Technics®

Electronic Components

SD-S947·S747
SD-S937·S737

Operating Instructions

COMPACT
disc
DIGITAL AUDIO

The photographs show SD-S947-S747.

Before connecting, operating or adjusting these components, please read these instructions completely.
Please save this manual.

P

2

Dear Customer

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

These operating instructions are applicable to the following sys-
tems.
These operating instructions, however, fundamentally explain the
operation of system SC-S4750.

System	SC-S4750	SC-S3700/SC-S3750
Electronic Components	SD-S947·S747	SD-S937·S737
Tuner	ST-K55	ST-K55
Amplifier	SU-G96	SU-G96
Graphic equalizer	SH-8017	–
Cassette deck	RS-TR280	RS-TR180
CD changer	SL-MC409	SL-MC409

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

Tuner   :
Amplifier   :
Graphic equalizer   :
Cassette deck   :
Compact disc changer :

User memo:

DATE OF PURCHASE _____

DEALER NAME _____

DEALER ADDRESS _____

_____

TELEPHONE NUMBER _____

CAUTION! (For SL-MC409)
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PER-
FORMANCE 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 PER-
SONNEL.

Before use

Listening

Recording

Adjusting the sound field and sound quality

Reference

CAUTION:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

FCC Notice: This system complies with new Part 15, except for the radio receiver, which complies with old Part 15, Subpart C of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation. The radio receiver is not subject to above item (2).

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

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

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

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

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Precautions

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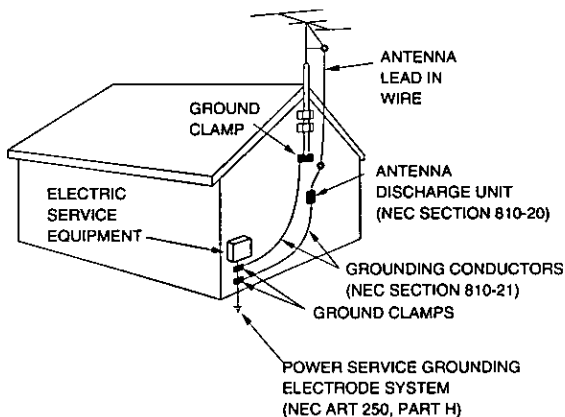Afterwards keep them handy for future reference.

Safety

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

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.

Installation

Environment

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

ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

NEC–NATIONAL ELECTRICAL CODE

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 48 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.
   (Only for U.S.A.)
   Call 1-800-545-2672 for the address of an authorized factory servicenter.

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. Infiltrating dust or other matter may lead to damage or malfunctions.

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.
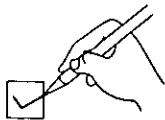To establish a safe level:
* Start your volume control at a low setting.
* Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

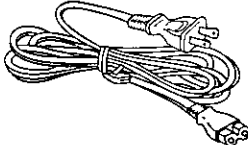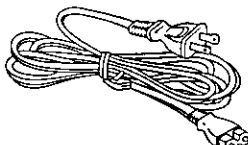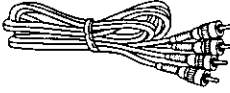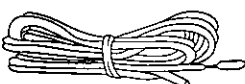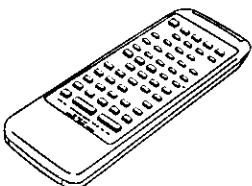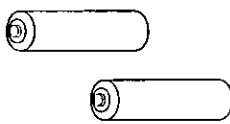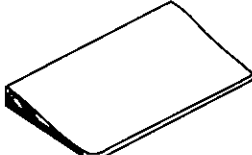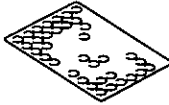Once you have established a comfortable sound level:
* Set the dial and leave it there.
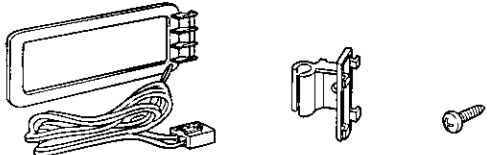
Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

Supplied accessories

Please check and identify the supplied accessories

AC power supply cord
(long thick type) (SJA172) ....2 pcs.

AC power supply cords
(short thin type)
For SD-S947·S747 ....3 pcs.
For SD-S937·S737 ....2 pcs.

Stereo connection cables
(SJP2249-3)
For SD-S947·S747 ....6 pcs.
For SD-S937·S737 ....4 pcs.

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

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

Remote control transmitter
(RAK-SA607MH) ....1 pc.

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

Notebook-like binder
[Liner notes organizer]
(RFA0623-K1) ....1pc.

Adhesive number
(RQLA0326) ....1pc.

Use numbers indicated in parentheses when asking for replacement parts.
To order accessories call MSC Accessory Dept. 1-800-332-5368.
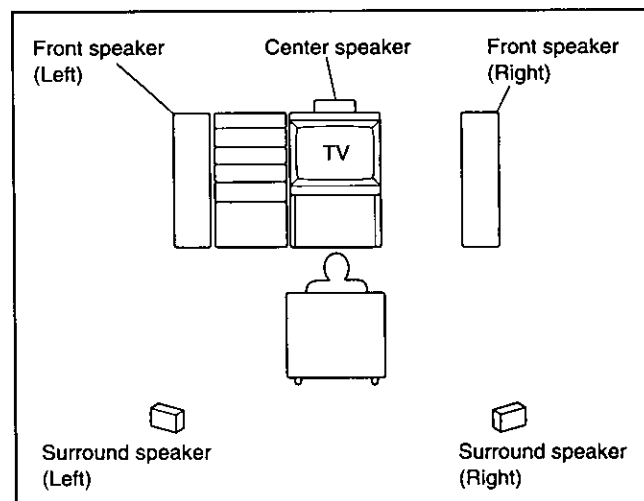
Placement

Placement of each unit

Tuner

Amplifier

Graphic equalizer
SD-S947·S747 only

Cassette deck

Compact disc changer
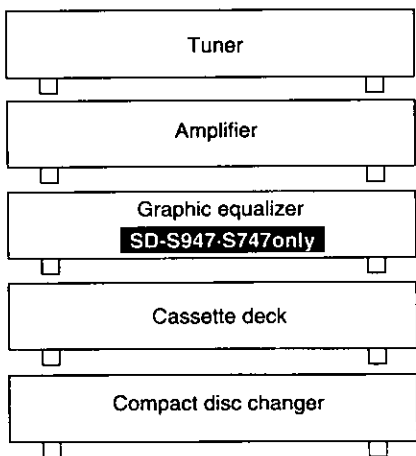
Placement of speaker systems

The illustration below is an example when enjoying Dolby Pro Logic Surround system and SFC function.

The listening position at which the effect is the greatest is a position slightly to the rear of a center position of five-speaker systems. However the position should be adjusted to your personal preference, because the effect varies to some degree depending upon the source.

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

TV

Surround speaker (Left)   Surround speaker (Right)

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 the reflection of sound.
  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 sound reflection will occur if the speakers face a hard wall or window. Curtains or similar materials can be used to prevent these reflections.
• To prevent possible acoustic feedback the speaker system should be kept away from the turntable. Feedback (howling) can result from vibrations from the speakers.
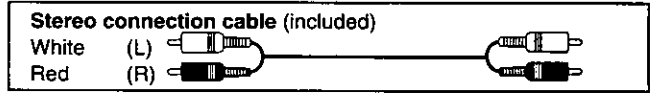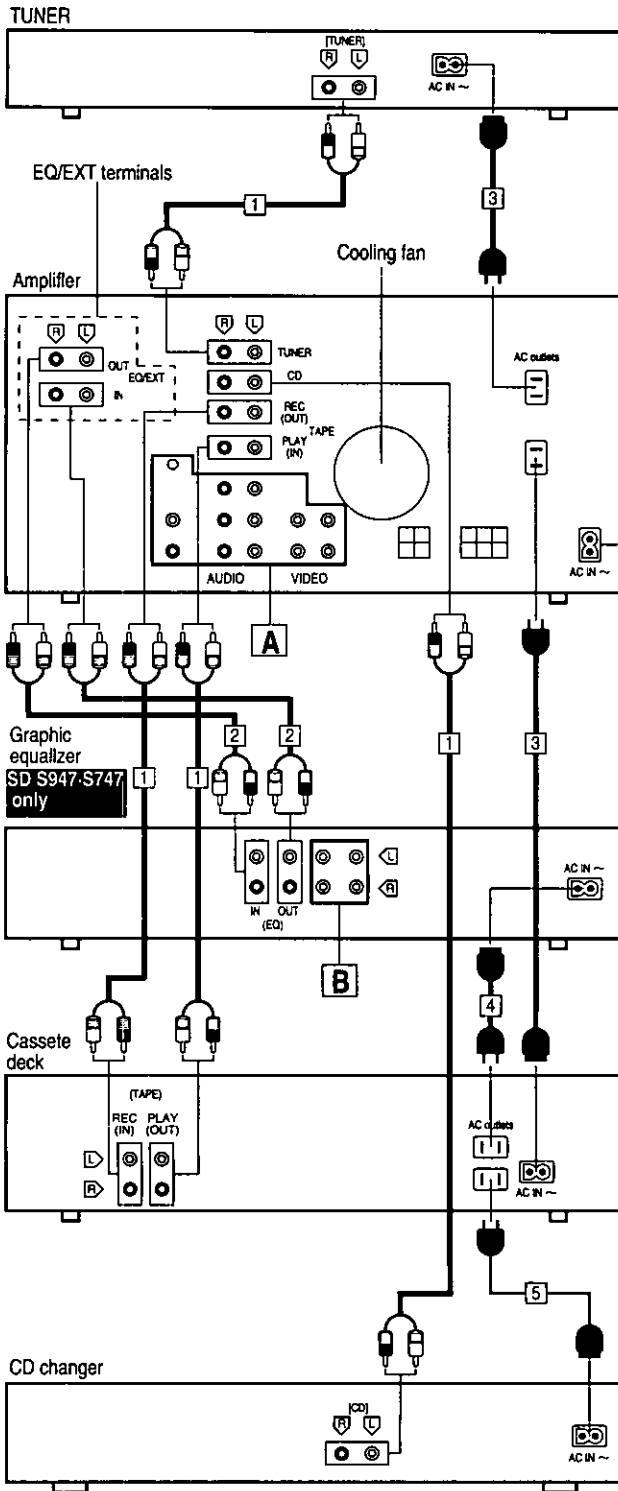• Keep the speakers away from sources of heat, high humidity and direct sunlight.

Note for front/center speakers

These speakers are made so as to be able to be used in close proximity to the TV, but irregular coloring may result due to how the system is placed. If such distortion occurs, turn off the TV for sometime between 15 and 30 minutes. The demagnetizing function of the TV will eliminate the distortion. If the irregular coloring is still visible, then move the speakers further away from the TV.

Please note that if there is a magnetic object near the TV, irregular coloring may result due to the interaction between the TV and the speaker.

7

Equipment connections

Connecting system components

TUNER

EQ/EXT terminals

Amplifier

Cooling fan

AUDIO   VIDEO

Graphic equalizer
SD S947·S747 only

Cassette deck

(TAPE)
REC   PLAY
(IN)   (OUT)

CD changer

**Stereo connection cable** (included)
White   (L)
Red   (R)

Make connections to each component by using the included cords and cables.

☐ **1** Connect the stereo connection cables (4 pcs.).

☐ **2** **SD-S947·S747 only**
Connect the stereo connection cables (2 pcs.).

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

☐ **4** **SD-S947·S747 only**
Connect the AC power supply cord (short thin type).

☐ **5** Connect the AC power supply cords (long thick type) (2 pcs.).

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.

Concerning the cooling fan
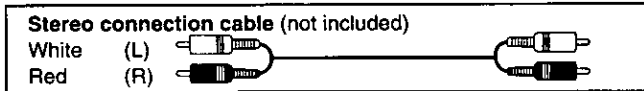The cooling fan operates only at high output power levels.

"EQ/EXT" terminals of the amplifier
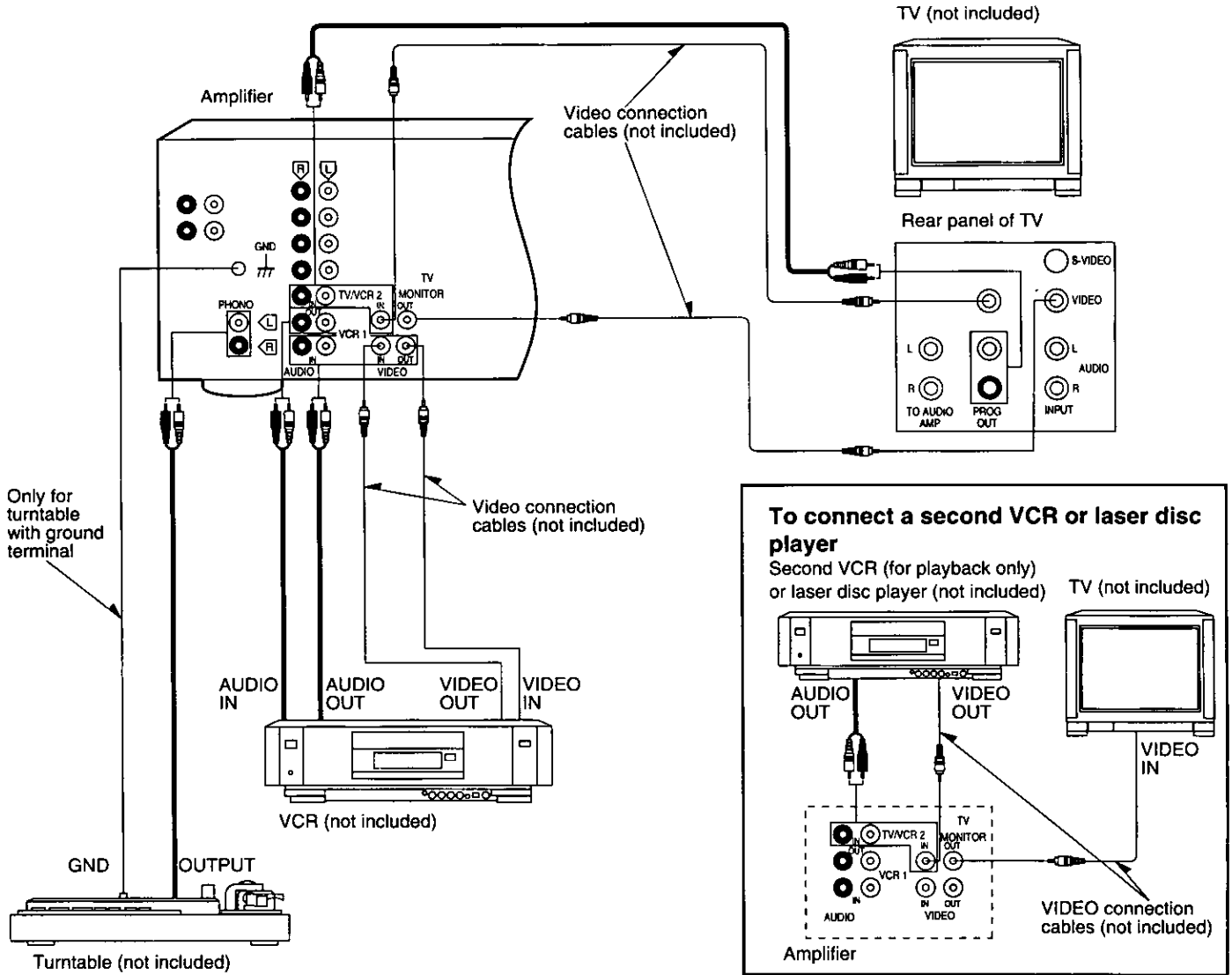When these terminals are not in use, be sure to insert the "shorting" pins (included).

OUT
EQ/EXT
IN
Shorting pins

8
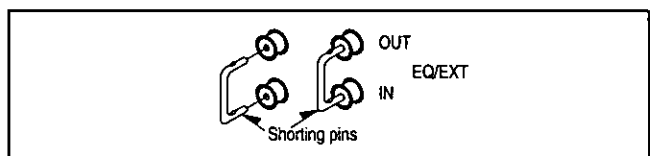
Connecting external units

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

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

[A] Connecting a turntable, VCR and TV

TV (not included)

Amplifier

Video connection cables (not included)

Rear panel of TV

S-VIDEO

VIDEO

L

AUDIO

R

PHONO

GND

TV/VCR 2

TV MONITOR

VCR 1

AUDIO   VIDEO

TO AUDIO AMP   PROG OUT   INPUT

Only for turntable with ground terminal

Video connection cables (not included)

To connect a second VCR or laser disc player

Second VCR (for playback only) or laser disc player (not included)   TV (not included)

AUDIO OUT   VIDEO OUT

VIDEO IN

TV/VCR 2

TV MONITOR OUT

VCR 1

AUDIO   VIDEO

VIDEO connection cables (not included)

Amplifier

| AUDIO IN | AUDIO OUT | VIDEO OUT | VIDEO IN |

VCR (not included)

GND   OUTPUT

Turntable (not included)

[B] Connecting a second cassette deck **SD-S947·S747 only**

Second cassette deck (not included)

LINE IN   LINE OUT
L
R
(R)(L) (R)(L)

Graphic equalizer

TAPE
REC (OUT)   PLAY (IN)
L
R
(R)(L)(R)(L)

9
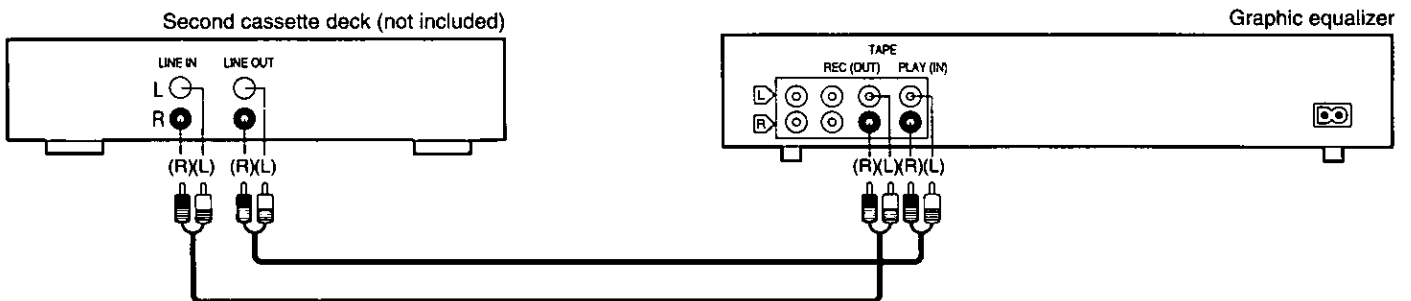
Antenna connections

FM indoor antenna (included)

This antenna is normally sufficient for reception of FM broadcasts.

FM indoor antenna
(included)

Adhesive tape

Tuner

GND 75Ω FM ANT AM ANT AM LOOP ANT
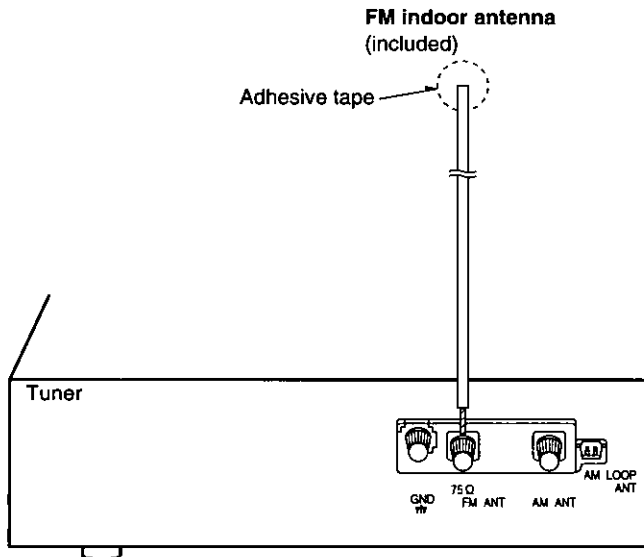
Attach to a wall (using a tape) facing in the direction of best reception.

How to connect an FM indoor antenna

① Pull off the plastic on the tip of the antenna wire.

② Twist the wire and connect as shown below.

Twist

Wire
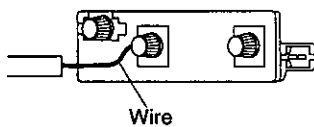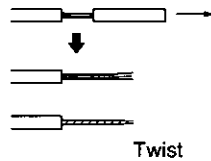
For best reception sound quality:
An FM outdoor antenna is recommended.

FM outdoor antenna (not included)

The outdoor antenna should be used when using the system in mountainous areas or in spaces enclosed by reinforced concrete where the FM indoor antenna (included) does not provide satisfactory reception.
Disconnect the FM indoor antenna if an outdoor antenna is installed.

FM outdoor antenna
(not included)

75-ohms coaxial cable
(not included)

Tuner

GND 75Ω FM ANT AM ANT AM LOOP ANT
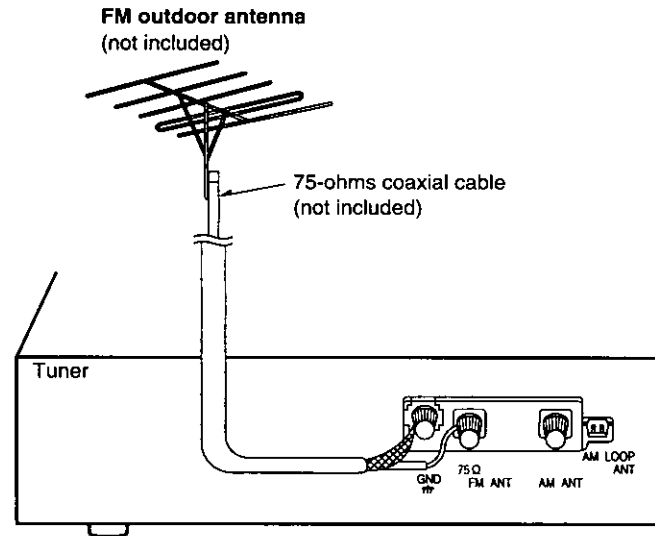
Note
An outdoor antenna should be installed by a qualified technician only.

How to connect a 75-ohms coaxial cable

① Remove a piece of outer vinyl insulator.

20mm
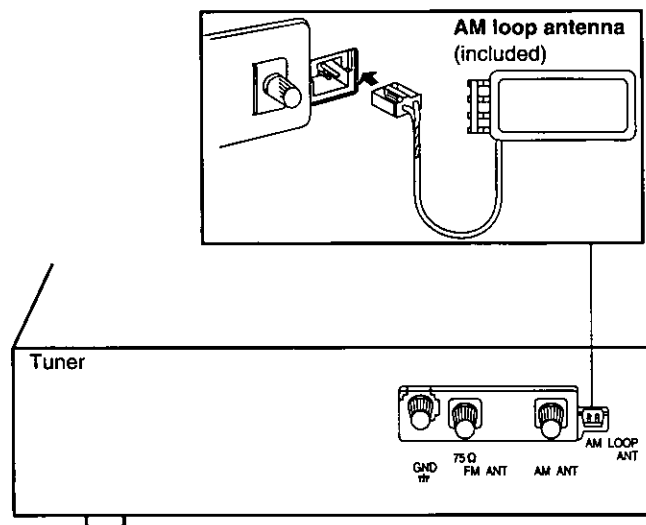(25/32")

② Twist the shield braid to expose the core wire.

Core wire

10mm(3/8")
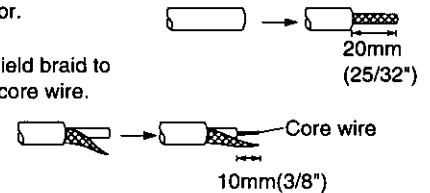
③ Connect the shield braid and the core wire as shown below.
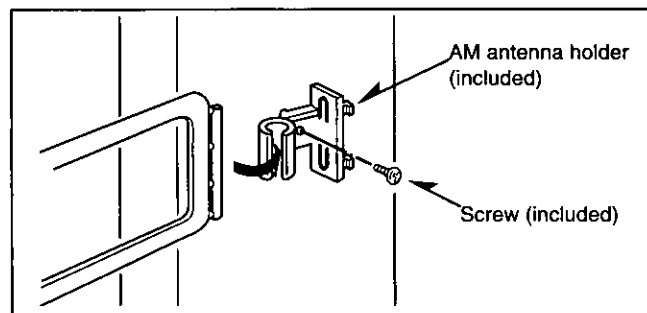
Shield braid   Core wire

10
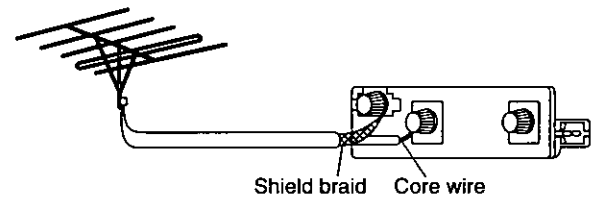
AM loop antenna (included)

This antenna is normally sufficient for reception of AM broadcasts.

When mounting the antenna to a wall or rack

AM antenna holder (included)

Screw (included)

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

AM outdoor antenna (not included)

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

AM loop antenna (included)

AM outdoor antenna (not included)
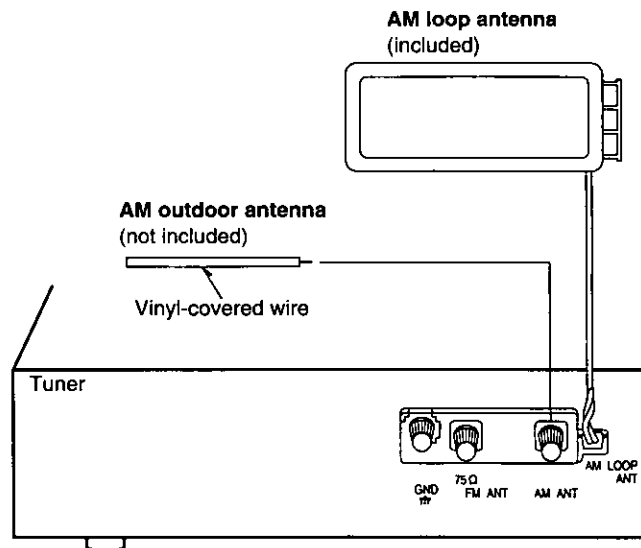
Vinyl-covered wire

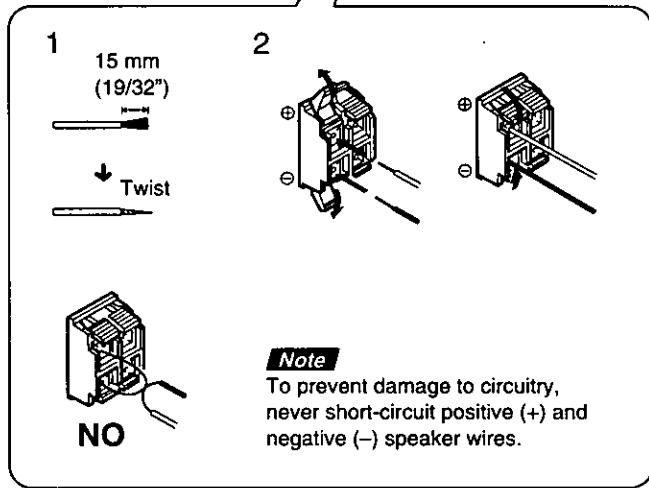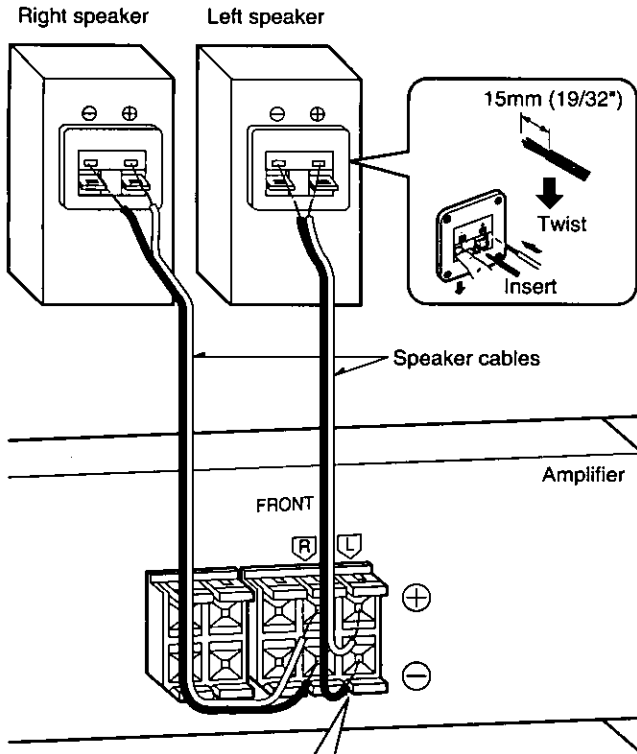Use 5–12 m (16–40 ft.) of vinyl-covered wire horizontally at the window, or convenient location.

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

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

Speaker connections

Connection of front speakers

Right speaker   Left speaker

15mm (19/32")

↓ Twist

Insert

Speaker cables

Amplifier

FRONT

1
15 mm (19/32")

↓ Twist

2

NO

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

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

Caution
Use these speakers only with the recommended system. Failure to do so may lead to damage to the amplifier and/or the speaker, 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.

Connection of surround speakers

Right speaker   Left speaker

15mm (19/32")

↓ Twist

Insert

Speaker cables

Amplifier
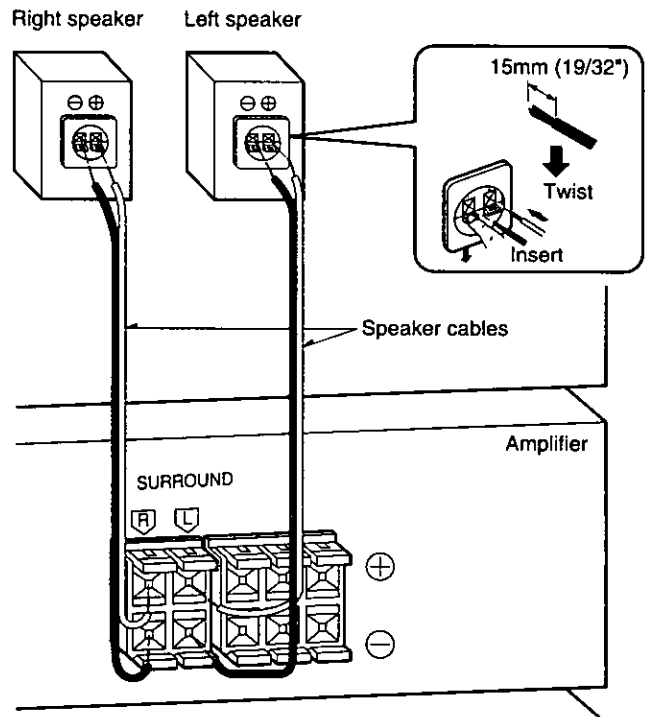
SURROUND

Note
Sound will only come out when the SURROUND mode of the Dolby Pro Logic System or SFC function is on.
If only one of the surround speakers is connected, no sound will come out. Be sure to connect both speakers.

■ Speaker impedance
The impedance of any speaker used with this unit must be 4-8 Ω.

Connection of center speaker

Center speaker

15mm (19/32")

↓ Twist
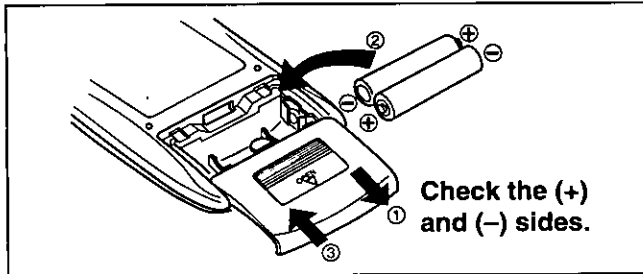
Insert

Speaker cable

CENTER

Amplifier
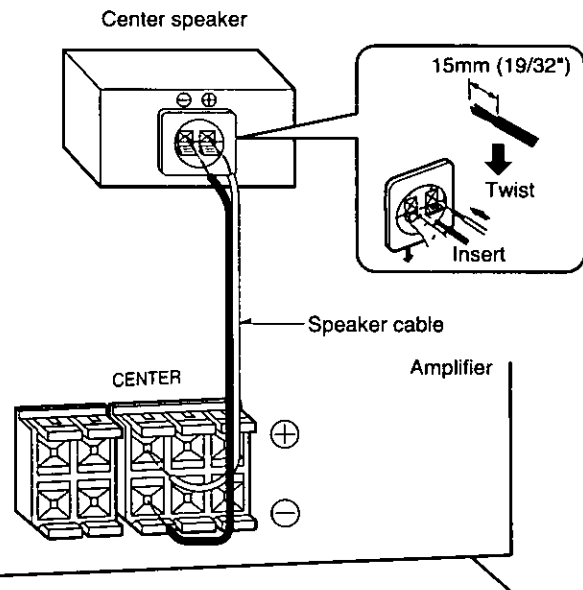
Note
Sound will only come out when the LIVE or THEATER mode of the SFC function or Dolby Pro Logic System is on.

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

Concerning the remote control

Battery installation

Check the (+) and (−) sides.

- Thoroughly clean the battery compartment before inserting new batteries.
- Do not mix old and new batteries, or batteries of different types (carbon and alkaline, etc.).
- If you will not use the remote control for a long period of time, remove the batteries and store them in a cool, dark place.
- Do not use rechargeable (nickel-cadmium) type batteries.
- Do not attempt to recharge alkaline or carbon batteries.
- Always remove old, weak or worn-out batteries promptly and dispose of them properly.
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the leaking electrolyte comes into contact with skin or clothes, flush with water immediately.

Battery life

Battery life is about one year.

The batteries should be replaced if the system fails to respond to commands from the remote control transmitter even when held close to the remote control signal sensor.

When you need to replace these batteries
Use two UM-4 "AAA", IEC R03 (1.5 V) or equivalent batteries.

Method for use

Tuner

Amplifier

Cassette deck

Compact disc changer

Remote control signal sensor

Avoid any obstacles

Transmission window

About 7 meters in front of the signal sensor. (The actual range will depend on the angle at which the remote control is used.)
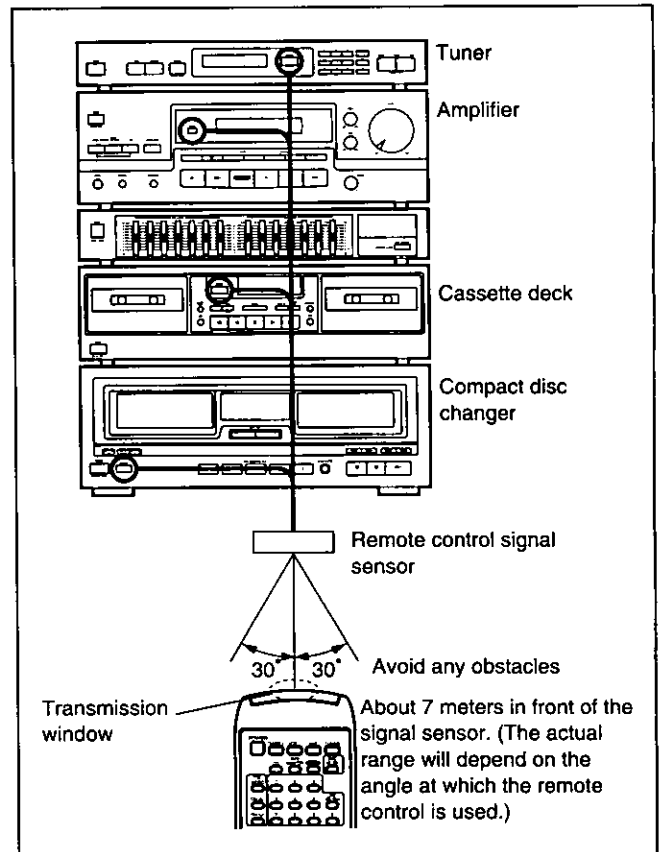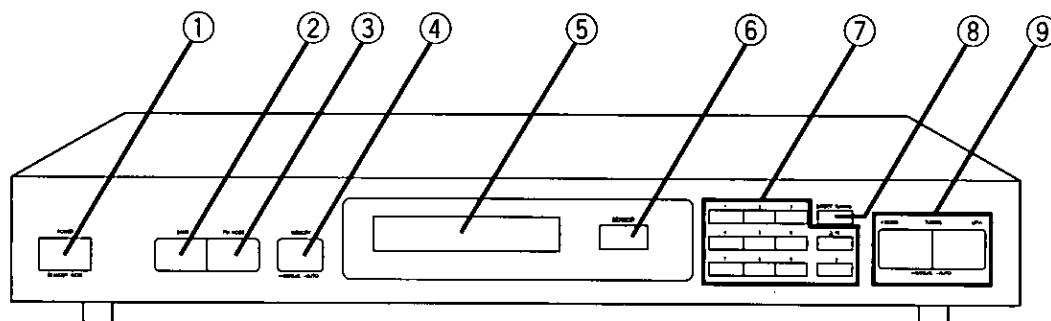
Note
Be sure the transmission window and the signal sensor are free from dust. Excessive dust might affect perfomance.

The operation may not be correct if direct sunlight or another strong light source strikes the signal sensor of this unit. If there is a problem, place the unit away from the light source.

13

Front panel controls

Tuner

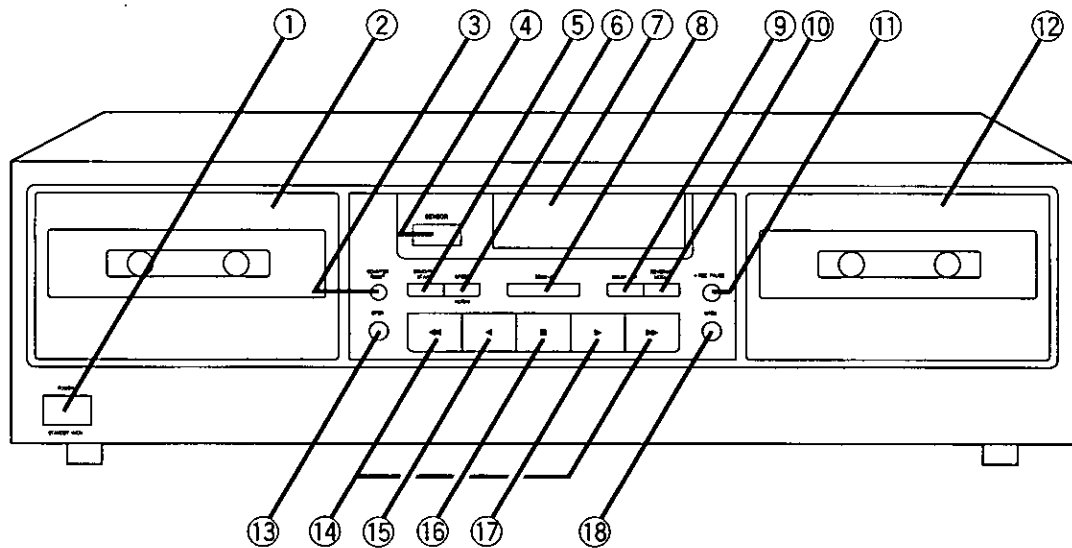| No.	Name	Ref. page
①	**Power "STANDBY ⏻ /ON" switch (POWER, STANDBY ⏻ /ON)** Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.	**19**
②	**Band select button (BAND)**	**20**
③	**FM mode select button (FM MODE)**	**21**
④	**Memory button (MEMORY)**	**22,23**
⑤	**Display**	**–**

No.	Name	Ref. page
⑥	**Remote control signal sensor (SENSOR)**	**–**
⑦	**Numeric buttons (1-0, ≥10)**	**20,23**
⑧	**Direct tuning button (DIRECT TUNING)**	**20**
⑨	**Tuning buttons (TUNING)**	**21**

Graphic equalizer SD-S947·S747 only
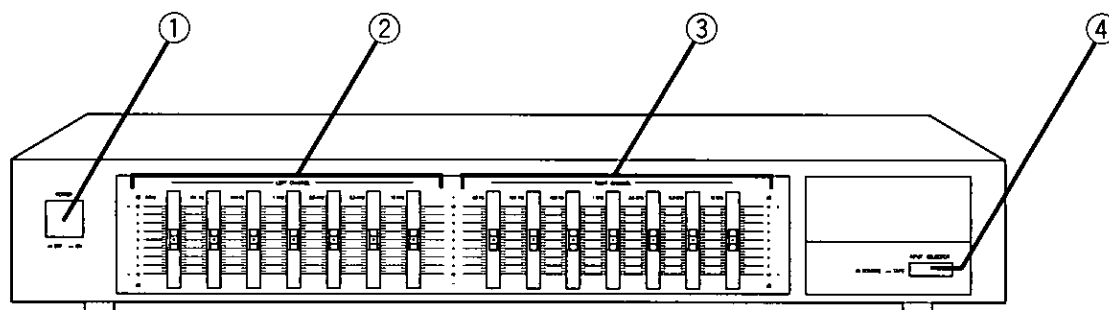
No.	Name	Ref. page
①	**Power switch (POWER)**	**45**
②	**Left channel band-level controls/ indicators**	**45**

No.	Name	Ref. page
③	**Right channel band-level controls/indicators**	**45**
④	**Input select button (INPUT SELECTOR)**	**45**

Amplifier
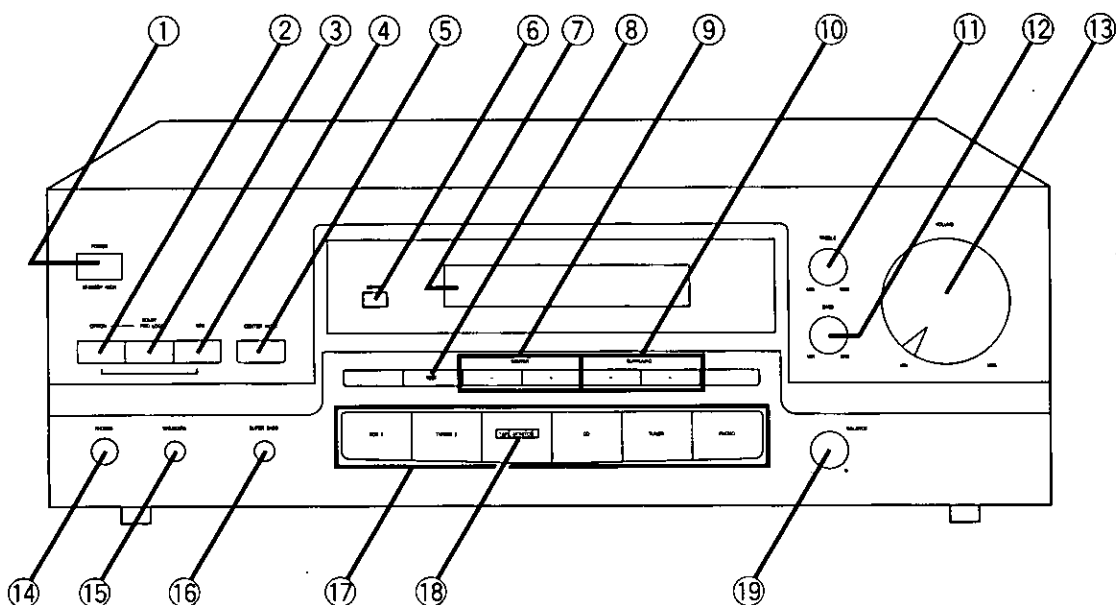
No.	Name	Ref. page
① **Power "STANDBY ⏻ /ON" switch (POWER, STANDBY ⏻ /ON)** Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.		19
② **DOLBY PRO LOGIC, SFC OFF/ON button (OFF/ON)**		43,44
③ **DOLBY PRO LOGIC select button (DOLBY PRO LOGIC)**		42
④ **Sound field control select button (SFC)**		44
⑤ **Center mode select button (CENTER MODE)**		42
⑥ **Remote control signal sensor (SENSOR)**		–
⑦ **Display**		–
⑧ **Test signal ON/OFF button (TEST)**		43
⑨ **Center level adjust buttons (CENTER)**		43

No.	Name	Ref. page
⑩ **Surround level adjust buttons (SURROUND)**		43
⑪ **Treble control (TREBLE)**		19
⑫ **Bass control (BASS)**		19
⑬ **Volume control (VOLUME)**		19
⑭ **Headphone jack (PHONES)**		19
⑮ **Speaker ON/OFF button (SPEAKERS)**		19
⑯ **Super bass ON/OFF button (SUPER BASS)**		19
⑰ **Input select buttons**		19
⑱ **Tape monitor button (TAPE MONITOR)**		19
⑲ **Balance control (BALANCE)**		19

15

Cassette deck

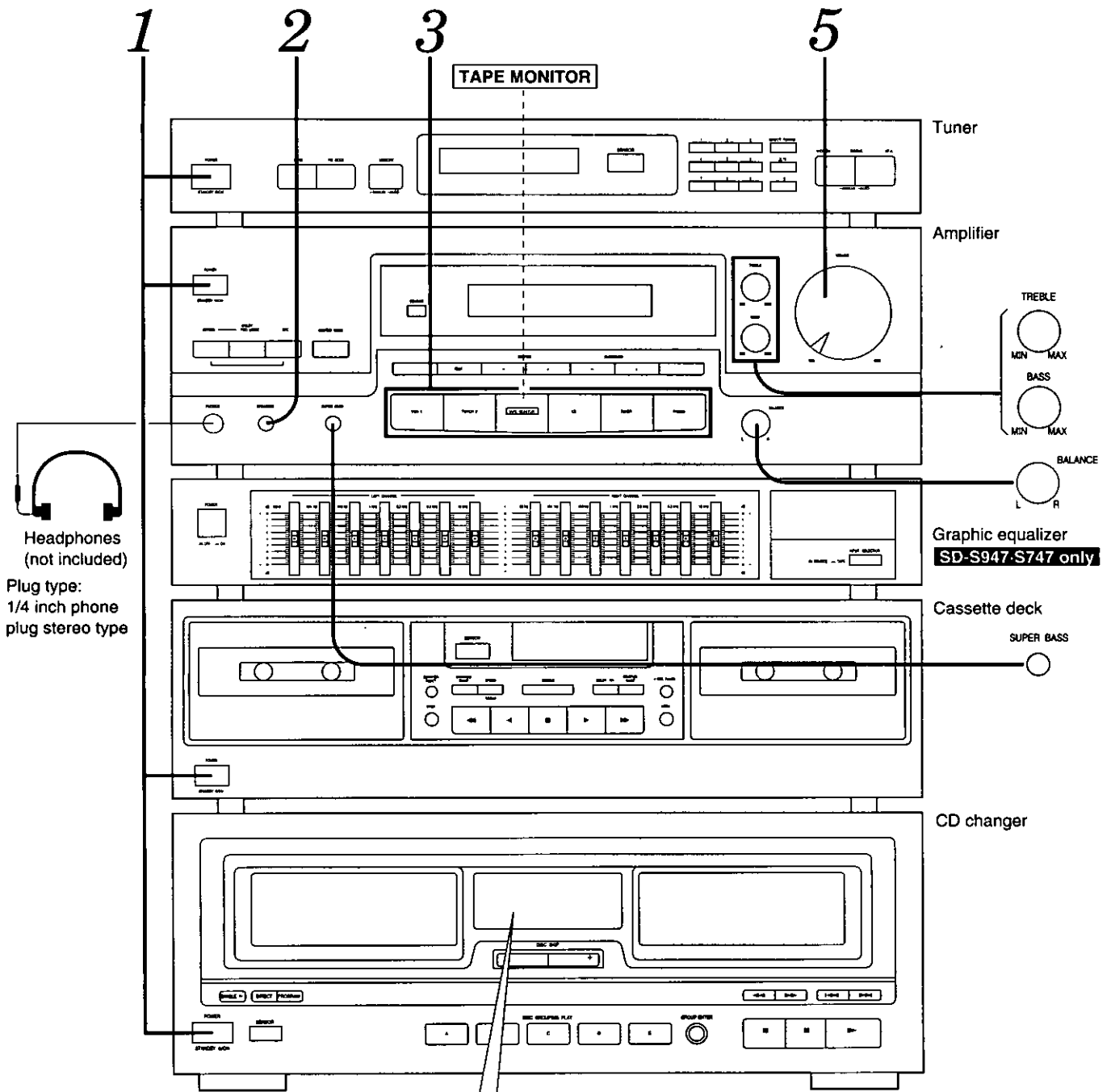| No.	Name	Ref. page
①	Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON) Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.	19
②	Cassette holder for deck 1	–
③	Counter reset button (COUNTER RESET)	37
④	Remote control signal sensor (SENSOR)	–
⑤	Synchro-start button (SYNCHRO START)	40
⑥	Tape-to-tape recording-speed button (SPEED)	40
⑦	Display	–
⑧	Tape deck select button (DECK 1/2)	35
⑨	Dolby noise-reduction button (DOLBY NR)	34,38
⑩	Reverse-mode select button (REVERSE MODE)	35,38

No.	Name	Ref. page
⑪	Rec pause button (●REC PAUSE)	38
⑫	Cassette holder for deck 2	–
⑬	Open button for deck 1 (▲ OPEN)	34
⑭	Rewind/fast-forward buttons (◀◀ ,▶▶)	37
⑮	Reverse-side playback button (◀)	35
⑯	Stop button (■)	35
⑰	Forward-side playback button (▶)	35
⑱	Open button for deck 2 (▲ OPEN)	34

CD changer
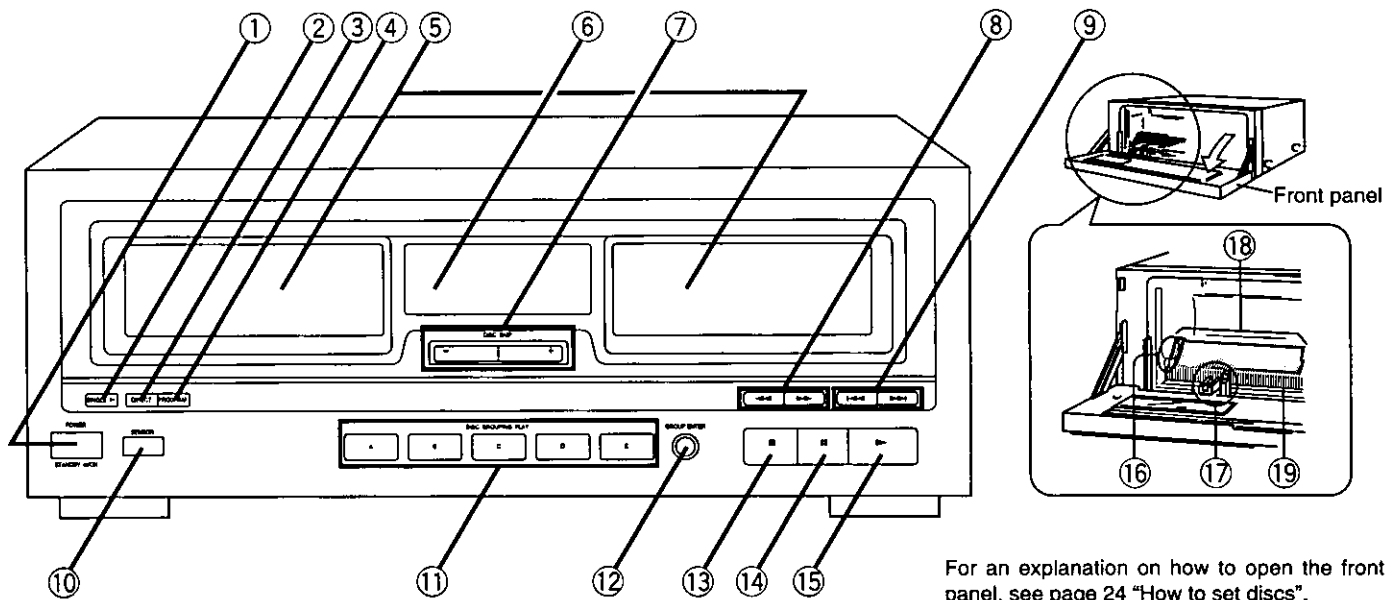
Front panel

For an explanation on how to open the front panel, see page 24 "How to set discs".

No.	Name	Ref. page
①	**Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)** 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.	*19*
②	**Single disc play button (SINGLE ▶)**	*28*
③	**Direct programming button (DIRECT)**	*33*
④	**Programming button (PROGRAM)**	*32*
⑤	**Windows**	–
⑥	**Display**	–
⑦	**Disc skip buttons (DISC SKIP – /+)**	*26*
⑧	**Search buttons (◄◄ , ►►)**	*28*
⑨	**Track skip buttons (I◄◄ , ►►I)**	*26*
⑩	**Remote control signal sensor (SENSOR)**	–
⑪	**Disc group buttons (DISC GROUPING PLAY,A,B,C,D,E)**	*29*
⑫	**Group enter button (GROUP ENTER)**	*29*

No.	Name	Ref. page
⑬	**Stop button (■)**	*25*
⑭	**Pause button (II)**	*25*
⑮	**Play button (▶)**	*25*
⑯	**Disc slot for single disc play (SINGLE)**	*28*

Disc slot for single disc play
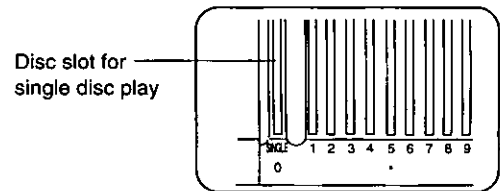
No.	Name	Ref. page
⑰	**Loader carriage**	*24*
⑱	**Disc slots**	*24*
⑲	**Slot numbers**	*24*

Basic operations

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

TAPE MONITOR

Tuner

Amplifier

TREBLE
MIN MAX

BASS
MIN MAX

Headphones
(not included)

Plug type:
1/4 inch phone
plug stereo type

BALANCE
L R

Graphic equalizer
SD-S947·S747 only

Cassette deck

SUPER BASS

CD changer

When you turn on the CD changer, the
message "CHECKING DISCS" appears
on the display. After that, if a CD was
playing before power was turned off,
the number of the last disc played will
be displayed.

_ _
DISC

CHECKING
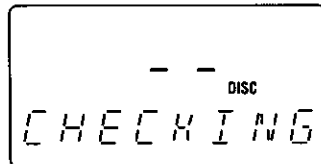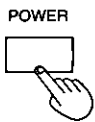
1 POWER **Press POWER of the amplifier, tuner, cassette deck and CD changer.**

First switch on the power of the amplifier.

The power for the entire system can thereafter be switched on and to the standby condition by using the power switch of the amplifier.
(provided that the power cords are connected as on page 8)

For SD-S947·S747
Only if wanting to use a graphic equalizer, do you have to turn it ON.

2 SPEAKERS **Press SPEAKERS to turn on the speaker systems.**

On the amplifier's display

SPEAKERS $T \sqcup I \sqcap E R$

Illuminates

If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.
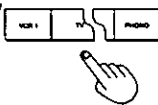
3 **Press to select the desired source.**

VCR 1: To watch video tapes (VCR 1)
TV/VCR 2: To watch TV or video tapes (VCR 2)
TAPE MONITOR: To listen to cassette tapes (The tape monitor indicator will appear.) (See upper right.)
CD: To listen to compact discs
TUNER: To listen to radio broadcasts
PHONO: To listen to phono discs

Note
To watch a video or the TV, set the TV to either the TV mode or VIDEO mode as indicated below.
● To enjoy videos (VCR 1 or VCR 2)
Set it to VIDEO mode.
● To watch TV
Set it to TV mode.

4 **Start the desired source.**
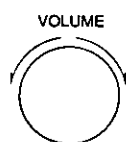
5 VOLUME **Turn VOLUME to adjust the volume level.**

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

When the tape monitor indicator is lit or flashing
This indicates that the tape monitor function of this unit is ON.
To listen to sources other than a tape, be sure to press TAPE MONITOR and check the indicator goes out.

Lit or flashing

TAPE MONITOR

To adjust the tone quality

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

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

To emphasize low-frequency sound

SUPER BASS **Press SUPER BASS.** Illuminates

SPEAKERS $T \sqcup I \sqcap E R$ SUPER BASS

Press once again to turn it off.

To adjust the sound balance

BALANCE **Turn BALANCE to adjust the left/right sound balance.**
This will not adjust the left/right volume balance of the surround speakers.

When listening through headphones

Use VOLUME to reduce the volume level, and connect the headphones.
Note
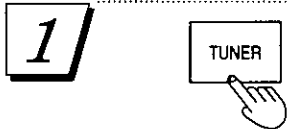Avoid listening for prolonged periods of time to prevent hearing damage.

19

Direct access tuning

Specify the frequency using the numeric buttons to directly tune to
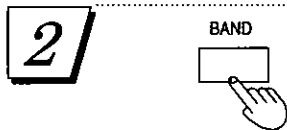the desired broadcast station.
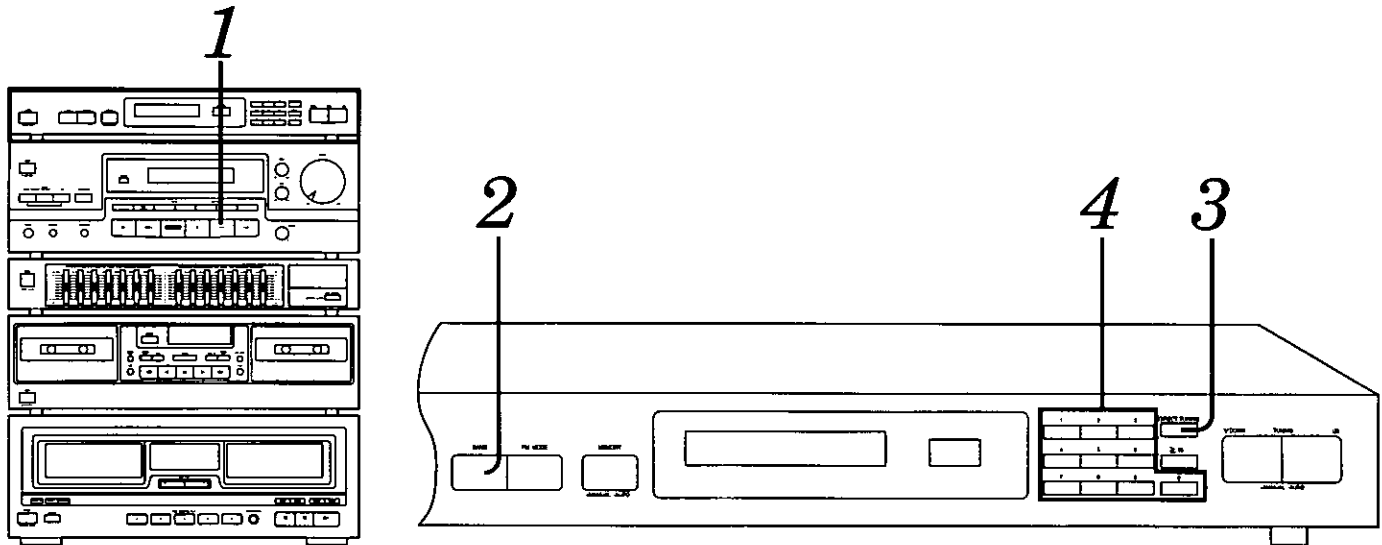
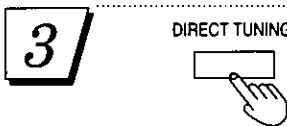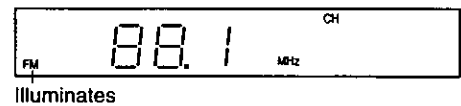**Have you performed the steps 1–2 (on page 19) of "Basic operations"?**

1/ TUNER

Press the input selector on the amplifier marked "TUNER".

On the amplifier's display

SPEAKERS $TUNER$

2/ BAND

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

FM 88.1 CH MHz

Illuminates

3/ DIRECT TUNING

Press DIRECT TUNING.

While cursor display is flashing (approx. 10 seconds)

FM CH MHz

4/
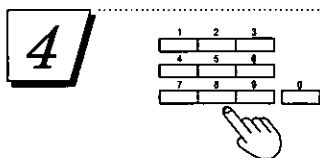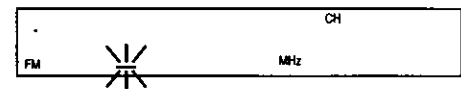
Press the appropriate numeric buttons to enter the frequency.
If the frequency has been input correctly, the frequency display will blink.

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

If the desired FM frequency is 107.9 MHz

$1 \rightarrow 0 \rightarrow 7 \rightarrow 9$

Illuminates when tuned

FM 107.9 CH QUARTZ LOCK MHz

When the FM stereo broadcast is received:
This unit will automatically switch to FM stereo reception and the
FM stereo indicator will illuminate.

Illuminates

STEREO 107.9 CH QUARTZ LOCK
FM MHz
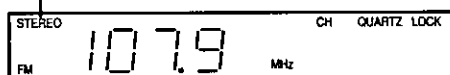
Sequential tuning

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

FM MODE

1 *2*
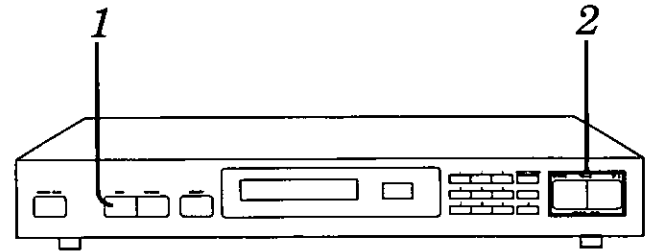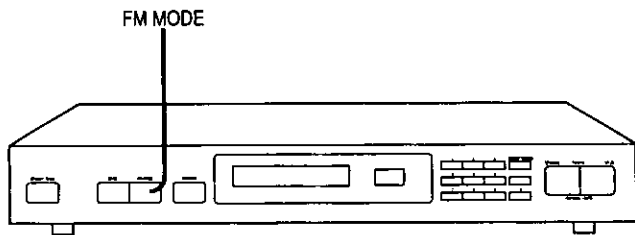
If noise is excessive in the FM stereo mode

FM MODE

Press FM MODE.

Illuminates

```
        1 0 7. 9     CH    QUARTZ LOCK
                     MONO
   FM                MHz
```
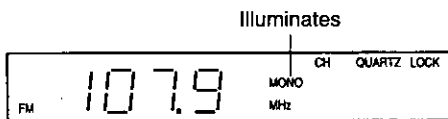
The broadcast will be monaural, but noise will be reduced. If the button is pressed once more, stereo mode will be resumed.
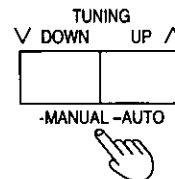
1 BAND

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

2

TUNING
∨ DOWN   UP ∧

-MANUAL -AUTO

Press DOWN or UP to tune to the desired broadcast.
Tuning Intervals
FM: 200 kHz interval
AM: 10 kHz interval

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

Note
Tuning may stop automatically if any jamming is encountered.

Preset tuning

By presetting the desired broadcast stations into the memory channels of this unit, broadcast stations can be selected simply by pressing numeric button(s). (Refer to page 23 for tuning.)

Before presetting

How many broadcast stations can be preset?
A total of 30 FM and AM stations can be preset.

How is presetting done?
The two following methods are available.

- **Automatic memory presetting**
  Automatic memory presetting allows this unit to automatically search for broadcast stations and then preset them into memory.
  With this function, searching proceeds from the frequency currently being displayed and continues through higher frequencies, (up to 107.9 MHz for FM, up to 1710 kHz for AM) and broadcast stations are preset in the order in which they are located.
  With this method, the channel ranges that can be preset into the memory for different bands (FM or AM) are set as follows.

Channel

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

←————————————FM————————————→
←——AM——→ (channels 21-30)
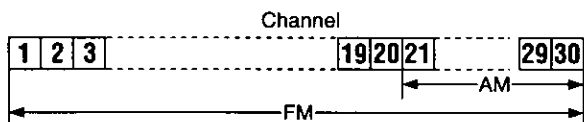
For FM broadcast stations 1–30
For AM broadcast stations 21–30

If the FM stations (channels 1–30) are preset and then the AM stations (channels 21–30) are preset:
Because this unit can accommodate a total of 30 preset channels, the settings for FM channels 21–30 will be replaced by the AM settings which were subsequently preset, and the channel allotment will be as shown below.

Channel

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

←————————FM————————→←————AM————→
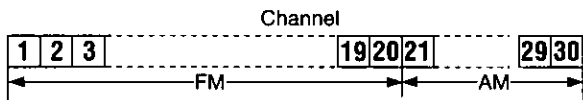
For FM broadcast stations 1–20
For AM broadcast stations 21–30
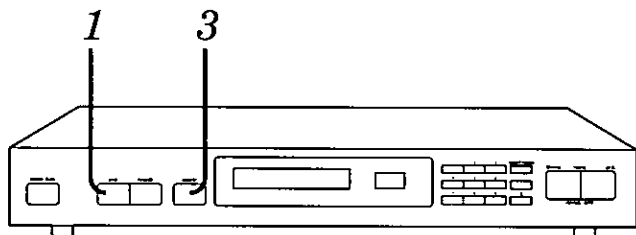
- **Manual memory presetting**
  The desired broadcast stations can be preset into the desired channels by the user.
  This can also be used as a method for changing selected broadcast stations that were preset in "Automatic memory presetting".

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

Automatic memory presetting

1 BAND — **Press BAND to select "FM" or "AM".**

2 — **Set to the frequency from which you want to start automatic memory presetting.**
(Follow steps 3 and 4 on page 20.)

3 MEMORY -MANUAL/AUTO — **Press MEMORY until the frequency begins to change.**
(Automatic memory presetting will start.)

To stop press MEMORY once again.

When a broadcast station is preset
The preset frequency and the preset channel number will be displayed for approximately 1 second.
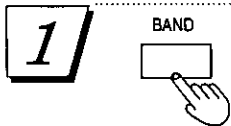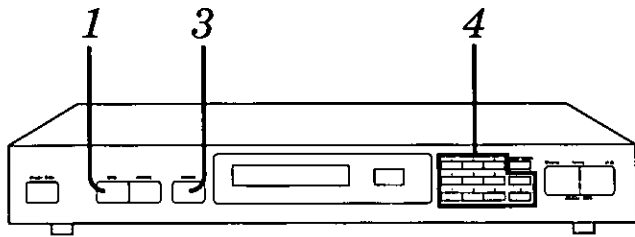

Illuminates

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

Note

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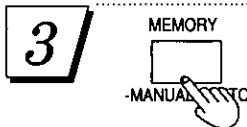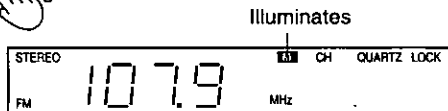
Manual memory presetting

To listen to preset broadcast stations

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

2   **Set to the desired broadcast.**
(Follow steps 3 and 4 on page 20 or step 2 on page 21.)
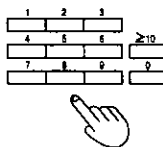You can also set the stereo mode to the monaural position.

3 MEMORY   **Press MEMORY momentarily.**
-MANUAL/AUTO

Illuminates

STEREO   CH   QUARTZ LOCK
FM   107.9   MHz

To cancel the memory function, press MEMORY again.

4   **Specify the desired channel to be preset using the numeric button(s) (completes preset-ting).**

To designate channels 1-9:
Press the appropriate (1-9) preset-tuning button.

To designate channels 10-30:
(Example: Channel 20)

≥10 ⟶ 2 ⟶ 0
(within 10 sec.) (within 10 sec.)

STEREO   CH   QUARTZ LOCK
FM   107.9   MHz   2⚡

Off

STEREO   CH   QUARTZ LOCK
FM   107.9   MHz   20

Preset channel

1   **Specify the preset channel using the numeric button(s).**

To designate channels 1-9:
Press the appropriate (1-9) preset-tuning button.

To designate channels 10-30:
(Example: Channel 20)

≥10 ⟶ 2 ⟶ 0
(within 10 sec.) (within 10 sec.)

To continue presetting
Repeat steps 1 through 4.

23

# Listening to compact discs

Setting/Removing discs

Special notes

- You can set discs in the slots and remove them too, while playing discs.
- Never set a disc in the slot of the disc being played.
- Sometimes the front panel cannot be opened while a disc is playing. It is a question of time. In such case, wait until you can open it.

How to set discs

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

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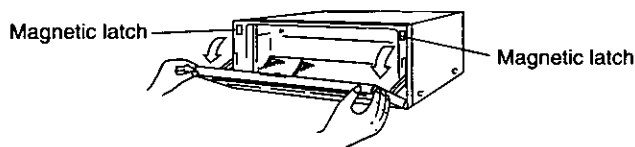
Cautions
- Except when setting or removing discs, keep hands out of the changer while open. You could injure yourself if somehow entangled in the internal mechanism.
- Keep cassette tapes away from the magnetic latches.

2. Slide the loader carriage to the slot you want. You can read the numbers between the prongs as shown below.

Disc slots — Slot number — Grab here and slide. — Loader carriage
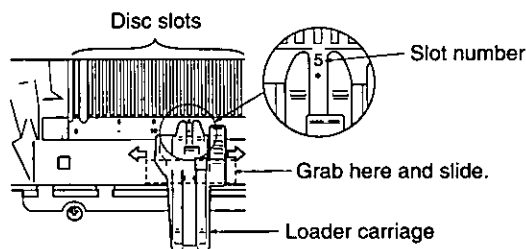
Note
Slot No. 0 (SINGLE) is reserved for single disc play.

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

Disc   Label side

Flip this part upward.
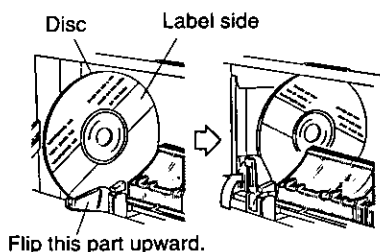
Cautions
- Do not use 3" (8 cm) discs fitted with expander rings. Expander rings could damage the disc slots.
- Do not use cleaning discs, discs with stickers on the label side or warped discs. All of these could damage your changer.
- Do not put anything other than discs in the changer.
- Do not set 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, one or both 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 front panel while the changer is changing discs.

Note
- Set discs with the label facing to the right.
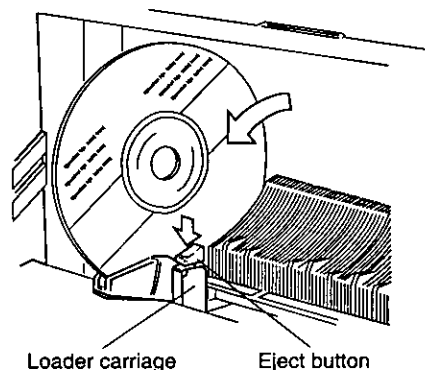- Never load more than one disc in any given slot.

4. Gently close the front panel.

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

How to remove discs

1. Open the front panel.

2. Slide the loader carriage to the slot you want.

3. Press the eject button on the loader carriage.

Loader carriage   Eject button

How to know what disc is in what slot

Your changer comes with a notebook-like binder (liner notes organizer) in which you can keep your CD liners. There are also adhesive numbers for indicating slot numbers in the binder. This is a convenient way to keep track of what disc is in what slot.
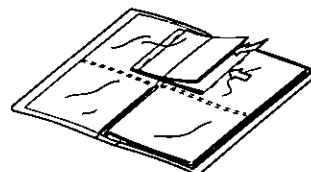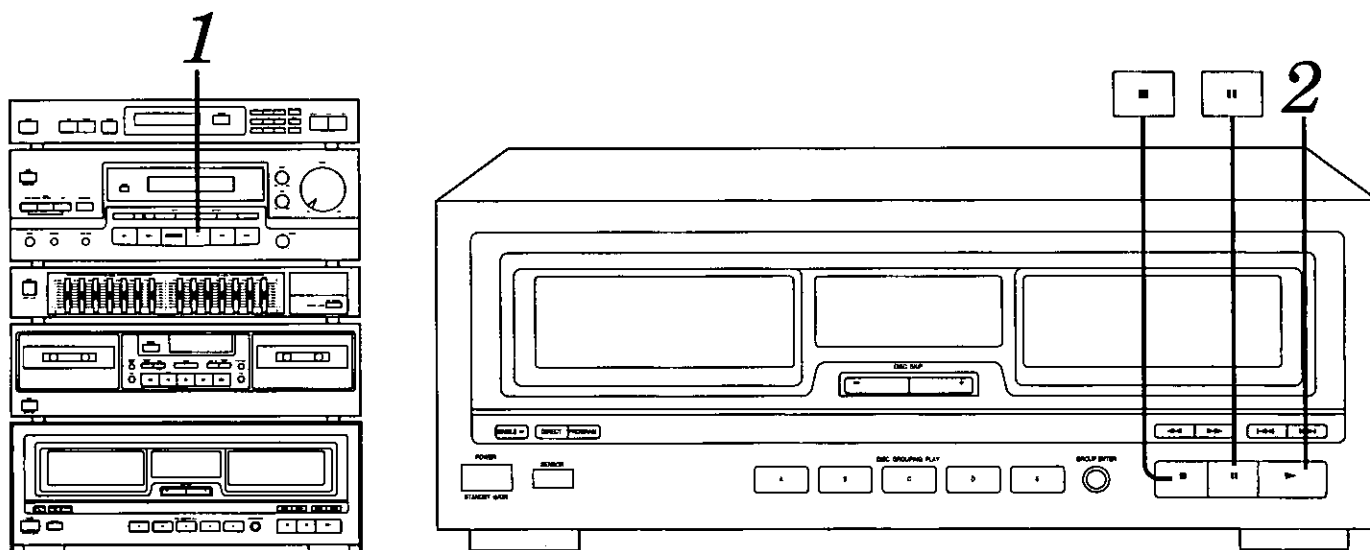
Put two liners back-to-back inside each pocket, as shown above.

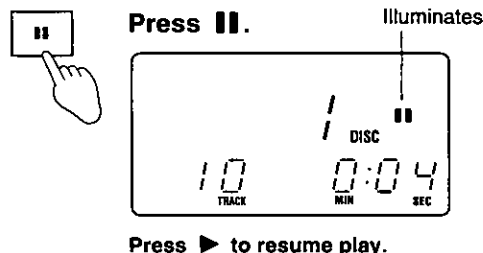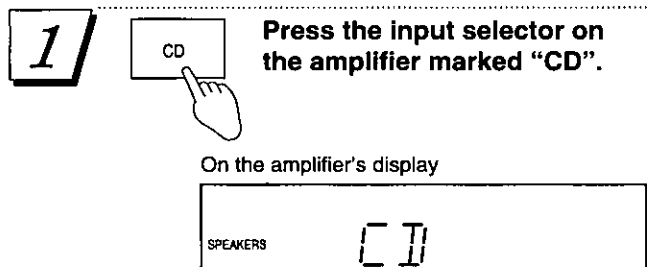Liner
Adhesive number

Binder
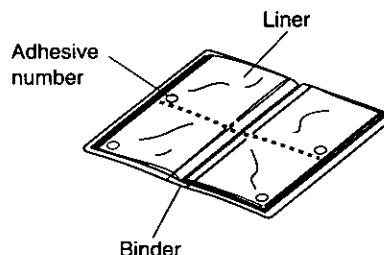
Normal use

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.
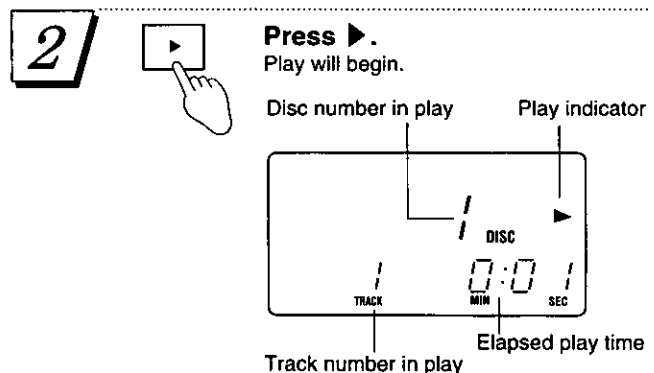

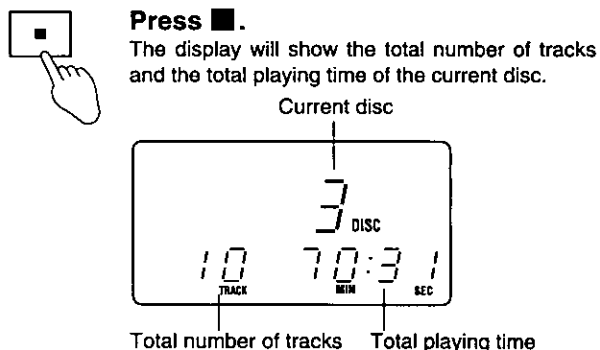**Have you performed the steps 1–2 (on page 19) of "Basic operations"?**

1 | CD | **Press the input selector on the amplifier marked "CD".**

On the amplifier's display

SPEAKERS   *C J*

2 | ► | **Press ►.**
Play will begin.

Disc number in play   Play indicator

/ DISC ►
/   0:0 /
TRACK   MIN   SEC

Track number in play   Elapsed play time

The disc number is the same as the slot number.

To temporarily stop play

| II | **Press II.**   Illuminates

/   II
/ DISC
/ 0   0:0 4
TRACK   MIN   SEC

Press ► to resume play.

To stop play

| ■ | **Press ■.**
The display will show the total number of tracks and the total playing time of the current disc.

Current disc

3 DISC
/ 0   70:3 /
TRACK   MIN   SEC

Total number of tracks   Total playing time

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.
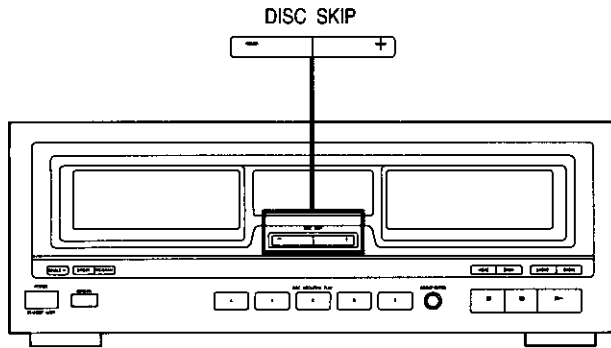
Press ► to re-start play.

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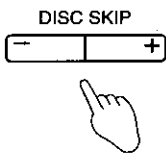It takes roughly 3 seconds from the time you press ■ until the disc is returned to the slot.

Normal use (continued)

<div style="display:flex">

To skip discs

Use this function to skip discs when selecting a disc which you wish to listen to.

DISC SKIP

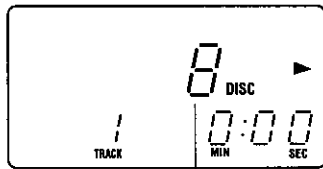You can use this function in stop, sequential play and disc grouping play modes.

DISC SKIP

Press either DISC SKIP (– or +) until you reach the desired disc.

–: Skips backwards to the preceding disc.
+: Skips forward to next disc.

Note
The changer skips over empty slots.

Disc number at the playing position

Note
• 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.

For your reference

If you press the DISC SKIP buttons intermittently, the slot Nos change slowly. If you hold the buttons down, the changer fastskips through numbers.
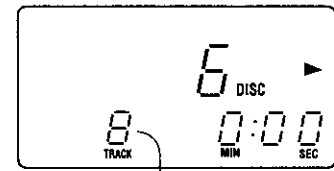
To skip tracks

Use this function to skip tracks when selecting a track which you wish to listen to.
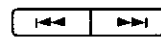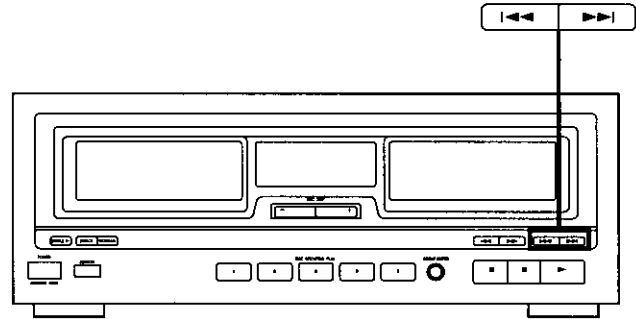
Press either I◀◀ or ▶▶I until you reach the desired track.

I◀◀ : You can skip backward.
▶▶I : You can skip forward.

Track number at the playing position

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

I◀◀ : 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.
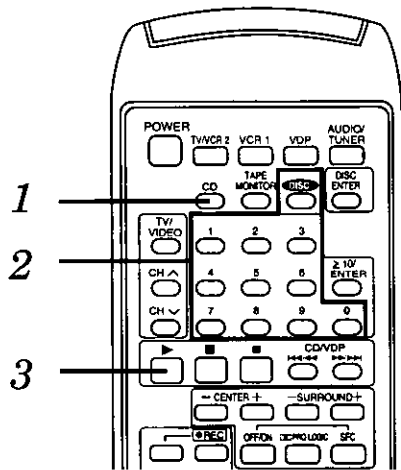Remember that in a backward skip, the current track is included in the count.

▶▶I : 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.

</div>

To directly access a specific disc

(Only available from the remote control.)

1

2

3

1 CD	**Press CD.** This will set the remote control to operate the CD changer.
2 DISC	**Select the disc you want with the numeric buttons.** To select a disc from 1 to 9 For example: "6" DISC → 6

To select a disc from 10 to 110
For example: "19"
DISC → 1 → 9
If you select "0", the changer will switch to the single disc play mode (see page 28).

Note
When selecting discs, the ≥ 10/ENTER does not respond to touch.

3	(Press within 7 seconds.) **Press ▶.**

Disc number

The changer will start playing the selected disc from the first track.

For your reference
• If you press DISC ENTER instead of ▶ to select a disc, the disc number will be displayed but play will not start automatically. You can start playback any time you want after that by pressing ▶.
• 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.
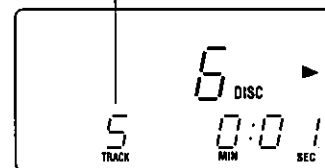
To directly access a specific track

(Only available from the remote control.)
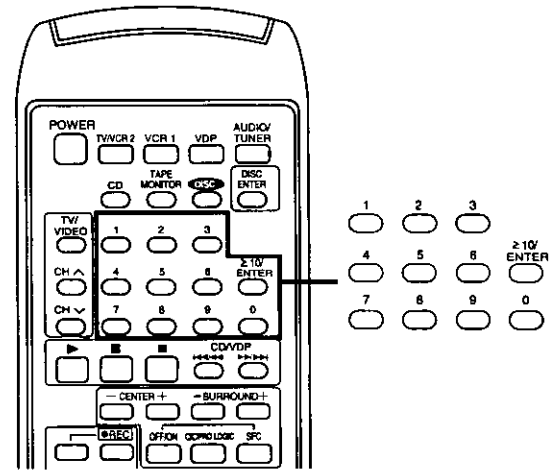
After selecting a disc, select a track with the numeric buttons.

Press the numeric button(s) to select the track.
Play will begin from the selected track.

Track number

To select a track between 1 and 9:
Press the corresponding numeric button.
To select a two-digit track number 10 or higher:
First press ≥ 10/ENTER and then press the numbers for the two digits
For example; number 20:
≥ 10/ENTER → 2 → 0

Normal use *(continued)*

Search function

You can search rapidly forward or backward on the disc for specific sections.
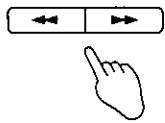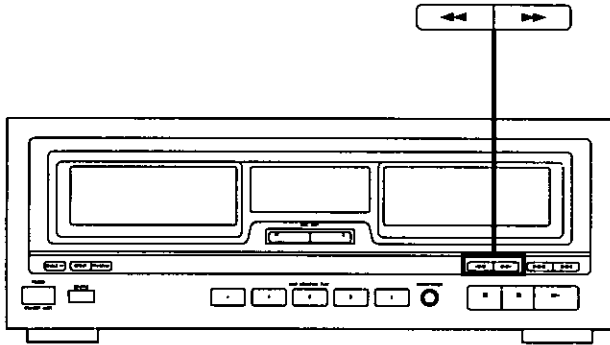
[In the play or pause mode]
Press and hold ◄◄ or ►► .
◄◄ : You can search backward.
►► : You can search forward.

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

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

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

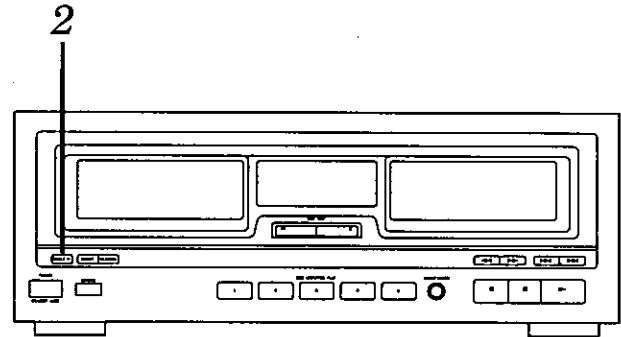**In the sequential/disc grouping play mode**
When the changer finishes searching the current disc, it starts searching the next one.

For your reference
The search function will begin slowly, and then, if the button is held down for longer than 3 seconds, it will change to high-speed search.

Single disc play

Single disc play is for that special disc of yours, perhaps one you just bought. You see, the changer has a slot for one special disc which you can use even when the rack is full (max. 110 discs).
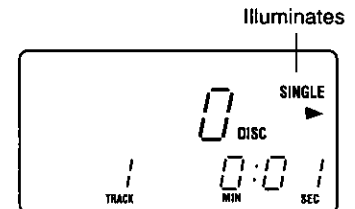
1 / Open the front panel, and set the disc in the slot No. 0.

Slot number

Face the label to the right and flip the loader upwards to set the disc.
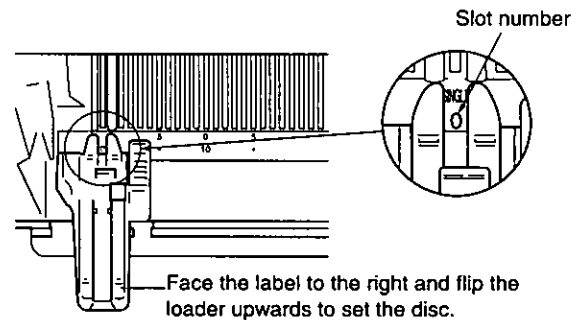
2 / [SINGLE ►] **Close the front panel and press SINGLE ►.**

The disc will start playing from the first track.

Illuminates

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

To cancel single disc play mode
• Select another disc with the numeric buttons of the remote control transmitter.
• Skip to another disc with DISK SKIP –/+.
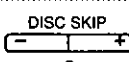• Select a group. (See page 31)

Disc grouping play

Sometimes, you want to block off your CDs into groups. For example, by the type of music, or your favorite CDs, etc. Well, this changer lets you make up to five groups, A through E. Basically, it's like dropping a disc into a box, then playing just discs from that box. What's more, you can name the groups with any of the preset names.

1   3   2

2   1
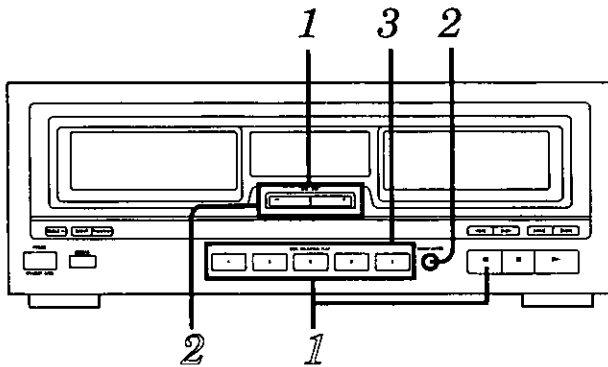
To make groups

- Any single group can hold up to 110 CDs.
- You can enter the same CD into as many of the 5 groups, A through E, as you like.
- You can assign any one of the preset names to a registered group (see step 2 on page 30). We recommend that you name your groups by the type of discs you put in them.

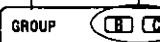**1** DISC SKIP (During sequential play or while it is on stop)

Press either DISC SKIP – or + until reaching the disc you want.

6 DISC
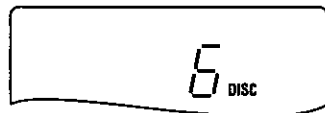
Note
- You cannot select slot No. 0.
- The changer skips over empty slots.

You can also select disc number by using the remote control.(See page 27)

2 GROUP ENTER **Press GROUP ENTER.**
If any groups have been registered already, their letters will light up.
Illuminates   Flashing

GROUP (B) (C)   ENTER

6 DISC

(Perform step 3)
You have to select a group within 7 seconds from when the indication "ENTER" starts flashing on the display. Unless you do so, the changer will return to the way it was before you pressed GROUP ENTER.

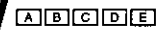**3** **Press the DISC GROUPING PLAY button(s) you want. (This "INPUT" the disc in the group.)**

A B C D E

For example: To input disc No. 6 in group A.
Press A .

— Illuminates —
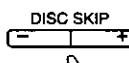GROUP (A) (B) (C)   ENTER
6 DISC
INPUT   A
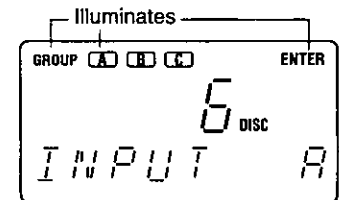
To enter the same disc into different groups.
Repeat steps 2 and 3 selecting the specific groups.

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

To check what discs are in what groups

1 A B C D E (During sequential play or while it is on stop)
Press the DISC GROUPING PLAY button you want and then press ∎.

2 DISC SKIP **Press either DISC SKIP (– or +).**
Every time you press DISC SKIP, the next disc number in order is displayed.
– : Numbers progress in reverse order.
+ : Numbers progress in regular order.

Example   GROUP (A)
6 DISC
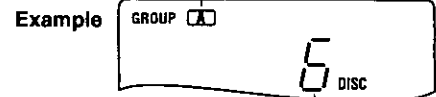
Disc number of disc registered in group A

Note
After checking, if you press the button of a group that is lit on the display, the changer reverts back to sequential play but does not automatically start playing the group.

Disc grouping play (continued)

To name groups

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

3 1 2

1/ GROUP ENTER (During sequential play or while it is on stop)
Press GROUP ENTER.

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

Illuminates | Flashing
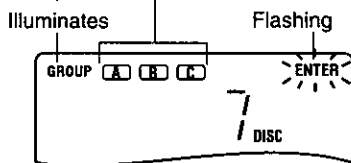
2/ (Press within 7 seconds.) **Select the name you want with |◀◀ and ▶▶|.**
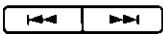
Names change in rotation as shown below, every time you press |◀◀ or ▶▶|.

ROMANTIC — RESET
ROCK — BALLADS
POP — BLUES
PARTY — CLASSIC
OLDIES — COUNTRY
NEW AGE — DANCE
JAZZ — FAVORITE
HIP HOP

3/ (Press within 7 seconds.) **Press the DISC GROUPING PLAY button for the group you want to name.**

A B C D E

For example: To name group A
Press A .

Illuminates

GROUP — ENTER → GROUP A

BALLADS → *BALLADS*

The above example shows when "BALLADS" has been selected.

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.)".
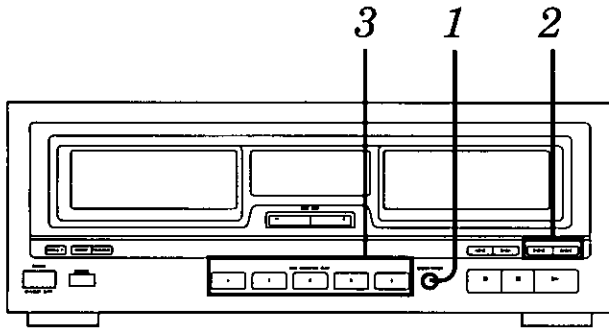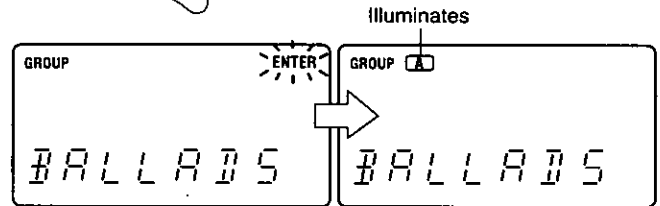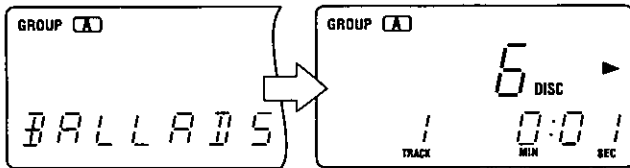
To start play

DISC SKIP (-, +)   GROUP ENTER
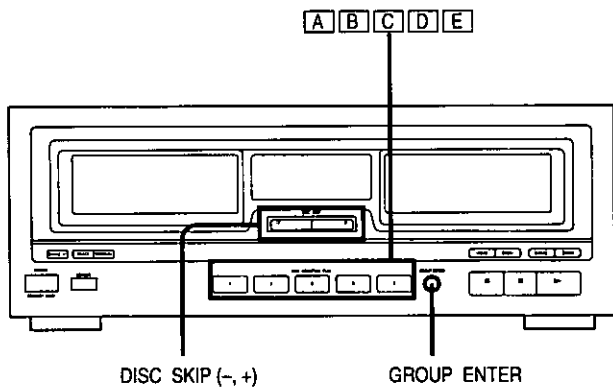
(During sequential play or while it is on stop)

Press the DISC GROUPING PLAY button of the group you want.

For example: To hear group A

Press Ⓐ .

Notes
• Unnamed groups will be displayed as "GROUP A, B, C ..." and so forth. In the above example, "GROUP A" appears in the place of "BALLADS".
• 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 group play
(In the stop mode)
Press the DISC GROUPING PLAY button indicated on the display.
(The group indication on the display will go out.)

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.

To cancel discs from groups

1. Press either DISC SKIP – or + until reaching the disc you want.
2. Press GROUP ENTER.
3. Press the DISC GROUPING PLAY button(s) you want.

For example: To cancel disc No. 7 from group A.

Press Ⓐ .

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

Illuminated   Indication goes out.
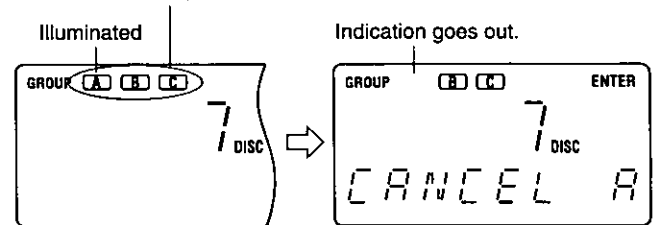
You can cancel a disc from two or more groups at one time, provided it has been entered in each of the groups, of course.
Press ■ in step 3. (In the stop mode.)

31

Program play

Everyone has his/her favorite tracks. You can program the changer to play them in a specific order. With this changer, you can make one program and fill it with up to 32 selections from any of the discs in the rack.
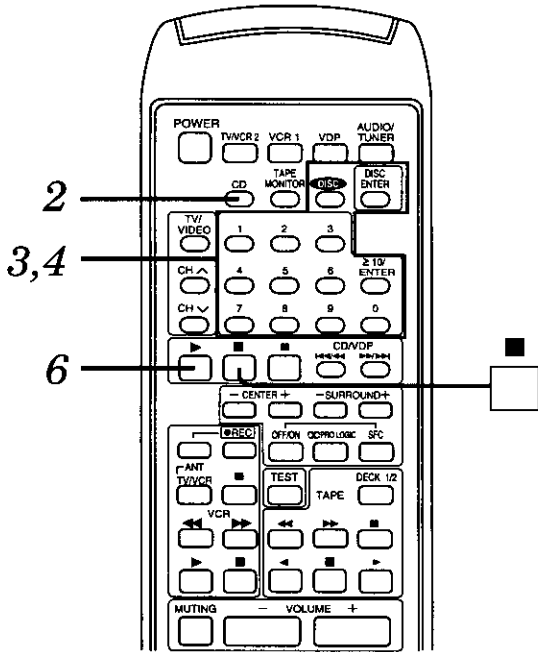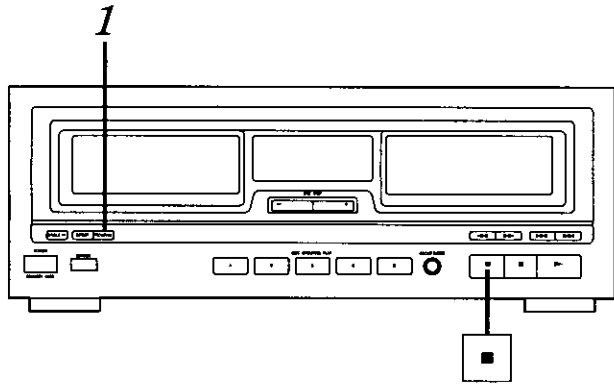
1

[PROGRAM]

[In the stop mode]
Press PROGRAM.

Illuminates

2

CD

Press CD.
This will set the remote control to operate the CD changer.

3

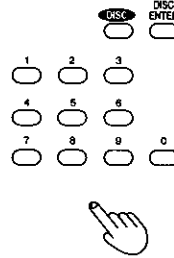**Select the disc(s) you want with the numeric buttons.**
For example:
To select disc 3.
DISC → 3 → DISC ENTER
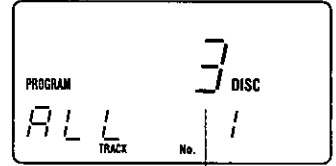
Specified disc number

The "ALL" indication shows that all the tracks on the disc are selected.
To program by means of disc numbers only, repeat the above operation. (The count will increase by one for each operation.)
You can select slot No. 0.

4

Press the numeric button(s) to specify the track.
For example:
To select track No. 20, press ≥10/ENTER, then 2, and then 0.
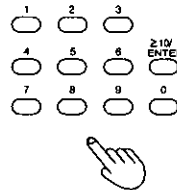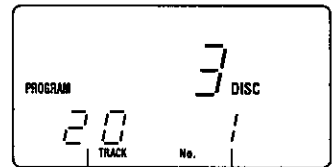
Specified track number   Program order

5

Repeat steps 3 and 4 until you have completed all entries.
If you enter non-existing disc(s) or track(s), the corresponding indicator illuminates and the entry is included in the count. In the play mode, the changer will cancel the non-existing entry.
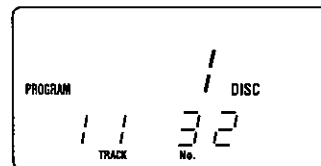
If you attempt a 33rd selection, the "PGM FULL" indication will be displayed.

32

6 ▶
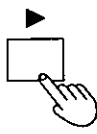
Press ▶ to start play.
To enter additional selections during play, repeat steps 3 and 4.
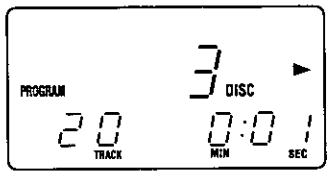
To clear all programmed contents
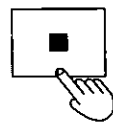
[In the stop mode]
Press ■.
The display will look as below.
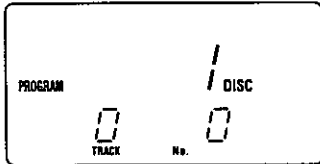
or
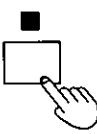
To quit the program mode

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

The programmed contents will remain stored in memory until they are cleared, even after the program mode is canceled.

Therefore, after program, it is possible to cancel the program mode and use another play mode and then hear the same program again at a later time.

In addition, if discs are changed, the program will be played using the new discs. If non-existing entries are found at this time, the changer will cancel them.

For your reference
The program 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.

Special note on recording programs
The changer needs time to change the discs and find the tracks. This time will vary depending on what you put into the program. In any case, the total playing time will be longer than that of the actual tracks.

Direct programming

You can add the track in play to your program.
In fact, a good way to build up your program is to listen to tracks and add those you like while they are still being played. It sure makes programming easier if you listen-and-program.
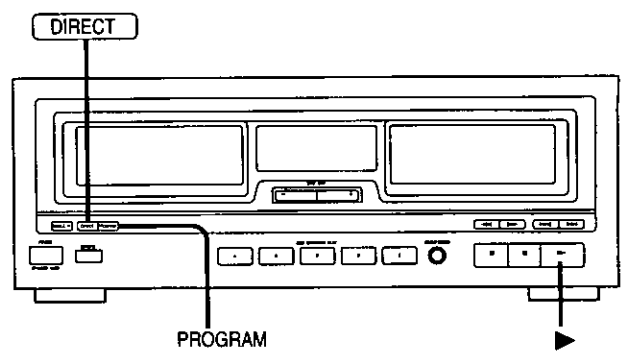
[DIRECT]

(In the play mode)
Press DIRECT.
The current track will be added to the tail end of the program.

Example Programmed order of the newly added track
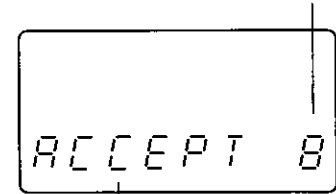
Illuminates for about 2 seconds when DIRECT is pressed.

Returns to the original indication.

Notes
● When you make a program as explained under "Program play" on the left page, and then perform the above procedure without clearing the program first, the selected track is added to the end of the program.
● You cannot add to the program if already full, that is, if already 32 selections have been programmed. If you press DIRECT in such case, the message "PGM FULL" will be displayed. Therefore, direct programming is possible only when 31 or less tracks have been programmed.

To listen to programmed tracks
(In the stop mode)
Press PROGRAM and check "PROGRAM" appears on the display, then press ▶.
The program will start from the first track.

Notes
During program play, the DIRECT button does not respond to touch.

Listening to tapes

Type of tape which can be played on this unit:

NORMAL POSITION/TYPE I	○
HIGH POSITION/TYPE II	○
Metal/TYPE IV	○

The unit automatically identifies the type of tape.
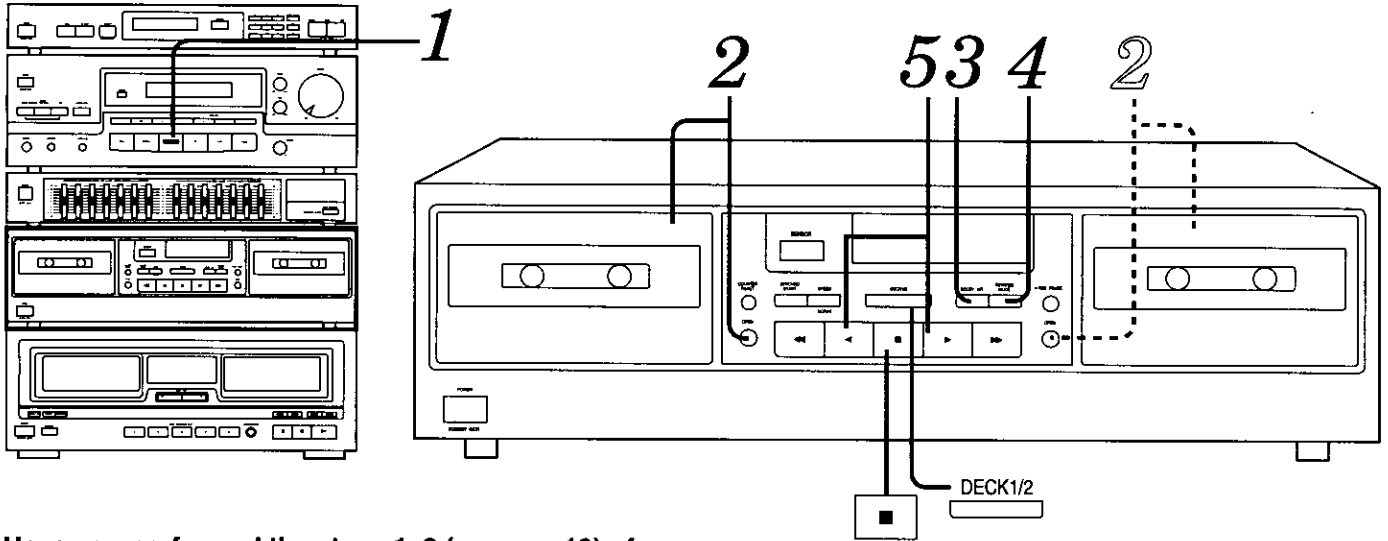
DECK1/2

Have you performed the steps 1–2 (on page 19) of "Basic operations"?

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

1 ［TAPE MONITOR］ **Press the input selector on the amplifier marked "TAPE MONITOR".**

On the amplifier's display

［TAPE MONITOR］
SPEAKERS   *T E P E*

2 OPEN **Press ▲ OPEN on Deck 1, and then insert the cassette tape.
Close the cassette holder.**

Forward side ──┐ ┌── Reverse siede

↓

Tape opening facing downward.

To play back on Deck 2, press the button ② for Deck 2.

For SD-S947·S747

3 DOLBY NR **Press DOLBY NR to select the appropriate noise-reduction system.**

DECK 1 ◻◻ ⇌   *0 0 0* _
        B

L
dB −20 −15 −10 −6 −3 0 +2 +4 ▶
R

▶
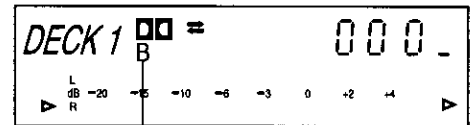
Each time the button is pressed, the indicators will change in the order: B → C → off.

Select the same type as that used for recording. When playing back a tape which was not recorded using a Dolby NR system, press so that the indicators go off.

For SD-S937·S737

3 DOLBY NR **Press DOLBY NR to listen to tapes recorded by Dolby B-type noise-reduction.**

DECK 1 ◻◻ ⇌   *0 0 0* _
        B

L
dB −20 −15 −10 −6 −3 0 +2 +4 ▶
R

▶
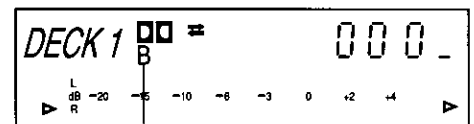
Illuminates

When playing back a tape which was not recorded using a Dolby NR system, press so that the indicators go off.

4 REVERSE MODE **Press REVERSE MODE to select the appropriate reverse mode.**
⇌ : One side only.
⟲ : Both sides repeatedly (up to 8 times).
∞ : Both sides, once only.
(Refer to the right side of the page.)

```
DECK 1  ⊞  ⇌          0 0 0 _
      L
      dB -20  -15  -10  '-6  -3   0  +2  +4
   ▷  R                                      ▷
```

Each time the button is pressed, the indicator will change in the order: ⇌ → ⟲ → ∞.

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

```
DECK 1  ⊞  ⇌          0 0 3 _
          B
         L ||||||||||||||||||||||||||||
PLAY  dB -20  -15  -10  -6  -3   0   +2   +4
   ▷  R ||||||||||||||||||||||||||||            ▷
```

Illuminates   Indicates the side being played.

To stop playback

Press ■.

To temporarily stop playback
(Only available from the remote control.)

Press ❚❚ .
The play indicator will flash.
Press once again to resume playback.

To change the Deck to be used

DECK 1/2 **Press DECK 1/2 to select the Deck you want to play.**

```
DECK 2  ⊞  ⇌          0 0 0 _
          B
      L
      dB -20  -15  -10  -6  -3   0  +2  +4
   ▷  R                                      ▷
```
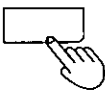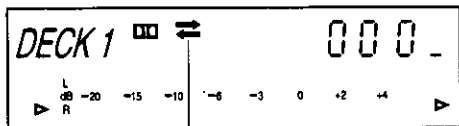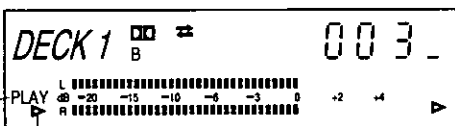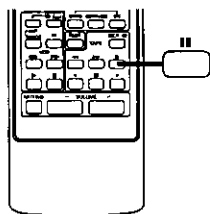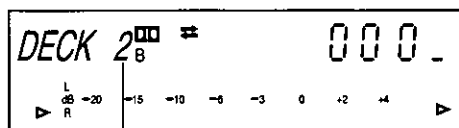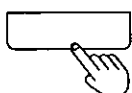
Each time the button is pressed, the indicator will change: DECK 1 ⇌ DECK 2

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 can occur with 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.

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.

SD-S947-S747 only
Dolby C-type noise-reduction
Noise is reduced to about one-tenth.
Use this system for the recording and playback of sound sources that have a wide dynamic range and good tone quality, such as FM broadcasts of live performances, etc., and for playing back such tapes.

SD-S947-S747 only
Dolby HX-Pro headroom extension system
By functioning to improve the maximum output level of the tape's high-frequency range, this system permits recordings without a reduction in the level of the sound source's high-frequency range. In addition, by using the system in parallel with this unit's noise-reduction system, recording and playback with a greatly extended dynamic range is possible.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol ⊞ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.
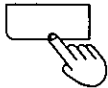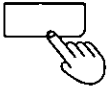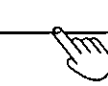
Series playback

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.)

3 4 1 2
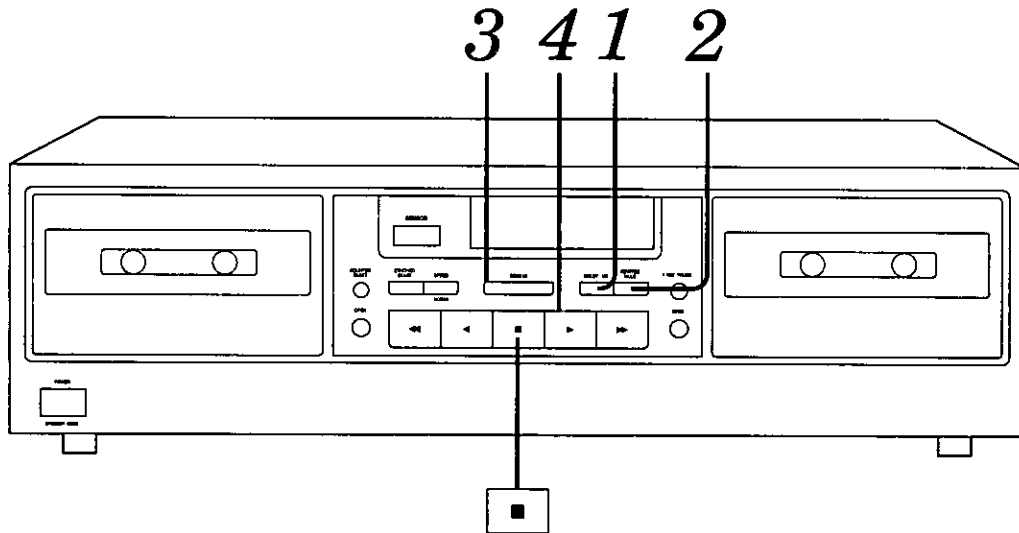
Preparation

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/ DOLBY NR

For SD-S947·S747
Press DOLBY NR to select the appropriate noise-reduction system.
For SD-S937·S737
Press DOLBY NR to listen to tapes recorded by Dolby B-type noise-reduction.

2/ REVERSE MODE **Press REVERSE MODE to select the " ∞ " mode.**

3/ DECK 1/2 **Press DECK 1/2 to select the Deck 1.**

4/ ▶ **Press ▶.**
(Series playback will begin from the forward side of the tape in Deck 1.)

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. (Refer to the tape travel table on page 35.)

To stop playback

Press ■.

To temporarily stop playback
(Only available from the remote control.)

Press ‖ .
Press once again to resume playback.
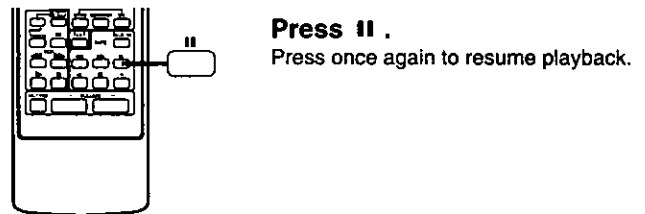
To fast-forward or rewind the tape

Deck 1
Tape side indicator

Deck 2
Tape side indicator

| 1 | DECK 1/2 | **Press DECK 1/2 to select the Deck (1 or 2).** |

| 2 | | [In stop mode]
Press ◄◄ or ►►. |
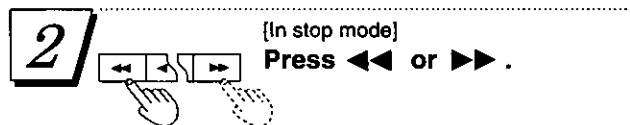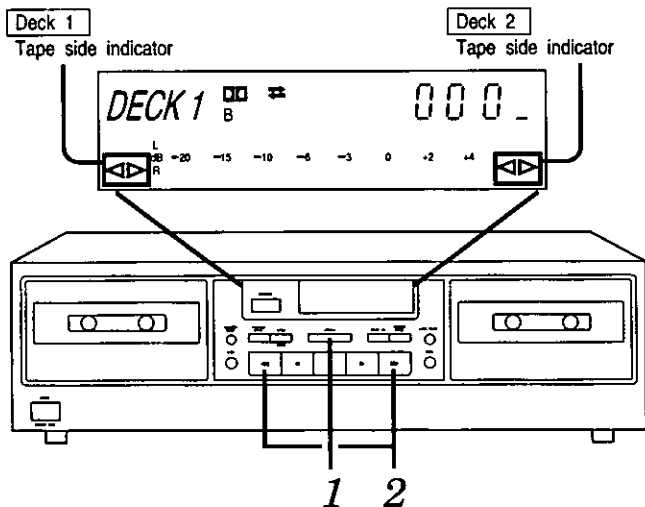
Because this unit is capable of playing back both sides of the tape, the operation changes in accordance with the direction of the tape side indicator.

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

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

Tape counter

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.

Currently selected deck   Tape counter
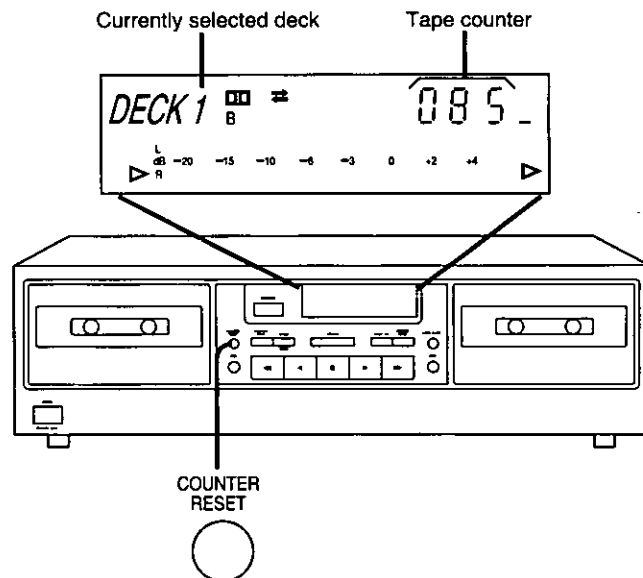
COUNTER RESET

To reset the tape counter

COUNTER RESET

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 travelling 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.

Making a recording (Deck 2 only)

Recording from the radio or external source

Type of tape which can be used for recording:

NORMAL POSITION/TYPE I	○
HIGH POSITION/TYPE II	○
Metal/TYPE IV	○
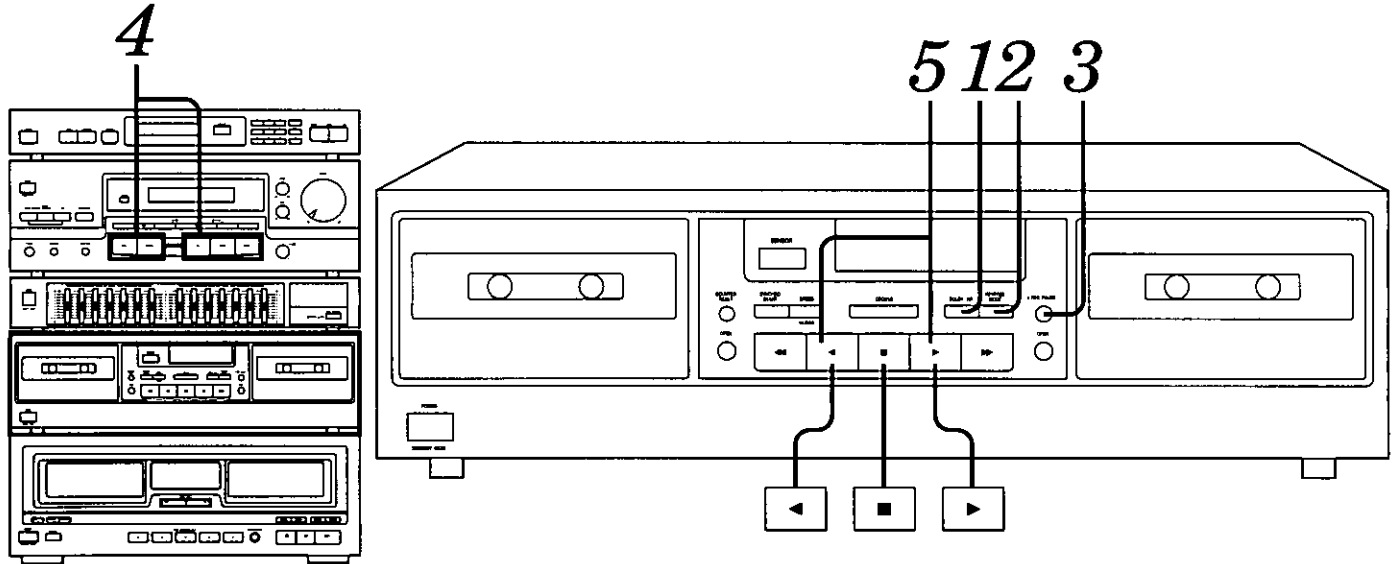
Preparation

Load a tape which has been advanced to the end of the leader tape (the transparent part at both ends of the tape) into Deck 2.

For SD-S947·S747

1 DOLBY NR **Press DOLBY NR to select the appropriate noise-reduction system.**
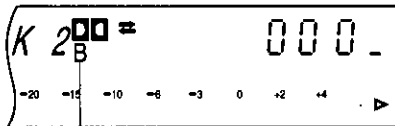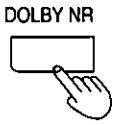
Each time the button is pressed, the indicator will change in the order:

B → C → off.

When recording a tape without using a Dolby NR system, press so that the indicators go off.

For SD-S937·S737

1 DOLBY NR **Press DOLBY NR to record by Dolby B-type noise-reduction system.**
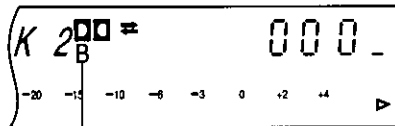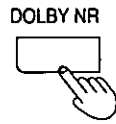
Illuminates

When recording a tape without using a Dolby NR system, press so that the indicators go off.

2 REVERSE MODE **Press REVERSE MODE to select the desired reverse mode.**
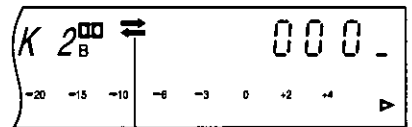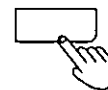
Each time the button is pressed, the indicator will change in the order:

⇄ → ⊂⊃ → ∞.
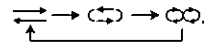
⇄ : Only one side will be recorded, and then operation will automatically stop.
⊂⊃ , ∞ : Both sides (the forward side first, and then the reverse side) will be recorded, and then operation will automatically stop.

3 ● REC PAUSE **Press ● REC PAUSE.**
(The unit will be in the recording standby mode.)

Illuminates

Flashes

38

4 ⎡ □ ⎤ **Press to select the desired source to be recording.**

5 **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.

$$K \; 2^{\boxed{\square\square}}_{B} \; \rightleftarrows \qquad \square \square \square \;\_$$

```
-20  -15  -10  -6  -3   0    +2   +4   REC
                                       PLAY
                                       ▷
```

Illuminates
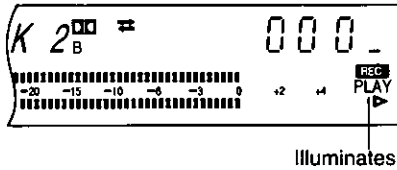
Note

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

To temporarily stop recording

● REC PAUSE

Press ● REC PAUSE.

To resume recording
Press either ◀ or ▶, corresponding to the side of the tape side indicator which is lit.

$$K \; 2^{\boxed{\square\square}}_{B} \; \rightleftarrows \qquad \square \; 8 \; 5 \;\_$$

```
-20  -15  -10  -6  -3   0    +2   +4   REC
                                       ◁▷
```

Tape side indicator

To stop recording

| ■ |

Press ■.

About the selection of the Dolby NR type

The Dolby NR effect can be obtained by using the same type of Dolby NR during both recording and playback. Refer to the following table when selecting the type (either B or C).

Type B	Use this type when the deck on which the tape will be played back is equipped with only type B Dolby NR.
Type C	Use this type when the deck on which the tape will be played back is equipped with type C Dolby NR. (for example, when this unit is also going to be used to play back the tape.)

Erasure prevention

Remove the tab(s).

Tab for side "B"
Tab for side "A"
Use a screwdriver or similar object to break out the tab.
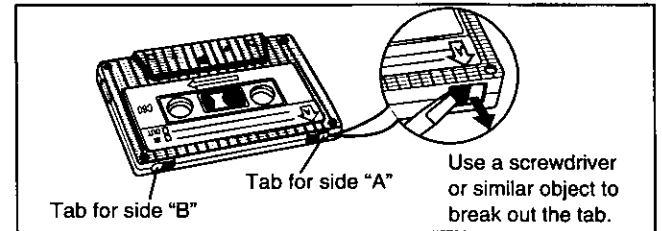
To re-record on a protected cassette

Cover the slot with adhesive tape.

Attach tape.

39
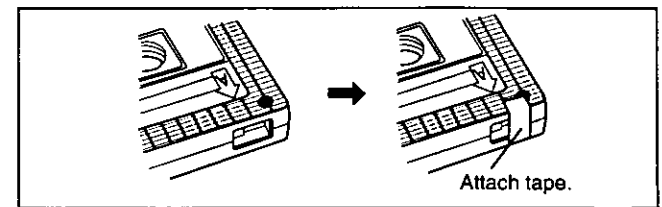
Tape-to-tape recording

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

3 2 DECK1/2 1

SYNCHRO START

◄   ■   ►   ● REC PAUSE
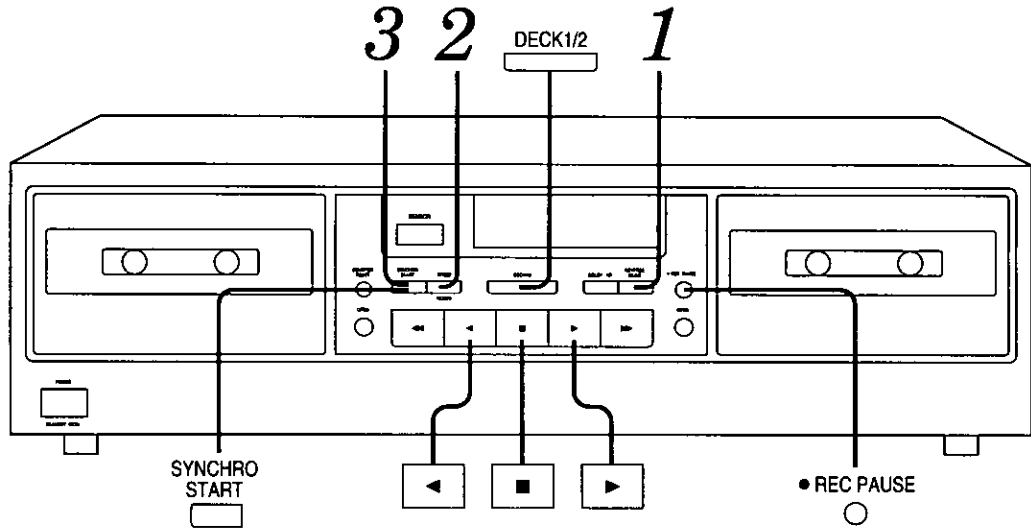
Preparation

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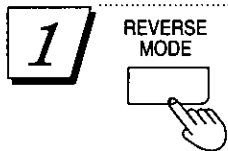
1 REVERSE MODE

Press REVERSE MODE to select the desired reverse mode.

K1 ⊟ ⇄   000 _

-20 -15 -10 -8 -3 0 +2 +4 ►

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 (▷).
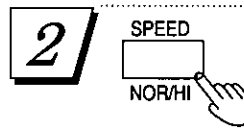
2 SPEED NOR/HI

Press SPEED to select the recording speed.

K1 ⇄ SPEED NOR   000 _

-20 -15 -10 -8 -3 0 +2 +4 ►
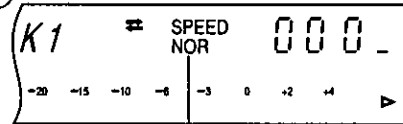
Each time the button is pressed, the indicators will change in the order:

NOR → HI → off.

NOR: normal speed
HI: approx. double speed
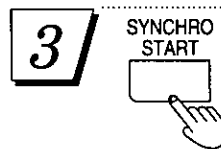
3 SYNCHRO START

Press SYNCHRO START.
(Recording will begin.)

To stop recording

1. Press DECK 1/2 to select the 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.

To record selected tracks

1 DECK 1/2 [During recording]

Press DECK 1/2 to select the 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 SYNCHRO START **Press SYNCHRO START.**
(Recording will resume.

To cut unwanted parts during recording

1 ● REC PAUSE **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 side of the tape side indicator which is lit.

(Deck 2 will resume recording.)

For your reference:
● The Dolby effect 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.

Note
When recording with the recording speed set to double 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.

To erase recorded sound

When new recordings are made on a pre-recorded tape, all sounds recorded on that portion of the tape are automatically erased. To erase a tape without making a new recording, follow the steps below.

4 1 2 3
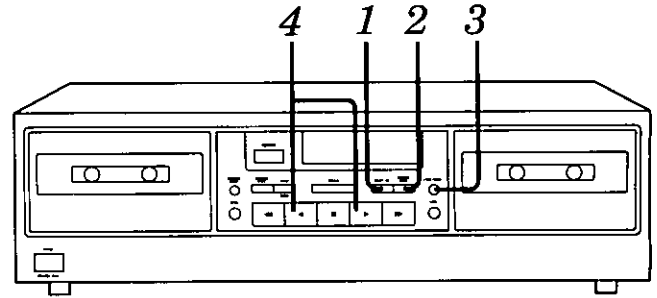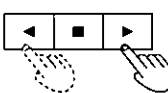
| Preparation |

● Load the tape to be erased into Deck 2.
● Set the input source on the amplifier to "TAPE MONITOR" position.
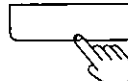
1 DOLBY NR **For SD-S947·S747**
Press DOLBY NR so that the Dolby NR indicators ("B" and "C") are off.
For SD-S937·S737
Press DOLBY NR so that the Dolby NR indicator is off.

2 REVERSE MODE **Press REVERSE MODE to select the desired reverse mode.**

⇌ : To erase one side of the tape.
⟳ , ∞ : To erase both sides of the tape.

3 ● REC PAUSE **Press ● REC PAUSE.**
(The unit will be in the recording standby mode.)

4 **Press ◀ or ▶ to begin erasing the tape.**

▶: To erase the forward side of the tape.
◀: To erase the reverse side of the tape.

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

41

Enjoying sound with DOLBY PRO LOGIC

By combining front, center and surround speakers, you can enjoy the SURROUND mode which conveys a feeling of presence or the 3 STEREO mode which conveys a feeling of orientation.

SURROUND

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

To enjoy SURROUND, be sure to connect the surround speakers.

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

Surround                            Surround
speaker (L)                         speaker (R)
```
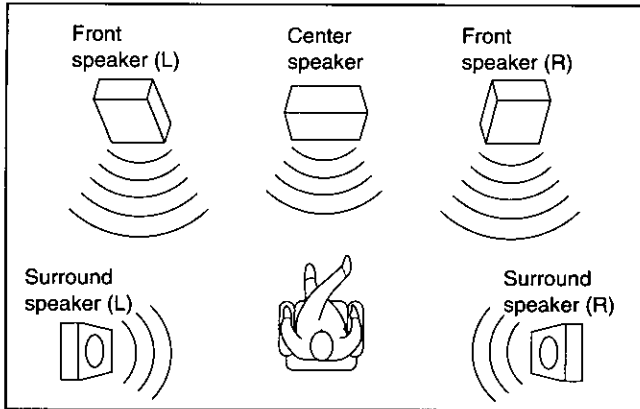
3 STEREO

You can enjoy audio/video sources with clear sound, more presence and a good feeling of orientation. 3 STEREO can be used with non DOLBY SURROUND recordings.

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

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

Surround                            Surround
speaker (L)                         speaker (R)
```
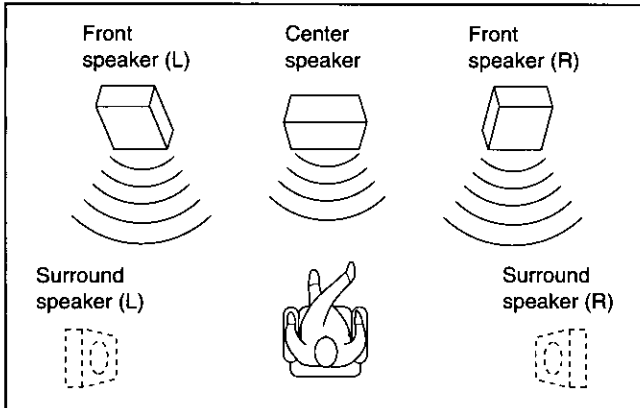
Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under Canadian patent number 1,037,877.
"Dolby", the double-D symbol ▯▯ and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

Setting the center mode

For Dolby Pro Logic systems, center mode setting is necessary to play back bass sounds effectively.
Set the center mode in accordance with the size of your center speaker.
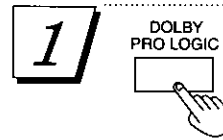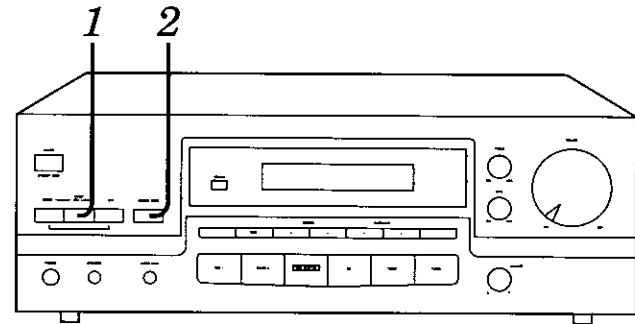
1 DOLBY PRO LOGIC   **Press DOLBY PRO LOGIC to turn on the Dolby Pro Logic system and select the desired mode.**
When the button is pressed, the current mode is displayed.
Pressing it again changes the Dolby Pro Logic mode.

For SURROUND mode
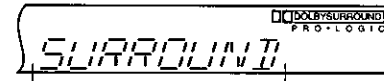
```
SURROUND          ▯▯ DOLBY SURROUND
                     PRO·LOGIC
```
Displayed for approximately 1 second only.

For 3 STEREO mode

```
3 STEREO          ▯▯ 3 STEREO
```
Displayed for approximately 1 second only.
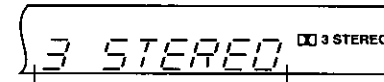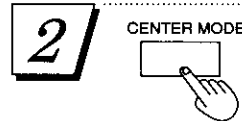
2 CENTER MODE   **Press CENTER MODE to select the correct center mode.**

```
NORMAL
```
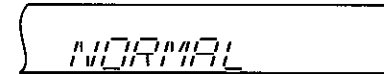
When the button is pressed, the current center mode is displayed.
Pressing it again changes the center mode.

NORMAL
When the center speaker is smaller than the front speakers
WIDEBAND
When the center speaker is the same or larger size as the front speakers
PHANTOM SURROUND mode only
When no center speaker is connected.

Note
In the PHANTOM mode, the sound which would have been sent to the center speaker will be divided equally between both the left and right front speakers.

Adjusting the output level of each speaker

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

● If front speaker volume is unbalanced, adjust the balance with the BALANCE.

OFF/ON

BALANCE
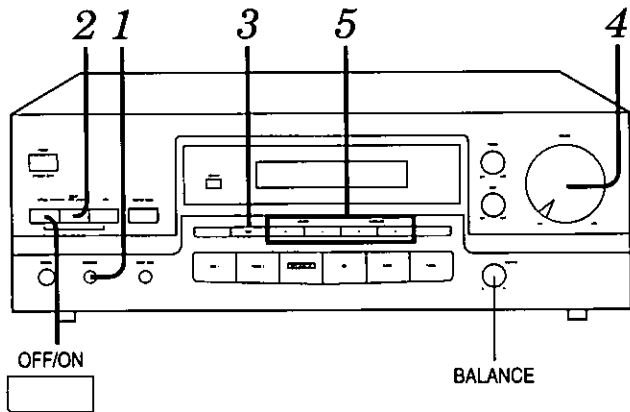
1/ SPEAKERS
Press SPEAKERS to turn on the front speaker systems.

SPEAKERS

Illuminates
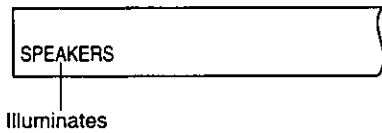
2/ DOLBY PRO LOGIC
Press DOLBY PRO LOGIC to turn on the Dolby Pro Logic system and select the desired mode.

For SURROUND mode
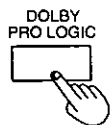
SURROUND
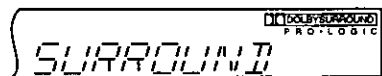
For 3 STEREO mode

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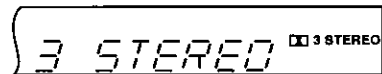
3/ TEST
Press TEST to output a test signal.

TEST L
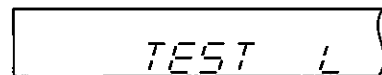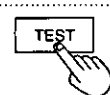
The speaker outputting the test signal is displayed while the test is running.
L : Front speaker (left)
C : Center speaker
R : Front speaker (right)
S : Surround speakers

For surround mode

L → C → R → S
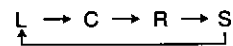
In the PHANTOM mode, the center speaker is OFF, so the test signal is not output and "C" is not displayed.

For 3 STEREO mode

L → C → R
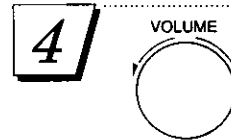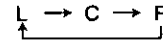
4/ VOLUME
Turn VOLUME to set the volume level normally used for enjoying the source.
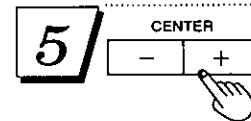
5/ CENTER
Press CENTER (−) or (+) or SURROUND (−) or (+) to adjust the output level balance.

SURROUND mode only

SURROUND
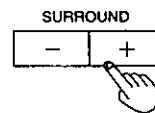
While standing in the listening area, adjust the output levels of each speaker until they are all identical.
◻: Decrease the output level.
◻: Increase the output level.

5 +3dB
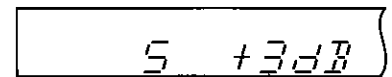
Output level can be varied within a range of −12 dB to +12 dB with front speaker output level serving as the zero point.

Note
The test signal is output only by the speaker you are now adjusting and does not repeat the sequence until adjustments are complete.

To stop the test signal
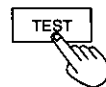
TEST   Press TEST.

To turn off the Dolby Pro Logic systems
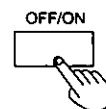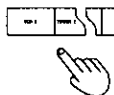
OFF/ON   Press OFF/ON.
Press once again to turn it on.

Enjoying with SURROUND or 3 STEREO
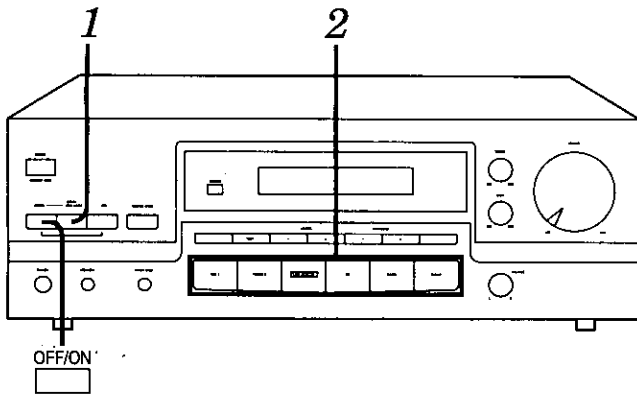
1 / DOLBY PRO LOGIC

Press DOLBY PRO LOGIC to turn on the Dolby Pro Logic system and select the desired mode.

When the button is pressed, the current mode is displayed.
Pressing it again changes the Dolby Pro Logic mode.

2 /

Select the desired source.

3 /

Start the desired source.

Note

When employing SURROUND, use software recorded in Dolby Surround.

OFF/ON

To turn off the Dolby Pro Logic systems
Press OFF/ON.
Press once again to turn it on.


The SFC function gives presence and spread thereby enhancing and enriching the music or movie.
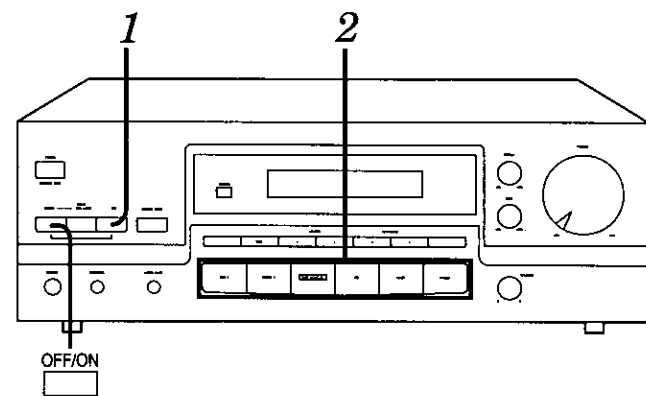
1 / SFC

Press SFC to select the desired SFC mode.

$$LIVE$$

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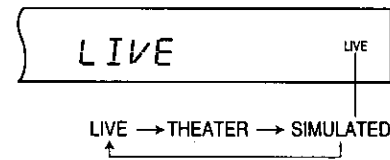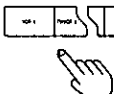
LIVE
Primarily for vocal pieces, this mode adds gloss to the vocals and you'll feel as though you were hearing a live stage performance.

THEATER
You can clearly perceive the directions and source of the movie.
Real ambience of sound can also be recreated naturally using this mode.
THEATER mode can be used with stereo sources not encoded with DOLBY SURROUND.

Note

When using Dolby surround encoded source materials, select the DOLBY PRO LOGIC SURROUND.

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 the sound from surround speakers.

Note

You can adjust center speaker volume only in the theater mode. The center speaker is not used in the simulated mode.

2 /

Select the desired source.

3 /

Start the desired source.

OFF/ON

To turn off the SFC function
Press OFF/ON.
Press once again to turn it on.

44

To adjust center and surround speakers volume

Note

Center speaker volume can be adjusted only in the THEATER mode.
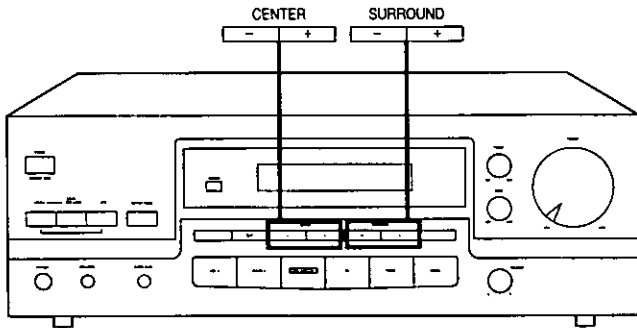
To adjust center speaker volume
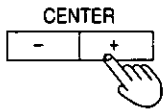
CENTER

In the theater mode only

Press CENTER (–) or (+).

To adjust surround speaker volume
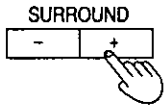
SURROUND

Press SURROUND (–) or (+).

Adjusting the tone quality

INPUT SELECTOR
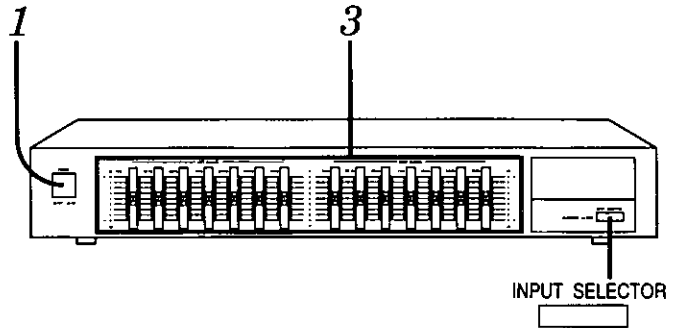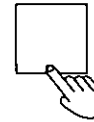
1 POWER **Press POWER of the graphic equalizer.**
The graphic equalizer will switch on.

2 **Start the desired source.**

3 **Adjust the left and/or right channel tone quality as desired.** (See page 46.)

LEFT CHANNEL   RIGHT CHANNEL
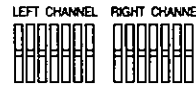
Note

As with any equalizer, it is not recommended to raise adjacent equalizer level controls by a large amount. This may cause amplifier 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.

To use the cassette deck or VCR connected to the graphic equalizer

INPUT SELECTOR
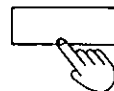
Set INPUT SELECTOR of the graphic equalizer to the "TAPE" position and then start the tape playback.

Note

Be sure to set this selector to the "SOURCE" position to listen to other sources.

Characteristics of each frequency range

The following are examples of typical applications with regards to the equalizer band settings.
These statements are used in a general manner of speaking and may not hold true in all cases.

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, a softness can be applied by reducing the setting.

16 kHz Super-treble range
This control can be used 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.

Examples of applications

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.
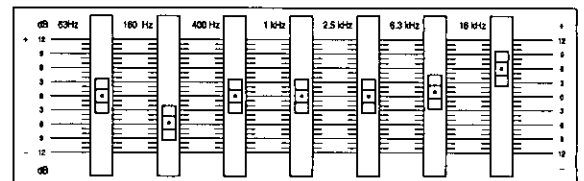
For editing "live" recordings made on tape, etc.
Cutting the noise from live recording tapes
Live tapes recorded outdoors generally contain popping noises caused by wind and various other noises from the surrounding area. In order to effectively eliminate wind noise, cut bass sounds below 63 Hz and raise the level of sounds in the 400 Hz range. Then control sounds made by birds, etc., with a 6.3 kHz adjustment.
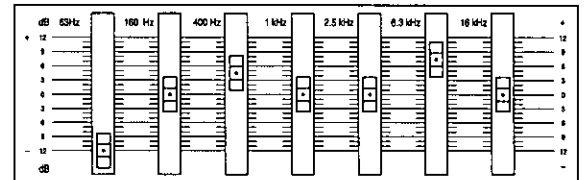
For creation of unique, individually personalized sounds.
Producing clear vocals
For female vocals, raise the level of the 1 kHz~2.5 kHz range by 2~4 dB. To rectify omission, raise the level of the 6.3 kHz vicinity slightly.
Male vocals can be improved by raising the level of the 400 Hz~2.5 kHz range.
Below is an example of a female vocal correction.

46
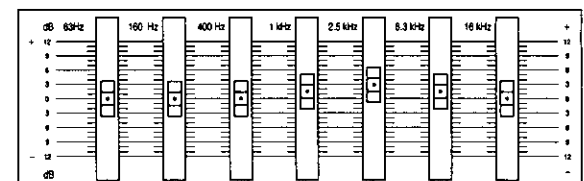
Concerning compact discs

With this changer, you can only play compact discs having this mark:

Handling precautions

To open the compact disc case, gently press the sides of the top and pull up.
To remove the disc from the case, press the center holder and lift the disc, holding by the edges.
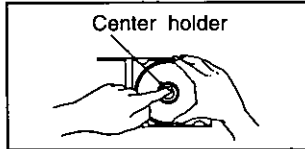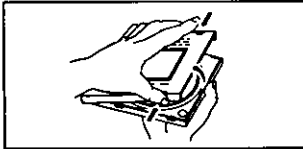
Center holder

To return the disc to the case, insert the disc with the label facing up and press downward at the center.

Hold compact discs by the edges so as not to soil the surface with fingerprints. Fingerprints, dirt and scratches can cause skipping and distortion.
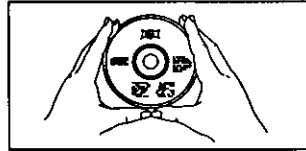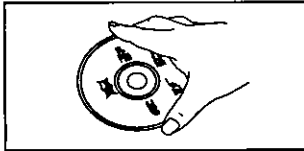
Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent on a disc.

If the surface is soiled, wipe gently with a soft, damp (water only) cloth.

Always move the cloth directly outward from the center of the disc, not in a circular motion as with standard phonograph records.

(Correct)   (Incorrect)
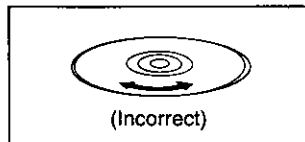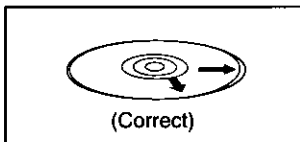
If you are taking the disc from a cold to a warm environment, moisture may form on the disc. Wipe this off with a soft, dry, lint-free cloth before using the disc.

Do not write on the label side with a ball-point pen or other writing instrument.

Storage precautions

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

Do not place or store discs in the following places:
1) Locations exposed to direct sunlight
2) Humid or dusty locations
3) Locations directly exposed to a heat vent or heating appliance
4) In the glove compartment or on the rear deck of an automobile

Concerning cassette tapes

Selection of cassette tapes

Cassette tapes exceeding 90 minutes
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the machine.

Endless tapes
Failure to operate these tapes correctly may cause the tape to wind around the revolving parts.
For this unit, it is recommended to use the tape which is appropriate to the auto reverse mechanism.

Fe-Cr tapes (TYPE III)
The high frequency range will be emphasized, and it will not be possible to obtain a flat frequency response.

Metal tape without detection holes in the cassette
Recordings will be very distorted. (However, there will be no problem with playback.)

Metal tape

Detection holes
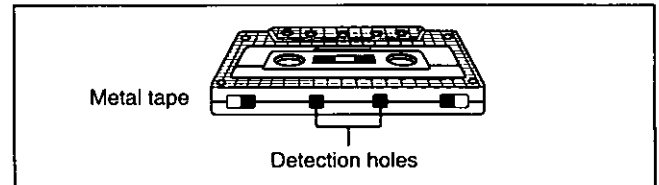
Tape slack

Tape slack may cause the tape to break.

Use a pencil or similar object to take up the slack.
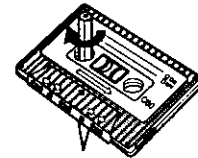
Tape storage

Tapes can be damaged if stored in places such as those described below.
- Where the temperature is high (95°F/35°C or higher) or where the humidity is high (80% or higher)
- Where there is a strong magnetic field (near a speaker, on top of a TV, etc.). Recording may become erased.
- In direct sunlight

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 and the capstan shaft 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.
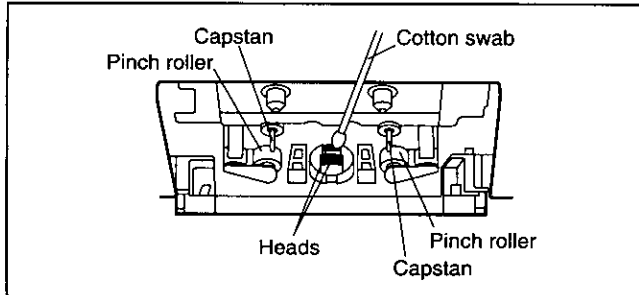
Head demagnetization

(Only for cassette deck)

In order to maintain good sound quality during recording and playback, it is recommended that the head assembly be demagnetized if distortion or poor sound quality persists after cleaning the heads.
If the head assembly becomes magnetized, it could create noise in the recordings, loss of high-frequency response or erasure of valuable recordings.

Several types of head demagnetizers are available and may be purchased separately at local electronics supply stores.
Follow the instructions that are supplied with the device.

Do not bring any type of metal objects or tools such as magnetic screwdrivers in contact with the head assembly.

Maintenance of external surfaces

To clean this unit, use a soft, dry cloth.
If the surfaces are extremely dirty, use a soft cloth, dipped into a soap-and-water solution or a weak detergent solution.
Wring the cloth well before wiping the unit.
Wipe once again with a soft, dry cloth.
Never use alcohol, paint thinner, benzine, nor a chemically treated cloth to clean this unit.
Such chemicals may damage the finish of your unit.

Technical specifications (IHF '78)

Tuner ST-K55

■ FM TUNER SECTION

Frequency range	87.9–107.9 MHz (0.1 MHz-steps)
Sensitivity	14.8 dBf (1.5 µV, IHF '58)
50 dB quieting sensitivity	
MONO	18.1 dBf (2.2 µV, IHF '58)
STEREO	39.2 dBf (25 µV, IHF '58)
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	75 dB
STEREO	70 dB
Frequency response	20 Hz–15 kHz, +0.5 dB, –1.5 dB
Alternate channel selectivity ±400 kHz	45 dB
Stereo separation	
1 kHz	40 dB
Carrier leak	
19 kHz	–35 dB
38 kHz	–50 dB
Antenna terminal	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	530 kHz–1710 kHz (10 kHz-steps)
Sensitivity (S/N 20 dB)	20 µV, 600 µV/m
Selectivity (±10 kHz)	40 dB
Image rejection at 1000 kHz	40 dB
IF rejection at 1000 kHz	50 dB

■ GENERAL

Output voltage	0.6 V
Power consumption	5 W
Power supply	AC 120 V, 60 Hz
Dimensions (W×H×D)	430×64×287.5 mm
	(16-15/16"×2-17/32"×11-5/16")
Weight	2.2 kg (4.9 lb.)

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

Amplifier SU-G96

■ MAIN AMPLIFIER SECTION

Rated minimum sine wave RMS power output
40 Hz–20 kHz both channels driven 0.9% total harmonic distortion 130 W per channel (8 Ω)

1 kHz continuous power output both channels driven

0.9% total harmonic distortion	135 W per channel (8 Ω)

Total harmonic distortion

rated power at 40 Hz–20 kHz	0.9% (8 Ω)
half power at 1 kHz	0.05% (8 Ω)

Power output at the Dolby Pro Logic operation

0.9% at 1 kHz Front	2×100 W (8 Ω)
Center	100 W (8 Ω)
SURROUND	※100 W (8 Ω)
SMPTE intermodulation distortion	0.9 % (8 Ω)
Dynamic headroom	2 dB (8 Ω)
Low frequency damping factor	30 (8 Ω)

Load impedance

Front	8 Ω
Center	8 Ω
SURROUND	4–8 Ω

※ Surround speakers' total impedance.

■ PRE AMPLIFIER SECTION

Input sensitivity

PHONO	0.3 mV (3 mV, IHF '66)
TUNER, CD, TAPE MONITOR, VCR 1, TV/VCR 2, EQ/EXT	
	18 mV (200 mV, IHF '66)

Input impedance

PHONO	47 kΩ
TUNER, CD, TAPE MONITOR, VCR 1, TV/VCR 2, EQ/EXT	
	22 kΩ

S/N (IHF, A)

PHONO	70 dB (80 dB, IHF '66)
TUNER, CD, TAPE MONITOR, VCR 1, TV/VCR 2, EQ/EXT	
	75 dB (85 dB, IHF '66)

Frequency response

PHONO	RIAA standard curve ±0.8 dB
TUNER, CD, TAPE MONITOR, VCR 1, TV/VCR 2, EQ/EXT	
	10 Hz–60 kHz, ±3 dB

Tone controls

BASS	50 Hz, +10 dB to –10 dB
TREBLE	20 kHz, +10 dB to –10 dB
Super bass	80 Hz, +7 dB

■ VIDEO SECTION

Output voltage at 1 V input	1 ±0.1 Vp-p
Maximum input voltage	1.3 Vp-p
Input/output impedance	75 Ω

■ GENERAL

Power consumption	270 W, 350 VA
Power supply	AC 120 V, 60 Hz
Dimensions (W×H×D)	430×153×360 mm
	(16-15/16"×6-1/32"×14-11/64")
Weight	9.4 kg (20.7 lb.)

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

Graphic equalizer SH-8017 (SD-S947·747 only)

■ EQUALIZER SECTION

Frequency response (center position)	5 Hz–100 kHz, –3 dB
Maximum output voltage	6 V (1 kHz, THD 0.01%)
Output voltage	1 V
Total harmonic distortion	0.005% (20 Hz–20 kHz)
	0.003% (1 kHz)
Input sensitivity	1V
S/N	110 dB (IHF 'A)
Maximum input voltage	6 V (1 kHz)
Input impedance	33 kΩ
Gain	0±1 dB
Band level controls	+12 to –12 dB
	(7 continuously variable elements per channel)

Center frequencies

63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz

■ GENERAL

Power consumption	7 W
Power supply	AC 120 V, 60 Hz
Dimensions(W×H×D)	430×75×192.5 mm
	(16-15/16"×2-31/32"×7-19/32")
Weight	1.8 kg (4.0 lb.)

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

CD changer SL-MC409

■ 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 consumption	11 W
Power supply	AC 120 V, 60 Hz
Dimentions (W×H×D)	430×170×387 mm
	(16-15/16"×6-11/16"×15-1/4")
Weight	7.0 kg (15.4 lb.)

MASH is a trademark of NTT.

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

Cassette deck RS-TR280 (For SD-S947·S747)

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

Motors

DECK 1	Capstan/Reel table drive (DC servo motor)×1
DECK 2	Capstan/Reel table drive (DC servo motor)×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, TYPE II type tape)

NR off	54 dB (A weighted)
Dolby B NR on	64 dB (A weighted)
Dolby C NR on	72 dB (A weighted)

Input sensitivity and impedance

REC (IN)	320 mV/47 kΩ

Output voltage and impedance

PLAY (OUT)	320 mV/500 Ω

■ GENERAL

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

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

Cassette deck RS-TR180 (For SD-S937·S737)

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

Motors

DECK 1	Capstan/Reel table drive (DC servo motor)×1
DECK 2	CapstanReel table drive (DC servo motor)×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, TYPE II type tape)

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

Input sensitivity and impedance

REC (IN)	320 mV/47 kΩ

Output voltage and impedance

PLAY (OUT)	320 mV/500 Ω

■ GENERAL

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

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

Front speakers SB-A47
(For SD-S947·S747)

Type	3 way 4 speaker bass-reflex
Speaker(s)	
Woofer	30 cm (11-13/16") cone type
Woofer	25 cm (9-15/16") cone type
Midrange	10 cm (4") cone type
Tweeter	2.5 cm (1") dome type
Impedance	8 Ω
Input power	260 W (MUSIC)
	130 W (DIN)
Output sound pressure level	89 dB/W (1.0 m)
Crossover frequency	3 kHz, 6 kHz
Frequency response	32 Hz–38 kHz (–16 dB)
	40 Hz–33 kHz (–10 dB)
Dimensions (W×H×D)	380×1050×340 mm
	(14-31/32"×41-11/32"×13-3/8")
Weight	16 kg (35.2 lb.)

Front speakers SB-A37
(For SD-S937·S737)

Type	3 way 4 speaker bass-reflex
Speaker(s)	
Woofer	30 cm (11-13/16") cone type
Woofer	25 cm (9-15/16") cone type
Midrange	10 cm (4") cone type
Tweeter	6.5 cm (2-9/16") cone type
Impedance	8 Ω
Input power	260 W (MUSIC)
	130 W (DIN)
Output sound pressure level	89 dB/W (1.0 m)
Crossover frequency	3 kHz, 6 kHz
Frequency response	35 Hz–35 kHz (–16 dB)
	43 Hz–31 kHz (–10 dB)
Dimensions (W×H×D)	380×980×285 mm
	(14-31/32"×38-9/16"×11-7/32")
Weight	13.5 kg (29.7 lb.)

Surround speakers SB-S937

Type	1 way 1 speaker bass-reflex
Speaker(s)	
Fullrange	8 cm (3-5/32") cone type
Impedance	4 Ω
Input power	110 W (MUSIC)
	55 W (DIN)
Output sound pressure level	83 dB/W (1.0 m)
Frequency response	110 Hz–20 kHz (–16 dB)
	130 Hz–17 kHz (–10 dB)
Dimensions (W×H×D)	150×180×100 mm
	(5-29/32"×7-3/32"×3-15/16")
Weight	1.0 kg (2.2 lb.)

Center speaker SB-C937

Type	1 way 2 speaker bass-reflex
Speaker(s)	
Fullrange	8 cm (3-5/32") cone type×2
Impedance	8 Ω
Input power	220 W (MUSIC)
	110 W (DIN)
Output sound pressure level	87 dB/W (1.0 m)
Frequency response	150 Hz–20 kHz (–16 dB)
	180 Hz–18 kHz (–10 dB)
Dimensions (W×H×D)	270×130×100 mm
	(10-5/8"×5-1/8"×3-15/16")
Weight	1.4 kg (3.1 lb.)

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

Troubleshooting guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.
If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem,

refer to the directory of authorized service centers (enclosed with this unit) to locate a convenient service center, or consult your Technics dealer for instructions.
(In U.S.A. consult MSC Authorized Servicenters for detailed instructions or call 1-800-545-2672 for the address of an authorized factory servicenter.)

Problem	Probable cause(s)	Suggested remedy
Problems noted at all times		
No sound is heard when the power is switched ON.	The power cord plug is not completely inserted.	• Confirm that the power cord plug is connected completely.
	Connections are incomplete or incorrect to the speaker systems, etc.	• Check to be sure that all connection wires are correctly connected.
	The incorrect input selector of the amplifier has been pressed.	• Check to be sure that the correct selector is pressed.
	The speaker selector is set incorrectly.	• Set it to the correct position.
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., (+)→(+), (−)→(−)].
When listening to stereo sound, the left and right sounds are reversed.	The left and right speaker connections, source connections, or graphic equalizer connections are reversed.	• Check all connections and correct them if necessary.
A low-pitched noise ("hum" or "buzz") is heard.	The power cord or a 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.
Sound stops during a performance, or no sound is heard when the power is switched ON.	The volume level is excessively increased.	• Decrease the volume level.
	The protection circuitry has functioned because the positive and negative speaker connection wires are "shorted" or speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.	• Switch OFF the power, and, after determining and correcting the cause, switch ON the power once again. • Use a speaker system of the proper impedance rating.

While listening to radio broadcasts		
A strange hissing noise is produced continuously or intermittently.	Caused by the "discharge phenomenon" and the "oscillation phenomenon" of electric appliances (such as fluorescent lights, TV, small series-type motors, rectification equipment, etc.).	• Try placing this unit farther away from such equipment. • Install noise-prevention equipment on this unit or on the electric appliance.

While listening to AM broadcasts		
An unusual "beat" sound is heard.	Unit is being used at the same time as the television set.	• Switch OFF the television set, or use this unit farther away from it.
A low-pitched "hum" sound is heard when the broadcast is tuned.	The AM loop antenna connection wires are too close to the power cord.	• Place the antenna connection wires and the power cord farther apart.
	The power supply frequency from the power cord is modulated and heard from the speakers.	• Install a special outdoor antenna.

52

Problem	Probable cause(s)	Suggested remedy

While listening to FM broadcasts

Problem	Probable cause(s)	Suggested remedy
An unusual hissing noise is heard when listening to the broadcast in stereo, but not heard when listening monaurally.	Due to the differences between a monaural and a stereo signal, a higher level of signal strength is required for proper stereo reception. If the signal level is low, a hissing noise may be produced on the stereo channel.	• Try reducing the treble sound by using the treble control of the amplifier. • In this case, set for monaural reception to reduce the hiss. Note, however, that the broadcast will not be heard as stereo. • Try changing the location, height and/or direction of the antenna.
Noise is excessive in both stereo and monaural broadcasts.	Poor location and/or direction of the antenna.	• If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
	Transmitting station is too far away	
The FM stereo indicator or the quartz lock indicator flickers, without completely illuminating.	Poor location and/or direction of the antenna.	• Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
	Transmitting station is too far away.	
Excessive distortion in the sound of stereo broadcasts.	Nearby building or mountain. [Multipath distortion is being caused by the mutual interference of broadcast signals received directly from the transmitting station (direct waves) and signals being reflected from nearby buildings or mountains (reflected waves).]	
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 compact discs

Problem	Probable cause(s)	Suggested remedy
Changer will not play.	A disc(s) or other foreign object(s) has fallen inside the changer.	• Open the loading drawer, and then remove the object.
	Moisture has collected in the changer.	• Switch on and 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.
	The disc is dirty.	• Wipe the disc with a soft cloth.
	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.
	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.
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.

Problem	Probable cause(s)	Suggested remedy

While using the tape deck

Problem	Probable cause(s)	Suggested remedy
Tape moves but no sound is heard.	The volume control of the amplifier is set to its minimum position.	• Adjust the volume control to the desired level.
	The input selector of the amplifier is not set to the "TAPE MONITOR" position.	• Set to the "TAPE MONITOR" position.
Previously recorded sound has not been erased.	Erase head is dirty.	• Clean the head.
Sound output is hoarse or unsteady.	Heads are dirty.	• Clean the heads.
	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 correct Dolby noise-reduction button is not set.	• Set to the correct position.
Sound is low, poor tone, intermittent sound, noise.	Heads, capstan and/or pinch roller are dirty or tape is damaged.	• Clean the heads, capstan and/or pinch roller, or try a new cassette.
Recording is not possible.	One of the tape-to-tape recording-speed indicators is illuminated.	• Switch off whichever tape-to-tape recording-speed indicator that is illuminated (by pressing the SPEED button).
Recorded sound is TV noise.	This unit is placed near a TV.	• Try placing this unit farther away from a TV.

While using the graphic equalizer (SD-S947·S747 only)

Problem	Probable cause(s)	Suggested remedy
Equalized sound can't be heard.	The power switch is switched "OFF".	• Switch "ON" the power.

While using the remote-control transmitter

Problem	Probable cause(s)	Suggested remedy
Remote-control transmitter does not function.	Batteries are incorrectly installed.	• Insert the batteries so that the positive (+) and negative (–) polarities are correct.
	The remote-control transmitter batteries are drained.	• Replace them with new batteries.
	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.

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 in product operation, refer to the servicenter directory.

When getting service

Before bringing in your changer for service, be sure to remove all discs first.
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.
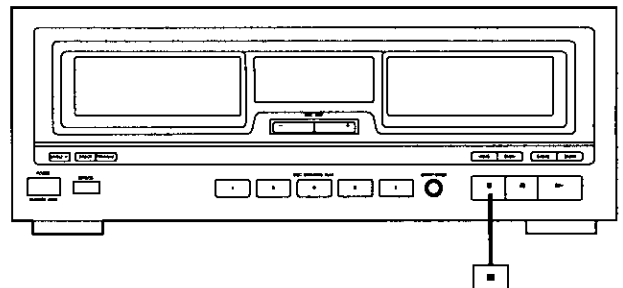
Disc index **For CD changer**

If should be easier for you to remember what disc is in what slot and the group(s) it's in if you record everything in this table.

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	
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	

No	GROUP					DISC NAME
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	
61	A	B	C	D	E	
62	A	B	C	D	E	
63	A	B	C	D	E	
64	A	B	C	D	E	
65	A	B	C	D	E	
66	A	B	C	D	E	
67	A	B	C	D	E	
68	A	B	C	D	E	
69	A	B	C	D	E	
70	A	B	C	D	E	
71	A	B	C	D	E	
72	A	B	C	D	E	
73	A	B	C	D	E	
74	A	B	C	D	E	
75	A	B	C	D	E	
76	A	B	C	D	E	
77	A	B	C	D	E	
78	A	B	C	D	E	
79	A	B	C	D	E	
80	A	B	C	D	E	
81	A	B	C	D	E	
82	A	B	C	D	E	
83	A	B	C	D	E	
84	A	B	C	D	E	
85	A	B	C	D	E	
86	A	B	C	D	E	
87	A	B	C	D	E	
88	A	B	C	D	E	
89	A	B	C	D	E	
90	A	B	C	D	E	
91	A	B	C	D	E	
92	A	B	C	D	E	
93	A	B	C	D	E	
94	A	B	C	D	E	
95	A	B	C	D	E	
96	A	B	C	D	E	
97	A	B	C	D	E	
98	A	B	C	D	E	
99	A	B	C	D	E	
100	A	B	C	D	E	
101	A	B	C	D	E	
102	A	B	C	D	E	
103	A	B	C	D	E	
104	A	B	C	D	E	
105	A	B	C	D	E	
106	A	B	C	D	E	
107	A	B	C	D	E	
108	A	B	C	D	E	
109	A	B	C	D	E	
110	A	B	C	D	E	

Write your group names in here.

GROUP	GROUP NAME
A	
B	
C	
D	
E	

RQT3338-P
H1195G0