "CHECKING DISCS" appears in the display. The CD mechanism will be damaged if the eject button is pressed at this time.
- Sometimes the front panel cannot be opened while a disc is playing. In such case, wait until you can open it.

B

Loader carriage   Eject button

A

NO NO

B How to hold CDs

OK NO

Do not touch the recorded surface.

C How to clean CDs

OK NO

Wipe from inside outward

D How to take up tape slack

E To protect tapes against further recording

Side A

Tab for side "B"   Tab for side "A"

To re-record

Normal position tape   High-position tape

Detection hole
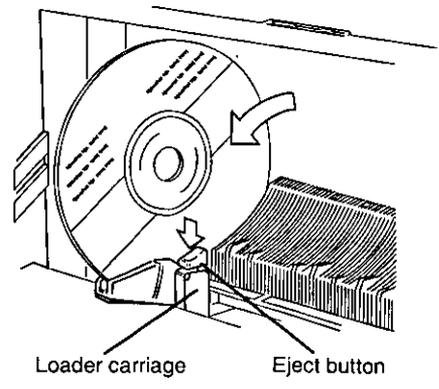
Concerning CDs

With this changer, you can only play CDs having this mark:
However, do not use irregular shape CDs. CDs of the sort can damage the unit. (**A**)

COMPACT
disc
DIGITAL AUDIO
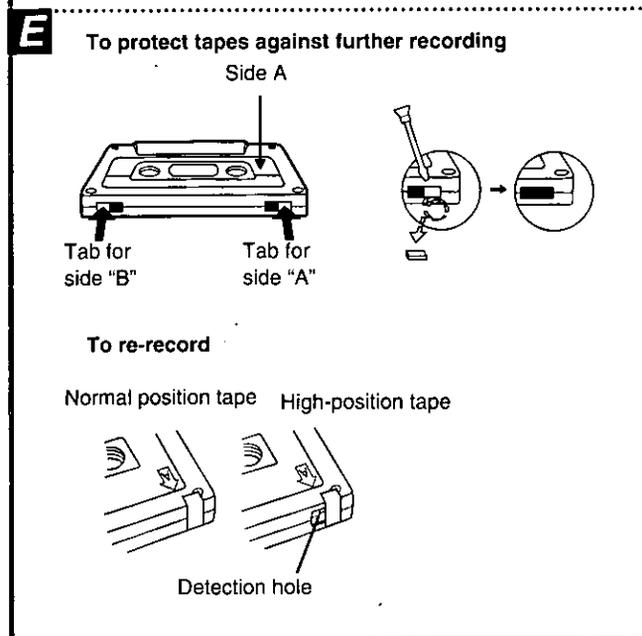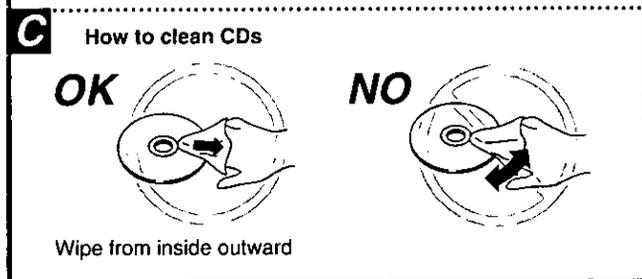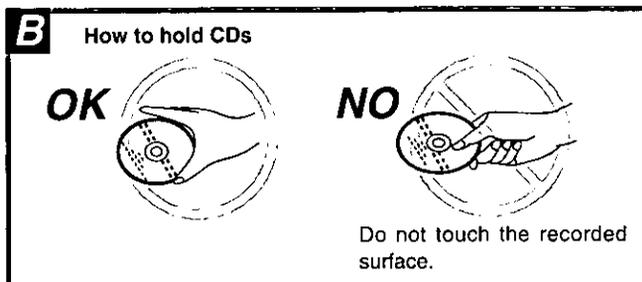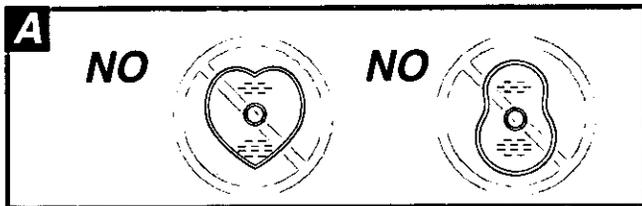
Handling precautions **B** – **C**

- If you are taking the CD from a cold to a warm environment, moisture may form on the CD. Wipe this off with a soft, dry, lint-free cloth before using the CD.
- Do not write on the label side with a ball-point or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not attach labels or stickers to CDs. (Do not use CDs with exposed adhesive from tape or left over peeled off stickers.)
- Do not use scratch-proof protectors or covers other than those specified for use with this system.
- Do not use CDs printed with label printers available on the market.

Storage precautions

Be sure to store CDs in their cases to protect them from dust, scratches, and warping.

Do not place or store CDs in the following places
- Locations exposed to direct sunlight
- Humid or dusty locations
- Locations directly exposed to a heat vent or heating appliance
- In the glove compartment or on the rear deck of an automobile

Concerning cassette tapes

Selection of cassette tapes

Tapes can get caught on the capstans. Use caution with the following types of tapes.

Cassette tapes exceeding 100 minutes
These tapes are made of a thin film material. Do not repeatedly advance and stop the tape, fast-forward it or rewind it.

Endless-tapes
For this unit, it is recommended to use tapes which are appropriate to the auto reverse mechanism.

Always read the instructions provided with your tapes.

Tape slack **D**

Tape slack may cause the tape to break.

Erasure prevention **E**

Use a screwdriver or similar object to break out the tab.

To re-record on a protected cassette
Cover the hole with adhesive tape.
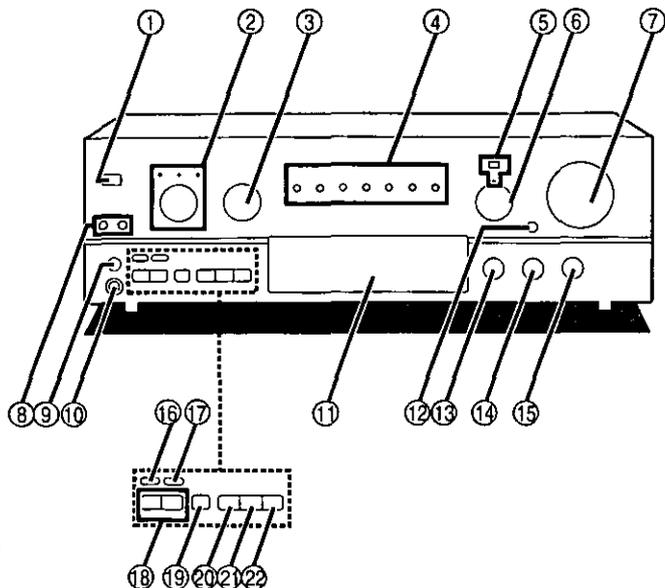Do not cover the detection hole on high-position tapes.

Storage precautions

Do not place or store tapes in the following places;
- In high temperature (95°F/35°C or higher) or high humidity (80% or higher) areas
- In a strong magnetic field (near a speaker, on top of a TV, etc.) This can erase a recording.
- Locations exposed to direct sunlight
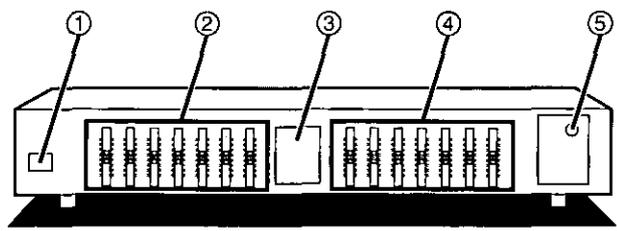
Front panel controls

A

No.	Name	Ref.page

Receiver   **A**

① **Power " ⏻/|" switch (POWER, ⏻/|)** **18**
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of
power.

② **DSP mode selector (DSP)**..**42**

③ **SFC mode selector (SFC MODE)** **44**

④ **Input indicators (INPUT)**

⑤ **Digital input select button/indicator
(DIGITAL INPUT)**..**22**

⑥ **Input selector (INPUT SELECTOR)**.....................**18**

⑦ **Volume control (VOLUME)** **18**

⑧ **Speaker select buttons (SPEAKERS A, B)** **18**

⑨ **Help/reset button (-HELP, -RESET)** **60**

⑩ **Headphones jack (PHONES)**....................................**37**

⑪ **Display**

⑫ **Tape monitor button (TAPE MONITOR)** **18**

⑬ **Bass control (BASS)**..**37**

⑭ **Treble control (TREBLE)** **37**

⑮ **Balance control (BALANCE)** **37**

⑯ **Digital signal processor on/defeat button
(-DSP ON/DEFEAT)**..**18**

⑰ **Subwoofer button (SUBWOOFER)** **38**

⑱ **Tuning buttons (TUNING ∨, ∧)** **18**

⑲ **Presetting button (PRESET)**....................................**21**

⑳ **Band select button (BAND)** **18**

㉑ **FM mode select button (FM MODE)**...........................**18**

㉒ **Memory button (MEMORY)**......................................**20**

Graphic equalizer   **B**

① **Power switch (POWER, ▣ OFF ▬ ON)**.....................**46**

② **Left channel band-level controls/indicators**.............**39**

③ **Signal level display (SIGNAL LEVEL)** **46**

④ **Right channel band-level controls/indicators** **39**

⑤ **Input select button (INPUT SELECTOR)** **18**

B

A

B

C

Disc slot for
single disc play

No.	Name	Ref.page

Cassette deck **A**
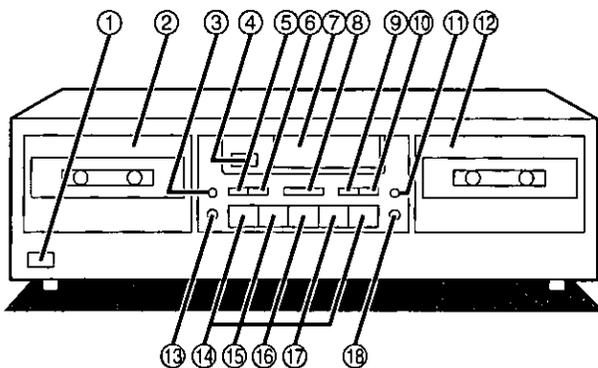
① **Power "STANDBY ○/ON" switch
(POWER, STANDBY ○/ON)**..............................**33**
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of
power.

② **Cassette holder for deck 1**

③ **Counter reset button (COUNTER RESET)**................**36**

④ **Remote control signal sensor (SENSOR)**................**13**

⑤ **Synchro-start button (SYNCHRO START)**................**40**

⑥ **Tape-to-tape recording-speed button
(SPEED NOR/HI)**..**40**

⑦ **Display**

⑧ **Tape deck select button (DECK 1/2)**........................**34**

⑨ **Dolby noise-reduction button (DOLBY NR)**..............**33**

⑩ **Reverse-mode select button (REVERSE MODE)**.....**33**

⑪ **Rec pause button (● REC PAUSE)**.........................**39**

⑫ **Cassette holder for deck 2**

⑬ **Open button for deck 1 (▲ OPEN)**...........................**33**

⑭ **Rewind/fast-forward buttons (◄◄, ►►)**...................**36**

⑮ **Reverse-side playback button (◄)**...........................**33**

⑯ **Stop button (■)**..**33**

⑰ **Forward-side playback button (►)**...........................**33**

⑱ **Open button for deck 2 (▲ OPEN)**...........................**39**
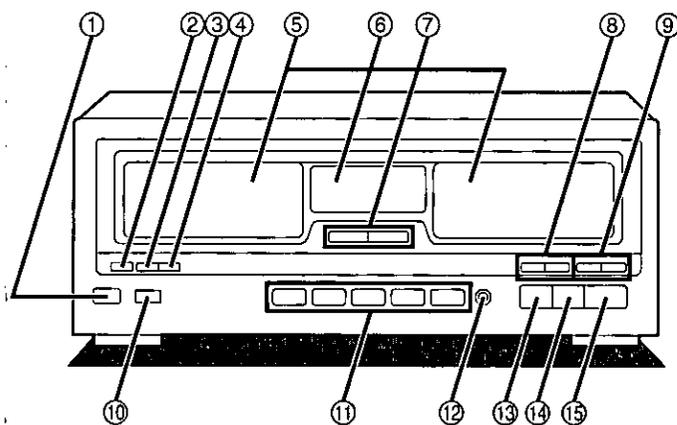
CD changer **B**

① **Power "STANDBY ○/ON" switch
(POWER, STANDBY ○/ON)**....................................**22**
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of
power.

② **Single disc play button (SINGLE ►)**.....................**25**

③ **Direct programming button (DIRECT)**.....................**31**

④ **Programming button (PROGRAM)**...........................**30**

⑤ **Windows**

⑥ **Display**

⑦ **Disc skip buttons (DISC SKIP, −, +)**...........................**24**

⑧ **Search buttons (◄◄, ►►)**.....................................**24**

⑨ **Track skip buttons (I◄◄, ►►I)**...............................**24**

⑩ **Remote control signal sensor (SENSOR)**................**13**

⑪ **Disc group buttons
(DISC GROUPING PLAY, A, B, C, D, E)**......................**27**

⑫ **Group enter button (GROUP ENTER)**........................**27**

⑬ **Stop button (■)**..**23**

⑭ **Pause button (II)**..**23**

⑮ **Play button (►)**..**23**
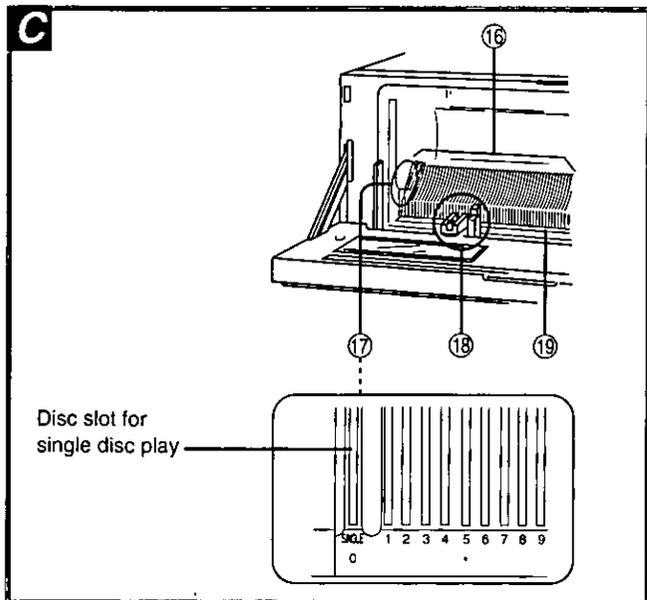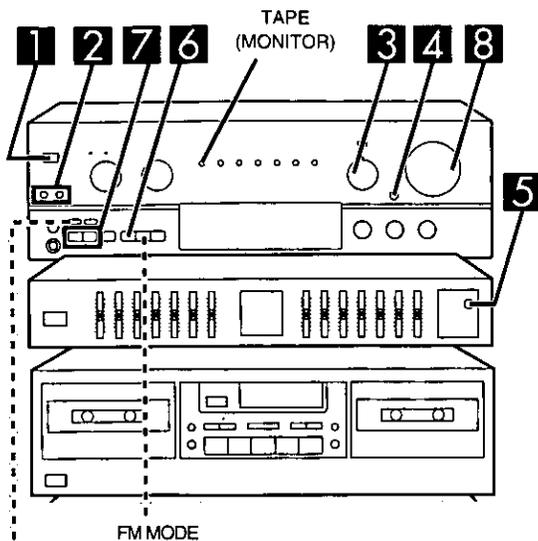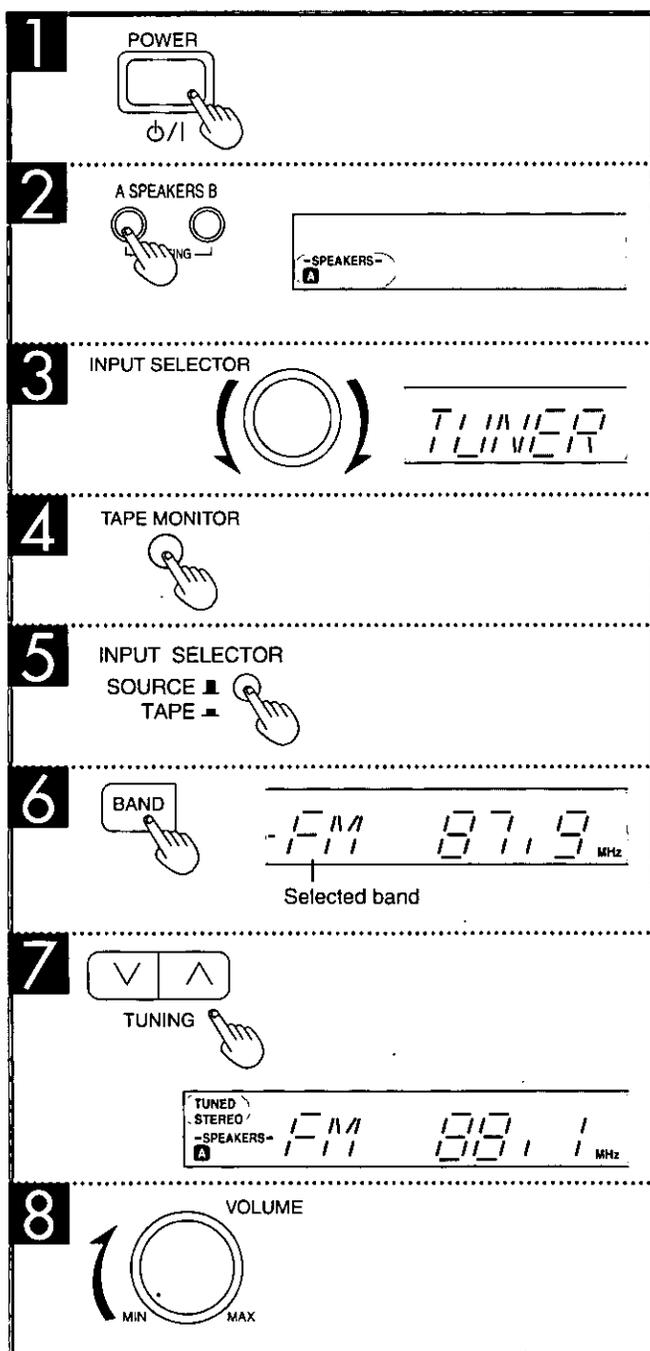
Disc slot section **C**

For an explanation on how to open the front panel, see page 14
"How to set discs".

⑯ **Disc slots**

⑰ **Disc slot for single disc play (SINGLE)**

⑱ **Loader carriage**

⑲ **Slot numbers**

TAPE
(MONITOR)

FM MODE
-DSP ON/DEFEAT

POWER
⏻/I

A SPEAKERS B
-TUNING-   -SPEAKERS-
                  A

INPUT SELECTOR
TUNER

TAPE MONITOR

INPUT SELECTOR
SOURCE ◼
TAPE ◼

BAND
-FM   87.9 MHz
Selected band

∨ | ∧
TUNING

TUNED
STEREO
-SPEAKERS-   -FM   88.1 MHz
A

VOLUME
MIN   MAX

Listening to radio broadcasts

To listen to the radio without presetting stations

Sequential tuning

Use the tuning buttons to tune-in radio stations.

Before operation, set [VOLUME] to the "MIN" position.

1 Press [POWER] on the receiver.

2 Press [A] to turn on SPEAKERS A.
If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

3 Turn [INPUT SELECTOR] to select "TUNER".

4 Press [TAPE MONITOR] so the TAPE (MONITOR) indicator lights.

5 Press [INPUT SELECTOR] on the graphic equalizer to select "SOURCE".

6 Press [BAND] to select "FM" or "AM".

7 Press [TUNING (∨) or (∧)] to tune to the desired frequency.
"TUNED" lights up when tuned.
"STEREO" lights up when an FM stereo broadcast is received.

To make an automatic search for a station
If [TUNING (∨) or (∧)] is held down for an instant until the frequency begins to scroll, the stations are tuned in automatically when one is found.

Note

Tuning may stop automatically if any jamming is encountered.

8 Adjust the volume.

When you are using the graphic equalizer
➡ page 46 for details about operation.

If noise is excessive in the FM stereo mode ·
Press [FM MODE].
("STEREO" will go out, and "MONO" will light up.)

The broadcast will be monaural, but noise will be reduced.
If the button is pressed once more, the stereo mode resumes.

If there is hissing or thumping while the radio is playing
Press and hold [-DSP ON/DEFEAT] to select "DEFEAT".
(➡ Page 44 for details about DSP DEFEAT)

For your reference
The tuner can pick up interference from DVD players. If this occurs turn the DVD player off.

When you finish listening
Be sure to reduce the volume, and switch the power to the standby condition by pressing [POWER] of the receiver.

The power for the system can thereafter be switched between on and the standby condition by using the power switch of the receiver (provided that the power cords are connected as on page 7).

Listening
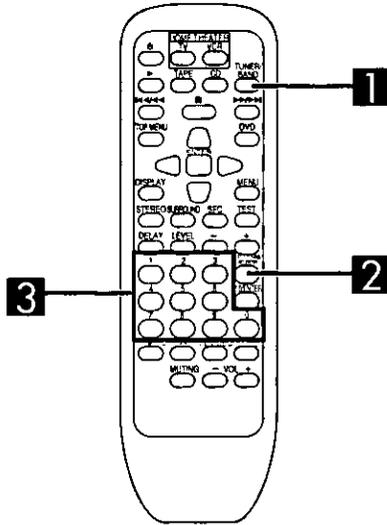
Direct tuning

by remote control only

Specify the frequency using the numeric buttons on the remote control to directly tune to the station.

1 **Press [TUNER/BAND].**

This will set the remote control to operate the tuner.
The selector on the receiver will change to "TUNER".
Each time the button is pressed, the band will change as follows, FM ⇌ AM.

2 **Press [DIRECT TUNING/DISC ENTER].**

3 While cursor display is flashing (approx. 10 seconds)
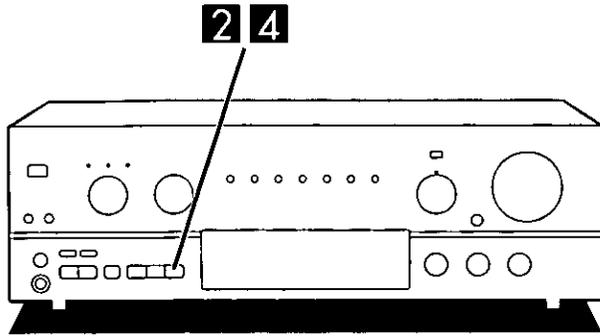**Press the numbered buttons to enter the frequency.**

If the desired FM frequency is 107.9 MHz, press
[1] → [0] → [7] → [9].
If the frequency has been input correctly, the displayed frequency will blink once.

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 2.
2. If the frequency has not been input correctly, "ERROR" will be displayed. In this case, re-enter the frequency.

1 TUNER/BAND

:ERS- *F M* *8 7.9* MHz

Selected band

2 DIRECT TUNING/DISC ENTER

:ERS- *F M* MHz

3

TUNED STEREO -SPEAKERS-
A *F M* *107.9* MHz

Preset Tuning

Presetting radio stations into the memory channels of this unit makes selecting stations simple.

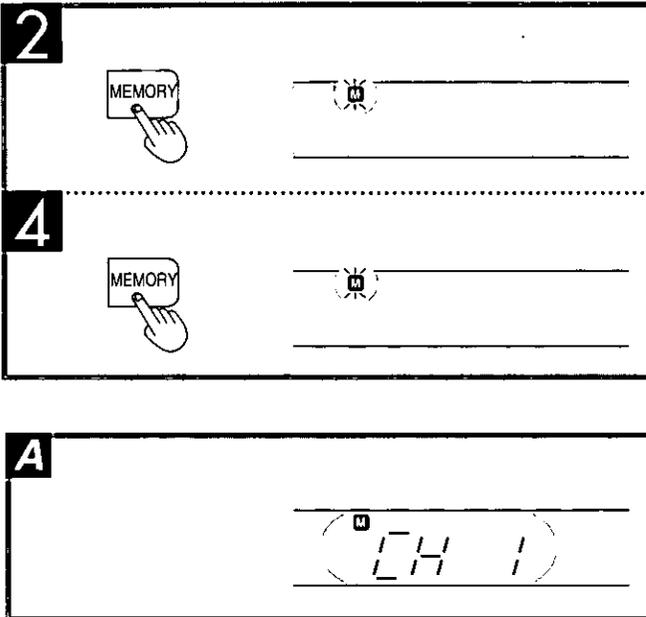A total of 30 FM and AM stations can be preset.

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

Automatic memory presetting

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

1 **Turn to the lowest frequency in FM.**
(➡ pages 18 and 19.)

2 **Press and hold [MEMORY].**
Automatic memory presetting will start.
All the FM stations the unit can receive are preset in channels 1 to 30.

3 **Turn to the lowest frequency in AM.**
(➡ pages 18 and 19.)

4 **Press and hold [MEMORY].**
Automatic memory presetting will start.
All the AM stations the unit can receive are preset in channels 21 to 30. (Any FM stations in these channels will be replaced.)

When a station is preset

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

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

Note
Frequencies may not be preset correctly in cases where the broadcast waves are too strong or too weak. In such cases, carry out presetting manually (➡ Page 21).

A

FM MODE

B
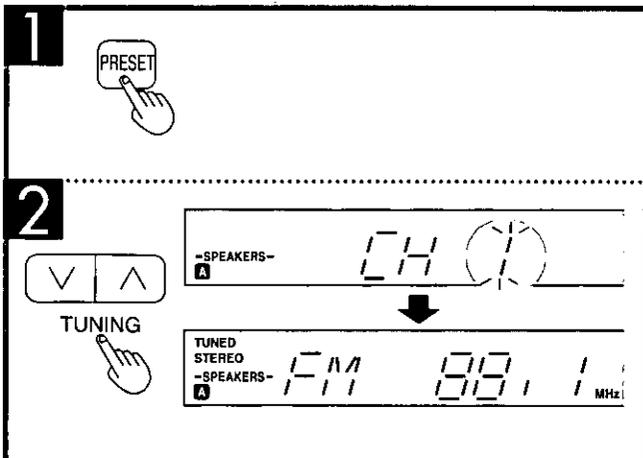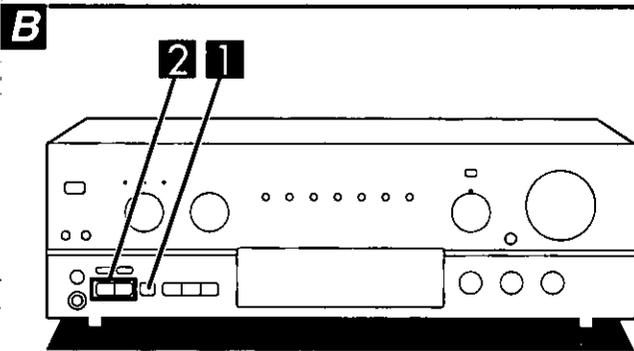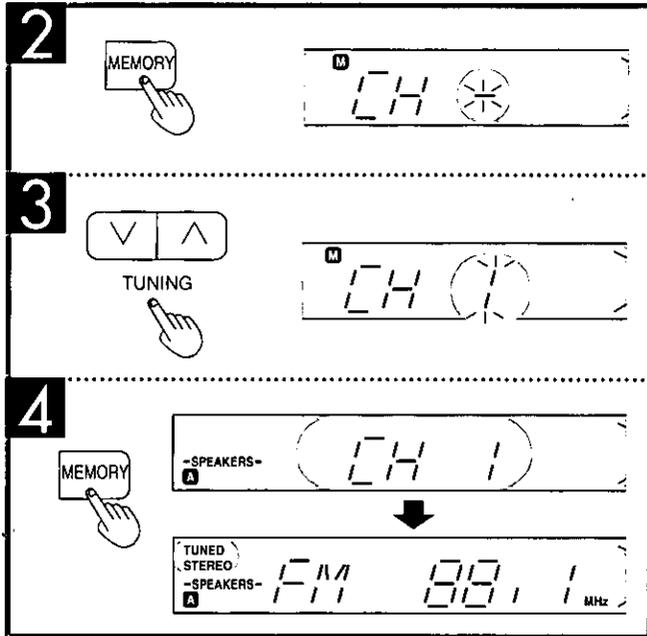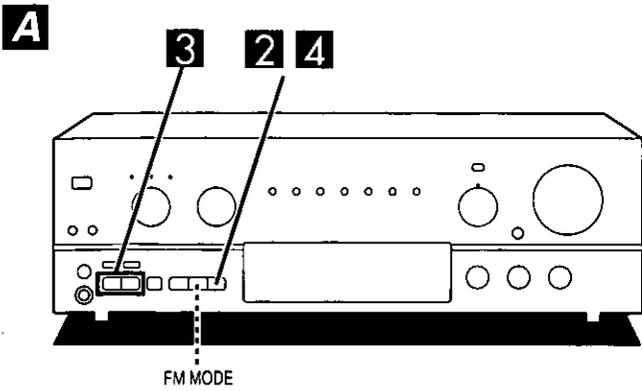
Manual memory presetting **A**

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

1 **Set to the desired frequency.**
(➡ pages 18 and 19.)

If interference or static is keeping you from enjoying an FM broadcast, press [FM MODE] and change to monaural.
You can preset the station in monaural just as in stereo.

2 **Press [MEMORY].**
To cancel the memory function, press [MEMORY] again.

3 **Press [TUNING (∨) or (∧)] to select the desired channel.**
Holding the buttons down lets you scroll through channels faster.

4 **Press [MEMORY].**
The channel will blink on the display.

To continue presetting
Repeat steps 1 through 4.

To listen to preset channels **B**

1 **Press [PRESET].**

2 **Press [TUNING (∨) or (∧)].**
Holding down the buttons lets you scroll through channels faster.

The channel number flashes for approximately 5 seconds.
Select the desired channel number during that time.
After 5 seconds, the display will change from the channel number to the frequency.

Note

If you press [PRESET] while the channel number is displayed, the display will change to the frequency.

To confirm the channel number of the station being received
Press [PRESET].
(The channel number flashes for approximately 5 seconds.)

Note

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

For your reference
Even if the power supply cord is disconnected from the household AC outlet, the memory will retain its contents for approximately one month.

If frequency presettings are accidentally erased
Program the presettings once again.
The power supply cord should remain connected for one hour or more for the memory back-up to be effective.

Listening

TAPE
(MONITOR)
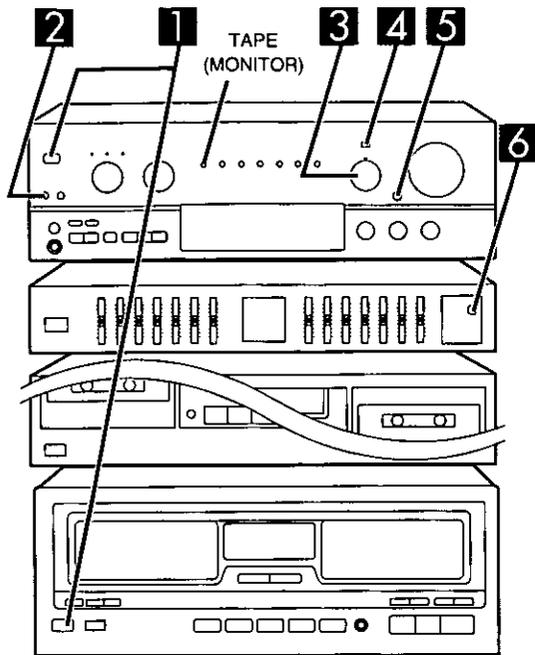
Listening to compact discs

Sequential play

The changer plays all the tracks on all the discs in order and stops automatically when the last track on the last disc finishes playing.

Before starting, load your discs (➡ Page 14).

1 **Press [POWER] on the receiver and CD changer.**
First switch on the power of the receiver.

The unit will switch on.
Momentarily, the message "CHECKING DISCS" will appear on the display.
When it goes out, the last disc played will be displayed.

2 **Press [A] to turn on SPEAKERS A.**
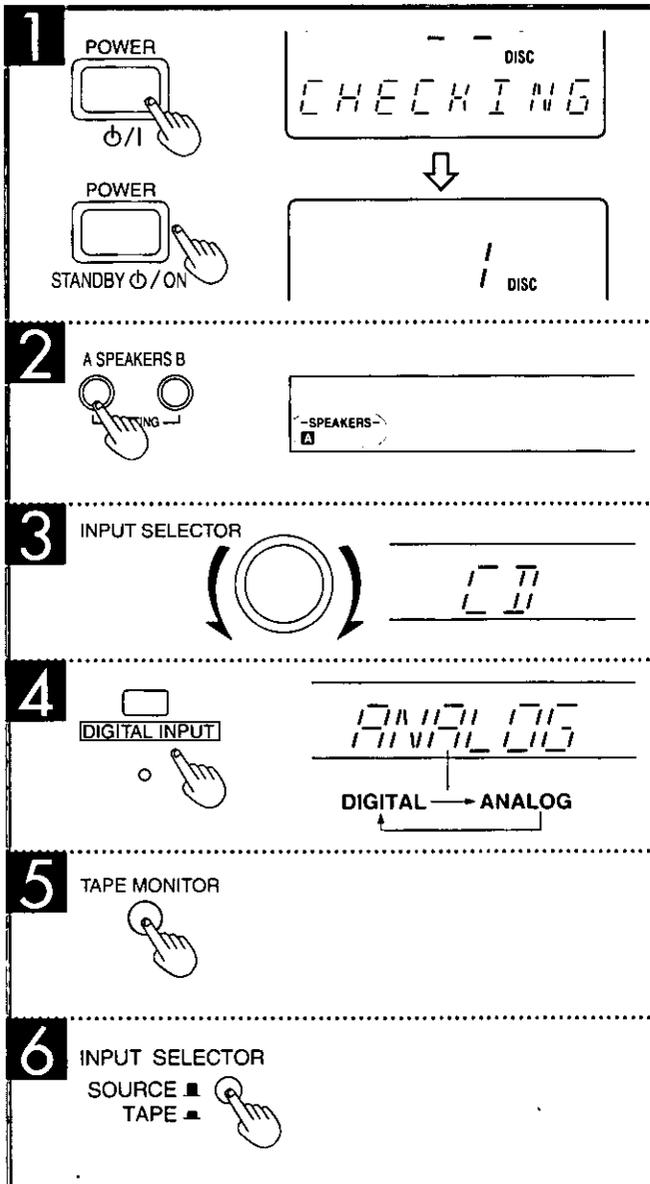If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.
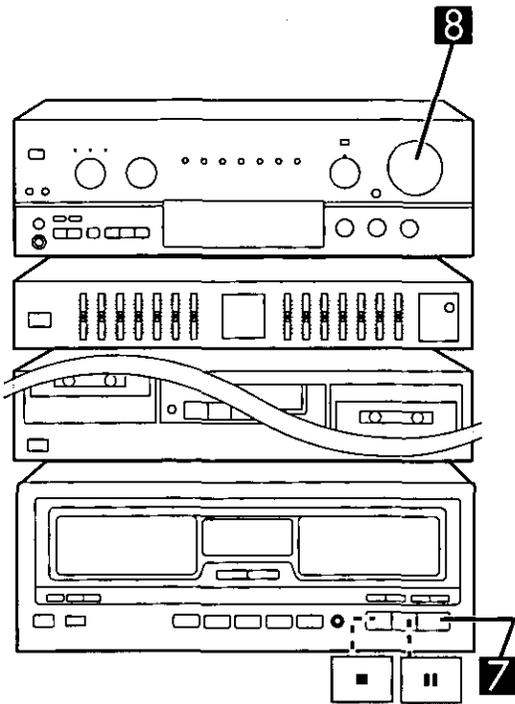
3 **Turn [INPUT SELECTOR] to select "CD".**

4 **Press [DIGITAL INPUT] to select "ANALOG".**
Each time the button is pressed the display switches.

5 **Press [TAPE MONITOR] so the TAPE (MONITOR) indicator lights.**

6 **Press [INPUT SELECTOR] on the graphic equalizer to select "SOURCE".**

7 Press [▶].
Play will begin.

8 Adjust the volume.

When you are using the graphic equalizer
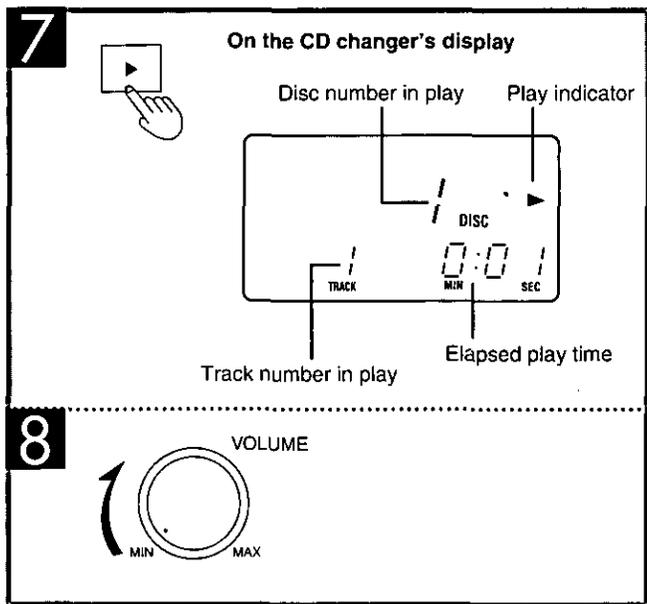➡ page 46 for details about operation.

To stop play
Press [■].
The display will show the total number of track and the total playing time of the current disc. (➡ page 24.)
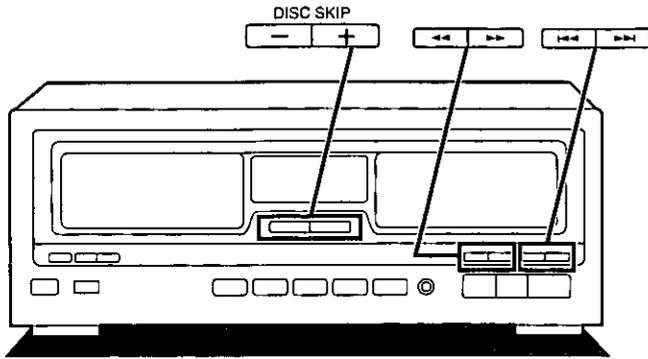Press [▶] to re-start play.

Note

It takes roughly 3 seconds from the time you press [■] until the disc is returned to the slot.

To temporarily stop play
Press [▐▐].
The "▐▐" indicator will light up.
Press [▶] to resume play.

On the CD changer's display

Disc number in play   Play indicator

DISC

TRACK   MIN   SEC

Track number in play   Elapsed play time

VOLUME
MIN   MAX

DISC SKIP

Current disc

$\overline{}$ DISC

/ ☐ ☐:☐ /
TRACK   MIN   SEC

Total number of tracks   Total playing time

Listening to compact discs

| To search for the desired position	◄◄ ►►
To skip tracks	◄◄ ►►◄
To skip discs	DISC SKIP — +

Displayed information when play is stopped

The total playing time displayed includes the silent sections between tracks. For this reason, it may be a few seconds longer than the playing time indicated on the disc.
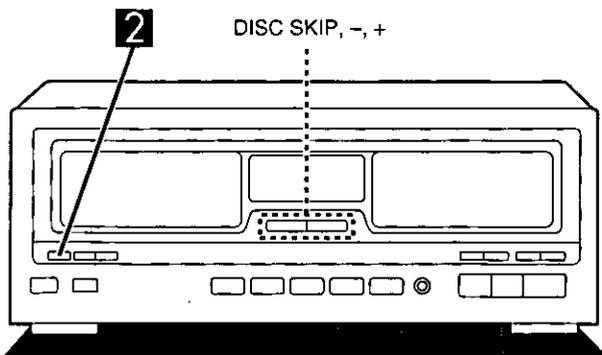
When you open the front panel, the total number of tracks and the total playing time go out.

After listening is finished

Be sure to reduce the volume level, and switch the power to the standby condition by pressing [POWER] on the receiver.

Listening

DISC SKIP, −, +

Slot number

Loader carriage
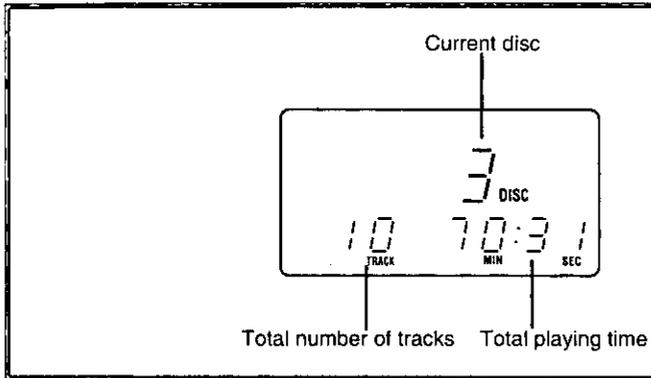
Single disc play

Single disc play is convenient when you want to playback a specific disc right away, without going through the usual selection procedure, for example, to listen to a disc you just bought.

1 **Open the front panel, and set the disc in slot No. 0.**
Face the label to the right and flip the loader upwards to set the disc.

2 **Close the front panel and press [SINGLE ▶] .**

The changer plays all the tracks in order and stops automatically when the last track finishes playing.

To cancel single disc play mode
● Skip to another disc with [DISC SKIP (−) or (+)].
● Select a group.
● Select another disc with the numeric buttons of the remote control.

Listening

DIRECT TUNING/
DISC ENTER

1 CD

2 DISC/DECK 1/2

3 Disc number

4 ▶

Track number
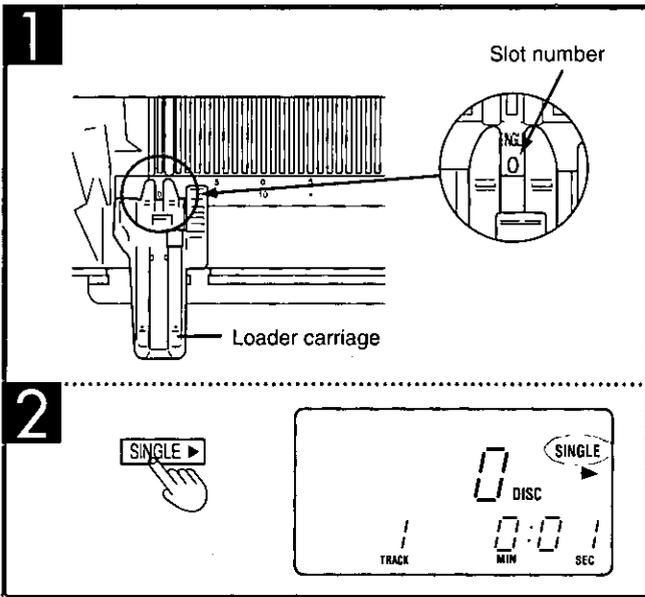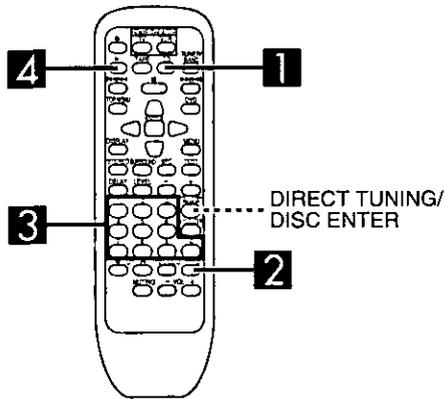
Listening to compact discs

Direct access play

by remote control only

To directly access a specific disc **A**

1 **Press [CD].**
This will set the remote control to operate the CD changer.

2 **Press [DISC/DECK 1/2].**

3 [Within 7 seconds]
Select the disc you want with the numbered buttons.

To select a disc from 1 to 9
For example: "6"
[6]

To select a disc from 10 or higher
For example: "19"
[1] → [9]
Push the buttons within 7 seconds of each other.

Note

When selecting discs, [≥10/ENTER] does not respond to touch.

4 [Within 7 seconds]
Press [▶].
The changer will start playing the selected disc from the first track.

For your reference
● If you press [DIRECT TUNING/DISC ENTER] instead of [▶] to select a disc, the disc number will be displayed but play will not start automatically.
● When in the stop mode, if you select an empty slot, the message "NO DISC" will appear on the display.
● While a disc is playing, if you select an empty slot, the changer will automatically play the next disc available.
● If you select "0", the changer will switch to the single disc play mode.

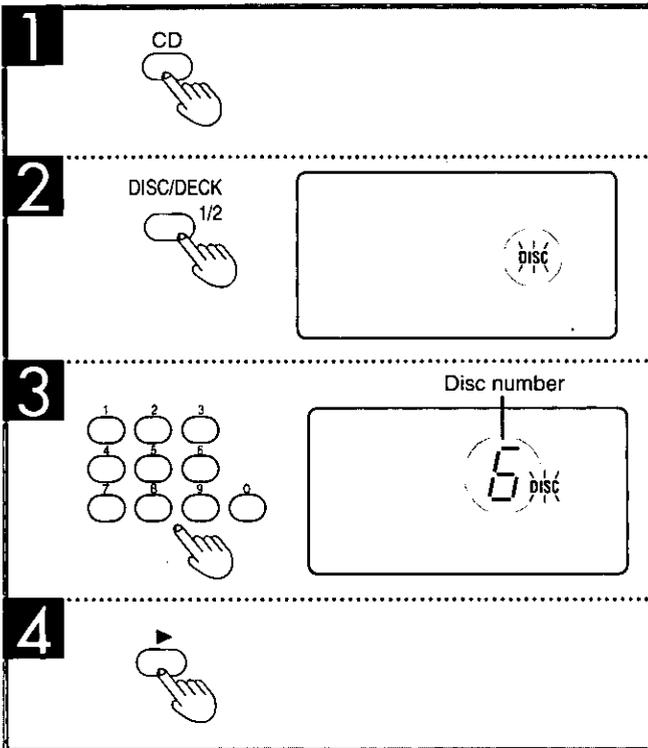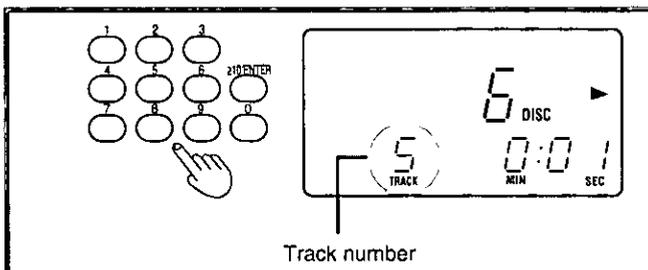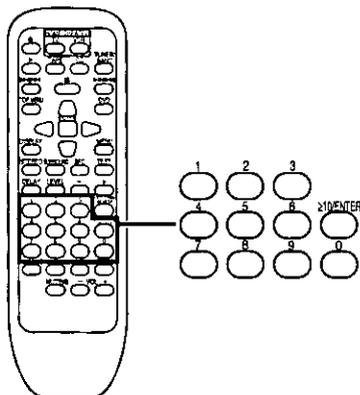**To directly access a specific track** **B**

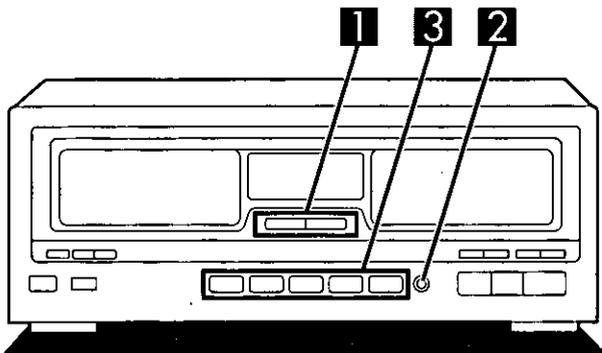After selecting a disc, select a track with the numbered buttons.

Press the numbered button(s) to select the track.

To select a track from 1 to 9
For example: "6"
[6]
To select a two-digit track number 10 or higher
For example: "19"
[≥10/ENTER] → [1] → [9]
Push the buttons within 7 seconds of each other.

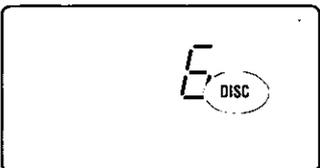Play will begin from the selected track.

Disc grouping play

With disc grouping play, you can register discs into any of the five available groups (A-E) and then play only the discs in a specific group.
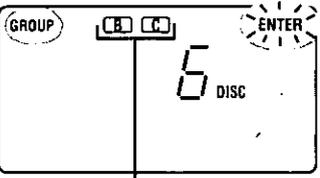• The same disc can be registered in as many groups as you like.
• Each group can hold up to 60 discs.
• You can name each group.

To make groups

1 [In the stop mode]
Press [DISC SKIP (–) or (+)] to select the disc.

Note
• You cannot select slot No. 0.
• The changer skips over empty slots.

For your reference
You can also select a disc number by using the remote control. (➡ page 26.)

2 **Press [GROUP ENTER].**

3 [Within 7 seconds]
Press the [DISC GROUPING PLAY] button you want.
(This inputs the disc in the group.)

For example: To input disc in group A.
Press [A] .

4 **Repeat steps 1, 2 and 3 until you have completed all items.**

For your reference
The group contents will remain stored in memory even after the unit is switched off.
However, if the power cord is unplugged or the power supply is otherwise interrupted for an extended length of time, the contents will be erased from memory.

DISC SKIP
(– | +)

GROUP ENTER

The letters for any groups the CD is registered in light.

DISC GROUPING PLAY
[A][B][C][D][E]

DISC SKIP
[– | +]

GROUP ENTER

If any groups have been registered already, their letters will light up.

2 [|◄◄ | ►►|]

3 DISC GROUPING PLAY
[A][B][C][D][E]
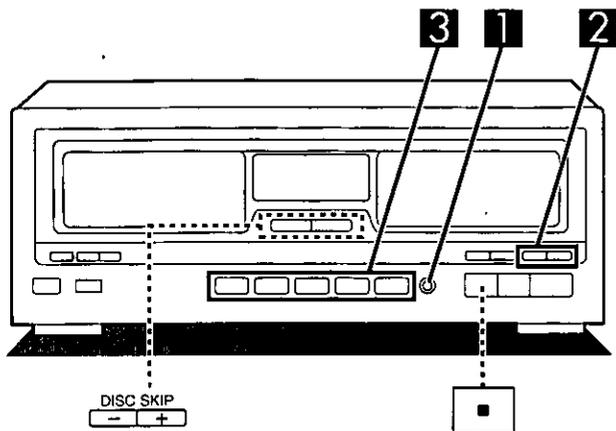
To name groups

You can name your groups. The changer has several preset names to choose from.

1 [During sequential play or while stopped]
Press [GROUP ENTER].

2 [Within 7 seconds]
Select the name you want with [|◄◄] and [►►|].
Names change in rotation as shown below, every time you press [|◄◄] or [►►|].

BALLADS ⟷ BLUES ⟷ CLASSIC ⟷ COUNTRY ⟷ DANCE

[RESET]   FAVORITE

ROMANTIC   HIP HOP

ROCK ⟷ POP ⟷ PARTY ⟷ OLDIES ⟷ NEW AGE ⟷ JAZZ

3 [Within 7 seconds]
Press the [DISC GROUPING PLAY] button for the group you want to name.
For example: To name group A
Press [A].

4 **Repeat steps 1, 2 and 3 to name other groups.**

To cancel names
Select "RESET" in step 2 and then the name of the group you want to cancel in step 3. Thereafter, the group will appear as "GROUP ... (A,B,C,D or E.)".

To check what discs are in what groups
[During sequential play or while stopped]
1. Press the [DISC GROUPING PLAY] button (A, B, C, D or E) you want and then press [■].
2. Press either [DISC SKIP (–) or (+)].
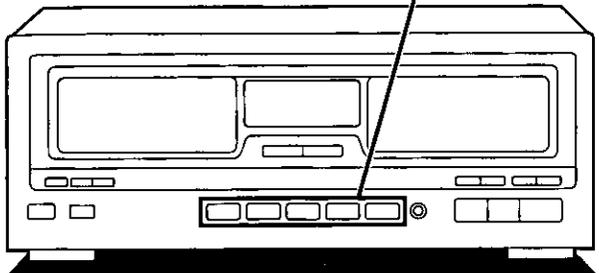   Every time you press [DISC SKIP (–) or (+)], the next disc number in order is displayed.

Note
After checking, if you press the button of a group that is lit on the display, the disc grouping mode disengages.

DISC GROUPING PLAY
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

DISC GROUPING PLAY
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

GROUP Ⓐ

BALLADS

GROUP Ⓐ

6 DISC ►

1 0·01
TRACK MIN SEC

B

1
DISC SKIP
─ +

6 (DISC)

2
GROUP ENTER

(GROUP) Ⓐ Ⓑ Ⓒ （ENTER）

6 DISC

3
DISC GROUPING PLAY
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Indication goes out.

GROUP Ⓑ Ⓒ ENTER

6 DISC

CANCEL A

## Listening to compact discs

To start play A

Unless otherwise specified, the changer selects sequential play.

[During sequential play or while stopped]
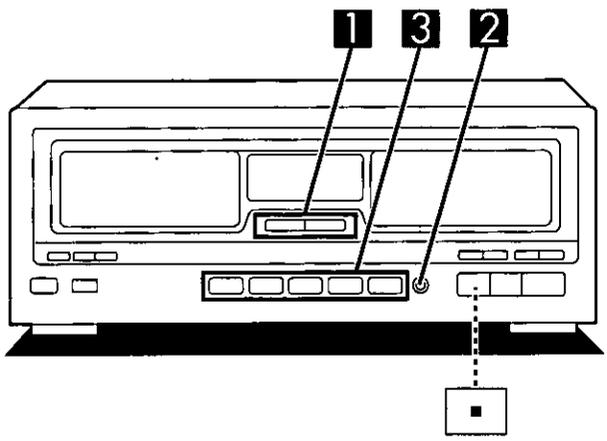**Press the [DISC GROUPING PLAY] button of the group you want.**

For example: To hear group A
Press [A].

Note

● Unnamed groups will be displayed as "GROUP A, B, C ..." and so forth.
● If you press the group button of a group which has no discs registered in it, the message "NO INPUT" will appear on the display.

....
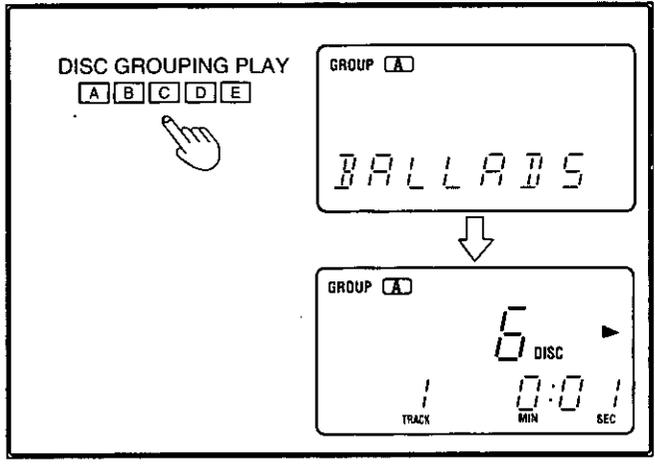
To cancel disc grouping play mode

[In the stop mode]
Press the [DISC GROUPING PLAY] button indicated on the display.
The group indication on the display will go out.

To cancel discs from groups B

1 [In the stop mode]
Press [DISC SKIP (−) or (+)] to select the disc.

2 **Press [GROUP ENTER].**

3 [Within 7 seconds]
Press the [DISC GROUPING PLAY] button you want.

For example: To cancel disc No. 6 from group A.
Press [A].

If the disc is registered in more than one group, you can cancel it from all groups in a single operation by pressing [■] in step 3 (in the stop mode).
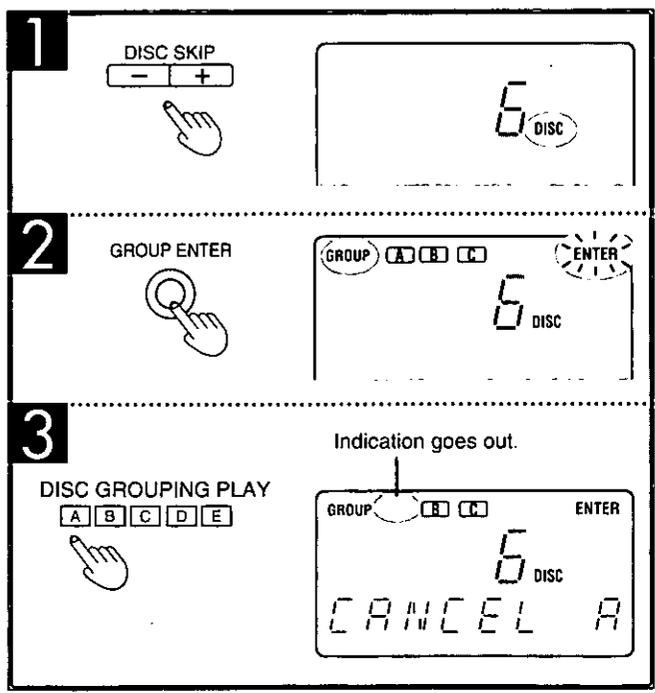
Listening to compact discs

Program play

Program play lets you playback your favorite tracks in the sequence you want to hear them. The program can hold up to 32 items.

1 [In the stop mode]
Press [PROGRAM].

2 **Press [CD].**
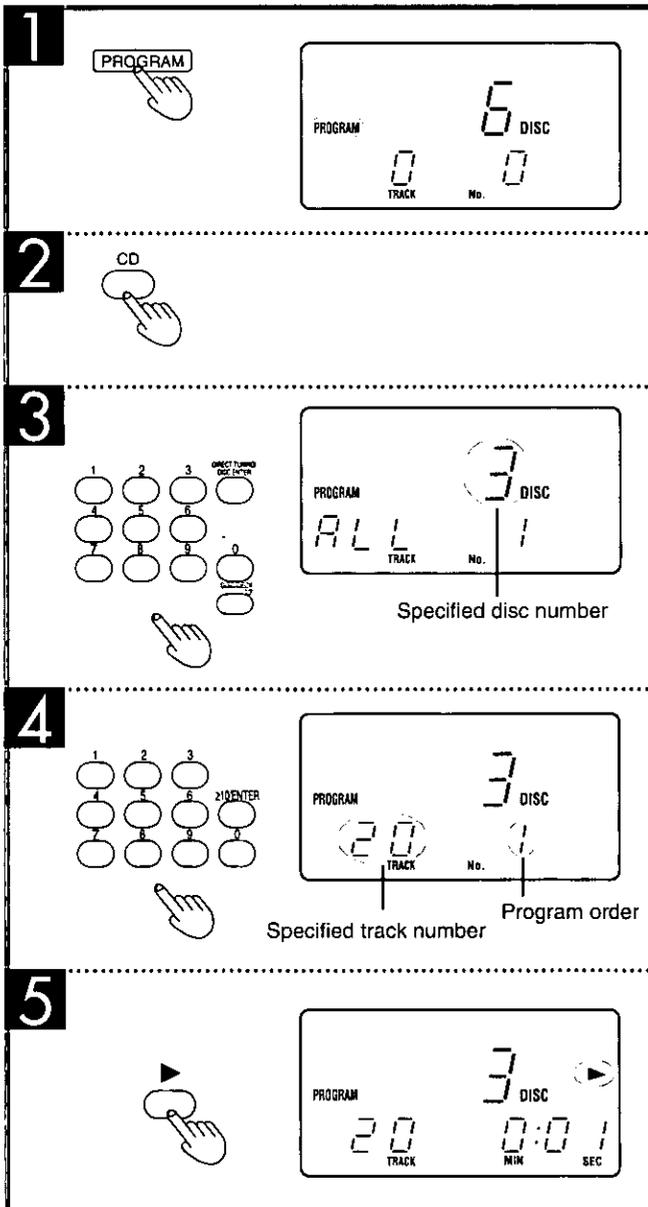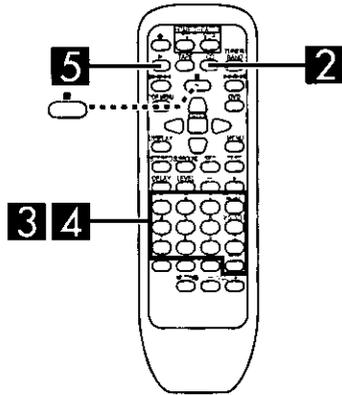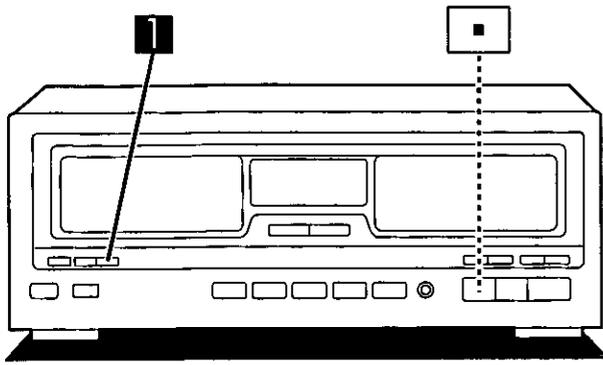This will set the remote control to operate the CD changer.

3 **Select the disc(s) with the numbered buttons.**
To select disc 3.
[DISC/DECK 1/2] → [3] → [DIRECT TUNING/DISC ENTER]

"ALL" indicates that the whole disc is selected. To program by disc, repeat the above. (The count increases by one for each operation.) You can select slot No.0.

4 **Press the numbered button(s) to specify the track.**
To select track No.20.
[≥10/ENTER] → [2] → [0]

To program tracks from the same disc, repeat this step.

Repeat steps 3 and 4 until you have completed all entries.
"PGM FULL" is displayed if you attempt to enter a 33rd selection.

If you enter non-existing disc(s) or track(s), the corresponding indicator illuminates and the entry is included in the count. During play, the changer will cancel the non-existing entry.

---

5 **Press [▶] to start play.**
To enter other selections during play, repeat steps 3 and 4.

To clear all programmed contents
[In the stop mode]
Press [■].

To quit the program mode

[In the stop mode]
Press [PROGRAM].
The changer will return to the sequential play mode.

If the mode is exited in this fashion, it is possible to re-enter the mode and listen to the same program after enjoying other modes of play. If discs are replaced, the new discs are included in the program. If a disc is removed or the new disc doesn't have the programmed track number, those entries are canceled as the program is played.

For your reference

The program is stored even if the unit is turned off or disconnected from its power supply. Extended disconnection will eventually result in erasure of the program.

Special note on recording programs

The changer needs time to change discs and find tracks.
It will take the changer slightly longer than the total track time to record everything. How much longer depends on the program.

Specified disc number

Specified track number

Program order

A
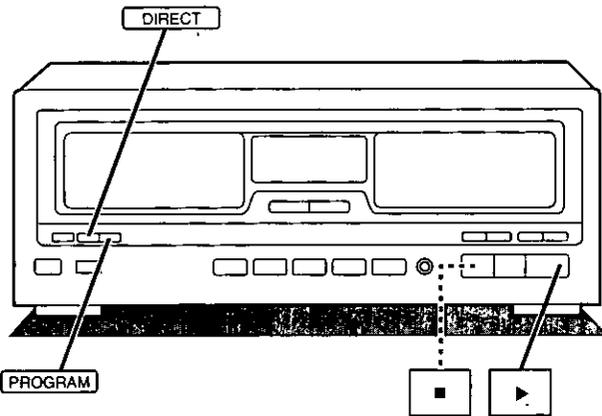
Direct programming

If, while listening to a certain track, you decide that you want to add that track to your program, you can with direct programming.

[While the track you want to program is playing]
Press [DIRECT].

The current track will be added to the end of the program. When you make a program as explained under "Program play", and then perform the above procedure without clearing the program first, the selected track is added to the end of the program.

Note

● You cannot add to the program if already full, that is, if 32 selections have already been programmed. If you press [DIRECT] in this case, the message "PGM FULL" will be displayed. Therefore, direct programming is possible only when 31 or less tracks have been programmed.
● During program play, the [DIRECT] button does not respond to touch.
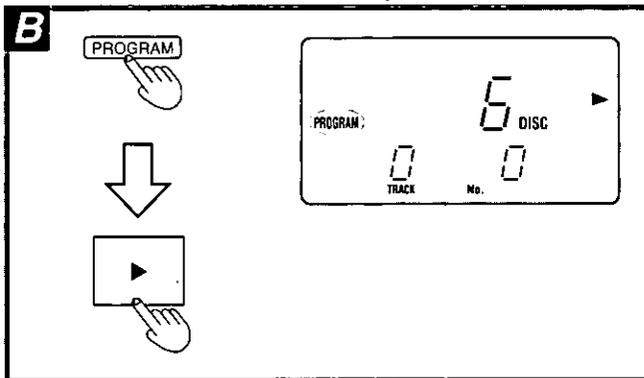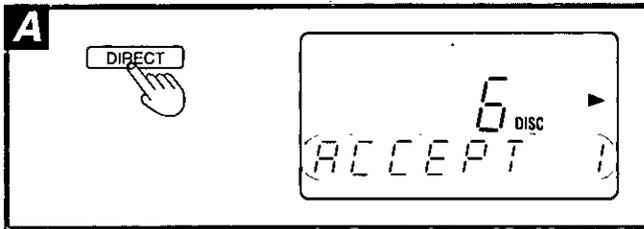
To listen to programmed tracks **B**

[In the stop mode]
Press [PROGRAM] and check "PROGRAM" appears on the display, then press [▶].
The program will start from the first track.

To clear all programmed contents.
[In the stop mode]
Press [■].
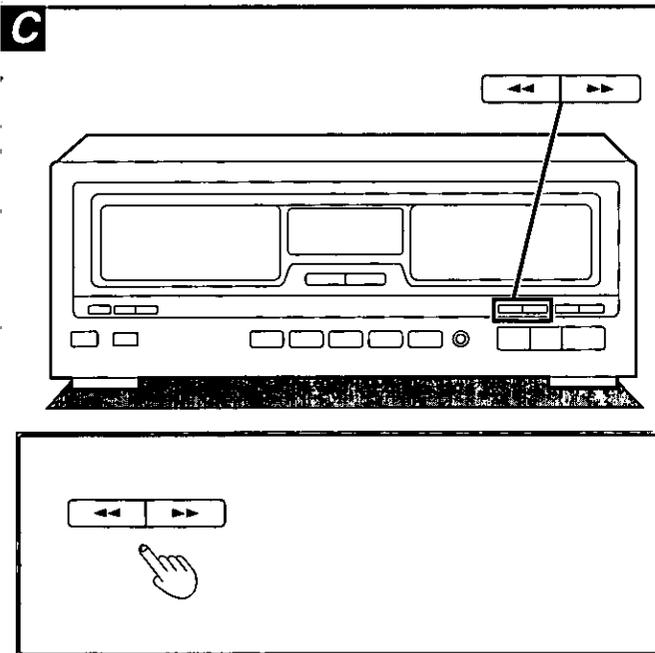
Search function

C

You can search rapidly forward or backward on the disc for specific sections.

[In the play or pause mode]
Press and hold [◄◄] or [►►].
◄◄ : You can search backward.
►► : You can search forward.

Release the button when you reach the desired point.
The changer will return to the previous mode (play or pause).

In the sequential/disc grouping play mode
When the changer finishes searching the current disc, it starts searching the next one.

In the single disc play mode
You can search forward or backward only within the current disc.

In the program play mode
You can search forward or backward only within the current track.

DISC SKIP

Skip function

To skip discs A

Use this function to skip discs to select a disc you wish to listen to.

You can use this function in stop, sequential play and disc grouping play modes.

Press [DISC SKIP (–) or (+)] until you reach the desired disc.
–: Skips to the preceding disc.
+: Skips to the next disc.

Note

- The changer skips over empty slots.
- This function does not work during program play.
- If you attempt to use this function during single disc play, the changer will cancel single disc play.

DISC SKIP

Disc number at the playing position

To skip tracks B

Use this function to skip tracks to select a track you wish to listen to.

Press either [|◀◀] or [▶▶|] until you reach the desired track.
|◀◀ : You can skip backward.
▶▶| : You can skip forward.

In the sequential/single disc/disc grouping/program play mode
In the program play mode, you can skip from one track to another in the programmed sequence.
In any other mode, you can skip forward and backward within the current disc only.

|◀◀ : You can skip to the beginning of the track being played. If you press this button again quickly, you can skip to the beginning of the previous track.
▶▶| : You can skip as many tracks as the number of times you press the button.

You can also skip tracks when the changer is in the stop mode or pause mode.

Track number at the playing position

Each press increases the number of skips.

Current position

2nd press   1st press   │   1st press   2nd press

track   track   track
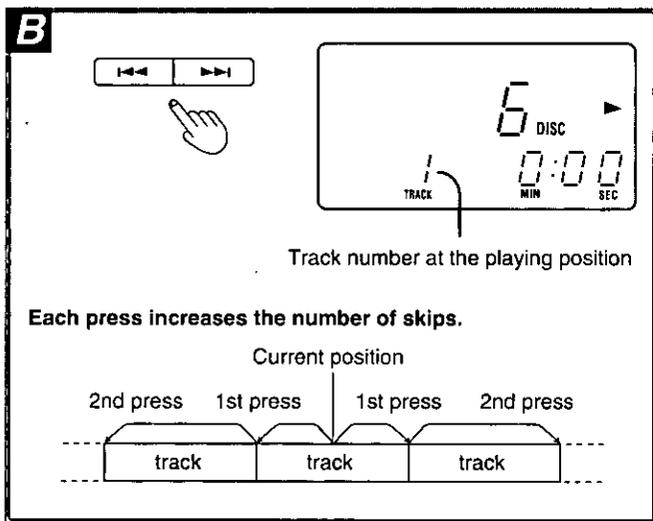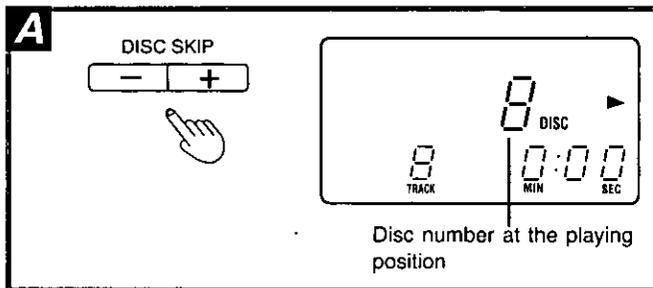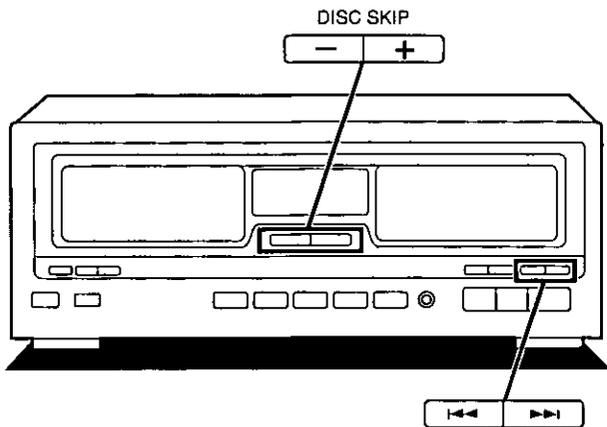
Listening to cassette tapes
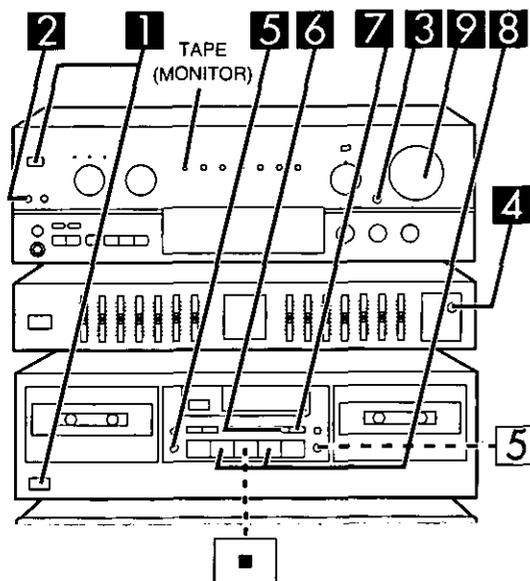
Types of tapes which can be played on this unit:

Normal position/TYPE I	✓
High position/TYPE II	✓
Metal position/TYPE IV	✓

The unit automatically identifies the type of tape.

The procedures described below are an example of playback on Deck 1.

1 **Press [POWER] on the receiver and cassette deck.**
First switch on the power of the receiver.

2 **Press [A] to turn on SPEAKERS A.**
If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

3 **Press [TAPE MONITOR] so the TAPE (MONITOR) indicator lights.**

4 **Press [INPUT SELECTOR] on the graphic equalizer to select "TAPE".**

5 **Press [▲ OPEN] on Deck 1, and then insert the cassette tape.**
Close the cassette holder by hand.
To play back on Deck 2, press the button ([5]) for Deck 2.

6 **Press [DOLBY NR] to listen to tapes recorded with Dolby B-type noise-reduction.**
("Dolby noise-reduction system" ➡ page 34.)

7 **Press [REVERSE MODE] to select the appropriate reverse mode.**
Each time the button is pressed, the indicator will change in the order:
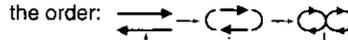
➡ : One side only.
⊂➡⊃ : Both sides repeatedly (up to 8 times).
⊂⊃ : Both sides, once only.
("Reverse function" ➡ page 34.)

8 **Press [▶] (or [◀]).**
Playback will begin.
▶ :To begin from the forward side.
◀ :To begin from the reverse side.

9 **Adjust the volume.**

When you are using the graphic equalizer
➡ page 46 for details about operation.

To stop playback
Press [■].

After listening is finished
Be sure to reduce the volume level, and switch the power to the standby condition by pressing [POWER] of the receiver.

DECK1/2
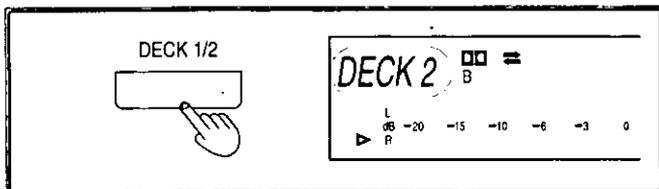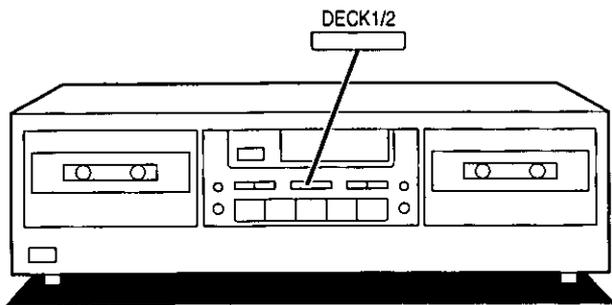
DECK 1/2

DECK 2

To change the Deck to be used

Press [DECK 1/2] to select the Deck you want to play.
Each time the button is pressed, the indicator will change:
DECK 1 ⇌ DECK 2
The indicator changes only if a tape is loaded in the both decks.

Reverse function

The reverse function on this unit has three modes (⇌ , ⊂⊃, ∞). Read the descriptions below and select the mode as desired.

Mode	Tape travel
→ ←	Only one side of the tape (either the forward side or the reverse side) will be played, and operation will automatically stop when playback has been completed.
⊂→⊃	Both sides of the tape will be played repeatedly eight times, and then operation will automatically stop. (If playback is begun from the reverse side, the forward side will be played seven times.)
∞	**When there is a tape in only one of the decks** Both sides of the tape will be played once, and then operation will automatically stop. (If playback is begun from the reverse side, the forward side will not be played.) **When there is a tape in each of the decks** The forward and reverse sides of the tape in Deck 1 will be played, followed by the forward and reverse sides of the tape in Deck 2, and after this operation is repeated eight times, operation will automatically stop. (If playback is begun from Deck 2, the tape in Deck 1 will be played seven times.)

Dolby noise-reduction system

The Dolby noise-reduction system is designed to effectively reduce the annoying high-frequency "hissing" noise which typical of cassette tapes. During recording, the system functions to increase the high-frequency sound level, and then, during playback, that same portion is weakened to bring it back to the previous level.
This unit is equipped with the Dolby B NR-type.

Dolby B-type noise-reduction
· Noise is reduced to about one-third.
Use this system when playing back tapes recorded by the Dolby-B noise-reduction system, such as prerecorded music tapes, etc.
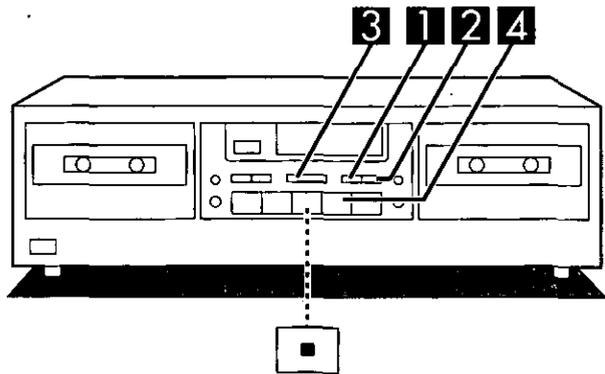
Series playback

Both sides of the tape in Deck 1 will be played, followed by both sides of the tape in Deck 2. (Repeated up to eight times.)

| Preparation |

Load the tapes to be played into Deck 1 and Deck 2.
Note that for series playback it is not possible to select different types of Dolby NR for Deck 1 and Deck 2. It is recommended that you use two tapes which were recorded using the same type of Dolby NR (or both recorded without Dolby NR).

1 Press [DOLBY NR] to listen to tapes recorded by Dolby B-type noise-reduction.

2 Press [REVERSE MODE] to select the " ∞ " mode.

3 Press [DECK 1/2] to select Deck 1.

4 Press [▶].
Series playback will begin from the forward side of the tape in Deck 1.

To stop playback
Press [■].

For your reference:
It is also possible to begin series playback from the reverse side of the tape in Deck 1 or from Deck 2. ("Reverse function" ➡ page 34.)

Listening

Deck 1
Tape side indicator

Deck 2
Tape side indicator

DECK 1 ᴰᴰ ⇌ 000_

L
dB -20 -15 -10 -6 -3 0 +2 +4
R

1 **2**

1 DECK 1/2

2 ◄◄ ◄ ►►

Tape side indicator	Rewind	Fast forward
▷	◄◄	►►
◁	►►	◄◄

B Currently selected deck   Tape counter

DECK 1 ᴰᴰ ⇌ 085_

L
▷ dB -20 -15 -10 -6 -3 0 +2 +4 ▷
R

COUNTER
RESET
○

COUNTER
RESET

Listening to cassette tapes

To fast-forward or rewind the tape **A**

1 Press [DECK 1/2] to select the Deck (1 or 2).

2 Press [◄◄] or [►►].

Because this unit is capable of playing back both sides of the tape, the operation changes in accordance with the direction of the tape side indicator.

The tapes in Deck 1 and Deck 2 can be advanced or rewound at the same time.

Tape counter **B**

The tape counter indicates the amount of tape travel as a numerical value based on the number of revolutions of the tape hub.
As you switch between Deck 1 and Deck 2, the tape counter shown on the display changes too.

To reset the tape counter

Press [COUNTER RESET].
The tape counter of the currently selected deck will revert back to "000", while that of the other deck will remain unchanged.

For your reference:
When the tape is traveling in the reverse direction, the value displayed on the tape counter will count down.
After "000" is reached, the display will switch to "999" and will then continue counting down.

Listening

DIGITAL INPUT   INPUT SELECTOR

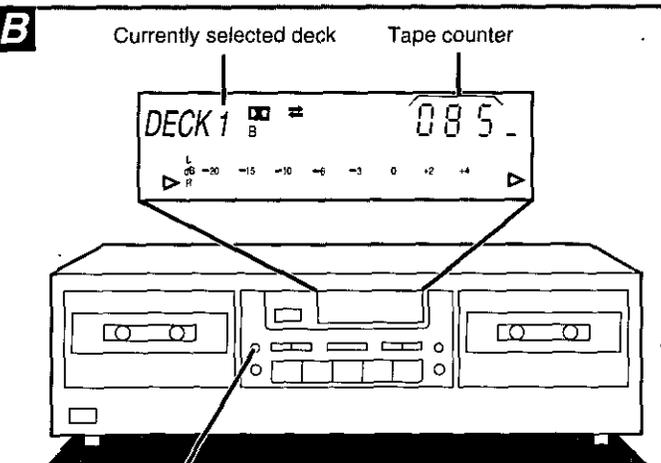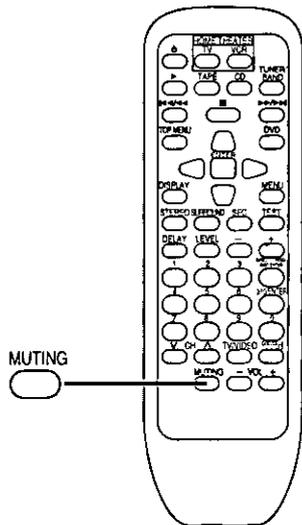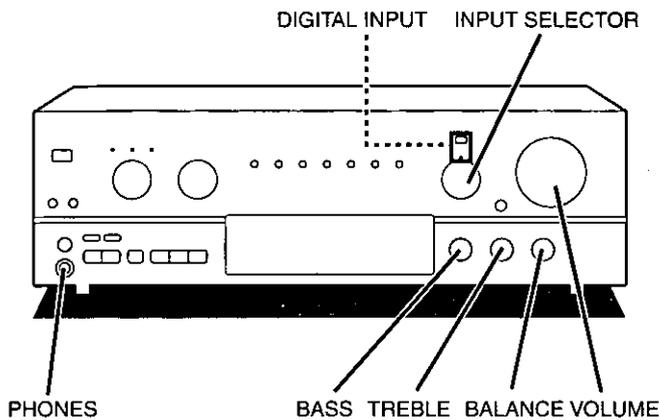PHONES   BASS TREBLE BALANCE VOLUME

MUTING

A
· BASS   · TREBLE

B
· BALANCE

C
MUTING

- MUTING □

D
INPUT SELECTOR

E
① ②PHONES
③
VOLUME

MIN   MAX   Headphones
(not included)

Other functions

To adjust the tone quality   **A**

Turn [BASS] to adjust the low frequency sound.
Turn [TREBLE] to adjust the high frequency sound.

To adjust the sound balance   **B**

Turn [BALANCE] to adjust the left/right sound balance.

To mute the sound level   **C**

by remote control only

Press [MUTING].
The message "MUTING ON NOW" runs repeatedly from right to left across the display as long as the muting function is on.
Press once again to return to the previous volume level.

Note

Muting is cancelled when the receiver is turned off.

To enjoy external sources   **D**

Turn [INPUT SELECTOR] to select and start the desired source.
(Refer to the appropriate operating instructions for details.)
The indicator corresponding the select source lights and the source is shown on the display.
VCR : To watch video tapes
TV: To watch TV
DVD : To watch DVD
PHONO: To listen to phono discs

Note

To watch a video (or DVD) or the TV, set the TV to either, the TV mode or VIDEO mode.

If you are using VCR and you select TAPE, CD, TUNER, or PHONO
The picture will remain on the screen.

Press [DIGITAL INPUT] to select "DIGITAL" if you have used digital connection for TV, DVD, or CD.
The DIGITAL INPUT indicator lights.
Only Dolby Digital, DTS or PCM signals (44.1 kHz or 48 kHz) can be reproduced through the digital terminal:
The digital input signal of sampling frequencies 96 kHz and other signal formats such as MPEG cannot be reproduced on the receiver.

To listen through headphones   **E**

① **Reduce the volume.**
② **Connect the headphones.**
·   Plug type: 6.3 mm (1/4 in.) stereo
③ **Adjust the volume.**

Select STEREO or turn SPEAKERS A and B off when using headphones. Turning the speakers off automatically engages STEREO mode and ensures no sound is heard from the subwoofer. If SURROUND is used, the sound heard through the headphones will seem unusual.

Note

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

A, B   SFC MODE

SUBWOOFER   TAPE   TAPE MONITOR
             (MONITOR)

LEVEL   -, +

A

TAPE MONITOR

B

① A SPEAKERS B
— SETTING —

② A SPEAKERS B
— ...G —

③ SFC MODE

④ A SPEAKERS B
— SETTING —

C

SUBWOOFER

Other functions
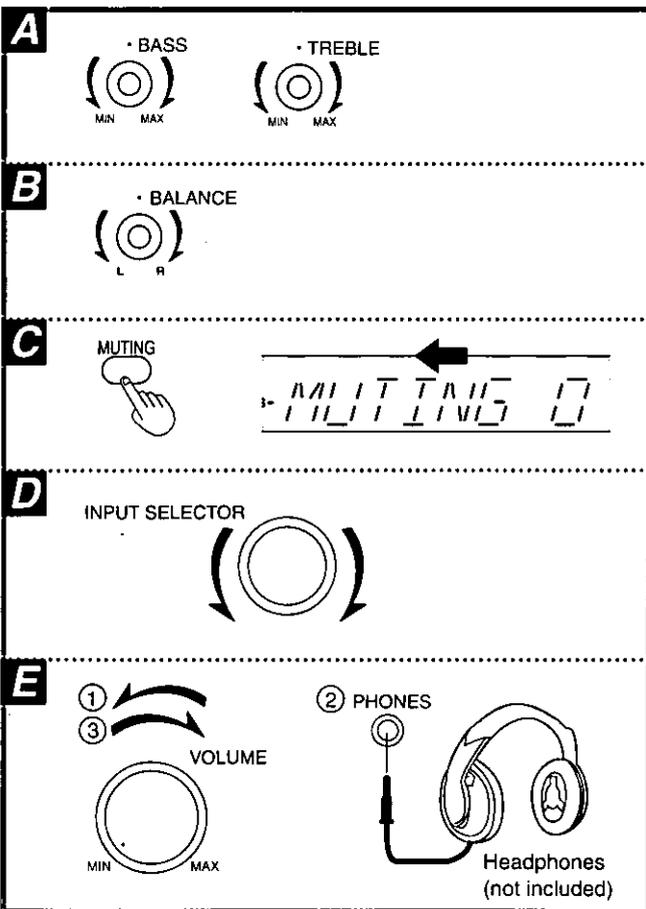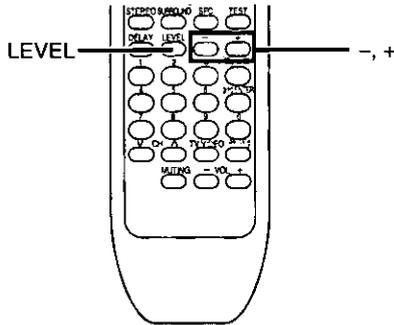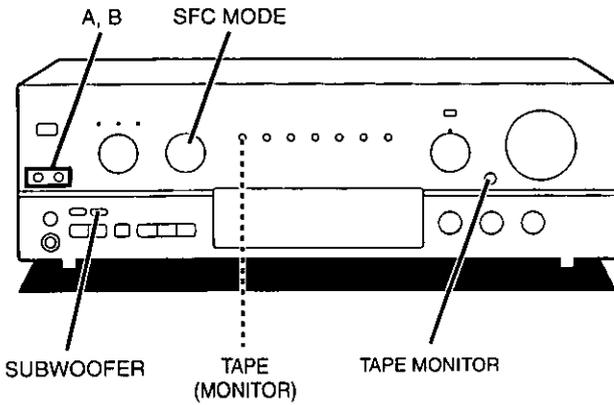
The TAPE (MONITOR) indicator ▢A

This indicator lights in the following two situations:
1. While TAPE is selected.
2. While TAPE MONITOR is in use.

To use the tape monitor

The tape monitor can be used to check the recorded sound when connecting a 3 head tape deck (not included) or using the graphic equalizer.

If [TAPE MONITOR] is pressed while a source other than TAPE is selected, the "TAPE (MONITOR)" indicator lights and the tape monitor comes on.

Press [TAPE MONITOR] again to turn the tape monitor off.

Note

● The tape monitor cannot be used when TV, DVD, or CD digital input is being used.
● If you are using the tape monitor and you select a digital input source, the tape monitor switches off.
● Depending on the setting on the graphic equalizer, there may be some distortion (➡ pages 46).

Dynamic range compression ▢B

"Dynamic range compression" (DR COMP) is a function for compressing the dynamic range (reproduction level range) of audio signals. It is used for viewing movie software late at night or at other times when high volume levels are not desirable.

This function only works with DR COMP compatible Dolby Digital format software.

The factory setting is "OFF".

① **Press [A] and [B] at the same time.**
"SETTING" appears on the display.
② **Press [A] to select "DR COMP".**
Each time the button is pressed the display switches as follows.
SIZE ⟶ DISTANCE ⟶ FILTER ⟶ DR COMP

③ **Turn [SFC MODE] to select the setting.**
Each time the selector is turned the display switches as follows.
OFF ⟶ STANDARD ⟶ MAX

The factory setting is "OFF".
④ **Press [A] and [B].**
"COMPLETE" appears on the display.

For your reference
When DR COMP is on, scenes that already have a low sound level will be heard as they are. When scenes that are loud occur, the function acts to reduce the peak level.
The sound field will remain intact even if DR COMP is functioning.

Using a subwoofer ▢C

Turn subwoofer output on if you connect a subwoofer (➡ page 57.)

Press [SUBWOOFER] to select "ON".

In STEREO mode
You can turn subwoofer output off or adjust the level.
To adjust subwoofer volume
① Press [LEVEL].
② Press [+] or [-].
The level can be adjusted between -10 and +10.
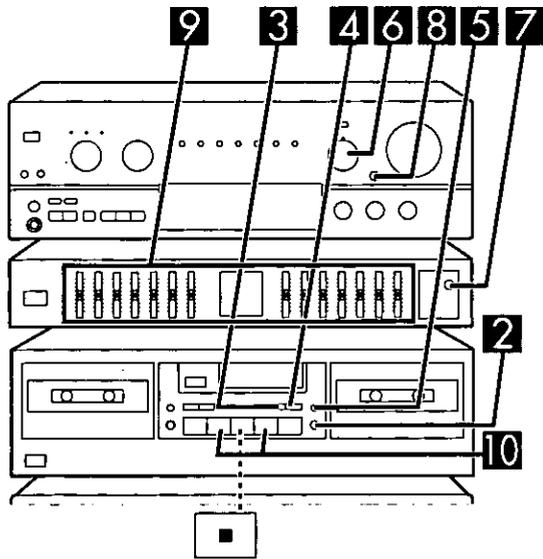(➡ pages 43 and 45 when using the subwoofer with other modes.)

Listening

Making a recording

Note

You cannot record a source connected through the receiver's digital terminals.

Recording from the radio or external source (Deck 2 only)

Types of tapes which can be used for recording:

|	
Normal position/TYPE Ⅰ	✓
High position/TYPE Ⅱ	✓
Metal position/TYPE Ⅳ	✓

Preparation

Wind the tape past the leader tape section so that recording can begin straight away.

1 **Turn on the power of the system.**

2 **Press [▲ OPEN] on Deck 2, and then insert the cassette tape.**
Close the cassette holder by hand.

3 **Press [DOLBY NR] to record with Dolby B-type noise-reduction system.**
When recording a tape without using Dolby NR, press so the indicator goes off.

4 **Press [REVERSE MODE] to select the desired reverse mode.**
Each time the button is pressed, the indicator will change in the order: ⇄ → ⊂⊃ → ∞
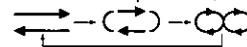
⇄ : Only one side will be recorded, and then operation will automatically stop.
⊂⊃ , ∞ : Both sides (the forward side first, and then the reverse side) will be recorded, and then operation will automatically stop.

5 **Press [● REC PAUSE].**
The unit will be in the recording standby mode.

6 **Turn [INPUT SELECTOR] to select the source to be recorded.**
Any source can be selected except TAPE.
When recording CD, DVD, or TV, ensure the source is connected through the corresponding analog terminals (➡ pages 8 and 9) and "ANALOG" input is selected (➡ page 22).

7 **Press [INPUT SELECTOR] on the graphic equalizer to select "SOURCE".**

8 **Press [TAPE MONITOR] so the TAPE (MONITOR) indicator lights.**

9 **Adjust the tone quality as desired.**
➡ pages 46 and 47 for details about operation.

10 **Press [▶] (or [◀]) to begin recording, and play the source to be recorded.**
▶ : To begin recording from the forward side.
◀ : To begin recording from the reverse side.

Note

When recording on both sides of the tape, be sure to press [▶].

To stop recording
Press [■].

REC PAUSE

◀ DECK1/2 ■ ▶

1 REVERSE MODE

2 SPEED NOR/HI

K1 ☎ (SPEED NOR) *0 0*

-20 -15 -10 -6 -3 0 +2 +4

3 SYNCHRO START
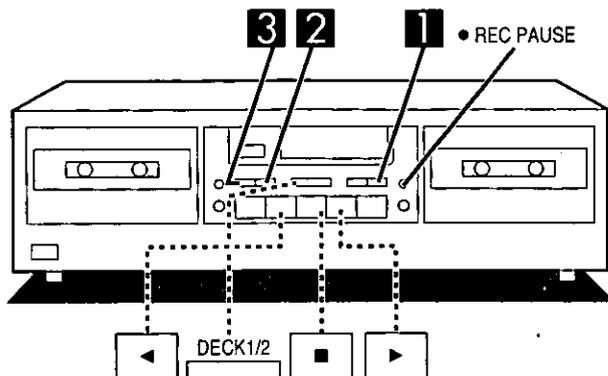
To temporarily stop recording

Press [● REC PAUSE].

To resume recording
Press either [◀] or [▶], corresponding to the side of the tape side indicator ("◁" or "▷") which is lit.

Tape-to-tape recording

Use Deck 2 to record the sound being played back on Deck 1.

Preparation

Load tapes which have been advanced to the end of the leader tape into both decks.
Deck 1: For playback   Deck 2: For recording

1 **Press [REVERSE MODE] to select the desired reverse mode.**
Each time the button is pressed, the indicator will change in the order: ⇄ – (⇄) – ∞

⇄ : Only one side of the tape will be recorded, and then operation will automatically stop.

(⇄) : Both sides of the tape (first the forward side and then the reverse side) will be recorded, and then operation will automatically stop.
If the recording tape is longer than the playback tape, the playback tape will be played repeatedly as many as eight times until the recording tape is finished.

∞ : Both sides of the tape (first the forward side and then the reverse side) will be recorded once, and then operation will automatically stop.

Note

To record on only one side of the tape, set the tape side indicators ("◁" or "▷") on Deck 1 and Deck 2 in accordance with the tape sides to be played back and recorded.
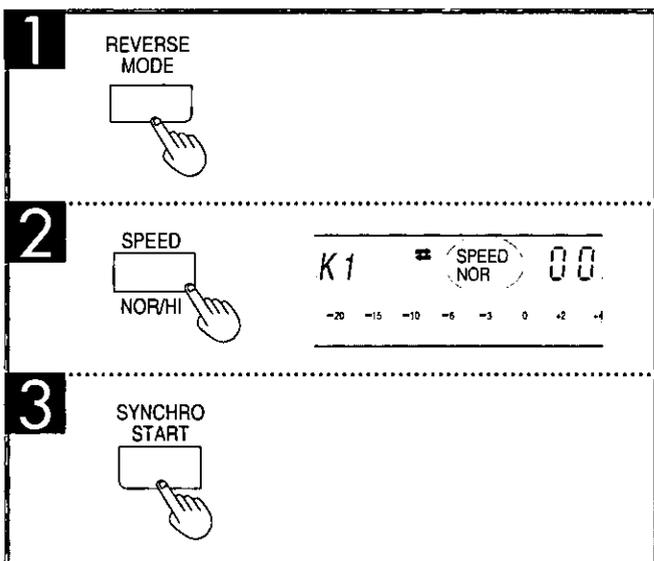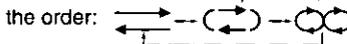To record on both sides of the tape, set the tape side indicators on both Deck 1 and Deck 2 to the forward side (▷).

2 **Press [SPEED] to select the recording speed.**
Each time the button is pressed, the indicators will change in the order: NOR — HI — (off).

NOR: normal speed
HI: approx. double speed

3 **Press [SYNCHRO START].**
Recording will begin.

To stop recording
1. Press [DECK 1/2] to select Deck 2.
2. Press [■].

Note

In order to avoid operation errors later, be sure to switch off the [SPEED] button (the "NOR" and "HI" indicator will go out) after the tape-to-tape recording has finished.

For your reference:
● The Dolby effects will be recorded as they are on the tape being played back.
● Because the signal being recorded from Deck 1 onto Deck 2 does not pass through the amplifier, it is possible to change the setting of the amplifier's input selector during recording in order to listen to some other sound source.

Recording

A
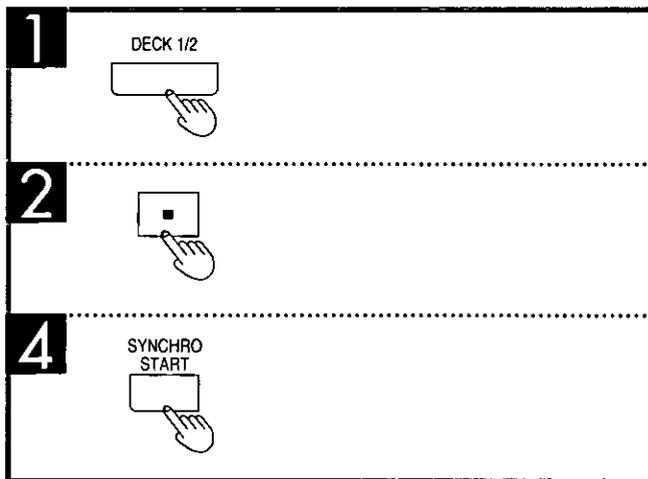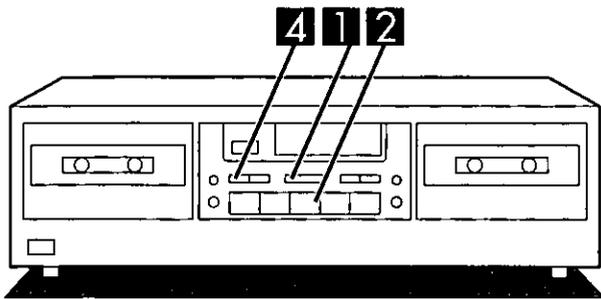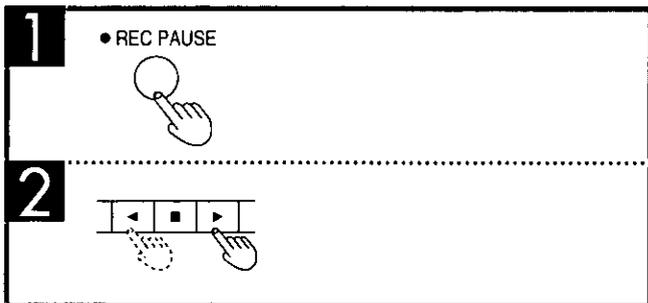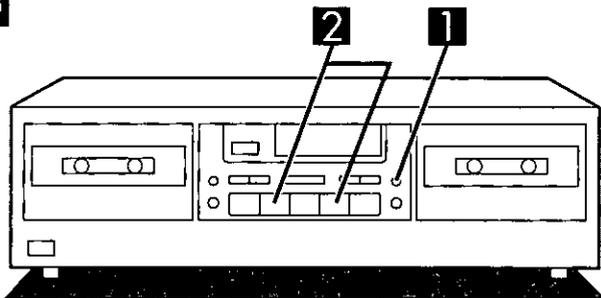
Note
- When recording with the recording speed set to hi-speed, noise interference may be recorded onto the tape if there is a television set nearby, so make the recording in a location separated from the television set or switch off the television set during recording.
- Noise reduction does not work during playback of tape-to-tape recordings. If the tape was recorded with noise reduction, listen at low treble. Lower the treble with the receiver's treble control before playback.

To record selected tracks **A**

1 [During recording]
Press [DECK 1/2] to select Deck 1.

2 **Press [■].**
Deck 1 will stop, and Deck 2 will record a 4-second silent interval and then enter the recording standby mode.

3 **Operate Deck 1 to find the track you wish to record.**
It is also possible to change the playback tape at this time.

4 **Press [SYNCHRO START].**
Recording will resume.

To cut unwanted parts during recording **B**

1 **Press [● REC PAUSE] during recording.**
Deck 2, which was recording, will enter the pause mode, and Deck 1 will continue playback.
(If you were recording at hi-speed, Deck 1 will change to normal speed while Deck 2 is on pause, but will return to hi-speed when you resume recording.)

2 [When Deck 1 reaches a part you wish to record]
Press either [◀] or [▶], corresponding to the tape side indicator which is lit.
Deck 2 will resume recording.

B

To make blank tapes (Deck 2 only)

1. Switch the amplifier to an input source which is not being used.
2. Insert the recorded tape into DECK 2.
3. Press [DOLBY NR] so that the Dolby NR indicator is off.
4. Press [REVERSE MODE] to select reverse mode.
5. Press [● REC PAUSE].
6. Press [◀] or [▶], whichever side you want to erase.

Note
To erase both sides of the tape, be sure to press [▶].

To record on a VCR

You can record audio and video sources on a VCR when it is connected to the "VCR" terminals on the receiver.

1. Switch the receiver to the input source that you want to record.

Note
Recording from the tape deck is not possible.

2. Begin recording on the VCR and start the desired source.
(Refer to the appropriate operating instructions for details.)

Recording

41

DSP   DIGITAL INPUT

A

—DSP—
STEREO SURROUND SFC

STEREO

B

—DSP—
STEREO SURROUND SFC

Dolby Pro Logic

SURROUND   DD PRO LOGIC

Dolby Digital

SURROUND   DDDIGITAL

DTS

SURROUND   dts

Software with the following mark can be played back in these modes.

DD DOLBY
DIGITAL   DD DOLBY SURROUND   DIGITAL dts SURROUND

Digital Signal Processor (DSP)

You can take advantage of the following modes with this unit.
The DSP modes can be set for each source. Once you have set the mode for a source, the mode is engaged whenever that source is selected.
These modes are automatically switched to STEREO if SPEAKERS B is selected or both speakers are turned off. When SPEAKERS B is turned off or SPEAKERS A is selected, the mode is switched back to the latest mode.
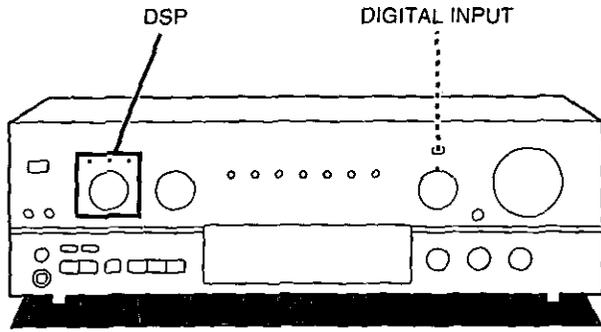
STEREO mode   **A**

Use this mode when you want to listen to stereo sources, whether they are digital or analog, or when you want to playback Dolby Digital or DTS sources through two channels. The sounds usually fed through the other speakers are down-mixed so they are output through the left and right front speakers. There may be surround change in the overall sound when surround sources are down mixed.

Turn [DSP] to select "STEREO".

SURROUND mode   **B**

By selecting this mode while digital input is being used, the unit automatically determines the kind of digital source being used (Dolby Digital, Dolby Surround, or DTS), and processes it accordingly. Select this mode also when you are playing back an analog source, VCR for example, that has been recorded in Dolby surround.

Turn [DSP] to select "SURROUND".

The following indicators light depending on the source.
DD PRO LOGIC
When playing analog sources.
When playing digital sources with PCM signals.
When playing Dolby Digital sources that contain Dolby Pro Logic.
DD DIGITAL
When playing Dolby Digital sources.

dts

When playing DTS sources.

If the beginning of a track is cut off when playing CDs
The beginning of a track may not be heard if you play CDs in STEREO mode.
You can solve this be engaging the PCM FIX mode.
Press and hold [DIGITAL INPUT] for four seconds.
"PCM FIX" appears on the display.

This mode can be selected for each source, but is cancelled when the unit is turned off.

Note
● The PCM FIX mode can be selected in STEREO mode only.
● Dolby Digital and DTS source cannot be played while PCM FIX mode is on.
● Noise can occur if DTS sources are played while PCM FIX mode is engaged. To avoid this, be sure to turn PCM FIX mode off after use.

Sound modes

Adjusting speaker output level

Adjust speaker level so the output from all the speakers is the same apparent level when sitting where you would normally enjoy a source.

1 Turn [DSP] to select "SURROUND".

2 Press [A] to turn on SPEAKERS A.
You cannot adjust SPEAKERS B.

3 **by remote control only**

Press [TEST] to output the test signal.
"TEST" appears on the display.
The signal is output from each speaker in order for about two second each.
L: Front speaker (Left)
C: Center speaker
R: Front speaker (Right)
RS: Surround speaker (Right)
LS: Surround speaker (Left)
SW: Subwoofer
Speakers set as "NONE" or "OFF" are skipped.

Note
DSP switches to SURROUND mode when the test starts.

4 **by remote control**

Press [VOL (–) or (+)] to set the volume level normally used for enjoying the source.

Note
Use [BALANCE] if the left right balance of the front speakers is off.

5 **by remote control only**

Press [LEVEL] to select speaker channel to adjust.
The current channel appears on the display.
Press again to change the speaker channel.
Speaker set as "NONE" or "OFF" are skipped.

6 **by remote control only**

Press [–] or [+] to adjust the level to the same apparent level as the front speakers.
The four channels can be adjusted between –10 dB and +10 dB, with zero being the current level of the front speakers.

7 Repeat 5 and 6 for each speaker channel.

To stop the test signal
Press [TEST].

Note
The test signal will not be output if DSP DEFEAT is engaged. Ensure DSP is ON (➡ page 44).

BALANCE

Sound modes

43

RQT5536

-DSP ON/DEFEAT

SFC mode

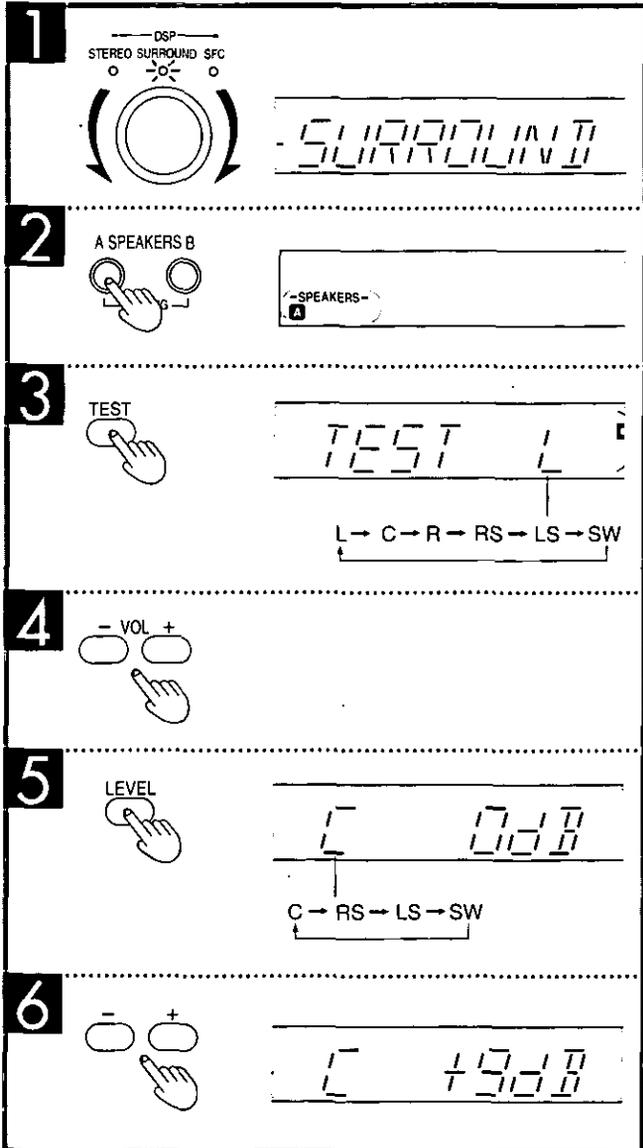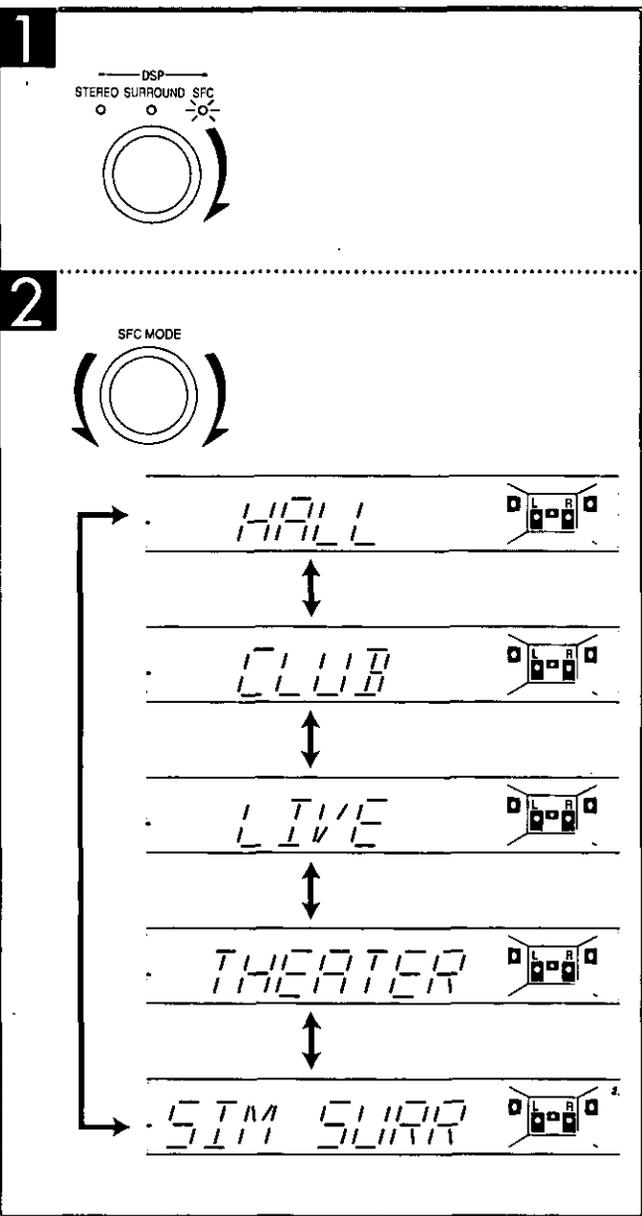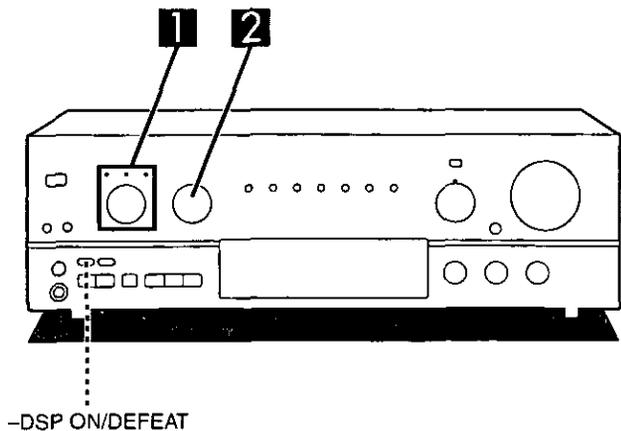The SFC (Sound Field Control) function gives presence and spread thereby enhancing and enriching the music or movies.
Read the following explanations better understand how to make your selection.

Note

SFC is designed to add surround-like effects to stereo sources. Select the appropriate mode when playing back Dolby Digital, DTS, or Dolby Surround sources.

HALL
This mode imparts a reflection and spread which will make you feel as if you are in a large concert hall.

CLUB
Like jazz club, this mode provides an exciting and intimate atmosphere. It simulates the sound field of a relatively small room having a low ceiling and hard reflective surfaces, for a "live" sound with enhanced presence to bring the performers up close.

LIVE
Primarily for vocal pieces, this mode adds gloss to the vocals and you'll feel as though you were hearing a live stage performance.

THEATER
You can clearly perceive the directions and source of the movie. Real ambience of sound can also be recreated naturally using this mode.

SIM SURR (SIMULATED)
Choose this mode if little or no sound will be heard from the surround speakers.
You can feel as if you were in a more expanded space adding to the actual sound from the source.
This mode also adds effect to monaural sources by outputting sound from surround speakers.

1 Turn [DSP] to select "SFC".

2 Turn [SFC MODE] to select the desired SFC mode.

Note

Dolby Digital and DTS sources cannot be played with SFC modes.

If reception is weak or "TUNED" fails to light completely while playing the radio
Press and hold [-DSP ON/DEFEAT] until "DEFEAT" appears on the display.
Press and hold again to turn DSP on. The STEREO mode is selected.

This allows you to play back sound without it passing though the digital signal processor (DSP). When this is selected, no sound will go through the center or surround speakers or the subwoofer.

Note

When "DEFEAT" is selected the sound mode indicators (STEREO, SURROUND and SFC) go out and these modes can not be selected.

Sound modes

A
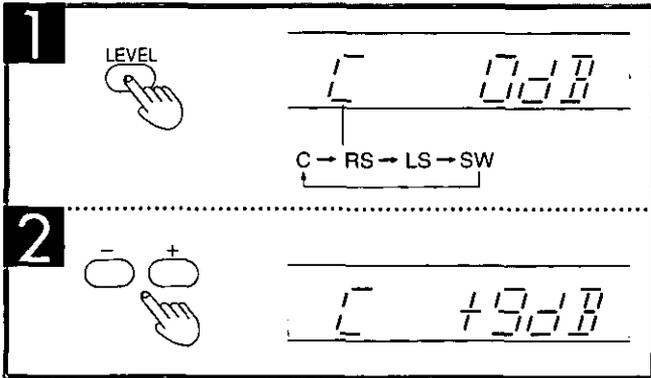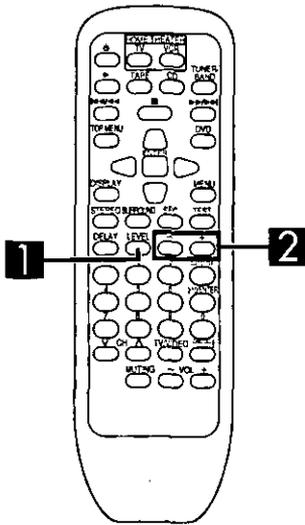
Adjusting field of sound

To adjust speaker level **A**

by remote control only

1 Press [LEVEL] to select the speaker channel to adjust.

Each time the button is subsequently pressed, the speaker whose level is to be set is selected in the listened sequence. Speakers set for which "NONE" or "OFF" has been set are skipped.

2 Press [–] or [+] to adjust the output level.

Channels C, RS, LS, and SW can be adjusted between –10 dB and + 10 dB.

To adjust delay time **B**

You can adjust only surround channel only in SFC mode.

by remote control only

1 Press [DELAY].

When the button is pressed, the current delay time is displayed.

2 Press [–] or [+] to set the time.

Select a delay time to suit your individual needs.
Delay time can be set at 10 milliseconds (ms) intervals between 10 and 100 ms.
The factory setting for each mode is 50 ms.
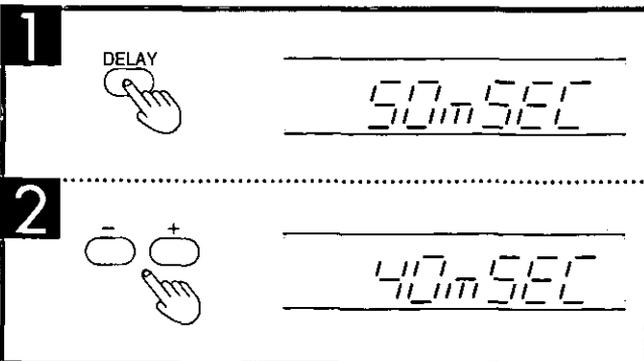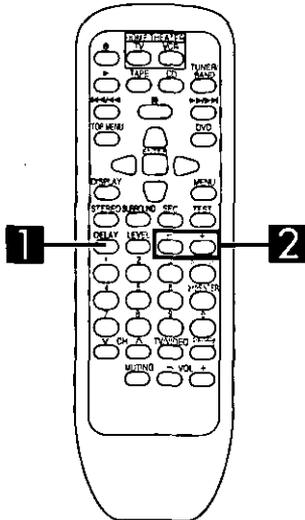
For your reference

Settings for volume level and delay time can be done for each SFC mode.

Sound modes

B

DSP   SIGNAL LEVEL

Using the graphic equalizer
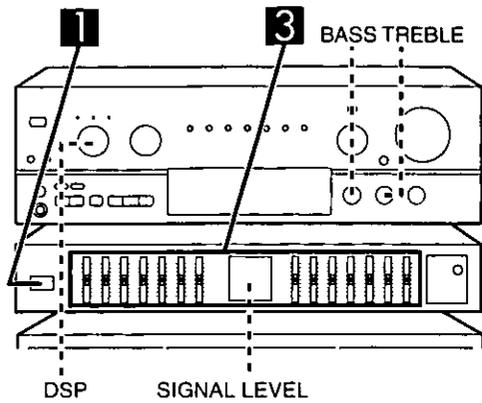
Adjusting the tone quality

[Preparation]
• Select "STEREO" with [DSP].
• Set the [TREBLE] and [BASS] on the receiver to the center.

1 Press [POWER] of the graphic equalizer.

2 Start the desired source.
The left and right input levels will be displayed.

3 Adjust the left and/or right channel tone quality as desired. (➡ page 47.)

Note
As with any equalizer, it is not recommended to raise adjacent equalizer level controls by a large amount. This may cause receiver clipping, distortion, or damage to the speakers. It is more effective to raise one equalizer level control and lower the ones on either side, especially if you want to emphasize a particular sound like a drum.

To bypass the graphic equalizer
Press [POWER] to switch off the graphic equalizer.
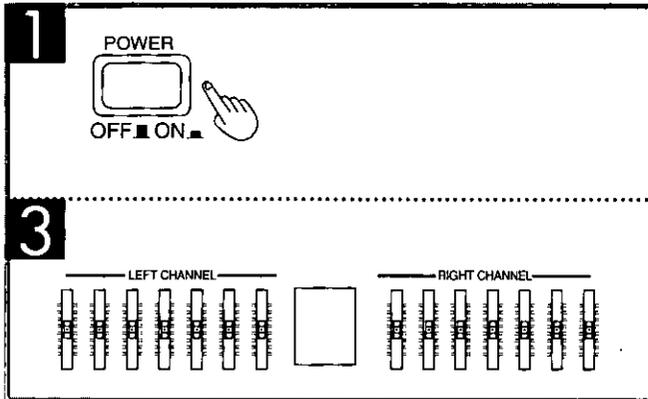
The following are examples of typical applications with regards to the equalizer band settings.

These are general descriptions and do not cover all possibilities.

63 Hz | Deep bass range
The sounds of the bass, drums, etc. are dramatically strengthened.

160 Hz | Bass range
This range provides the sounds of the saxophone, trombone, etc. Sounds can be clarified, if indistinct, by reducing this setting.

400 Hz | Mid-bass range (the fundamental range for music)
This control can be used to reinforce the sounds of male vocals, etc.

1·kHz | Mid-range
This control can be used to add clear presence and realism to female vocals, etc.

2.5 kHz | Mid-high range
This range provides clarity and color variations to stringed instruments, etc.

6.3 kHz | Treble range
This control can be used to brighten the sounds of the flute and similar instruments. If sounds seem too jarring, softness can be applied by reducing the setting.

16 kHz | Super-treble range
This control can be used to provide an extra measure of delicate vibration to the sounds of the cymbals, triangle, etc.
If tape "hiss" noises are annoying, this control's setting can be reduced to alleviate such noises.

By using the seven band-level controls, various corrections of the sound field and tone quality are possible.

For creation of a sound field in the listening room.
Correcting room acoustics
Each room has its own particular effects on frequency characteristics. These effects are determined by a number of conditions, such as room size, furnishings, etc.

The 7 separate divisions of the band level control on this unit make it possible to selectively correct only the frequency ranges necessary to suit the conditions of each listening room.

An example of room acoustics correction
In order to correct the peaks and dips in bass sounds caused by reflection, reduce the 160 Hz level 4-6 dB and then, raise the level of sounds below 63 Hz and above 6.3 kHz vicinity slightly.
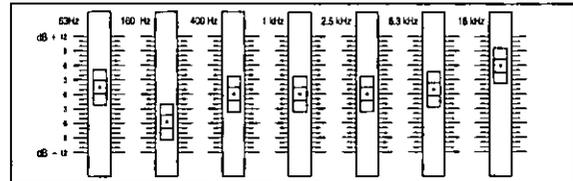
For editing "live" recordings made on tape, etc.
Cutting the noise from live recording tapes
Live tapes recorded outdoors generally contain popping noises caused by wind and various other noises from the surrounding area. In order to effectively eliminate wind noise, cut bass sounds below 63 Hz and raise the level of sounds in the 400 Hz range. Then control sounds made by birds, etc., with a 6.3 kHz adjustment.
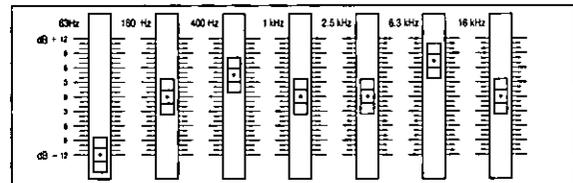
For creation of unique, individually personalized sounds.
Producing clear vocals
For female vocals, raise the level of the 1 kHz-2.5 kHz range by 2-4 dB. To rectify omission, raise the level of the 6.3 kHz vicinity slightly.

Male vocals can be improved by raising the level of the 400 Hz-2.5 kHz range.

Below is an example of a female vocal correction

Sound modes

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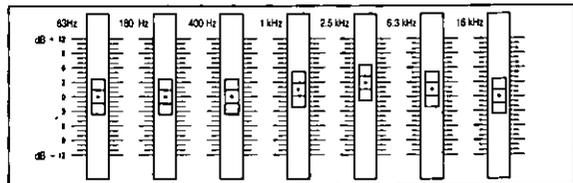
Using the remote control

This remote control can be used to operate the receiver you purchased and some other Panasonic and Technics cassette decks, CD players, TVs, VCRs, and DVD players, provided they are equipped with a remote control sensor.

It is also possible to change-over the remote control code so that the remote control can operate TVs and VCRs which have not been manufactured by this company. (➡ page 54)

To operate the receiver

Point the remote control toward the receiver

To turn the receiver ON/OFF	TUNER/ BAND ⬤ ➡ ⬤ (◡)	
To select an input source and switch the remote control to each operation mode	TAPE VCR TV DVD CD TUNER/BAND ⬤ ⬤ ⬤ ⬤ ⬤ ⬤ **Note** ● PHONO can not be selected with this remote control. ● TAPE MONITOR cannot be controlled with the [TAPE] button.	
To turn on the STEREO mode	STEREO ⬤	
To turn on the SURROUND mode	SURROUND ⬤	
To turn SFC on and select the desired mode	SFC ⬤	Changes as follows each time the button is pressed. HALL – CLUB – LIVE → THEATER └ SIM SURR (SIMULATED) ┘
To output a test signal	TEST ⬤ Press once more to stop the signal.	
To select the speaker channel and adjust its output level	LEVEL ⬤ ➡ ⬤ ⬤ – + **When the SURROUND or SFC modes are on** You can adjust the level of the center and surround speakers and the subwoofer. **When the STEREO mode is on** You can adjust the level of the subwoofer.	
To change the surround channel delay time	When the SFC mode is on DELAY ⬤ ➡ ⬤ ⬤ – +	
To mute the sound level	MUTING ⬤ The message "MUTING ON NOW" runs repeatedly from right to left across the display as long as the muting function is on. Press once more to return to the original volume.	
To adjust the volume level	– VOL + ⬤⬤	

Remote control operation

Make sure the remote control is in the tuner operation mode. (➡ Page 48.)

Point the remote control toward the receiver	To listen to radio broadcasts		
	To select "FM" or "AM"	TUNER/ BAND	Changes as follows each time the button is pressed. FM ⇆ AM
	To select the desired channel sequentially (Preset tuning)	∨ CH ∧	
	To select the desired channel directly (Preset tuning)	1 2 3 / 4 5 6 ≥10/ENTER / 7 8 9 0	(Example: Channel 1) 1 / (Example: Channel 10) ≥10/ENTER ➡ 1 ➡ 0 within 10 seconds
	To select radio stations by frequency (Direct tuning)	DIRECT TUNING/ DISC ENTER ➡ 1 2 3 / 4 5 6 / 7 8 9 0	(Example: 107.9 MHz) 1 ➡ 0 ➡ 7 ➡ 9 within 10 seconds
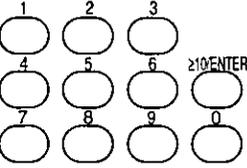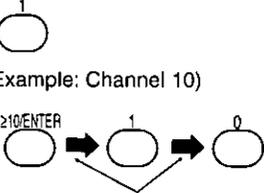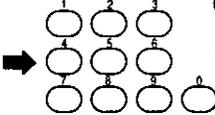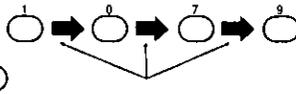
Turn the cassette deck ON before trying to operate it by remote control.
Make sure the remote control is in the cassette deck operation mode. (➡ Page 48.)

Point the remote control toward the cassette deck		
	To select the tape deck (DECK 1/DECK 2)	DISC/DECK 1,2
	To start playback	►
	To fast-forward or rewind the tape	While the tape is stopped I◄◄/◄◄ ►►/►►I
	To stop playback	■
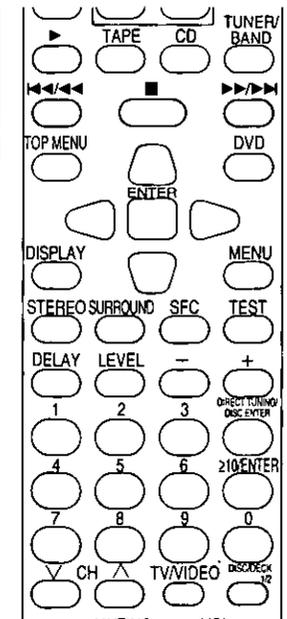
To operate the CD changer

Turn the CD changer ON before trying to operate it by remote control.
Make sure the remote control is in the CD changer operation mode. (➡ Page 48.)

Point the remote control toward the CD changer	To start play	
	To start play from the desired disc	**For SL-MC59** Select the disc number. (When selecting discs, [≥10/ENTER] does not respond to touch.) **For your reference** If you press this button instead of [▶] shown in the above procedure, the CD changer will stop and display the disc number. To start the disc, press [▶].
		For 5 CD changer Select the disc number.
	To start play from the desired track	Select the track number. (Example: Track 1) (Example: Track 10)
	To skip a track	
	To stop play	
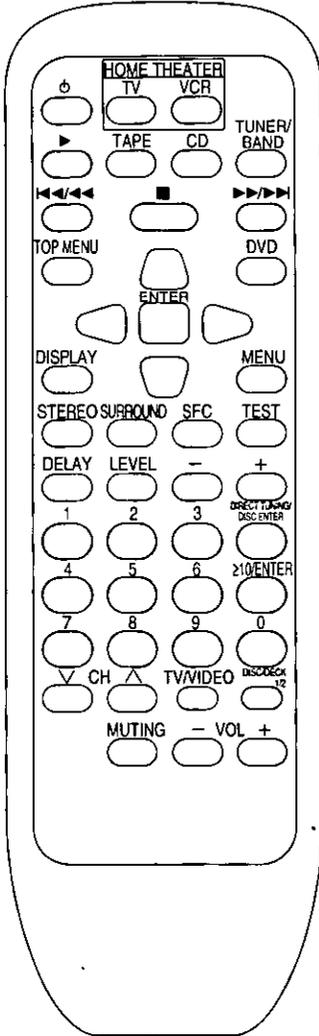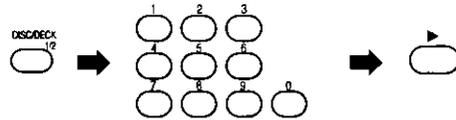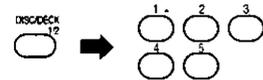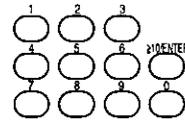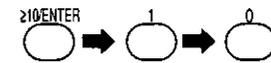
The procedures below are examples for when a TV and VCR are connected to the receiver as shown in this manual.
This remote control transmitter is designed for use with a home theater system. If you press [TV] (or [VCR]) and [⏻] in succession, the TV (or VCR) and receiver will be turned on and the selector on the receiver will change to TV (or VCR). Press [⏻] within 3 seconds of pressing [TV] (or [VCR]).
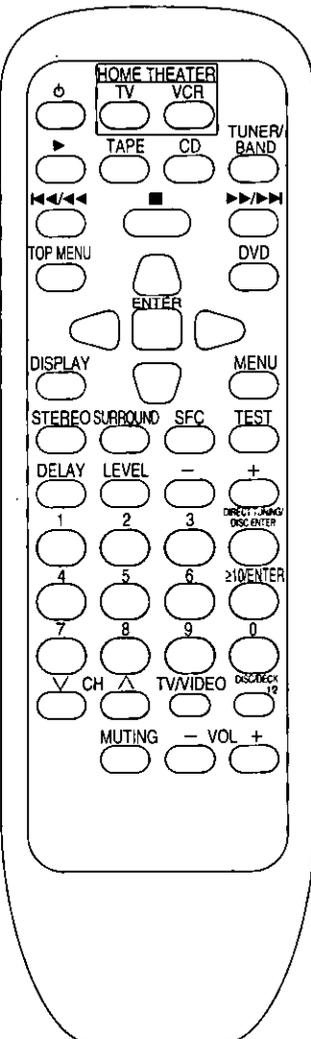
To watch TV broadcasts

Point the remote control toward the TV and the receiver

Point the remote control toward the TV

Point the remote control toward the TV

TV ➡ ⏻ ➡ TV/VIDEO ➡ ∨ CH ∧ or (keypad 1-0)

Switch ON the TV and the receiver.
The receiver will switch to TV input.

Set the TV/VIDEO mode on the TV to "TV".
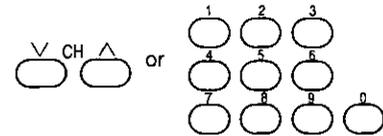
Select the desired channel.

Note

If you allow more than 3 seconds to pass between pressing [TV] and [⏻], only the TV will be operated.
Do not use this remote control to turn the TV ON and OFF if you are not using the receiver.

To watch TV broadcasts with a VCR tuner

Point the remote control toward the TV and the receiver

Point the remote control toward the VCR and the receiver

TV ➡ ⏻ ➡ VCR ➡ ⏻ ➡ **Set the input selector on the VCR to the "TUNER" position**

Switch ON the TV and the receiver.

Switch ON the VCR.
The receiver will switch to VCR input.

Point the remote control toward the VCR

∨ CH ∧ or (keypad 1-0)
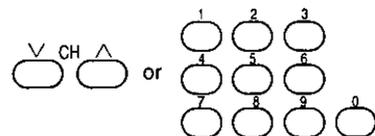
Select the desired channel.

Point the remote control toward the TV

TV/VIDEO

Set the TV/VIDEO mode on the TV to "VIDEO".

Note

If you allow more than 3 seconds to pass between pressing [VCR] and [⏻], only the VCR will be operated.
Do not use this remote control to turn the VCR ON and OFF if you are not using the receiver.

To switch OFF the TV   To switch OFF the VCR

TV ➡ ⏻   VCR ➡ ⏻   **Note**
Turn the receiver OFF last.

≥10/ENTER
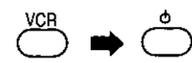
This button is used when using ENTER to select a channel on a TV or VCR which has not been manufactured by this company.

Remote control operation

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RQT5536

To watch video tapes

The procedure below are examples for when a TV and VCR are connected to the receiver as shown in this manual.
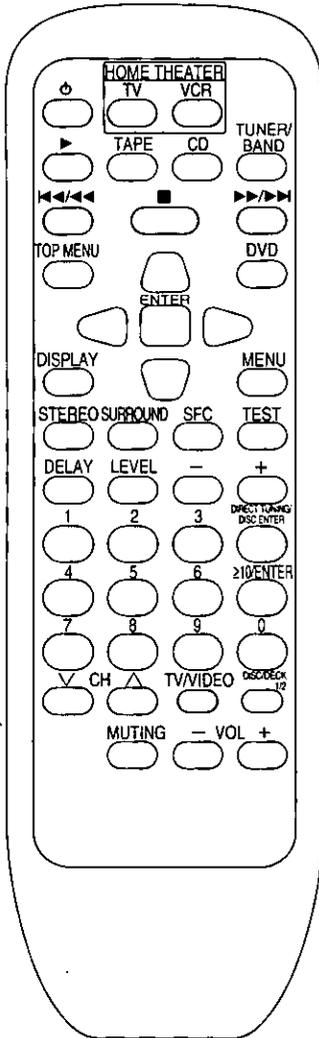
To watch video tapes

Point the remote control toward the TV and the receiver
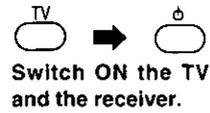
TV ➡ ⏻

Switch ON the TV and the receiver.

Point the remote control toward the VCR and the receiver

VCR ➡ ⏻

Switch ON the VCR.

The receiver will switch to VCR input.

Point the remote control toward the TV

TV/VIDEO

Set the TV/VIDEO mode on the TV to "VIDEO".

Point the remote control toward the VCR

▶

Playback will begin.
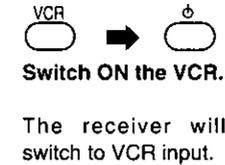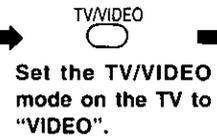
To fast-forward or rewind the video tape	In the stop mode VCR ➡ ◄◄/◄◄ ►►/►►|
To stop playback	VCR ➡ ■

To switch OFF the TV

TV ➡ ⏻

To switch OFF the VCR

VCR ➡ ⏻

Note
Turn the receiver OFF last.

The procedures below are examples for when a TV and DVD player are connected to the receiver as shown in this manual.
Make sure the remote control is in the DVD player operation mode. (➡ Page 48.)
Actual operations depend on your equipment and software.
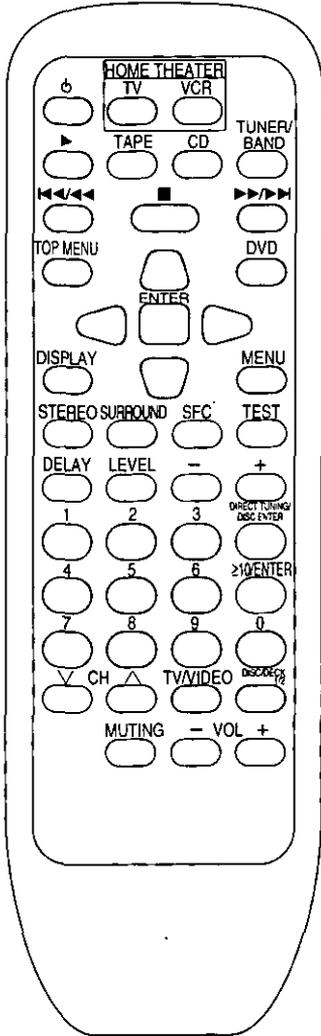
To enjoy DVDs

	Point the remote control toward the TV and the receiver	Point the remote control toward the DVD player and the receiver	Point the remote control toward the TV
	TV ➡ ⏻ ➡	DVD ➡ ⏻ ➡	TV/VIDEO
	Switch ON the TV and the receiver.	**Switch ON the DVD player.** The receiver will switch the DVD input.	**Set the TV/VIDEO mode on the TV to "VIDEO".** Point the remote control toward the DVD player. Play will begin. ▶
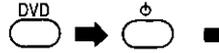
[DVD changer only] **To start play from the desired disc**	DISC/DECK 1/2 ➡ 1 2 3 / 4 5 Within 3 seconds	Select disc number.
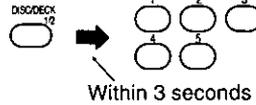
To select the top menu	TOP MENU ➡ ◁ ▷ ➡ ENTER Play will begin.
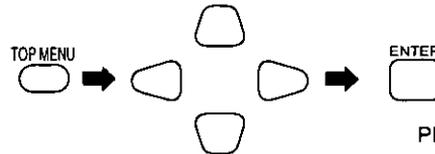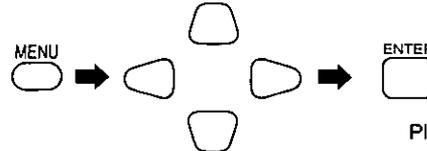
To use the menu	MENU ➡ ◁ ▷ ➡ ENTER Play will begin.

To use on-screen graphic controls (Graphic user interfaces, GUI, are a feature of some DVD players. See your player's manual for details.)	DISPLAY ➡ ◁ ▷ ENTER ⬅ ◁ ▷ or 1 2 3 / 4 5 6 / 7 8 9 / 0 Play will begin.
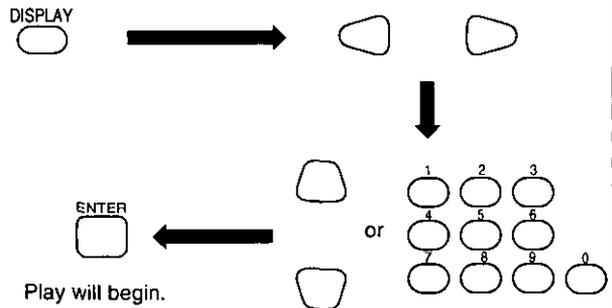
To skip to the beginning of a track or chapter	◄◄/◄◄ ►►/►►►

To stop play	■

To switch OFF the TV	**To switch OFF the DVD player**
TV ➡ ⏻	DVD ➡ ⏻ **Note** Turn the receiver OFF last.

Remote control operation

Changing the remote control code

Changing the remote control code in either of the following circumstances:
- If the Panasonic TV or VCR does not operate as a result of a difference in the remote control code.
- If you wish to operate some other make of TV or VCR.
  (➡ pages 51 and 52 for the buttons which can be used.)

Note

Even after changing the code there may be cases where certain operations cannot be done or operation is not possible at all.

How to change the remote control code
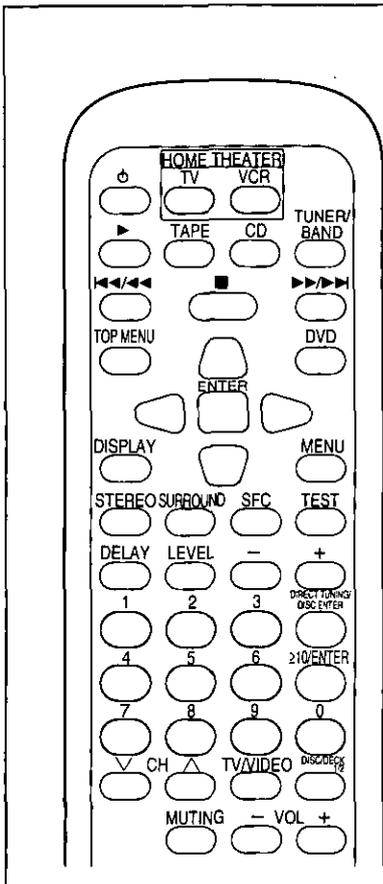
Hold down the button corresponding to the component you wish to operate.

Continue to hold the button down and...
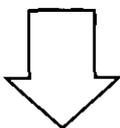
Aim the remote control at the component you wish to operate and carefully and slowly press the numbered buttons to enter the appropriate two-digit code number.
(Refer to the table below for the code number.)
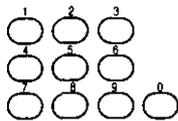
When the two-digit code number is entered, the remote control will automatically output the on/off signal.

If the remote control has been correctly changed to the code for the component to be operated, the component will be switched ON or OFF.
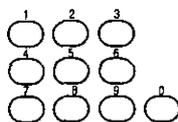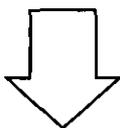
Note

If there is more than one code number indicated in the code table, repeat the above procedure until you find a code number for which the power of the component is switched ON or OFF.

TV				VCR			
Manufacturer	Code No.	Manufacturer	Code No.	Manufacturer	Code No.	Manufacturer	Code No.
Panasonic	01,02,20	RCA	03,07,09,13,23	Panasonic	01,02,09,33	Philips	02,09,12
Sony	04		24,25	Sony	05,06,07,35,36	Pioneer	09
Fisher	14	Sanyo	14		37	Quasar	01,02,09,33
G-E	02,03,07,09	Sharp	08,21	Fisher	13,14,15,18	RCA	02,03,04,09,10
Gold Star	07,15	Sylvania	06,07,15	Funai	08,30		11,12,23,24,26
Hitachi	05,07	Symphonic	17	G-E	02,03,11	Sanyo	14,18
JVC	12	Toshiba	10,21	Gold Star	27	Sharp	16,17
LXI	03,06,07,10,14	Zenith	18,26	Hitachi	09,10,11	Shintom	32
	15			JVC	19,25,31,38,39	Sylvania	02,09,12,30
Magnavox	06,07,11,15,22				40	Symphonic	30
Mitsubishi	07,15,16,21			LXI	10,13,14,15,18	Toshiba	23,24
NEC	07,15				27,30	Zenith	20
Philco	06,07			Magnavox	02,09,12		
Philips	06			Mitsubishi	21,22,28,29		
Pioneer	02,10,19			NEC	19,25,31,38		
Quasar	02			Philco	02,09,12,30		

Note

Changes to the codes are cancelled when the remote control's batteries are replaced. Repeat the above operation to reenter the code.

A

Center speaker

Surround speaker (left)

Surround speaker (right)

Subwoofer

Front speaker (left)   Front speaker (right)

B

1

POWER

⏻/|

2

A SPEAKERS B

SETTING

SETTING

3

A SPEAKERS B

SIZE

4

"SIZE"

① A SPEAKERS B

SETTING

FRONT

② SFC MODE

LARGE

Reference for speakers
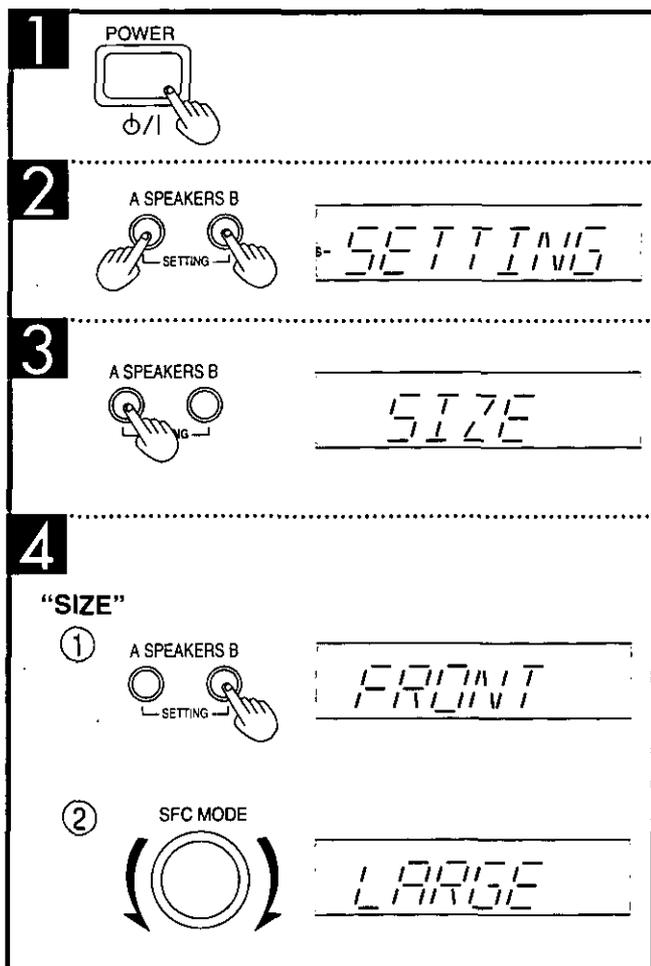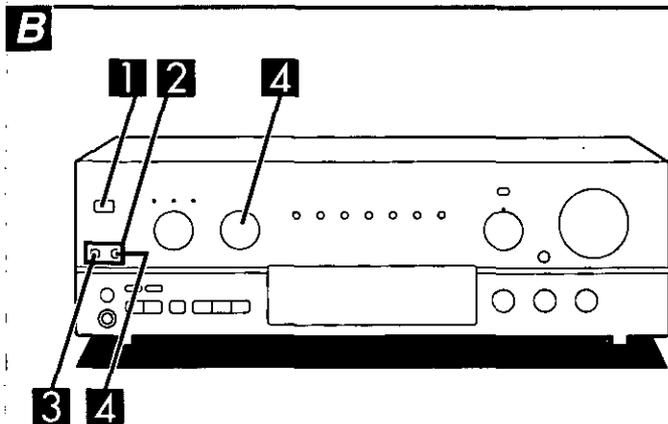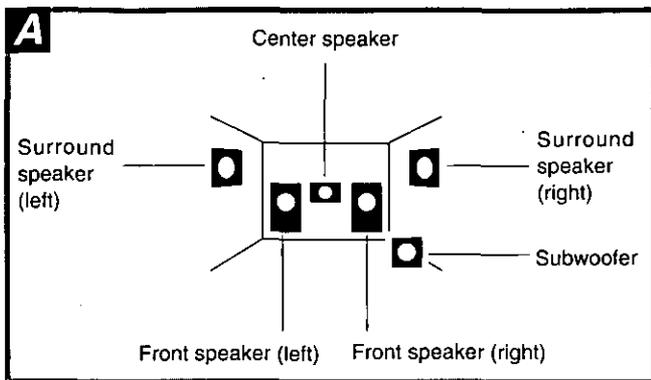
The speaker indicators

This part of the display indicates which speakers sound comes from.

The corresponding indicators will not light if you selected "NONE" during the speaker setting procedure, or if you turned the subwoofer off.

The surround and center speaker indicators do not light when STEREO mode is selected (➡ page 42).

Front, center, and surround channel settings

The following settings may be necessary if you replace the speakers included with this unit. They should be performed in this case to get the most from this unit's reproduction modes (➡ pages 40 and 42). Set the SIZE, DISTANCE, and FILTER for your speakers.

In SIZE
Set the type (LARGE or SMALL) and presence of your speakers. Select "LARGE" if the speakers can produce bass (below around 100 Hz). Select "SMALL" if the speakers cannot produce bass. If you aren't using center or surround speakers select "NONE" so the sound is produced through the front speakers.

In DISTANCE
Enter the distance of each speaker from the listening position so the sound from the speakers reaches the listening position at the same time. The unit calculates the delay time for the center and surround speakers based on these distances.

In FILTER
Enter the cutoff frequency for your subwoofer based on the bass capability of your front speakers.
The factory setting is 100 Hz.

1 Press [POWER] on the receiver.

2 Press [A] and [B] at the same time.
"SETTING" appears on the display.

3 Press [A] to select what you want to set.
Each time the button is pressed the display switches as follows,

SIZE ⟶ DISTANCE ⟶ FILTER ⟶ DR COMP

4 *When "SIZE" is selected*
① **Press [B] to select the speaker channel to be set.**
Each time the buttons is pressed the display switches as follows.

FRONT ⟶ CENTER ⟶ SURROUND

② **Turn [SFC MODE] to set the type (LARGE, SMALL) of the speaker.**
Each time the selector is turned the display switches as follows.

Front:
SMALL ⇄ LARGE

Center, Surround:
NONE ⇄ SMALL ⇄ LARGE

The factory settings are as follows.
Front speakers: LARGE
Center and surround speakers: SMALL

③ **Repeat steps ① and ② to complete the size settings for the front, center and surround speakers.**

Reference

Reference for speakers
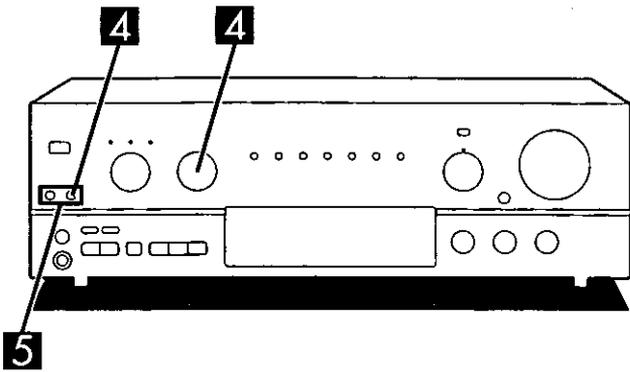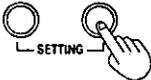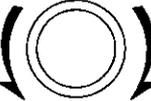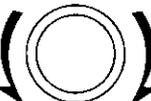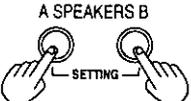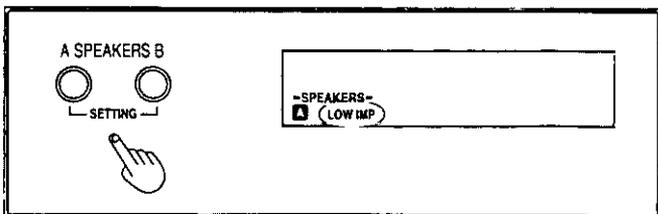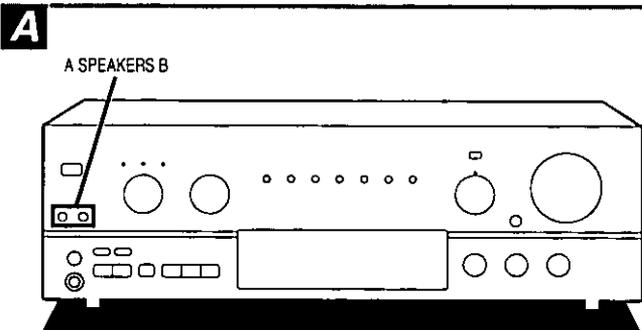
▣4 When "DISTANCE" is selected

① **Press [B] to select the speaker channel to be set.**

Each time the selector is turned the display switches as follows.

FRONT ──→ CENTER ──→ SURROUND

② **Turn [SFC MODE] to set the distance.**

Distance can be set at 1 foot intervals between 3 feet to 20 feet.
The factory settings are as follows.
Front and center speakers: 10 FEET
Surround speakers: 5 FEET

③ **Repeat steps ① and ② to complete the distance settings for the front, center and surround speakers.**

When "FILTER" is selected

Turn [SFC MODE] to set the cut off frequency.

Each time the buttons is pressed the display switches as follows.

100 ⇌ 150 ⇌ 200 (Hz)

▣5 Press [A] and [B] at the same time.

"COMPLETE" appears on the display.

··

If you allow about 10 seconds to elapse between setting, the procedure is cancelled, all settings are returned to how they were, and the previous display is restored. Begin again if this occurs.

For your reference:
The settings remain as they are until changed by the above procedure, even after the power has been turned off.

For front speakers with an impedance under 8 Ω ▣A

Press and hold [A] or [B] until "LOW IMP" lights up on the display.

If even one of the speakers being used has an impedance under 8 Ω, press and hold down either [A] or [B] for 4 seconds or more to set the impedance on the main unit to low.

(Press and hold down once again for 4 seconds or more to turn it off.)

Note that when "LOW IMP" is illuminated, speakers A and B cannot both the used at the same time.

To change a speaker:
e. g. To use speaker B, press [A] ("🅰" goes out), and then press [B] to activate speaker B.

Note
No settings are necessary when using the speakers included with this unit. Settings may need to be changed if you replace the speakers.

SUB:;COFER   Speaker cable (included)

Front speaker (Left)

Front speaker (Right)

SPEAKERS

SURROUND   CENTER   FRONT

(−) (+)   (−) (+)

(−) (+)   HF   LF   (−) (+)   HF   LF

(−) (+)   (+)(−)(−)(+)   (−) (+)

Speaker cable (not included)

Remove the short bars (ⓑ) from the terminals of both speakers.
Keep the short bars in a safe place.
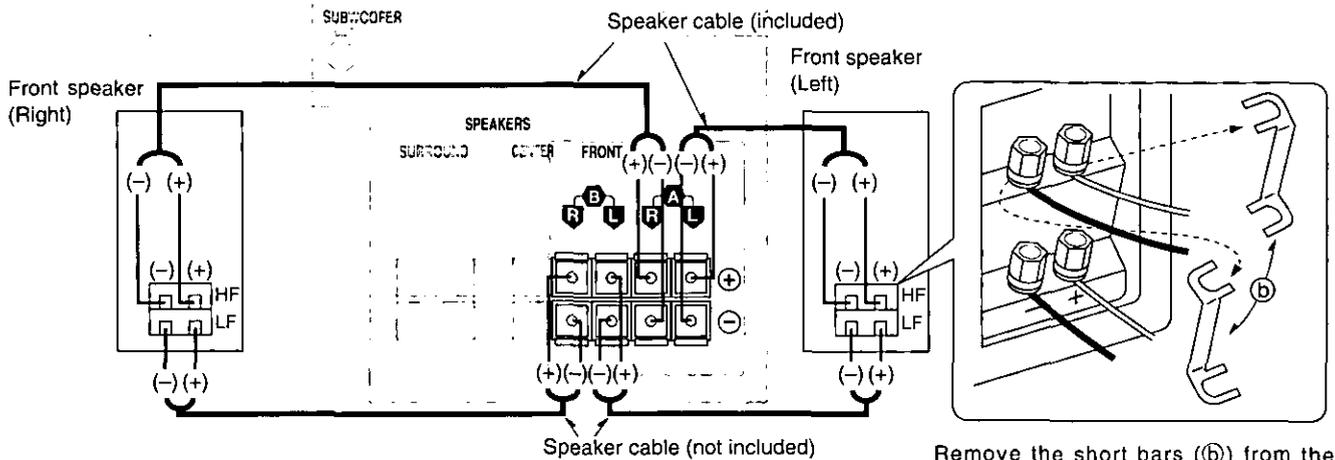
Note

- You will need to purchase another set of speaker cords to bi-wire the speakers.
- If you bi-wire the speakers, turn speakers A and B on (➡ page 18). SURROUND and SFC cannot be used in this case.

Connections to the FRONT B and SUBWOOFER OUT terminals
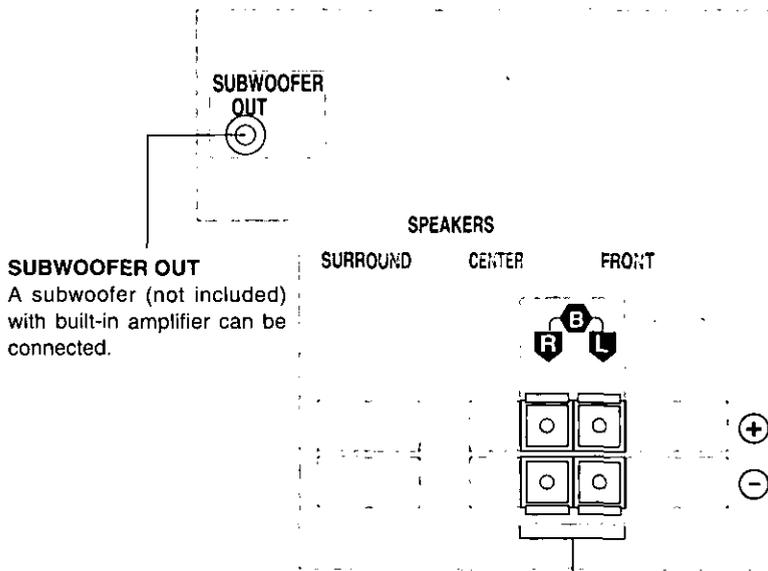
SUBWOOFER OUT

SUBWOOFER OUT
A subwoofer (not included) with built-in amplifier can be connected.

SPEAKERS

SURROUND   CENTER   FRONT

Note
This receiver has no amplifier section designed especially for the subwoofer.
To connect a passive subwoofer
- You can connect another amplifier and connect a passive subwoofer to it.
- Connection to a passive subwoofer that has front speaker terminals is also possible.
(See the operating instructions of the subwoofer for details.)

"B" terminals
For connection to a second pair of speakers.
To use speakers B, press [B] (➡ page 18).

Note
Use the A terminals to enjoy Dolby Digital, Dolby Pro Logic, DTS and SFC.

Replacing the speakers

You can use other speakers with this unit instead of the included set.

When choosing replacement speakers, ensure they meet the following impedance ratings.

Front	A or B	4–8 Ω
	A and B	8 Ω
Center		8 Ω
Surround		8 Ω
Subwoofer		8 Ω

After you have replaced the speakers, you may need to change the speaker settings on this unit (➡ pages 55 and 56).

Reference

Receiver SA-G90

■ AMPLIFIER SECTION

Rated minimum sine wave RMS power output
20 Hz–20 kHz both channel driven
0.05% total harmonic distortion

100 W per channel (8 Ω)

1 kHz continuous power output both channels driven	
0.05% total harmonic distortion	105 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 1 kHz each channel driven
0.9% total harmonic distortion

Front	2 X 100 W (8 Ω)
Center	100 W (8 Ω)
Surround	2 X 100 W (8 Ω)
Low frequency damping factor	30 (8 Ω)

Load impedance

Front	
A or B	4–8 Ω
A and B	8 Ω
Center	8 Ω
Surround	8 Ω
Dynamic headroom	2 dB (8 Ω)

Frequency response

PHONO	RIAA standard curve ±0.8 dB
CD, TAPE, DVD, TV, VCR	10 Hz–70 kHz, ±3 dB

Input sensitivity

PHONO	0.4 mV (3 mV, IHF'66)
CD, TAPE, DVD, TV, VCR	27 mV (200 mV, IHF'66)

S/N (IHF A)

PHONO	70 dB (80 dB, IHF'66)
CD, TAPE, DVD, TV, VCR	75 dB (85 dB, IHF'66)

Input impedance

PHONO	47 kΩ
CD, TAPE, DVD, TV, VCR	22 kΩ

Tone controls

BASS	50 Hz, +10 to –10 dB
TREBLE	20 kHz, +10 to –10 dB
Subwoofer frequency response (–6 dB)	7–200 Hz

Digital input	
Optical	CD, DVD, TV

■ 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	73 dB
STEREO	67 dB
Frequency response	20 Hz–15 kHz, +1 dB, –2 dB
Alternate channel selectivity	65 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	40 dB
Spurious response rejection at 98 MHz	75 dB
AM suppression	50 dB

Stereo separation

1 kHz	40 dB
10 kHz	30 dB
Antenna terminal	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	530–1710 kHz
Sensitivity	20 μV, 330 μV/m
Selectivity	55 dB
IF rejection at 1000 kHz	50 dB

■ VIDEO SECTION

Output voltage at 1 V input (unbalanced)	1±0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω

■ GENERAL

Power supply	AC 120 V, 60 Hz
Power consumption	380 VA, 290 W
Dimensions (W X H X D)	430 X 158 X 320.5 mm
	(16–15/16" X 6–7/32" X 12–5/8")
Mass	9.6 kg (21.3 lb.)

Power consumption when system is in standby mode: 1 W

Note:
1. Specifications are subject to change without notice.
   Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Cassette deck RS-TR180

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4 track, 2 channel
Recording system	AC bias
Bias frequency	80 kHz (approx.)
Erasing system	AC erase

Heads

DECK 1	Playback head (Permalloy) X 1
DECK 2	Recording/Playback head (Permalloy) X 1
	Erasing head (Double-gap ferrite) X 1

Motors

DECK 1	Capstan/Reel table drive (DC servo motor) X 1
DECK 2	Capstan/Reel table drive (DC servo motor) X 1
Tape speed	4.8 cm/s (1–7/8 ips)
Wow and flutter	0.18% (WRMS)

Fast forward and rewind times

Approx. 120 seconds with C-60 cassette tape

Frequency response (Dolby NR off)

TYPE I (NORMAL)	40 Hz–14 kHz, ±3 dB
	20 Hz–17 kHz
TYPE II (HIGH POSITION)	40 Hz–14 kHz, ±3 dB
	20 Hz–17 kHz
TYPE IV (METAL)	40 Hz–15 kHz, ±3 dB
	20 Hz–18 kHz

S/N
(signal level=max recording level, HIGH POSITION type tape)

NR off	54 dB (A weighted)
Dolby B NR on	64 dB (A weighted)

Input sensitivity and impedance

REC (IN)	500 mV/47 kΩ

Output voltage and impedance

PLAY (OUT)	500 mV/500 Ω

■ GENERAL

Power supply	AC 120 V, 60 Hz
Power consumption	18 W
Dimensions (W X H X D)	430 X 131 X 286 mm
	(16–15/16" X 5–5/32" X 11–1/4")
Mass	3.8 kg (8.5 lb.)

Note:
Specifications are subject to change without notice.
Mass and dimensions are approximate.

■ EQUALIZER SECTION

Frequency response (center position)	5 Hz–100 kHz, –3 dB
Maximum output voltage	6 V (1 kHz)
Rated output voltage	1 V
Rated total harmonic distortion	0.007% (20 Hz–20 kHz)
	0.005% (1 kHz)
Input sensitivity	1 V
S/N	110 dB (IHF'A)
Maximum input voltage	6 V
Input impedance	33 kΩ
Gain	0 ±1 dB
Band level controls	+12 to –12 dB
	(7 continuously variable elements per channel)
Center frequency	
	63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz

■ GENERAL

Power supply	AC 120 V, 60 Hz
Power consumption	8.5 W
Dimensions (W X H X D)	430 X 75 X 192.5 mm
	(16-29/32" X 2-15/16" X 7-19/32")
Mass	1.8 kg (3.95 lb.)

Note:
1. Specifications are subject to change without notice.
   Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

■ AUDIO

No. of channels	2 (left and right, stereo)
Frequency response	2–20,000 Hz, ±1 dB
Output voltage	2 V (at 0 dB)
Dynamic range	92 dB
S/N	100 dB
Total harmonic distortion	0.007% (1 kHz, 0 dB)
Wow and flutter	Below measurable limit
DA converter	MASH (1 bit)
Output impedance	Approx.1 kΩ
Load impedance	More than 10 kΩ

■ PICKUP

Wavelength	780 nm

■ GENERAL

Power supply	AC 120 V, 60 Hz
Power consumption	11 W
Dimensions (W X H X D)	430 X 170 X 387 mm
	(16–15/16" X 6–11/16" X 15–1/4")
Mass	6.3 kg (13.9 lb.)

Note:
Specifications are subject to change without notice.
Mass and dimensions are approximate.

Type	2 way 3 speaker Bass-reflex
Speaker(s)	
Woofer	14 cm (5-1/2") cone type X 2
Tweeter	2.5 cm (1") dome type
Impedance	8 Ω
Input power	200 W (MUSIC)/100 W (DIN)
Sound pressure level	86 dB/W (1.0 m)
Crossover frequency	3 kHz
Frequency range	38 Hz–40 kHz (–16 dB)
	42 Hz–36 kHz (–10 dB)
Dimensions (W X H X D)	216 X 980 X 300 mm
	(8-1/2" X 38-19/32" X 11-13/16")
Mass	13.5 kg (29.76 lb)

Note:
Specifications are subject to change without notice.
Mass and dimensions are approximate.

Type	2 way 2 speaker Bass-reflex
Speaker(s)	
Woofer	10 cm (3-15/16") cone type
Tweeter	6 cm (2-3/8") cone type
Impedance	8 Ω
Input power	200 W (MUSIC)/100 W (DIN)
Sound pressure level	81 dB/W (1.0 m)
Crossover frequency	3.5 kHz
Frequency range	65 Hz–22 kHz (–16 dB)
	95 Hz–20 kHz (–10 dB)
Dimensions (W X H X D)	120 X 208 X 163 mm
	(4-3/4" X 8-3/16" X 6-7/16")
Mass	1.8 kg (4.0 lb.)

Note:
Specifications are subject to change without notice.
Mass and dimensions are approximate.

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.

When getting service

Before bringing in your changer for service, be sure to remove all discs.
If the disc in play doesn't return to its slot when you press [■], hold the button down for about 4 seconds. The disc should return to the slot.

Reference

About the HELP function
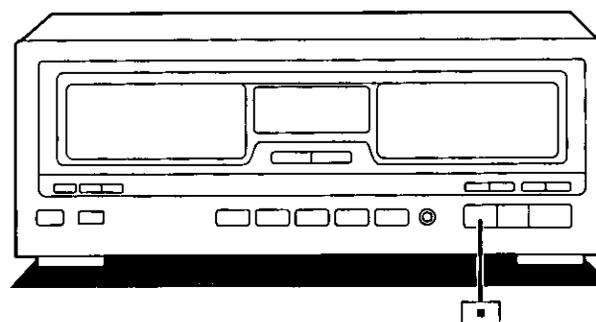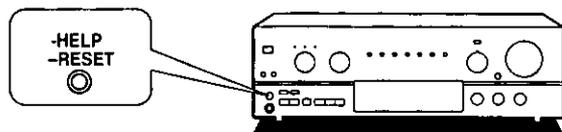
If you make a mistake in operation or if sound output stops due to some operation which was performed, the HELP function displays information which can be useful for indicating the method by which this condition can be remedied.
If "ERROR" or scrolling characters (for instance, "SPEAKER OFF NOW") appear on the display during operation, carry out the following operation.

Press [-HELP, -RESET].

The method for remedying this situation will be displayed.

For your reference

If the above button is pressed for 2 seconds or more 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 stations which have been preset into memory will not be erased at this time.

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.

We recommend you to avoid prolonged exposure to excessive noise.

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.

Maintenance

Head care (Only for cassette deck)
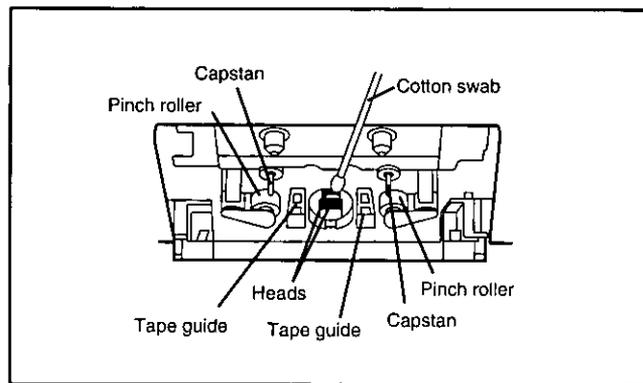
To assure good sound quality for recording and playback, be sure to clean the heads after approximately every 10 hours of use.
1) Press [OPEN] to open the cassette holder.
2) **Switch off the power of the cassette deck.**
3) Clean the heads, pinch roller, capstan shaft and the tape guide with a cotton swab (or with a soft, lint-free cloth) slightly moistened with isopropyl alcohol.
Do not use any solution other than alcohol for head cleaning.

If the surfaces are dirty

To clean this unit, wipe with a soft, dry cloth.
If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

● Never use alcohol, paint thinner or benzine to clean this unit.
● Before using chemically treated cloth, read the instructions that came with the cloth carefully.

Reference

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 dealer for instructions.

For detailed instructions, contact Panasonic Canada Inc.
Customer Care Centre in Canada
Call 905-624-5505 or visit www.panasonic.ca

Problem	Probable cause(s)	Suggested remedy	Page(s)

Common Problems

Problem	Probable cause(s)	Suggested remedy	Page(s)
Sound is not heard when the power is switch on.	The power cord plug is not fully inserted.	● Confirm the plug is fully inserted.	–
	Incomplete or incorrect connection to the speaker systems, etc.	● Check all connections.	7–12
	The speakers indicators are off.	● Turn on the speaker indicators.	18
	The tape monitor function is on.	● Press the tape monitor button.	18, 38
	The input selector is set incorrectly.	● Select the correct source.	18, 22, 33, 37
When listening to stereo sound, the sound lacks depth (i.e. thin bass, tinny sound).	One of the speakers is connected out of phase [(+) → (−), (−) → (+)].	● Reconnect the speakers maintaining proper polarity [i.e., (+) → (+), (−) → (−)].	12
When listening to stereo sound, the left and right sounds are reversed.	The left and right speaker connections, or source connections, are reversed.	● Check all connections and correct them if necessary.	7–12
A low-pitched noise ("hum" or "buzz") is heard.	A power cord, fluorescent light, etc., is near the connection wires.	● Try separating this unit as far as possible from the electric appliance.	–
Sound is not heard from one of the speaker systems.	The speaker wires are disconnected.	● Check and correct the connections of the speaker wires.	–
	The balance control is set too far to one side.	● Set so that sounds are heard at the center, between the speaker systems.	37
Cannot play CD, DVD, or TV.	The DIGITAL input mode is set to DIGITAL or ANALOG.	● Change the setting to suit the type of connection you have made.	22, 37
Sound suddenly stops or none is heard when the power is switched on. "OVERLOAD" appears on the display of receiver.	The protection circuitry has functioned because the positive and negative speaker wires are shorted; speakers with a lower impedance than the receiver rated impedance are being used; the speakers are under strain through excessive volume, excessive power, or by being used in a high temperature environment.	● Switch off the power, and, after determining and correcting the cause, switch the power on. ● Use a speaker system of the right impedance rating.	– 57
"F70" appears on the display of receiver.		● Turn off the power and then turn it on again, or disconnect the AC power supply cord and then connect it to your household AC outlet again. (If "F70" remains on the display, consult an authorized service center or your dealer.)	–

While enjoying the surround modes

Problem	Probable cause(s)	Suggested remedy	Page(s)
Sound is not heard from the center, surround or subwoofer speakers.	The presence setting of the speaker has been incorrectly set to "NONE" or "OFF".	● Set the type and presence setting of each speaker correctly.	55, 56
	The presence mode setting has been incorrectly set to "STEREO".	● Set the SURROUND mode.	42
SURROUND and SFC cannot be selected.	DSP is off.	● Select "DSP ON".	44
	Speaker B is on.	● Turns SPEAKERS B off.	42
Cannot play Dolby Digital or DTS sources.	The PCM FIX mode may be on.	● Turn PCM FIX mode off.	42
	An SFC mode is on.	● Switch to SURROUND or STEREO mode.	42

Reference

RQT5536

Problem	Probable cause(s)	Suggested remedy	Page(s)

While listening to FM broadcasts

Problem	Probable cause(s)	Suggested remedy	Page(s)
Hissing is heard during stereo broadcasts, but not during monaural ones.	Modulation for the two types is different so some noise may be heard during stereo broadcasts.	● Reduce the treble sound by using the treble control of the receiver.	37
Excessive noise in both stereo and monaural broadcasts.	Antenna location and direction poor.	● Changing the location and direction of the antenna.	10
	Station is distant.	● Use an outdoor antenna.	10
		● Use an antenna with more elements.	–
	DSP is on.	● Select "DSP DEFEAT".	44
"STEREO" and "TUNED" indicators flicker.	Antenna location and direction poor.	● Changing the location and direction of the antenna.	10
	Station is distant.	● Use an outdoor antenna.	10
Stereo broadcasts highly distorted.	Building or mountain nearby.	● Use an antenna with more elements.	–
Sound is distorted, "popping" noise is heard, and/or the volume level becomes low.	Broadcast signals are being disturbed by nearby automobile traffic or airplanes.	● Relocate the antenna and the connection wires to a place farther away from where automobiles pass.	–

While listening to AM broadcasts

Problem	Probable cause(s)	Suggested remedy	Page(s)
Unusual "beat" sound is heard.	A television is on nearby.	● Separate the two or turn the television off.	–
	Adjacent signal is interfering.	● Reduce the treble.	37
	DSP is on.	● Select "DSP DEFEAT".	44
Low-pitched "hum" sound is heard when the a station is tuned.	Power cord is near the antenna wires.	● Separate the power cord from the wires.	–
	Electronic interference from the power cord is fed to the speakers.	● Use an outdoor antenna.	–
A continuous or intermittent hiss is heard.	Interference from other appliances, fluorescent light, TVs, small motors, etc., through discharge and oscillation.	● Separate this system from such appliances. ● Install noise-prevention equipment on this unit or on the electric appliance.	–

While using the cassette deck

Problem	Probable cause(s)	Suggested remedy	Page(s)
Previously recorded sound has not been erased.	Erase head is dirty.	● Clean the head.	60
Sound output is hoarse or unsteady.	Heads are dirty.	● Clean the heads.	60
	Tape is damaged.	● Try operation with a new cassette; if there is no problem with the new cassette, discard the damaged cassette.	–
Poor sound quality (especially in the high treble and low bass ranges).	The Dolby noise-reduction function is off.	● Press [DOLBY NR].	33
Sound is low, poor tone, intermittent sound, noise.	Heads, capstan and/or pinch roller are dirty.	● Clean the heads, capstan and/or pinch roller.	60
	Tape is damaged.	● Try operation with a new tape.	–
There is a lot of noise, and the treble is drowned out.	The heads have been magnetized.	● Demagnetize the heads with a commercially sold magnetic eraser.	–
Recording is not possible.	One of the tape-to-tape recording-speed indicators is illuminated.	● Switch off whichever tape-to-tape recording-speed indicator is illuminated (by pressing [SPEED]).	40
Recorded sound is TV noise.	This unit is placed near a TV.	● Try placing this unit further away from a TV.	–

Problem	Probable cause(s)	Suggested remedy	Page(s)

While listening to compact discs

Problem	Probable cause(s)	Suggested remedy	Page(s)
Changer will not play.	A disc(s) or other foreign object(s) has fallen inside the changer.	● Open the front panel and remove the object.	–
	Moisture has collected in the changer.	● Allow the changer to dry out for about one hour before using it.	–
The disc in the changer does not play.	The disc label is facing left.	● Set the disc with the label facing right.	14
	The disc is dirty.	● Wipe the disc with a soft cloth.	15
	The disc is scratched.	● Replace the disc with a new one.	–
	The disc is warped.		
	The disc is not within specified standards.		
Play stops before changing to the next disc.	The front panel is open.	● Close the panel.	–
A certain music passage can't be played correctly.	The disc is dirty.	● Wipe the disc with a soft cloth.	15
	The disc is scratched.	● Replace the disc with a new one.	–
There is noise from the tuner or disturbance on the TV screen.	Caused by high-frequency signals from this changer.	● Use the changer further away from the tuner or TV. ● If the tuner or TV's antenna is the indoor type, use an outdoor one.	–
The error message "NO PGM" appears on the display, when program play is started.	Play was started without a track being programmed.	● Program a track.	30
The error message "ERROR" appears on the display, and the changer stops operating.	The mechanism of the changer has been improperly adjusted.	● Turn the unit off and then back on again.	–
The error message "F-26" appears on the display and the changer stops operating.	The servo LSI has malfunctioned.	● Unplug the changer from its outlet, replug it in and turn the changer ON again.	–
The error message "TAKE OUT" appears on the display and the changer stops operating.	A disc has been put in the slot of the disc in play.	● Remove the disc whose number is displayed and press the stop button.	–
	Because of light or noise, the changer has detected a disc in the slot of the disc being played, even though it is empty.	● Check whether there is a disc in the displayed slot. With the front panel close, hold down [■] for at least 4 seconds.	–

While using the remote control transmitter

Problem	Probable cause(s)	Suggested remedy	Page(s)
Remote control transmitter does not function.	Batteries are incorrectly installed.	● Insert the batteries so that the positive (+) and negative (–) polarities are correct.	13
	The remote control transmitter batteries are drained.	● Replace them with new batteries.	13
	There is an obstruction between the remote control transmitter and the system components.	● Remove the obstruction.	–
	The remote control transmitter is not correctly facing the system components.	● Face the remote control transmitter correctly toward the system components.	13

While using the graphic equalizer

Problem	Probable cause(s)	Suggested remedy	Page(s)
Sound is distorted.	The TAPE, EQ switch on the back of the receiver is switched to TAPE.	● Set to EQ.	7
No sound.	Input on the graphic equalizer is set incorrectly.	● Correct the setting.	18, 22, 33

Reference

Disc index `For CD changer`

No.	GROUP					DISC NAME
0	SINGLE					
1	A	B	C	D	E	
2	A	B	C	D	E	
3	A	B	C	D	E	
4	A	B	C	D	E	
5	A	B	C	D	E	
6	A	B	C	D	E	
7	A	B	C	D	E	
8	A	B	C	D	E	
9	A	B	C	D	E	
10	A	B	C	D	E	
11	A	B	C	D	E	
12	A	B	C	D	E	
13	A	B	C	D	E	
14	A	B	C	D	E	
15	A	B	C	D	E	
16	A	B	C	D	E	
17	A	B	C	D	E	
18	A	B	C	D	E	
19	A	B	C	D	E	
20	A	B	C	D	E	
21	A	B	C	D	E	
22	A	B	C	D	E	
23	A	B	C	D	E	
24	A	B	C	D	E	
25	A	B	C	D	E	
26	A	B	C	D	E	
27	A	B	C	D	E	
28	A	B	C	D	E	
29	A	B	C	D	E	
30	A	B	C	D	E	

No.	GROUP					DISC NAME
31	A	B	C	D	E	
32	A	B	C	D	E	
33	A	B	C	D	E	
34	A	B	C	D	E	
35	A	B	C	D	E	
36	A	B	C	D	E	
37	A	B	C	D	E	
38	A	B	C	D	E	
39	A	B	C	D	E	
40	A	B	C	D	E	
41	A	B	C	D	E	
42	A	B	C	D	E	
43	A	B	C	D	E	
44	A	B	C	D	E	
45	A	B	C	D	E	
46	A	B	C	D	E	
47	A	B	C	D	E	
48	A	B	C	D	E	
49	A	B	C	D	E	
50	A	B	C	D	E	
51	A	B	C	D	E	
52	A	B	C	D	E	
53	A	B	C	D	E	
54	A	B	C	D	E	
55	A	B	C	D	E	
56	A	B	C	D	E	
57	A	B	C	D	E	
58	A	B	C	D	E	
59	A	B	C	D	E	
60	A	B	C	D	E	

Write your group names in here.

GROUP	GROUP NAME
A	
B	
C	
D	
E	

En

RQT5536-P

H0200MK0 (D)