AV Control Receiver

Operating Instructions

Model No. **SA-DA20**
SA-DA15

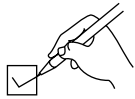SA-DA20 (Black version)

Technics®

E   EB

RQT5861-B

Dear customer

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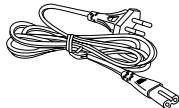For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to models SA-DA20 and SA-DA15, however, are intended primarily for model SA-DA20.
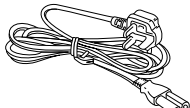
Supplied accessories

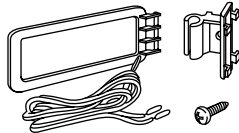Please check and identify the supplied accessories.

☐ AC mains lead...1

| For Continental Europe (RJA0019-2K) | For the United Kingdom (VJA0733) |

☐ AM loop antenna set (RSA0012) 1
(AM loop antenna, antenna holder, screw)

☐ FM indoor antenna (RSA0007-L) 1
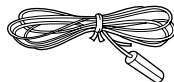
☐ Antenna plug (SJP9009) 1
(Only for the United Kingdom)

☐ Batteries 2

☐ Remote control (EUR7502X60).......................................1
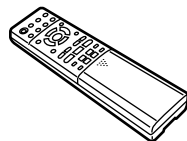
Use the numbers indicated in parentheses when asking for replacement parts.

Table of contents

Enjoying surround sound

Pages

Connect your equipment

6–9

Position and connect the speakers

10, 11

Change the settings

12–14

Adjust speaker output level

15

Sit back and enjoy the experience

18

CAUTION

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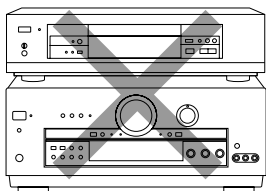
NO

Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.

Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.

Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.

Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these operating instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

Before use

Caution for AC Mains Lead

(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS 1362.
Check for the ASTA mark ⬦ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF–KEEP DRY.

Before use
Remove the connector cover.

How to replace the fuse
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below. Illustrations may differ from actual AC mains plug.
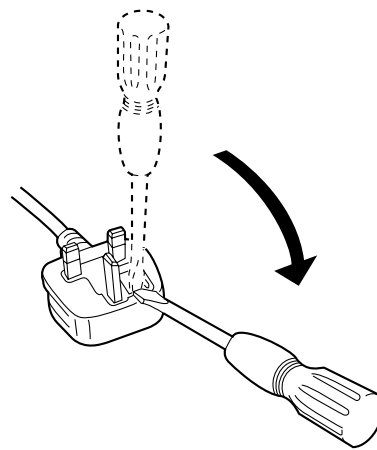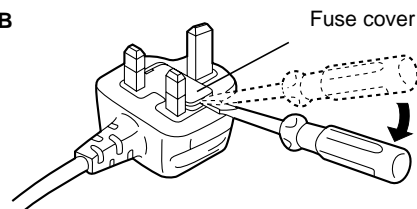
1. Open the fuse cover with a screwdriver.

Figure A

Figure B   Fuse cover
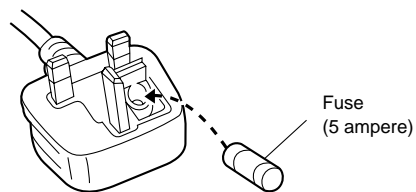
2. Replace the fuse and close or attach the fuse cover.

Figure A   Fuse (5 ampere)
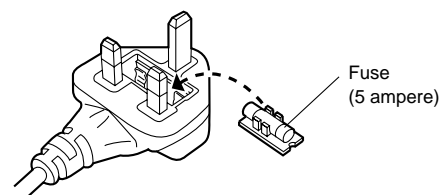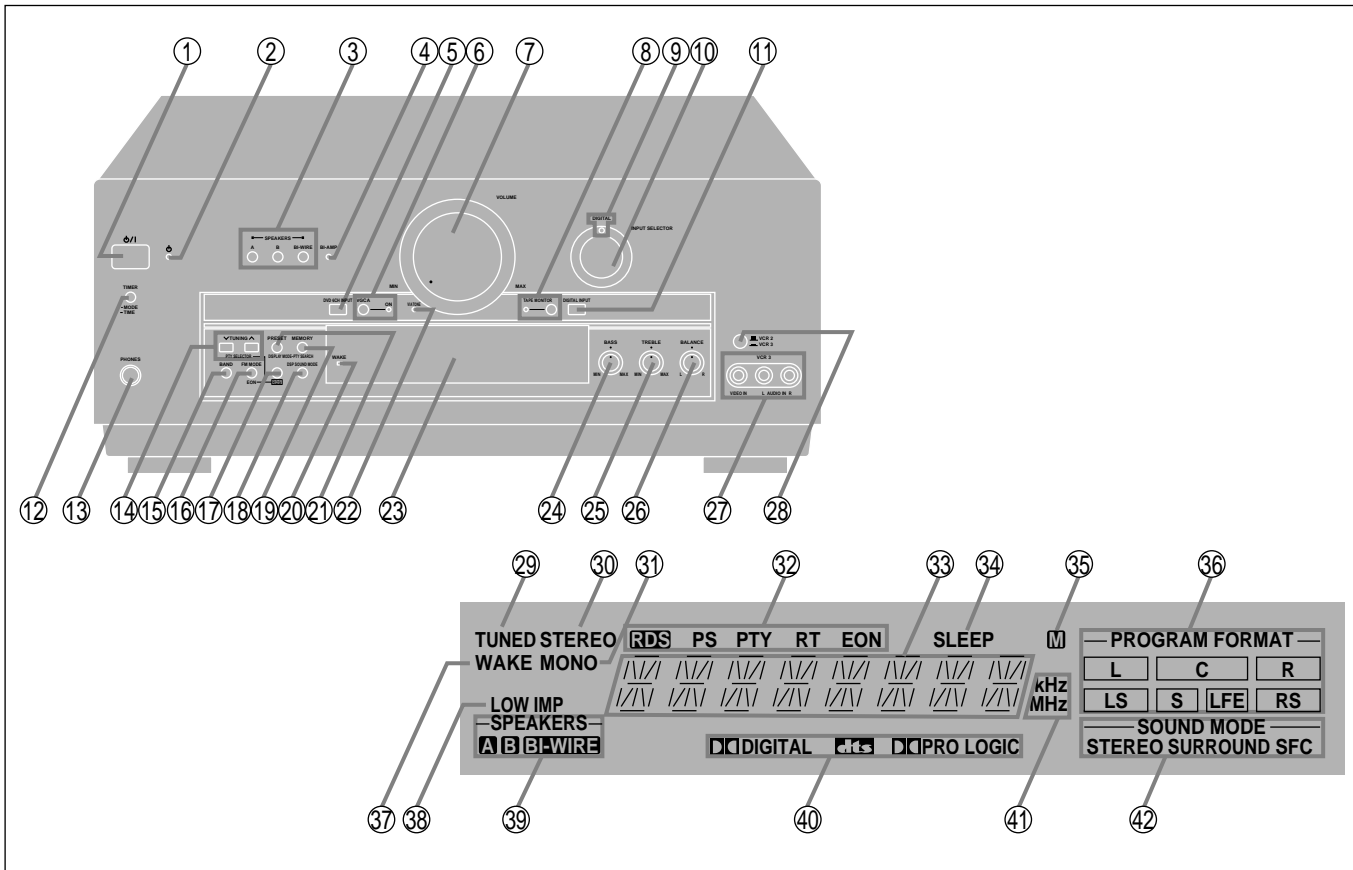
Figure B   Fuse (5 ampere)

Control reference guide

Reference pages are given in parentheses.

Main unit

① **Standby/on switch [⏻/I]...(13)**
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of
power.

② **Standby indicator [⏻]**
When the unit is connected to the AC mains supply, this
indicator lights up in standby mode and goes out when the unit
is turned on.

③ **Speaker select buttons**
[SPEAKERS, A, B, BI-WIRE]..(13, 18)

④ **Bi-amp indicator [BI-AMP]..(19)**

⑤ **DVD 6ch input select button [DVD 6CH INPUT].................(19)**

⑥ **VGCA button/indicator [VGCA, ON] ....(20)**

⑦ **Volume control [VOLUME] ....(18)**

⑧ **Tape monitor button/indicator [TAPE MONITOR] ....(26)**

⑨ **Digital input indicator [DIGITAL]..(18)**

⑩ **Input selector [INPUT SELECTOR] ....(13, 18)**

⑪ **Digital input select button [DIGITAL INPUT].....................(18)**

⑫ **Timer button [TIMER, -MODE, –TIME] ....(36)**

⑬ **Headphone jack [PHONES] ....(26)**

⑭ **Tuning/PTY select buttons**
[TUNING, ∨, ∧, PTY SELECTOR].................................(22, 24)

⑮ **Band select button [BAND] ....(22)**

⑯ **FM mode select/EON button [FM MODE, EON] ....(22, 25)**

⑰ **RDS button [RDS]...(24)**

⑱ **DSP sound mode select button**
[DSP SOUND MODE]...(18)

⑲ **Memory/PTY search button**
[MEMORY, PTY SEARCH]...(23, 24)

⑳ **Wake indicator [WAKE] ....(36)**

㉑ **Preset channel/display mode button**
[PRESET, DISPLAY MODE] ....(23, 24)

㉒ **Via tone indicator [VIA TONE]..(20)**

㉓ **Display section**

㉔ **Bass control [BASS] ....(21)**

㉕ **Treble control [TREBLE]..(21)**

㉖ **Balance control [BALANCE] ....(21)**

㉗ **VCR 3 terminals [VCR 3]...(6)**

㉘ **VCR 2/VCR 3 select button [◼ VCR 2, ◼ VCR 3] ....(21)**

Display section

㉙ **Tuned indicator [TUNED]...(22)**

㉚ **Stereo indicator [STEREO]..(22)**

㉛ **Monaural indicator [MONO]...(22)**

㉜ **RDS indicators [RDS, PS, PTY, RT, EON] ....(24)**

㉝ **Display**

㉞ **Sleep indicator [SLEEP] ....(36)**

㉟ **Memory indicator [M] ....(23)**

㊱ **Program format indicators**
[–PROGRAM FORMAT–, L, C, R, LS, S, LFE, RS]..............(18)

㊲ **Wake indicator [WAKE] ....(36)**

㊳ **Low impedance indicator [LOW IMP]...................................(14)**

㊴ **Front speaker indicators**
[-SPEAKERS-, A, B, BI-WIRE]...(18)

㊵ **Signal format indicators**
[◼◼ DIGITAL, dts , ◼◼ PRO LOGIC]...................................(18)

㊶ **Frequency unit indicators [kHz, MHz] ....(22)**

㊷ **DSP sound mode indicators**
[–SOUND MODE–, STEREO, SURROUND, SFC] ....(18)

Refer to "Remote control", for a guide to the remote control's buttons (➡ pages 28–35).

Connections

Stereo phono cable
White (L)
Red   (R)
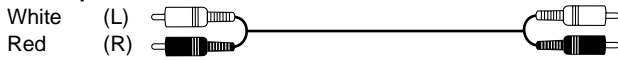
Video connection cable

To connect equipment, refer to the appropriate operating instructions.

Peripheral equipment and cables sold separately unless otherwise indicated.

Note

- Turn off all components before making any connections.
- Use digital connection to enjoy Dolby Digital or DTS (➡ page 18).
- Use analogue connection to enjoy sources that cannot be decoded on this unit and to record a source (➡ pages 16, 19 and 27).
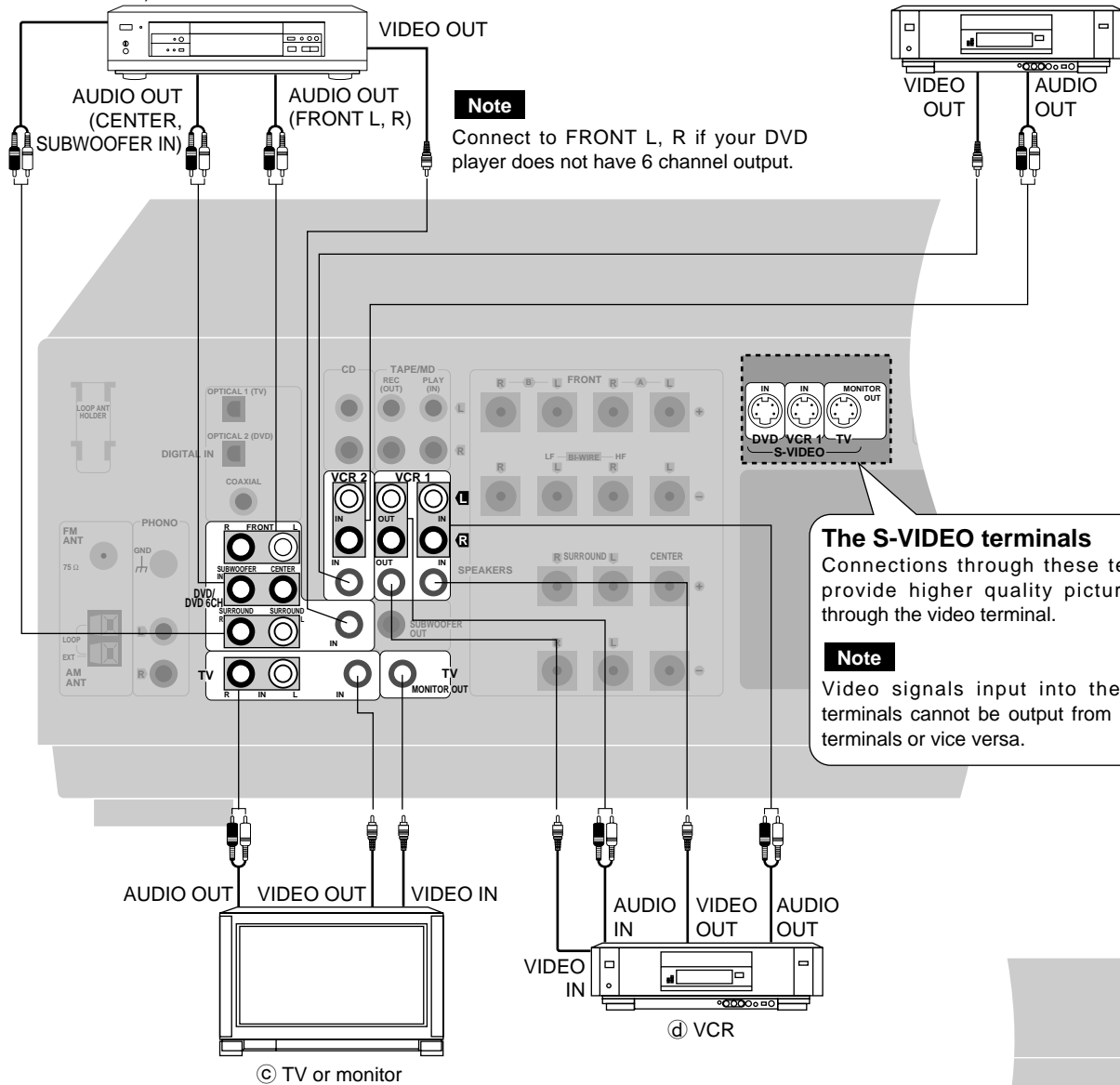
Connecting video equipment

AUDIO OUT
(SURROUND L, R)   ⓐ DVD player

VIDEO OUT

ⓑ VCR (for play only)

VIDEO OUT   AUDIO OUT

AUDIO OUT
(CENTER, SUBWOOFER IN)

AUDIO OUT
(FRONT L, R)

Note

Connect to FRONT L, R if your DVD player does not have 6 channel output.

The S-VIDEO terminals

Connections through these terminals provide higher quality pictures than through the video terminal.

Note

Video signals input into the VIDEO terminals cannot be output from S-VIDEO terminals or vice versa.

AUDIO OUT   VIDEO OUT   VIDEO IN

ⓒ TV or monitor

AUDIO IN   VIDEO OUT   AUDIO OUT

VIDEO IN

ⓓ VCR

Connecting to the VCR 3 terminals on the front panel

ⓔ Video camera, etc.

VIDEO OUT

AUDIO OUT

VCR 3
VIDEO IN L AUDIO IN R
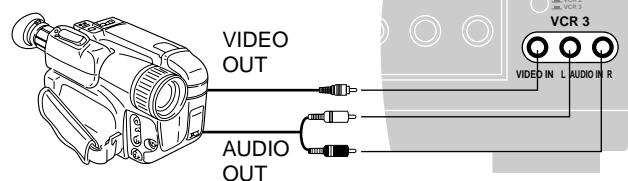
Connection with 21 pin scart cable

(a) VCR (for play only)

AV

AUDIO OUT

VIDEO OUT

(b) 21 pin scart cable

OPTICAL 1 (TV)

OPTICAL 2 (DVD)

DIGITAL IN

COAXIAL

LOOP ANT HOLDER

FM ANT

75 Ω

PHONO

GND

CD

TAPE/MD
REC (OUT)   PLAY (IN)

L

R

VCR 2   VCR 1
IN   OUT   IN
IN   OUT   IN

FRONT

R   B   L   FRONT   R   A   L

LF   BI-WIRE   HF
R   L   L

SPEAKERS

R   SURROUND   L   CENTER

DVD/
DVD 6CH
SURROUND
R   SURROUND
L

SUBWOOFER
OUT

R   L

LOOP
EXT
AM
ANT

L   R

FRONT
R   L

SUBWOOFER
IN   CENTER

TV
R   IN   L

IN

TV
MONITOR OUT

(c) TV or monitor

(d) 21 pin scart cable

AV

AUDIO OUT

VIDEO
OUT

VIDEO
IN

VIDEO
IN

AUDIO
IN

VIDEO
OUT

AUDIO
OUT

(e) 21 pin scart cable

AV

(f) VCR

Connections

Connecting audio equipment

(g) Turntable

OUTPUT   GND

OPTICAL 1 (TV)

OPTICAL 2 (DVD)

DIGITAL IN

COAXIAL

LOOP ANT
HOLDER

FM
ANT

75 Ω

PHONO

GND

CD

TAPE/MD
REC   PLAY
(OUT)   (IN)

L

R

VCR 2   VCR 1

IN   OUT   IN

OUTPUT

(i) CD player

PLAY (OUT)

REC (IN)

(j) Tape or MD deck

FRONT
R   L

SUBWOOFER
IN   CENTER

DVD/
DVD 6CH
SURROUND
R   SURROUND
L

LOOP
EXT
AM
ANT

L

R

SPEAKERS

R

R

R

SUBWOOFER
OUT

IN

TV
R   IN   L

IN

TV
MONITOR OUT

(h) Only for turntable with
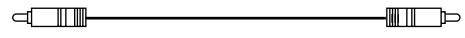ground terminal.

Note

If you have a graphic equalizer, connect it
to the TAPE/MD terminals (➡ page 26).

Connections

Connecting digital equipment

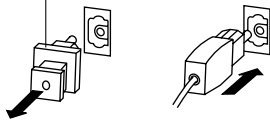**Optical fiber cable**   **Coaxial cable**

ⓐ Satellite receiver, etc.

DIGITAL OUT

Changing the digital input settings
You can change the input settings for the digital terminals if necessary (for example, if your CD player doesn't have a coaxial output terminal). Note the equipment you have connected to the terminals, then change the settings (➡ pages 12, 13).
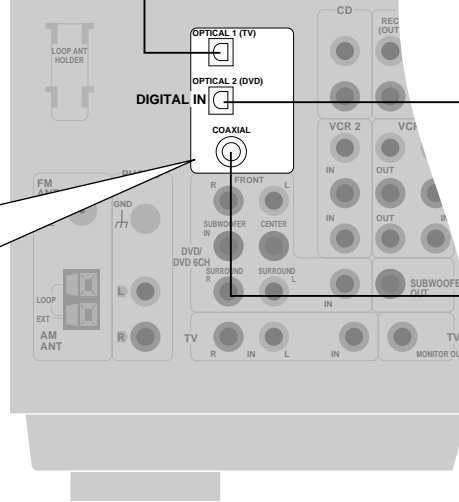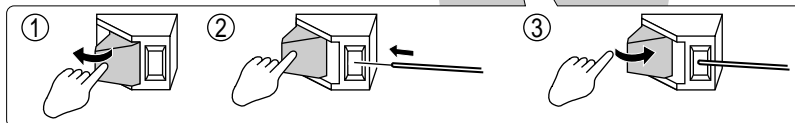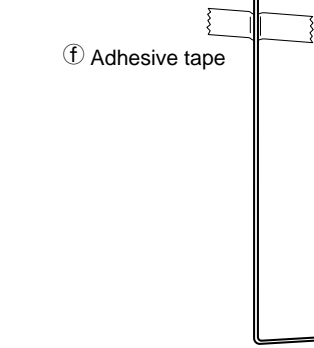
### Optical fiber cable connection

ⓓ Dust cap

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

Note

This unit cannot decode Dolby Digital RF (radio frequency) signals from a laser disc player.

OPTICAL 1 (TV)
OPTICAL 2 (DVD)
DIGITAL IN
COAXIAL

DIGITAL OUT   ⓑ DVD player

DIGITAL OUT   ⓒ CD player

Antenna connections

When mounting the antenna to a column, wall or rack

FM antenna
Fix the other end of the antenna where reception is best.

ⓔ FM indoor antenna (included)

ⓕ Adhesive tape

ⓗ Screw (included)
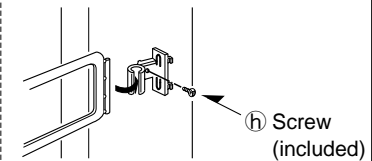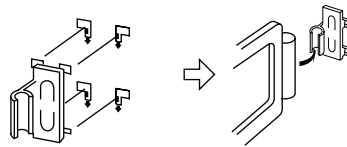
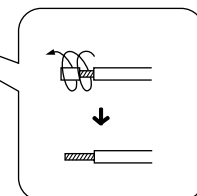ⓖ AM loop antenna (included)
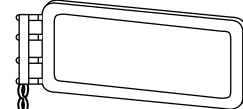
AM loop antenna
● Fit the AM loop antenna holder (included) onto the rear panel of this unit and then attach the AM loop antenna to it (facing in the direction of best reception).
● Keep the antenna cord away from tape decks, DVD players, and other cords.
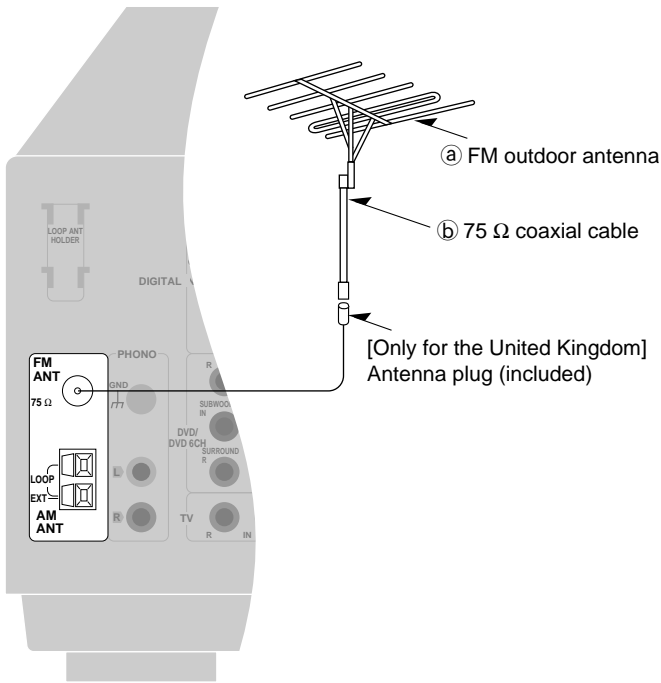
FM ANT 75 Ω
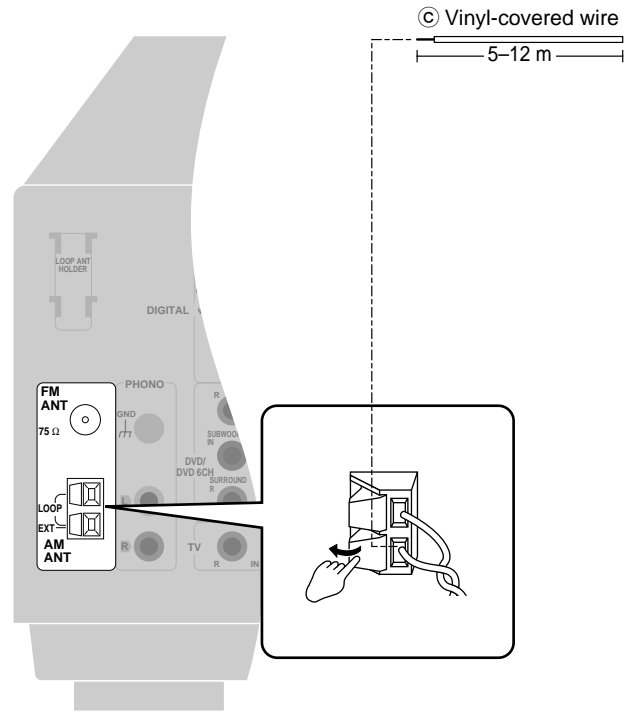
LOOP ANT HOLDER

① ② ③

To connect an outdoor antenna

FM outdoor antenna
- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

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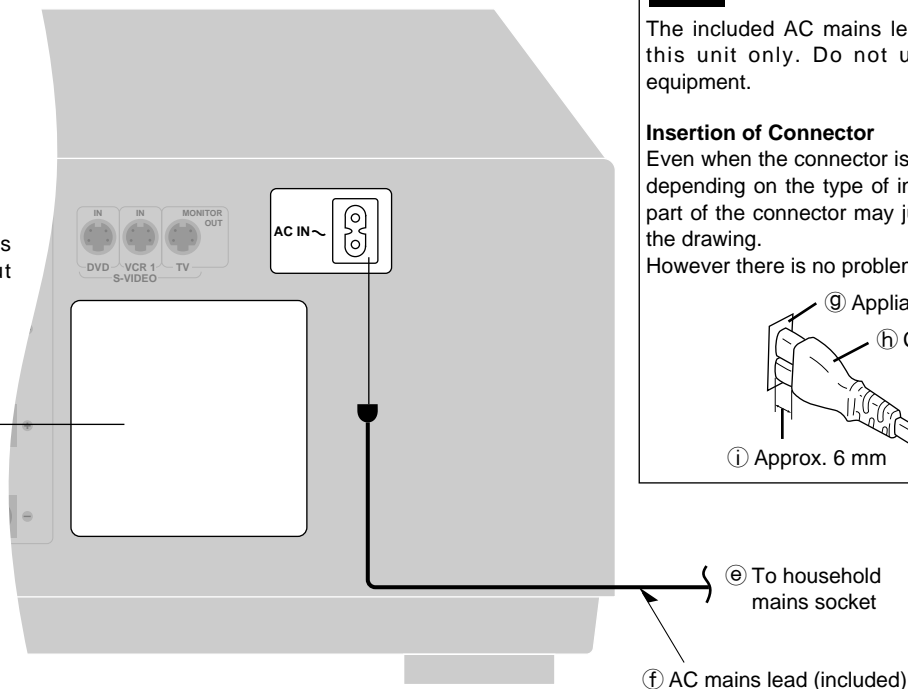- Disconnect the antenna when the unit is not in use. Do not use the antenna during an electrical storm.

ⓒ Vinyl-covered wire

5–12 m

LOOP ANT HOLDER

DIGITAL

FM ANT

75 Ω

PHONO

GND

R

SUBWOO

DVD/
DVD 6CH

SURROUND

R

L

R

TV

R   IN

LOOP

EXT

AM ANT

ⓐ FM outdoor antenna

ⓑ 75 Ω coaxial cable

[Only for the United Kingdom]
Antenna plug (included)

LOOP ANT HOLDER

DIGITAL

FM ANT

75 Ω

PHONO

GND

R

SUBWOO

DVD/
DVD 6CH

SURROUND

R

R

TV

R   IN

LOOP

EXT

AM ANT

Connecting the AC mains lead and other information

(FOR THE UNITED KINGDOM ONLY)
READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 4 BEFORE CONNECTION.

AC mains lead
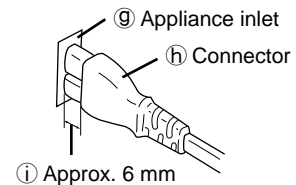Connect this lead only after all other cables and cords are connected.

Note

The included AC mains lead is for use with this unit only. Do not use it with other equipment.

Insertion of Connector
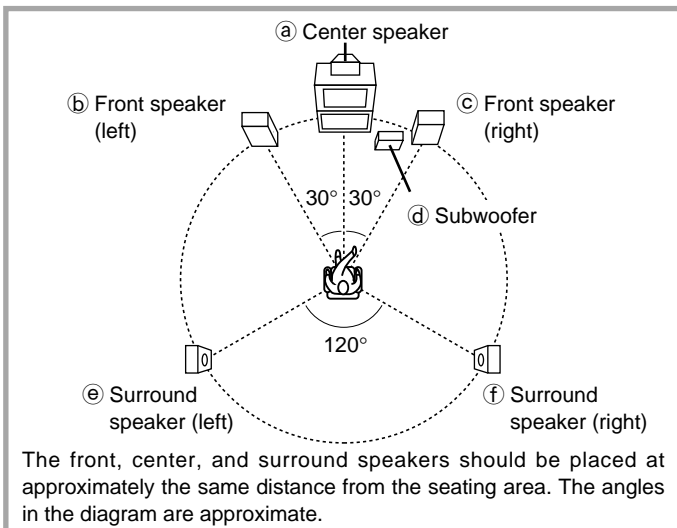Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.

ⓖ Appliance inlet

ⓗ Connector

ⓘ Approx. 6 mm

ⓓ **Cooling fan**
The cooling fan operates at high power output levels only.

IN

IN

MONITOR OUT

AC IN～

DVD   VCR 1   TV
S-VIDEO

ⓔ To household mains socket

ⓕ AC mains lead (included)

Speaker connections

Placement of speakers

ⓐ Center speaker
ⓑ Front speaker (left)
ⓒ Front speaker (right)
ⓓ Subwoofer
ⓔ Surround speaker (left)
ⓕ Surround speaker (right)

30° 30°
120°

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

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

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

Surround speakers
Place on the side of or slightly behind the seating area, about one meter higher than ear level.

Subwoofer
The subwoofer can be placed in any position as long as it is at a reasonable distance from the TV.
Note that some experimentation can yield the smoothest low frequency performance. Placement near a corner can increase the apparent output level, but can result in unnatural bass.

Connecting speakers

Other connections are possible depending on your speaker system.
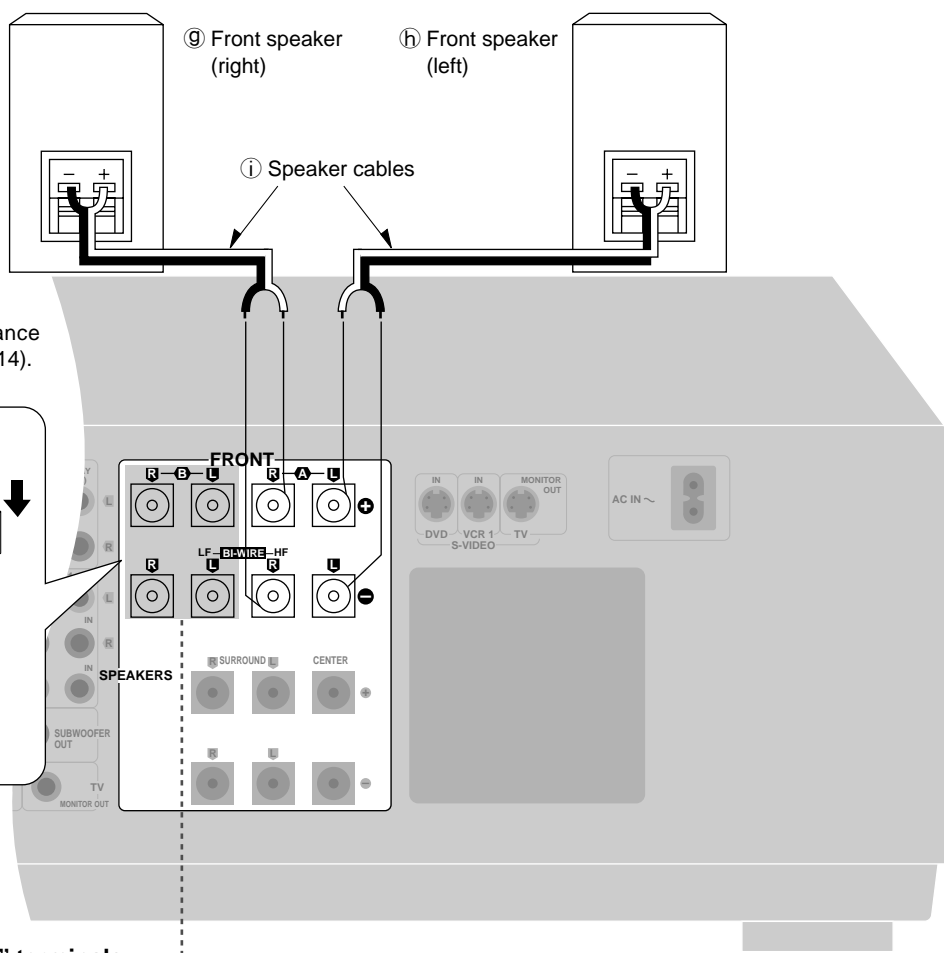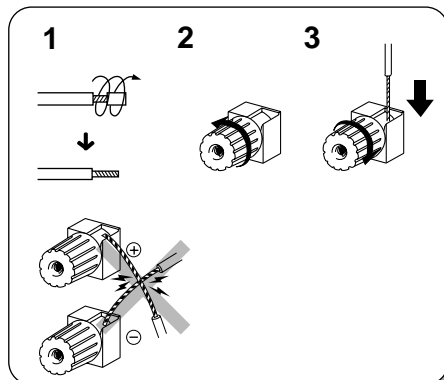See your speaker system's operating instructions for details.

Front speakers

Speaker impedance:
A or B: 4-16 Ω
A and B: 8-16 Ω

ⓖ Front speaker (right)
ⓗ Front speaker (left)
ⓘ Speaker cables

Note

If you connect speakers with an impedance under 6 Ω, switch on "LOW IMP" (➡ page 14).

1 2 3

FRONT
R—B—L R—A—L +
LF—BI-WIRE—HF
R R L —
SPEAKERS
SURROUND CENTER
SUBWOOFER OUT
TV MONITOR OUT
IN IN MONITOR OUT
DVD VCR 1 TV
S-VIDEO
AC IN ∼

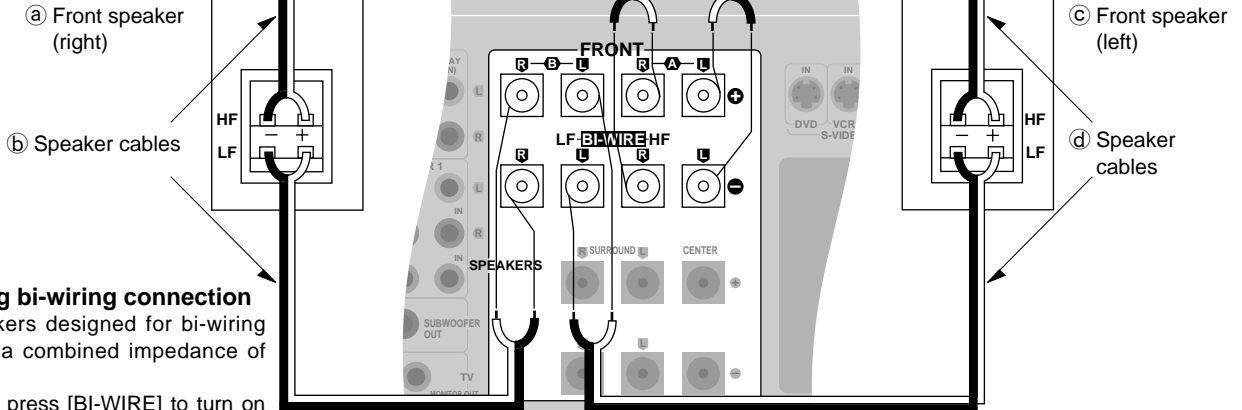**"B" terminals**
For connection to a second pair of speakers.

Note

Use the A terminals to enjoy SURROUND, SFC and DVD 6CH INPUT.

Front speakers (bi-wiring connection)

Speaker impedance:
BI-WIRE: 6-16 Ω

ⓐ Front speaker (right)

ⓑ Speaker cables

HF
LF

FRONT
R B L   R A L
LF BI-WIRE HF

IN   IN
DVD   VCR
S-VIDE

ⓒ Front speaker (left)

ⓓ Speaker cables

HF
LF

SPEAKERS

R SURROUND L   CENTER

SUBWOOFER OUT

TV

MONITOR OUT

Note

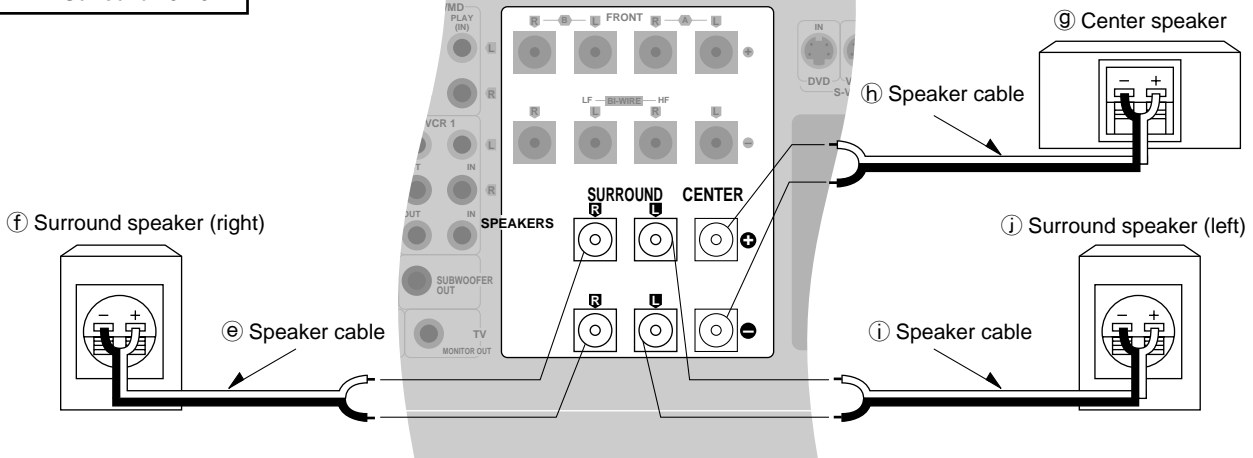**When using bi-wiring connection**
- Use speakers designed for bi-wiring that have a combined impedance of 6–16 Ω.
- Be sure to press [BI-WIRE] to turn on the "BI-WIRE" indicator (➡ page 18).
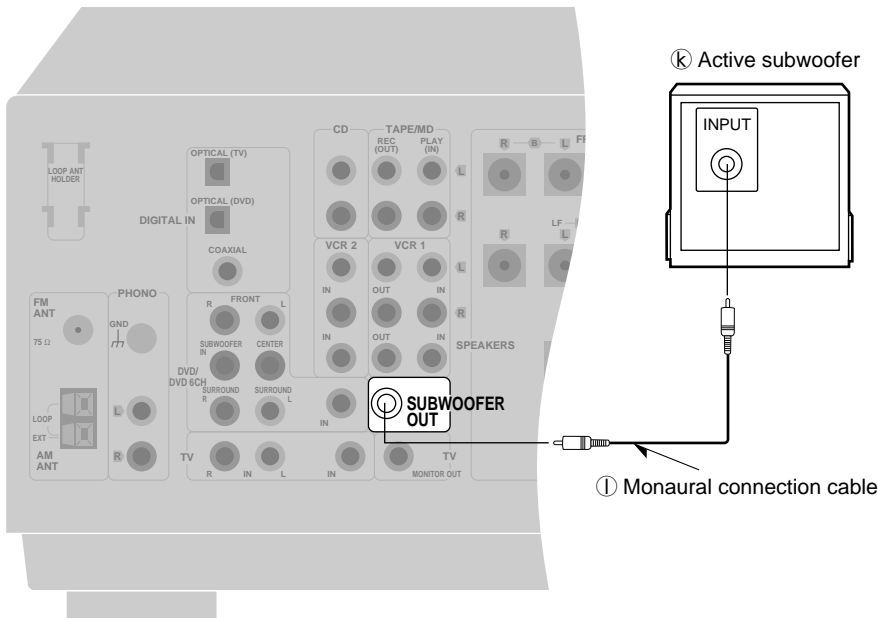
Center and surround speakers

Speaker impedance:
Center: 6-16 Ω
Surround: 6-16 Ω

/MD PLAY (IN)

FRONT
R B L   R A L
LF BI-WIRE HF

IN
DVD   V
S-V

ⓖ Center speaker

ⓗ Speaker cable

VCR 1

SURROUND   CENTER
R   L

SPEAKERS

ⓕ Surround speaker (right)

ⓔ Speaker cable

SUBWOOFER OUT

TV

MONITOR OUT

ⓙ Surround speaker (left)

ⓘ Speaker cable

Subwoofer

ⓚ Active subwoofer

INPUT

CD   TAPE/MD
REC (OUT)   PLAY (IN)

OPTICAL (TV)

OPTICAL (DVD)

DIGITAL IN

COAXIAL

R B L FF

L

R

LF L

LOOP ANT HOLDER

FM ANT
75 Ω

PHONO
GND

VCR 2   VCR 1
IN   OUT   IN

FRONT
R   L

SUBWOOFER IN   CENTER

DVD/ DVD 6CH

SURROUND R   SURROUND L

LOOP

EXT

AM ANT

R   L

TV
R   IN   L   IN

OUT   IN

SPEAKERS

SUBWOOFER OUT

TV

MONITOR OUT

ⓛ Monaural connection cable

Note

This receiver does not have an amplifier for the subwoofer.

To connect a passive subwoofer
- Connect another amplifier and connect the subwoofer to it.

Or

- Connect a passive subwoofer that has front speaker terminals.

(See the operating instructions of the speaker system for details.)

Connections

SIZE

```
SIZE
```

```
FRONT  ➡  LARGE
```

FRONT ⟶ CENTER
↑ ↓
SUB-WFR ⟵ SURROUND

FRONT SMALL ⟷ LARGE
CENTER, SURROUND
NONE ⟷ SMALL ⟷ LARGE
SUB-WFR NO ⟷ YES

DISTANCE

```
DISTANCE
```

```
FRONT  ➡  3.0  m
```

FRONT ⟶ CENTER
↑ ↓
SURROUND ⟵

1.0 m ········ 10.0 m

FILTER

```
FILTER
```

```
100
```

100 ⟷ 150 ⟷ 200

DR COMP

```
DR COMP
```

```
OFF
```

OFF ⟷ STANDARD ⟷ MAX

D-INPUT

```
D-INPUT
```

```
CD  COAX  ➡  CD  COAX
```

CD ⟶ DVD
↑ ↓
TV ⟵

COAX ⟷ OPT1 ⟷ OPT2

DIMMER

```
DIMMER
```

```
OFF
```

OFF ⟷ ON

Customizing your receiver

Change the settings to suit your speakers and equipment and to suit the environment in which the unit is to be used. Before making any changes, read the following descriptions, note the factory settings and ranges, and refer to the instructions for the speakers and equipment.

The settings remain intact until they are changed, even after the power is turned off.

Setting descriptions

SIZE
Change to suit the speakers you have connected.
LARGE: For speakers that can reproduce a full sound range, particularly the bass range below 100 Hz.
SMALL: For speakers that cannot adequately reproduce the bass range. This setting is sufficient for most speakers if you are using a subwoofer.
NONE: For speakers you haven't connected (center or surround).
The factory settings are: Front: LARGE
Center and surround: SMALL
For the subwoofer, select YES if you have connected one (factory setting), or NO if you have not.

DISTANCE
Enter the distance of the speakers from the seating position so that the sound from all the speakers (except for the subwoofer) reaches you at the same time.
You can select distances between 1.0 and 10.0 m at 0.1 m intervals.
The factory settings are: Front and center: 3.0 m
Surround: 1.5 m

FILTER
This setting allows you to change the cut-off for bass output from the front speakers. If you set the front speakers to "SMALL", the filter is set to 100 Hz. Raise the cut-off if the bass from the front speakers is unsatisfactory so that this bass is output through the subwoofer.
You can raise the cut-off from 100 Hz to either 150 Hz or 200 Hz.

DR COMP - Dynamic range compression
Change this setting to view software at low volume (for example, late at night) and maintain audio clarity. This setting works with Dolby Digital software. It reduces the peak level in loud scenes without affecting the sound field.
OFF: The software is played with the original dynamic range (factory setting).
STANDARD: The level recommended by the producer of the software for household viewing.
MAX: The maximum allowable compression (recommended for night viewing).

D-INPUT - Digital input
Change these settings to suit the connections you have made to the three digital input terminals, COAX, OPT1, and OPT2 (➡ page 8), so that the correct source is selected when you turn [INPUT SELECTOR] (➡ page 18).
The factory settings are: CD: COAX
DVD: OPT2
TV: OPT1

DIMMER
This setting allows you to dim the unit's display (and turn off the white lights on SA-DA20) for better viewing in a darkened room.
The factory setting is OFF (normal brightness).

1   2,5

3   4

1

⏻/|

2
⎯⎯ SPEAKERS ⎯⎯
A   B

$SETTING$

3
⎯⎯ SPEAKERS ⎯⎯
A

$SIZE$

4
SIZE, DISTANCE, D-INPUT
⎯⎯ SPEAKERS ⎯⎯
B ➡ INPUT SELECTOR

FILTER, DR COMP, DIMMER
INPUT SELECTOR

5
⎯⎯ SPEAKERS ⎯⎯
A   B

$COMPLETE$

Basic steps

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

1   Press [⏻/|].

2   Press [A] and [B] at the same time.

3   Press [A] to select the item you want to change.
Each time you press the button:
SIZE → DISTANCE → FILTER → DR COMP → D-INPUT → DIMMER

4   Change the settings (➡ below).

Repeat steps 3 and 4 to complete the necessary settings.

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

Changing the settings

SIZE
① **Press [B] to select the speaker you want to set.**
Each time you press the button:
FRONT → CENTER → SURROUND → SUB-WFR (Subwoofer)

② **Turn [INPUT SELECTOR] to change the setting.**
When you turn the selector:
FRONT: SMALL ↔ LARGE
CENTER and SURROUND: NONE ↔ SMALL ↔ LARGE
SUB-WFR: NO ↔ YES
③ **Repeat ① and ② to change other SIZE settings.**

DISTANCE
① **Press [B] to select the speaker you want to set.**
Each time you press the button:
FRONT → CENTER → SURROUND

② **Turn [INPUT SELECTOR] to set the distance.**
③ **Repeat ① and ② to change other DISTANCE settings.**

FILTER
Turn [INPUT SELECTOR] to set the cut-off.
When you turn the selector:
100 ↔ 150 ↔ 200

DR COMP
Turn [INPUT SELECTOR] to change the setting.
When you turn the selector:
OFF ↔ STANDARD ↔ MAX

D-INPUT
① **Press [B] to select the input position you want to set.**
Each time you press the button:
CD COAX → DVD OPT2 → TV OPT1

These are the factory settings. Actual displays depend on the changes you make. If you change one setting, the other corresponding setting will also change.
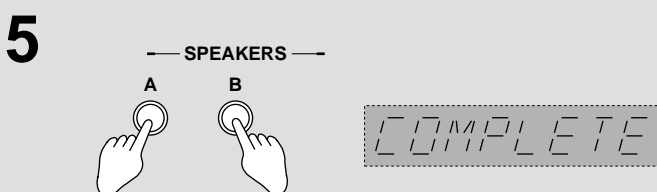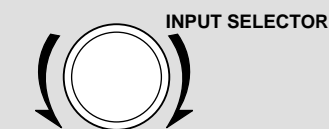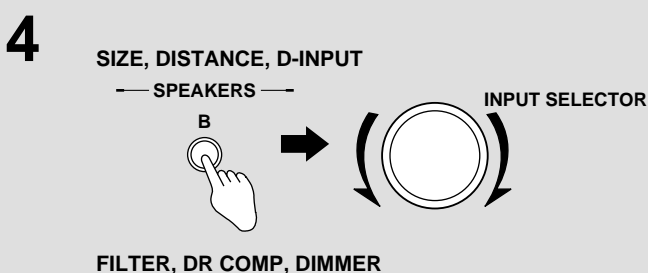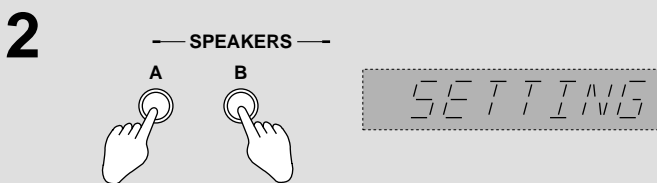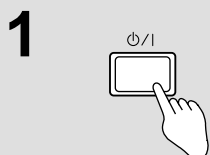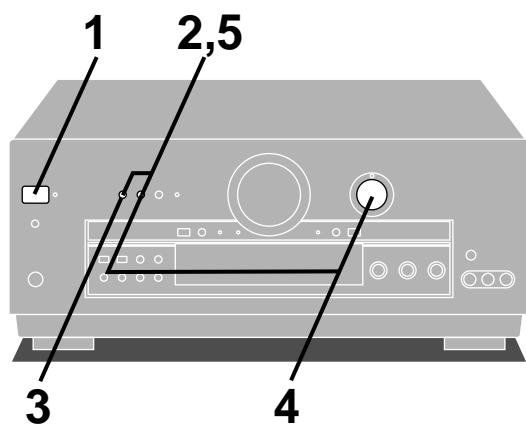② **Turn [INPUT SELECTOR] to change the setting.**
When you turn the selector:
COAX ↔ OPT1 ↔ OPT2

③ **Repeat ① and ② to change other D-INPUT settings.**

DIMMER
Turn [INPUT SELECTOR] to change the setting.
When you turn the selector:
OFF ↔ ON

Preparations

SPEAKERS A, B

SPEAKERS

A   B

LOW IMP
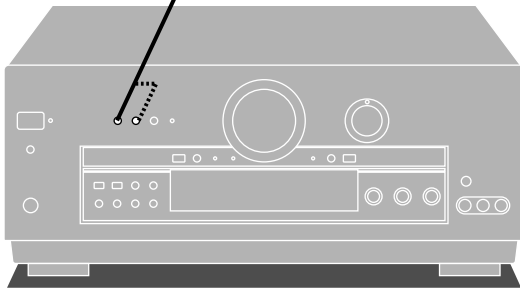—SPEAKERS—
A

For front speakers with an impedance under 6 Ω

Turn "LOW IMP" on if even one of your speakers has an impedance under 6 Ω.

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

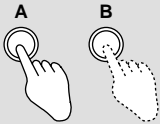Press and hold down again to cancel "LOW IMP".

Note that when "LOW IMP" is on, SPEAKERS A and B cannot be used at the same time.

Adjusting speaker output level

Adjust the level of the speakers so they are the same apparent level as the front speakers when you are sitting where you would normally enjoy a source.

1 Press [A] or [BI-WIRE] to turn on SPEAKERS A or BI-WIRE.
You cannot adjust output level when SPEAKERS B is on.

2 Press [TEST] to output the test signal.
DSP sound mode switches to SURROUND mode.
The signal is output from each speaker in order for about two seconds each:
L: Front speaker (left)
C: Center speaker
R: Front speaker (right)
RS: Surround speaker (right)
LS: Surround speaker (left)
SW: Subwoofer
Speakers set as "NONE" or "NO" are skipped.

Note
The test signal will not be output if the VGCA (➡ page 20) or DVD 6CH INPUT is on (➡ page 19).

3 Adjust the volume to the level normally used.
Adjust the balance of the front speakers if necessary (➡ page 21).

4 Press [LEVEL] to select the speaker channel to adjust.
The current level appears on the display.
Press again to change the speaker channel.

Speakers set as "NONE" or "NO" are skipped.

5 Press [+] or [–] to adjust the level to the same apparent level as the front speakers.
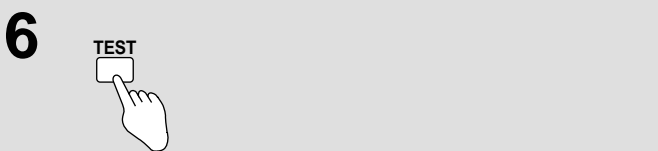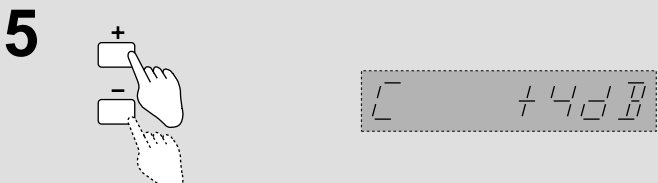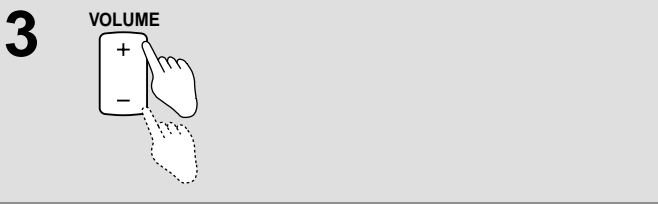C, RS, and LS can be adjusted between –10 dB and +10 dB, with zero being the current level of the front speakers.
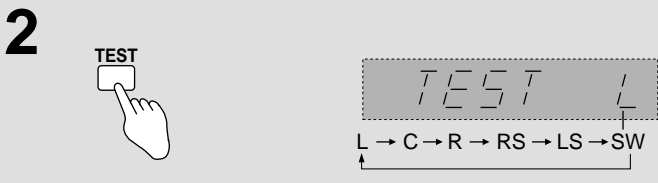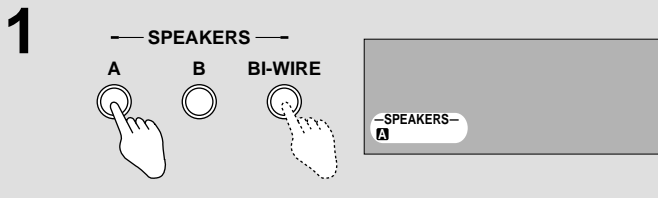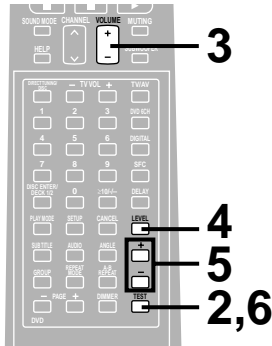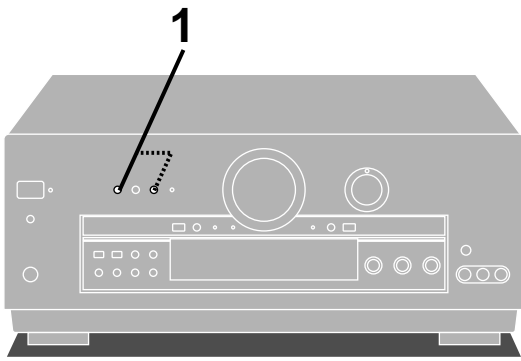SW can be set to MIN, between 1 to 19, or MAX.

Repeat steps 4 and 5 for each speaker channel.

6 Press [TEST] to stop the test signal.

For your reference
Subwoofer output is easily influenced by the source played. You can achieve better results by adjusting its output while listening to a source (➡ page 21).

1

SPEAKERS
A   B   BI-WIRE

—SPEAKERS—
A

2

TEST

$TEST \quad L$

$L \rightarrow C \rightarrow R \rightarrow RS \rightarrow LS \rightarrow SW$

3

VOLUME
+
–

4

LEVEL

$C \qquad 0 dB$

5

+
–

$C \qquad +4 dB$

6

TEST

Preparations

DSP SOUND MODE DIGITAL INPUT

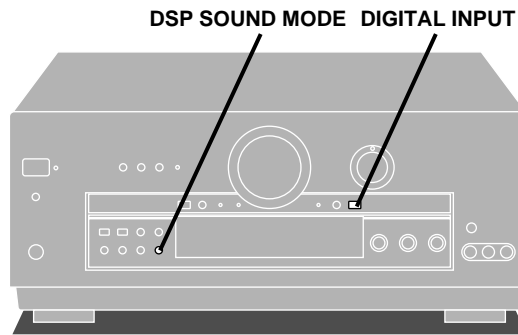# DSP sound modes

The digital sound processor (DSP) in this unit can decode Dolby Digital and DTS digital signals. It automatically determines the type of signal, PCM, Dolby Digital, or DTS, and processes it accordingly. The DSP can add surround-like effects to stereo sources (analogue or PCM signals).

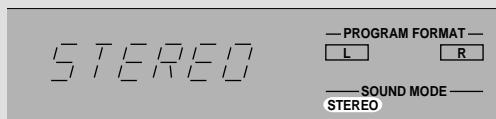Choose from the STEREO, SURROUND, or SFC modes.

Note
- PCM with a sampling frequency of 44.1 kHz is the digital signal format normally found on CDs. Some DVDs also use this format but often with a higher sampling rate.
- This unit cannot process other digital signal formats, such as PCM signals with a sampling frequency of 96 kHz and MPEG.
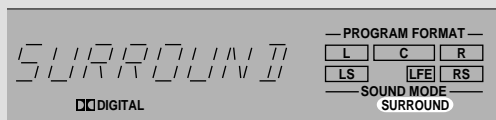
A   STEREO mode

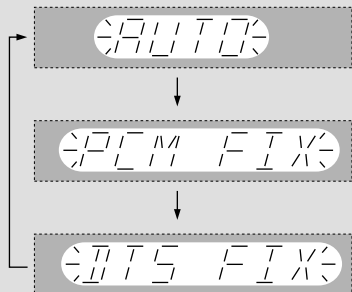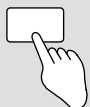Use this mode to play digital or analogue stereo sources or to play surround sources through two speakers. When surround sources are played in this mode, the sounds intended for the other speaker channels are played through the front speakers.

B   SURROUND mode

Select this mode when you are playing a digital surround source (Dolby Digital or DTS) or an analogue source that is recorded with Dolby Surround (VCR, for example).

C   Changing the recognition mode

In rare cases, the unit may have trouble recognizing the digital signals on discs. With the PCM signals on CDs, this may cause the beginning of a track to be cut off. Engage the PCM FIX mode if this occurs. With DTS, the signals may not be recognized at all. Engage the DTS FIX mode if this occurs.

This mode does not need to be changed under normal circumstances. Change it only if the unit appears to be having trouble recognizing the software you are playing.

While the input source is selected and digital input is engaged:
Press and hold [DIGITAL INPUT].
The current mode is displayed. Press again to change the mode.
Each time you press the button:
AUTO → PCM FIX → DTS FIX

When a FIX mode is on, the unit cannot process other signals. This may cause noise to be output. Select "AUTO" if this occurs.
"AUTO" is reengaged when you turn the unit off.

A

DSP SOUND MODE

```
S T E R E O
```
— PROGRAM FORMAT —
| L | | R |

—— SOUND MODE ——
| STEREO |

B

DSP SOUND MODE

```
S U R R O U N D
```
— PROGRAM FORMAT —
| L | C | R |
| LS | LFE | RS |

□□ DIGITAL   —— SOUND MODE ——
| SURROUND |

C

DIGITAL INPUT

```
: A U T O :
```
↓
```
: P C M   F I X :
```
↓
```
: D T S   F I X :
```

DSP SOUND MODE

① ②❶❷

A

DSP SOUND MODE → **SFC**

```
HALL                      ─── PROGRAM FORMAT ───

                          ─── SOUND MODE ───
                                          SFC
```
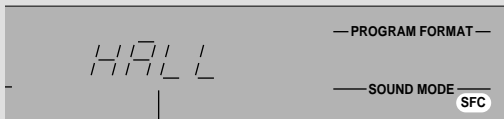
```
CLUB
```

```
LIVE
```

```
THEATER
```

```
SIM SURR
```
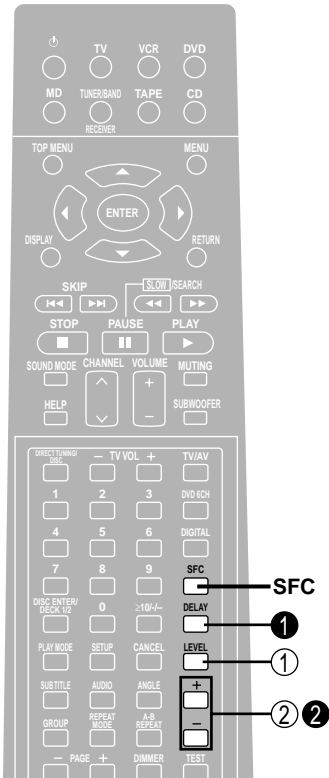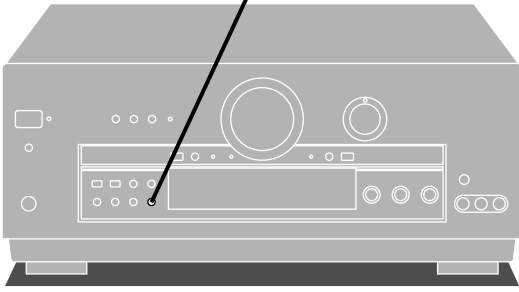
DSP sound modes

A   SFC modes

Enjoy an enhanced sound experience with greater presence and spread by using these SFC (sound field control) modes with PCM or analogue stereo sources.
The SFC modes cannot be used if the input signal is Dolby Digital or DTS.
Choose from the following modes.

HALL
Imparts the reflection and spread of a large concert hall.

CLUB
Conveys the exciting and intimate atmosphere of a jazz club.

LIVE
Brings you up close for "live" stage performance and smoother vocals.

THEATER
Recreates natural sound ambience and direction.

SIM SURR (Simulated Surround)
Heightens the sensation of expanded space with stereo sources, and augments monaural sources.

B   Adjusting the sound field

You can adjust the sound field by adjusting the level of the speakers and the delay time of the surround speakers. These adjustments can be made for each SFC mode.

To adjust the speaker level
① **Press [LEVEL] to select the speaker channel.**
Each time you press the button:
C → RS → LS → SW

Speakers set as "NONE" or "NO" are skipped.
② **Press [+] or [–] to adjust the level.**
C, RS, and LS:
−10 dB to +10 dB
SW:
--- (off) ↔ MIN ↔ 1 – 19 ↔ MAX
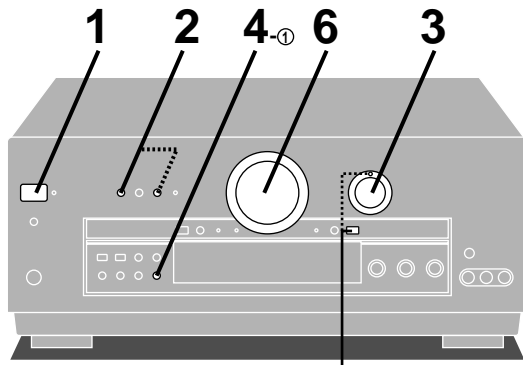
To adjust the delay time
❶ **Press [DELAY].**
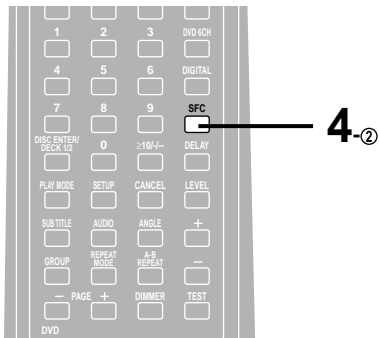❷ **Press [+] or [–] to change the delay time.**
Delay time can be set at 10-millisecond (ms) intervals between 10 and 100 ms.
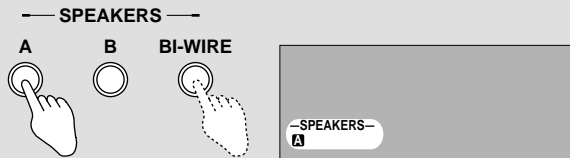The factory setting is 50 ms for each mode.

Operations

Enjoying the sounds

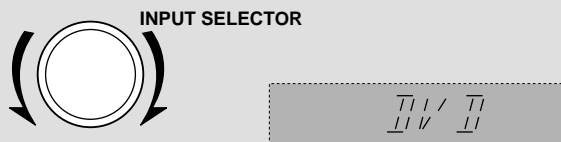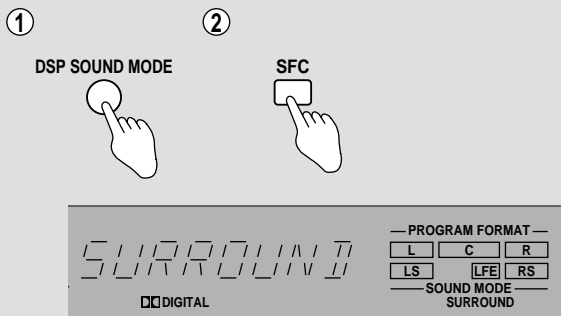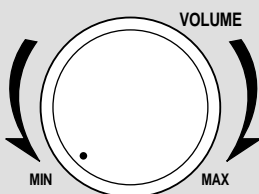## 1 Press [⏻/l].

2 Press [A] or [BI-WIRE].
"SURROUND" and "SFC" do not work if you select "B".

A, B and BI-WIRE refer to the speaker terminals on the rear of the unit.

3 Turn [INPUT SELECTOR] to select the input source.

To switch between analogue and digital input (CD, DVD, and TV)
Press [DIGITAL INPUT].
Each time you press the button:
ANALOG ←→ DIGITAL
The indicator lights when you select "DIGITAL".
Once you have set the mode for a source, that mode is engaged whenever you select that source.

4 Select the DSP sound mode.
① **Press [DSP SOUND MODE].**
   The indicator corresponding to the mode lights.
   Select the mode appropriate to the source (➡ pages 16, 17).
② **When you select "SFC"**
   Press [SFC] on the remote control.
Once you have set the mode for a source, that mode is engaged whenever you select that source.

5 Start playing the source.
Refer to the equipment's instructions for details.

6 Adjust the volume.

When you finish listening
Be sure to reduce the volume and press [⏻/l] to switch the unit to standby.

For your reference
- **If you are using a VCR (connected to VCR 1) and you select TAPE/MD, CD, TUNER, or PHONO**
  The picture will remain on the screen.
- **The signal format indicators**
  The following indicators light depending on the source you are playing.
  ▪▪ **DIGITAL:**
  Dolby Digital sources
  dts :
  DTS sources
  ▪▪ **PRO LOGIC:**
  Analogue sources in SURROUND mode
  Digital sources with PCM signals in SURROUND mode
  Dolby Digital sources that contain Dolby Pro Logic in SURROUND mode
- **The program format indicators (L, C, R, LS, S, LFE, RS)**
  The program format indicators light up to indicate the channels contained in the digital input signal. They do not light when input is analogue.
  L: Front channel (left)
  C: Center channel
  R: Front channel (right)
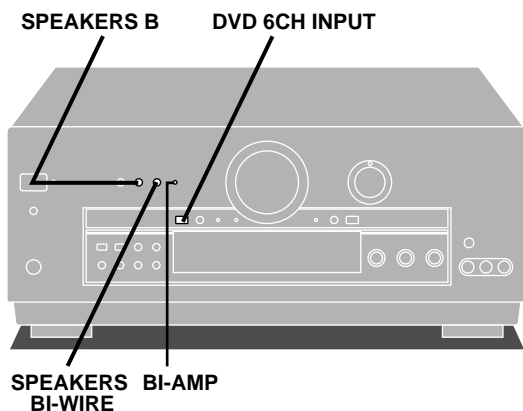 LS: Surround channel (left)
  RS: Surround channel (right)
  S: If the surround channel is monaural.
  LFE (Low Frequency Effect): Deep-bass effect.

DIGITAL INPUT

1

2 ── SPEAKERS ──
A   B   BI-WIRE
─SPEAKERS─
Ⓐ

3 INPUT SELECTOR

4 ①   ②
DSP SOUND MODE   SFC

── PROGRAM FORMAT ──
L   C   R
LS   LFE   RS
── SOUND MODE ──
SURROUND
DIGITAL

6 VOLUME
MIN   MAX

SPEAKERS B **DVD 6CH INPUT**

SPEAKERS BI-AMP
BI-WIRE

A

DVD 6CH INPUT

$DVD\ 6CH$

B

— **SPEAKERS** —

BI-WIRE BI-AMP

—SPEAKERS—
BI-WIRE

C

— **SPEAKERS** —

B

—SPEAKERS—
B

Enjoying the sounds

A   Using DVD 6CH INPUT

You may need to use 6 channel analogue input for DVD, for example when you are playing discs recorded with digital signals this unit cannot decode. These signals include MPEG and high quality, multi-channel linear PCM with sampling frequencies of 96 and 192 kHz.
Select "DVD" for any other source to take advantage of this unit's features.

DVD 6CH INPUT only works when either SPEAKERS A or BI-WIRE is on and SPEAKERS B is off.

Press [DVD 6CH INPUT].
Each time you press the button:
DVD ←→ DVD 6CH
Input switches automatically to "DVD 6CH" if you press this button while another source is selected.

When DVD 6CH INPUT is on:
● You cannot use any of the DSP sound modes.
● Speaker settings (➡ page 13) are ineffective. (Change the settings on the DVD player if necessary.)
● The bi-amp is off (➡ below).

B   To enjoy bi-amp sound

By using the bi-wiring feature of this unit to connect your speakers (➡ page 11), you are able to take advantage of two separate amplifiers for the high frequency and low frequency ranges. This enables more highly defined sound reproduction of the two ranges thus producing high quality bi-amp stereo sound.

Ensure "BI-AMP" lights when [BI-WIRE] is selected.

BI-AMP will turn off and the indicator will go out in the following cases:
● If any of the DSP sound modes are turned on.
● If DVD 6CH INPUT is selected.

Note
● Before pressing [BI-WIRE], connect speakers designed for bi-wiring using bi-wiring connection.
● Do not select [BI-WIRE] if you have connected two sets of speakers to the A and B speaker terminals.

C   To use SPEAKERS B

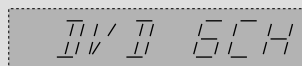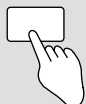Use SPEAKERS B if you have connected another set of speakers to the B terminals.
Sound will be heard in stereo while SPEAKERS B is on.

Press [B].
If you don't want sound coming from the speakers connected to the A terminals, press [A] to turn them off.

Operations

VGCA **INPUT SELECTOR**

ON VIA TONE

VGCA ON

$V\!G\!C\!A \quad O\!N$

↙
$D\!I\!S\!P\!L\!A\!Y$

Turning on the VGCA

This unit features a state-of-the-art variable gain control amplifier (VGCA). This feature cuts down greatly on noise encountered during normal use.

Press [VGCA].

The "VIA TONE" indicator goes out and the "ON" indicator lights when "VGCA" is selected.

"VGCA ON" is displayed, then "DISPLAY OFF" scrolls across the display. The display then turns off.

If TUNER was chosen as the source, the current frequency is shown.
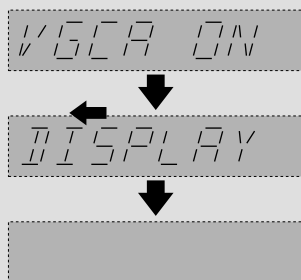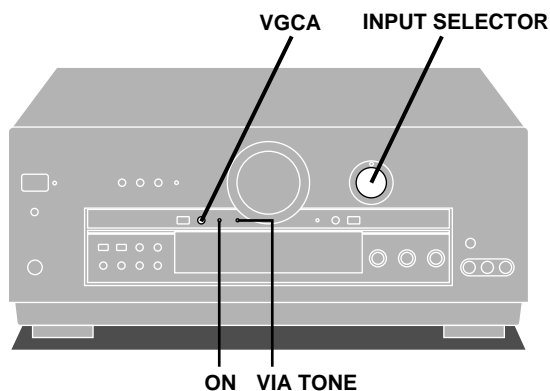
To confirm the current display
Press [VGCA].
The display comes on for about 4 seconds.

To turn the VGCA off
● **When the display is off**
  ① Press [VGCA].
  ② Press [VGCA] again to turn the VGCA off.
● **When the display is on**
  Press [VGCA].

For your reference
You can set the VGCA mode for each source.
Each source will retain the selected mode.

When the VGCA is on:
The DSP is off so sound is in stereo and no sound comes from the subwoofer (unless you are using DVD 6CH input).
You cannot adjust tone quality (bass and treble).

Note

The VGCA can only be used with analogue input. The VGCA is turned off if you select digital input.

To have the display on constantly

The display is turned off while the VGCA is on to cut down on unnecessary noise. Do the following if you would prefer to have the display on.

① **Turn [INPUT SELECTOR] to select a source other than TUNER.**
② **Press [VGCA] to turn the VGCA on.**
③ After the display turns off
   Press and hold [VGCA] for about 4 seconds until the display comes on.

This setting remains active even if the unit is turned off.
Repeat the procedure to turn the display off again.

BASS   TREBLE   BALANCE

STOP   PAUSE   PLAY

SOUND MODE   CHANNEL   VOLUME   MUTING

HELP   SUBWOOFER

SUBWOOFER

DIRECT TUNING/DISC   − TV VOL +   TV/AV

1   2   3   DVD 6CH

4   5   6   DIGITAL

7   8   9   SFC

DISC ENTER/DECK 1/2   0   ≧10/−/−   DELAY

PLAY MODE   SETUP   CANCEL   LEVEL

LEVEL

SUB TITLE   AUDIO   ANGLE

+, −

GROUP   REPEAT MODE   A-B REPEAT

− PAGE +   DIMMER   TEST

A

BASS   TREBLE

MIN   MAX   MIN   MAX

B

BALANCE

L   R

C

INPUT SELECTOR   VCR 2   VCR 3

D

SUBWOOFER

Enjoying the sounds
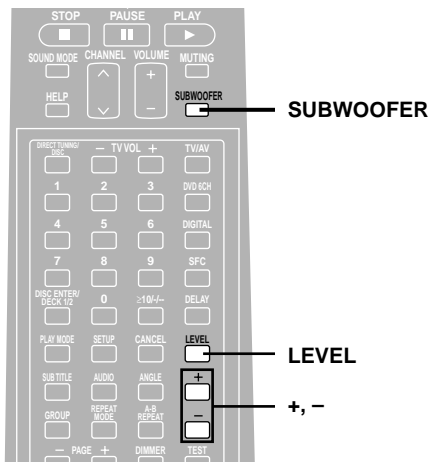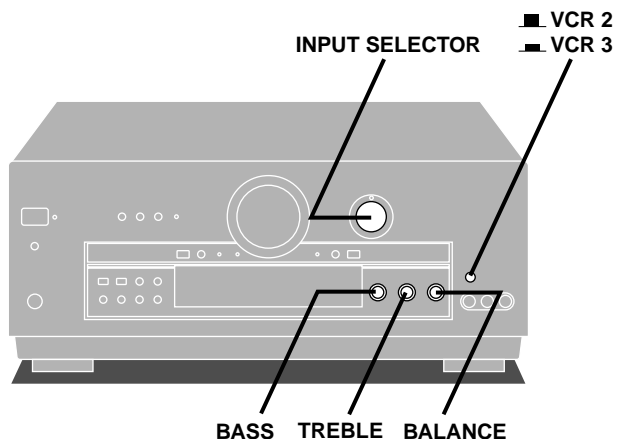
A   Adjusting the tone

Turn [BASS] to adjust bass.
Turn [TREBLE] to adjust treble.

B   Adjusting the balance

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

C   Using the VCR 3 terminals

1   Turn [INPUT SELECTOR] to select
"VCR 2"

2   Press [■ VCR 2, ▬ VCR 3] to select
"FRT-VCR 3".
Press again to use the VCR 2 terminals.

D   Adjusting the subwoofer level

You can adjust the volume of the subwoofer while listening to a
source. No sound is heard from the subwoofer if "SW ---" is
selected. This setting can be done for each DSP mode.
You cannot adjust the subwoofer level while the VGCA is on or if
DVD 6CH INPUT is selected.
The factory setting is "SW 10".

Press [SUBWOOFER].
The current setting is shown.
Each time you press the button:
SW --- → SW MIN → SW 5 → SW 10 → SW 15 → SW MAX

To make finer adjustments
① Press [LEVEL] to select "SW".
② Press [+] or [−].

Note

Sound from the subwoofer can be distorted if you raise the unit's
volume while subwoofer level is high. Reduce subwoofer level if this
occurs.

Operations

The radio

A **Manual tuning**

You can tune radio stations manually by selecting the station's frequency, or you can preset up to 30 stations into channels to make tuning simpler (➡ page 23).

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

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

3 Press [TUNING, ∨, ∧, PTY SELECTOR] to select the frequency of the station.

"TUNED" lights when tuned.
"STEREO" lights during FM stereo broadcasts.

Automatic tuning
Hold down [TUNING, ∨, ∧, PTY SELECTOR] until the frequency begins to scroll. Tuning stops when a station is found. (Tuning may stop if there is interference.)

Improving reception
● **FM mode**
You can improve FM reception by switching reception to monaural.
Press [FM MODE, EON].
"MONO" lights.
Press [FM MODE, EON] again to cancel.

● **VGCA**
You can improve reception by turning the VGCA on (➡ page 20).

● **For your reference**
DVD players can interfere with radio reception. Turn the DVD player off or move it further away from the antennas if this occurs.

To change the AM frequency step
Press and hold [BAND] for about 3 seconds when AM band is selected. (The frequency step changes from 9 kHz to 10 kHz.)
To return to the previous step, press and hold [BAND] for about 3 seconds again.

B **Direct tuning**

①**Press [TUNER/BAND RECEIVER].**
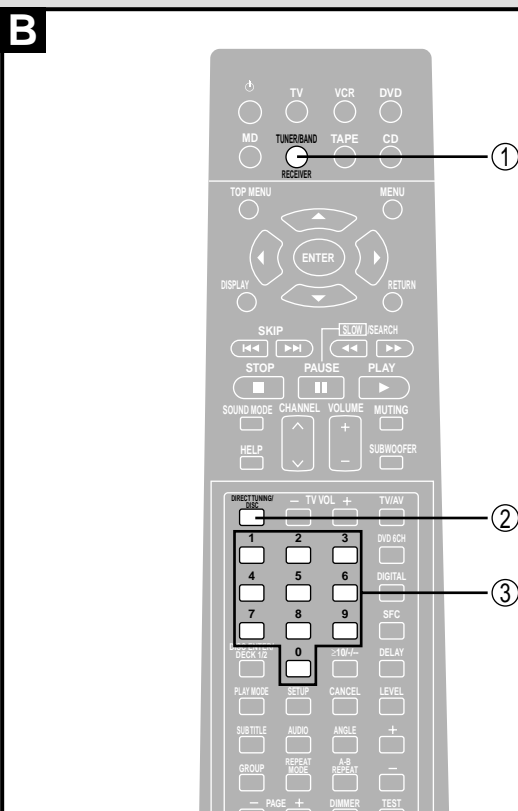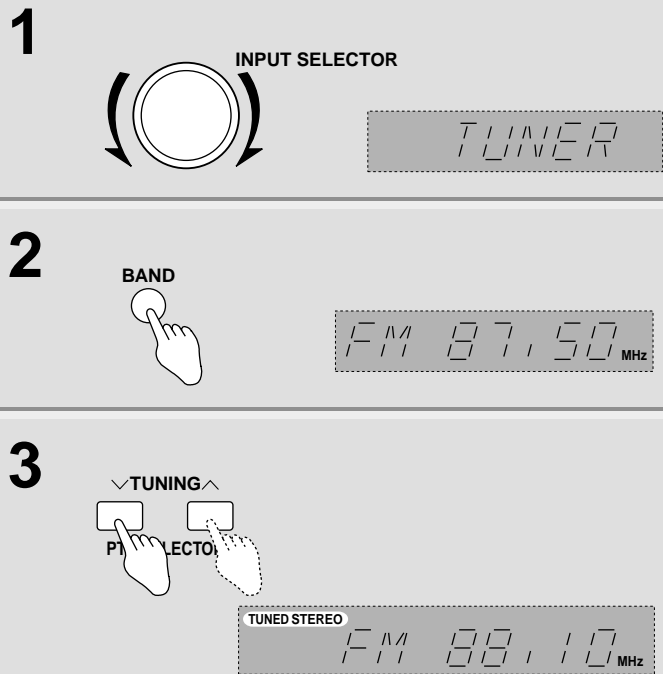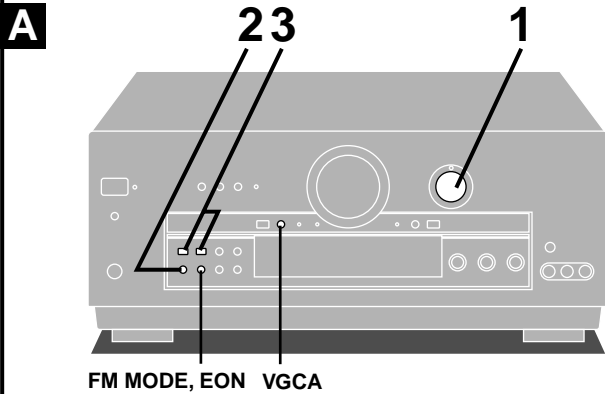The band changes each time you press the button.
②**Press [DIRECT TUNING/DISC].**
③**Press the numbered buttons to enter the frequency.**
e.g. To select 107.90 MHz, press [1] → [0] → [7] → [9] → [0]

Note

1. If you do not press a button while the cursor is flashing, the display returns to the frequency being received.
2. If the frequency has not been input correctly, "ERROR" will be displayed.

A

2 3 **1**

FM MODE, EON **VGCA**

1 INPUT SELECTOR

TUNER

2 BAND

FM 87.50 MHz

3 ∨TUNING∧

PTY SELECTOR

TUNED STEREO
FM 88.10 MHz

B

① TUNER/BAND RECEIVER

② DIRECT TUNING/DISC

③

MEMORY, PTY SEARCH

A
C

①③ ②④

A
MEMORY

PTY SEARCH

B

CH 1 Ⓜ

D

2 1

CHANNEL, ∧, ∨

≥10/-/--, 1–0

1
PRESET

DISPLAY MODE

2
∨TUNING∧

PTY SELECTOR

CH

FM 88.1 10 MHz

The radio

Preset tuning

Choose either automatic presetting, which presets the stations the tuner can receive, or manual presetting, which allows you to select the stations to preset and the order in which they are to be preset. There are 30 channels available for presetting.

Remember
If a new station is preset into a channel, the old station is erased.

A Automatic presetting

Presetting FM stations
Preparation: Tune to the FM frequency where you want to begin presetting (➡ page 22).

Press and hold [MEMORY, PTY SEARCH].
The FM stations the unit can receive are preset in channels 1 to 30.

Presetting AM stations
Preparation: Tune to the AM frequency where you want presetting to begin (➡ page 22).

Press and hold [MEMORY, PTY SEARCH].
The AM stations the unit can receive are preset in channels 21 to 30. (FM stations are replaced if any were preset in these channels.)

During automatic presetting, the memory indicator flashes and the frequency scrolls. The memory indicator and channel numbers are displayed for a second when a station is preset (**B**).
The last station to be preset is displayed when presetting finishes.

For your reference
Even if the AC mains lead is disconnected from the household mains socket, the stations remain in memory for approximately one month.

C Manual presetting

Preset the stations one at a time.
① **Tune to the station.**
② **Press [MEMORY, PTY SEARCH].**
③ **Press [TUNING, ∨, ∧, PTY SELECTOR] to select a channel.**
④ **Press [MEMORY, PTY SEARCH].**

D Selecting channels

1 Press [PRESET, DISPLAY MODE].
The channel number flashes for about 5 seconds.

2 Press [TUNING, ∨, ∧, PTY SELECTOR].
Hold down the buttons to change channels faster.
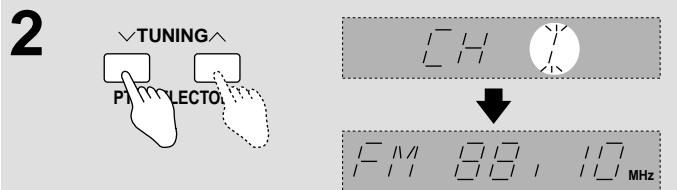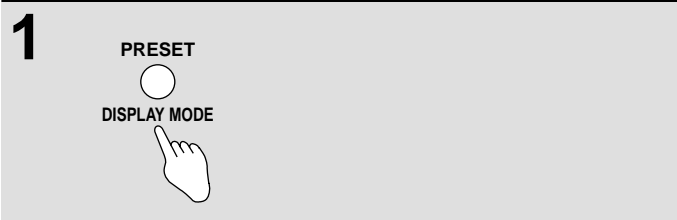

On the remote control
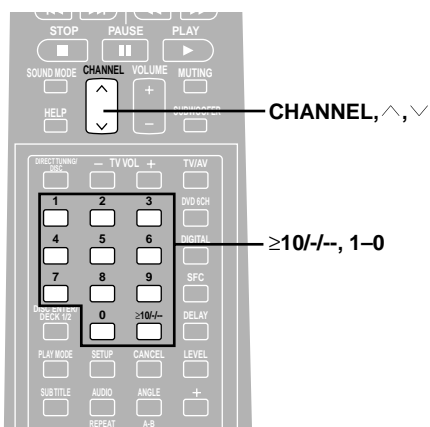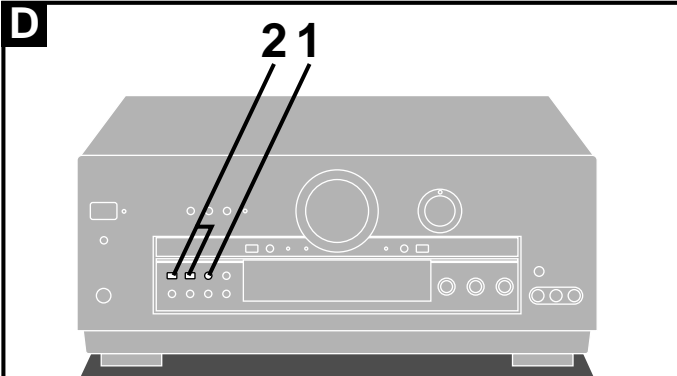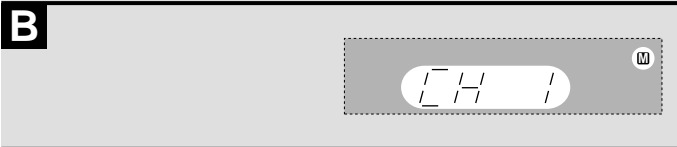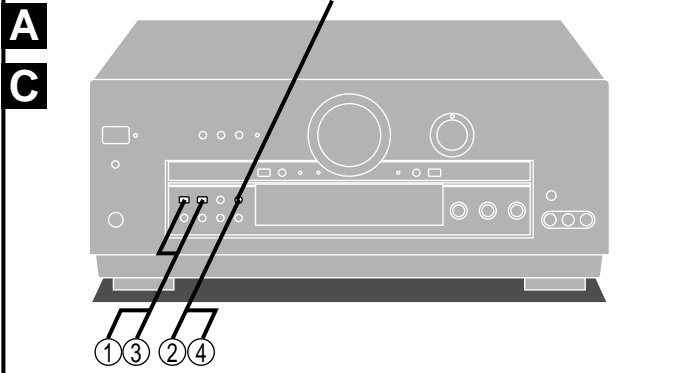Press [CHANNEL ∧ or ∨].
Or
Press the numbered buttons.
  For channels 1 to 9, press the corresponding number.
  For channels 10 or over, press [≥10/-/--], then the two digits.
  e.g. To select channel 21: [≥10/-/--] → [2] → [1]

RDS broadcasts

RDS (radio data system) is a multiplex broadcasting system where, along with FM audio signals, stations transmit other signals to help you enjoy radio more and tune into programs easier. This unit can use the following types of signals. Some stations do not have PTY, EON, and RT.

- **PS** (Program service): Station name.
- **PTY** (Program type): Displays the program type and is used to search for a type of program (➡ below).
- **EON** (Enhanced other networks): This signal is used between networked stations to make it easier for you to tune into a type of program (➡ page 25).
- **RT** (Radio text): This unit can show up to 64 letters by scrolling them across the display. This text could be about the song, traffic or weather, phone-in numbers, or police information.

Note

This unit does not have the emergency broadcasts system (EBS) that tunes automatically into emergency broadcasts.

A   To display RDS information

The display normally shows the radio frequency. "RDS" lights when the station is broadcasting RDS signals. You cannot change the display if "RDS" is off.

1   Press [RDS].

2   While "RDS" is flashing

Press [PRESET, DISPLAY MODE].

The display changes each time you press the button.
1. **Frequency display**
2. **PS display**
3. **PTY display** ("NO PTY" if there are no PTY signals, then the frequency is shown again)
4. **RT display** (no change if there are no RT signals)

B   PTY search

PTY finds programs currently broadcasting from amongst the preset FM stations. Preset FM stations before proceeding.

1   Press [RDS].

2   While "RDS" is flashing

Press [TUNING,∨, ∧, PTY SELECTOR] to select the program type.

The display changes each time you press the button (➡ page 25 for PTY displays).

3   While the PTY display is flashing
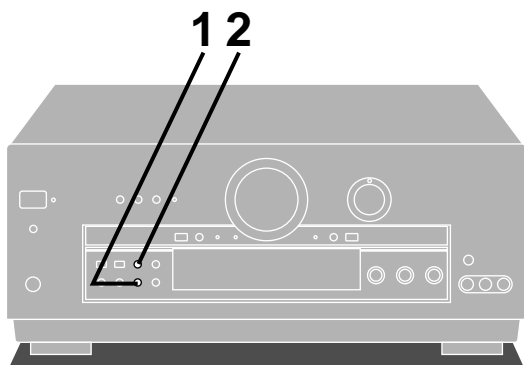
Press [MEMORY, PTY SEARCH].

The PTY indicator flashes while searching.
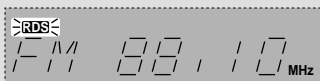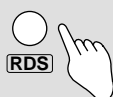The unit switches to the station broadcasting the program.
The PTY indicator flashes for another two seconds.
"SELECT PTY FIRST" scrolls across the display if you try to start a PTY search without selecting a program type.
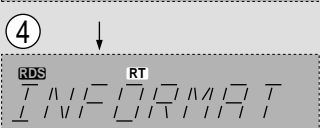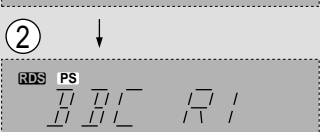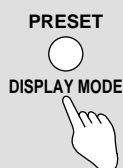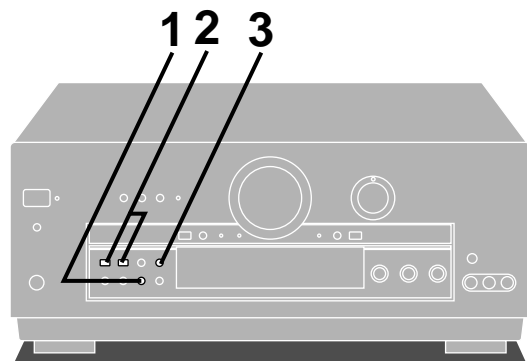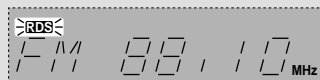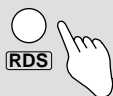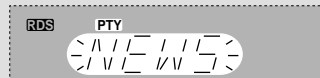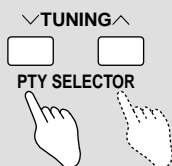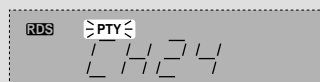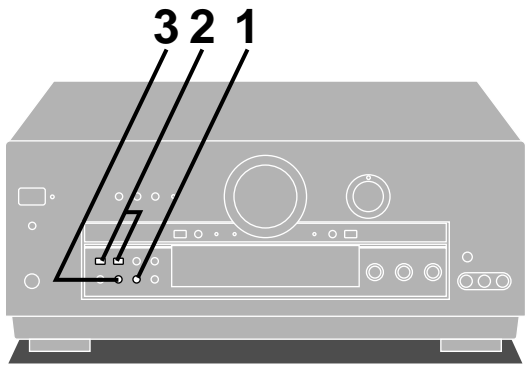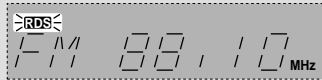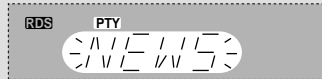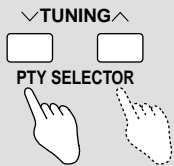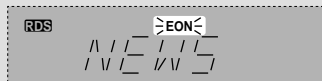
A EON tuning

EON puts the unit on standby to receive programs that are going to be broadcast on a station that shares RDS signals with the current station. Preset FM stations before proceeding. EON tuning does not work if the unit is not receiving EON signals ("NO EON" is displayed.)

1 Press [RDS].

2
While "RDS" is flashing
Press [TUNING, ∨, ∧, PTY SELECTOR] to select the program type.

3
While the PTY display is flashing
Press [FM MODE, EON].
"EON" lights.

The current station remains tuned in until the program type starts, then the unit switches to the station and "OTHER PROGRAM SERVICE" scrolls across the display. (It changes immediately if the selected program is broadcasting.)

To cancel EON tuning
1. Press [RDS].
2. Press [FM MODE, EON].

EON tuning is also canceled if you operate the tuner, change the input source, or turn the unit off.

PTY displays

NEWS	News
AFFAIRS	Current affairs
INFO	Information
SPORT	Sport
EDUCATE	Education
DRAMA	Drama
CULTURE	Culture
SCIENCE	Science
VARIED	Varied
POP M	Pop music
ROCK M	Rock music
M. O. R. M	Middle-of-the-road Music
LIGHT M	Light classical
CLASSICS	Serious classical
OTHER M	Other music
WEATHER	Weather information
FINANCE	Finance
CHILDREN	Children
SOCIAL A	Social affairs
RELIGION	Religion
PHONE IN	Phone in
TRAVEL	Travel
LEISURE	Leisure
JAZZ	Jazz music
COUNTRY	Country music
NATIONAL	National music
OLDIES	Oldies
FOLK M	Folk music
DOCUMENT	Documentary
TEST	Test broadcast
ALARM	Emergency announcement

Radio functions

Other functions

A Muting the volume

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

To cancel
Press [MUTING].
Muting is also canceled when the unit is turned off.

B Using the TAPE MONITOR

Use the tape monitor if you have connected a graphic equalizer to the TAPE/MD terminals.

Press [TAPE MONITOR].
The "TAPE MONITOR" indicator lights and the tape monitor comes on.

Sources other than TAPE/MD can still be selected with [INPUT SELECTOR] while the "TAPE MONITOR" indicator is on.
Press [TAPE MONITOR] again to turn the tape monitor off.

(➡ See "Making a recording" on page 27 for details on how to use the tape monitor during recording.)

Note
• The tape monitor cannot be used when input is digital and turns off if you select digital input.
• Depending on the setting, the graphic equalizer can cause distortion.

C When using the unit in a darkened room

Dimming the display and turning off the white lights (SA-DA20 only) can improve video viewing in dark or dimly lit rooms.

Press [DIMMER].
Repeat to turn on again.

The settings remain even after the unit is turned off.

D Using headphones

① **Press [A], [B], or [BI-WIRE] to turn off the speakers.**
Turning the speakers off automatically engages STEREO mode and ensures no sound is heard from the subwoofer.
(Sound will seem unusual if you use another DSP mode.)
② **Reduce the volume.**
③ **Connect the headphones (not included).**
Plug type: 6.3 mm stereo
④ **Adjust the volume.**

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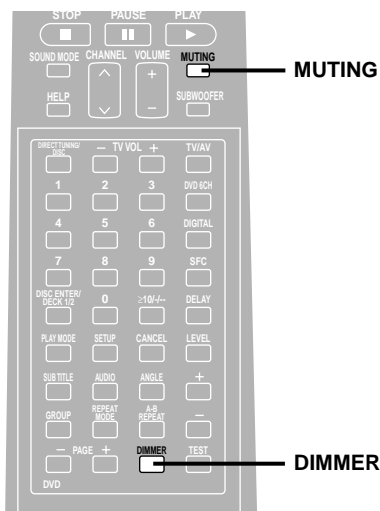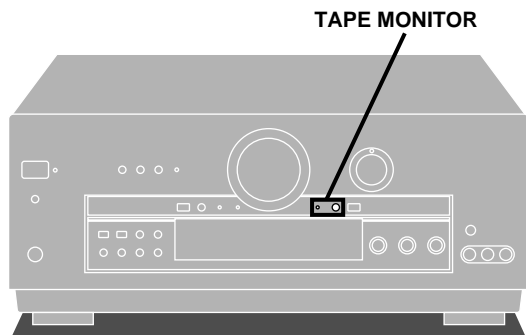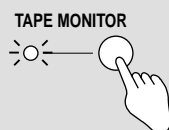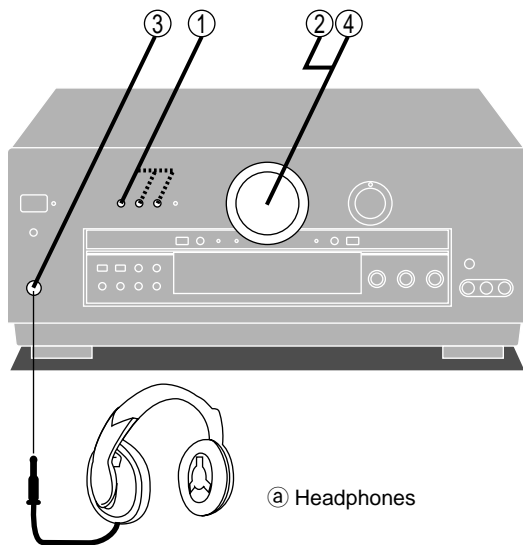
ⓐ Headphones

A

1 **2**

TAPE MONITOR

1

INPUT SELECTOR

2

■ VCR 2
— VCR 3

B

TAPE MONITOR
❍

Making a recording

A Recording on a tape or MD deck or VCR

You can record to equipment connected to TAPE/MD REC (OUT) or to a VCR connected to VCR 1 OUT.

See the recording unit's operating instructions for details on how to prepare it for recording.

When recording with a tape or MD deck, you can record any source except TAPE/MD.

When recording with a VCR, you can record any source except TAPE/MD or VCR 1.

1 Turn [INPUT SELECTOR] to select the source to be recorded.

2 If you selected "VCR 2" in step 1, set [■ VCR 2, — VCR 3] to the required position.

3 Begin recording.
Follow your recording unit's operating instructions.

4 Begin the source to be recorded.
Follow your equipment's operating instructions.

B To monitor sound being recorded onto a tape deck

It is possible to check the sound being recorded if your tape deck is a 3 head system.

Press [TAPE MONITOR] on this unit and set the monitor button on the tape deck to "TAPE".

Press [TAPE MONITOR] once again to turn it off.

Others

A

❶ ❹

❸ ❷

(R6, AA, UM-3)

B

ⓐ Remote control signal sensor

30° 30°

ⓑ Transmission window
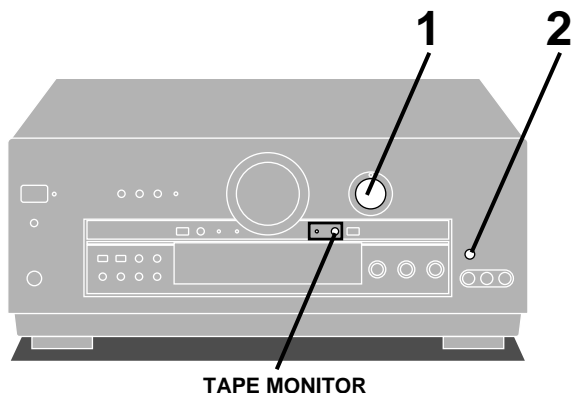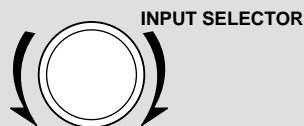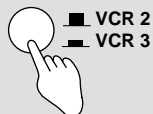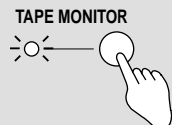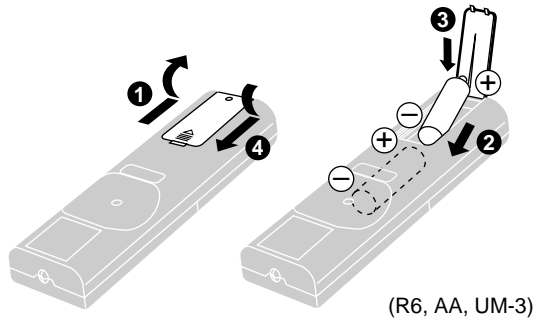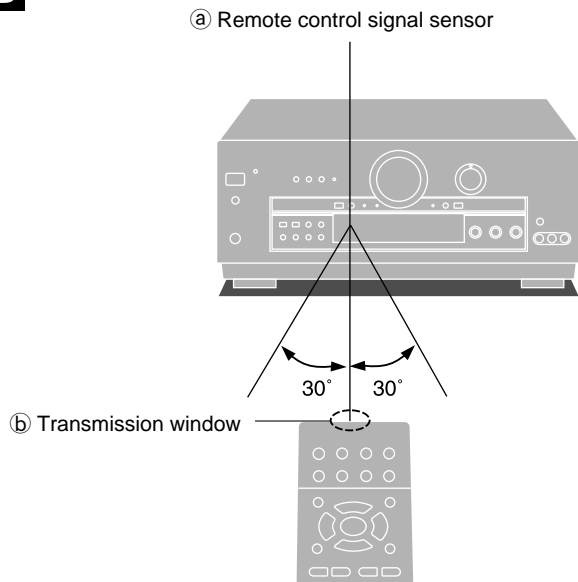
C
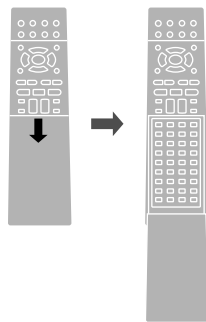
Remote control

Apart from the receiver, this remote control can also operate Panasonic or Technics cassette decks, CD players, MD decks, televisions, video decks and DVD players, provided they have remote control sensors.

- For details on operating other equipment, see the instruction manual provided with the specific unit.
- Some models cannot be operated by this remote control.
- Actual operations depend on your equipment and software.

You can also change the remote control code to operate televisions, video decks, and DVD players manufactured by other companies (➡ page 34).

A   Batteries

- Insert so the poles (+ and –) match those in the remote control.
- Do not use rechargeable type batteries.

Do not;
- mix old and new batteries.
- use different types at the same time.
- heat or expose to flame.
- take apart.
- short circuit.
- attempt to recharge alkaline or manganese batteries.
- use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

If electrolyte leaks from the batteries, consult your dealer.

Wash thoroughly with water if electrolyte comes in contact with any part of your body.

Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

Replace if the unit does not respond to the remote control even when held close to the front panel.

B   Use

Aim at the sensor, avoiding obstacles, at a maximum range of 7 meters directly in front of the unit.
- Keep the transmission window and the unit's sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, and the glass doors on cabinets.

Do not;
- put heavy objects on the remote control.
- take the remote control apart.
- spill liquids onto the remote control.

C   How to open the remote control

Button guide

Buttons ❹, ⓮, ⓱ and ⓲ function in the same way as the controls on the main unit.

① **[⏻]**
for turning the equipment on and off
.... `RCVR` , `DISC` , `TV` , `VCR` , `TAPE`

② **[TOP MENU, MENU, DISPLAY, RETURN, ENTER, ▲, ▼, ◄, ►]**
for operating a DVD player.. `DISC`

③ **[SKIP ◄◄ ►►|, SLOW/SEARCH ◄◄ ►►, STOP ■, PAUSE ❚❚, PLAY ►]**
for controlling disc and tape play
.... `DISC` , `VCR` , `TAPE`

❹ **[SOUND MODE]**
for selecting the DSP sound mode .... `RCVR`

⑤ **[CHANNEL, ∧, ∨]**
for changing channels sequentially
.... `RCVR` , `TV` , `VCR`

⑥ **[HELP]**
for displaying help messages and confirming the remote control mode .... `RCVR`

⑦ **[– TV VOL +]**
for adjusting the television's volume........................... `TV`

⑧ **[DIRECT TUNING/DISC]**
for selecting radio stations by frequency and disc number
.... `RCVR` , `DISC`

⑨ **[1, 2, 3, 4, 5, 6, 7, 8, 9, 0]**
for selecting numbers
.... `RCVR` , `DISC` , `TV` , `VCR`

⑩ **[DISC ENTER/DECK 1/2]**
for confirming disc selection and selecting deck 1or 2
.... `DISC` , `TAPE`

⑪ **[PLAY MODE, SETUP, CANCEL, SUB TITLE, AUDIO, ANGLE, GROUP, REPEAT MODE, A-B REPEAT, – PAGE +]**
for operating a DVD player.. `DISC`

⑫ **[TV, VCR, DVD, MD, TUNER/BAND RECEIVER, TAPE, CD]**
for selecting input source and switching the remote control mode.............. `RCVR` , `DISC` , `TV` , `VCR` , `TAPE`
One of these buttons lights when you press any other button to indicate the current remote control mode.

⓭ **[MUTING]**
for muting the volume .... `RCVR`

⓮ **[VOLUME, +, –]**
for adjusting the volume .... `RCVR`

⓯ **[SUBWOOFER]**
for adjusting subwoofer output level........................... `RCVR`

⓰ **[TV/AV]**
for selecting the television's input mode .... `TV`

⓱ **[DVD 6CH]**
for selecting the DVD 6CH INPUT mode..................... `RCVR`

⓲ **[DIGITAL]**
for selecting the DIGITAL INPUT mode .... `RCVR`

⓳ **[SFC]**
for selecting SFC mode... `RCVR`

⓴ **[≥10/-/--]**
for entering two digit numbers
.... `RCVR` , `DISC` , `TV` , `VCR`

㉑ **[DELAY, LEVEL, +, –]**
for adjusting speaker delay time and output level ... `RCVR`

㉒ **[TEST]**
for starting the speaker test signal .... `RCVR`

㉓ **[DIMMER]**
for dimming the display .... `RCVR`

Remote control

29
RQT5861
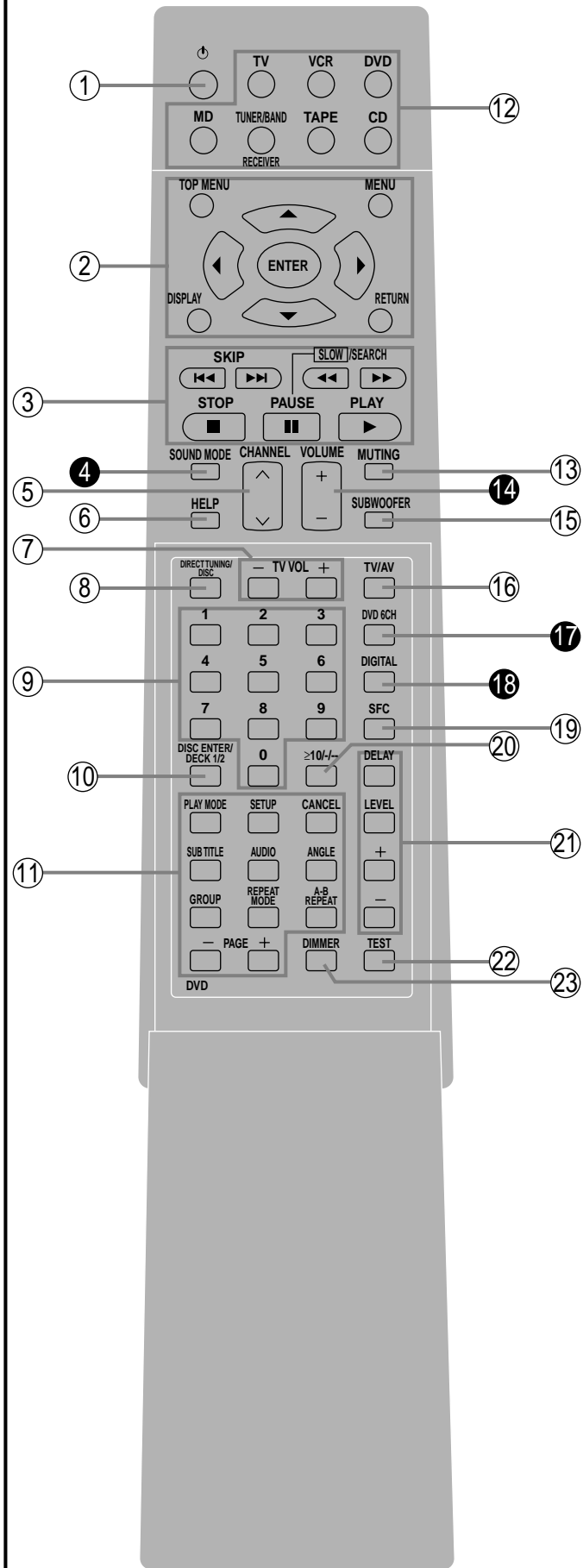
RCVR   Operating the receiver

Reference pages are given in parentheses.
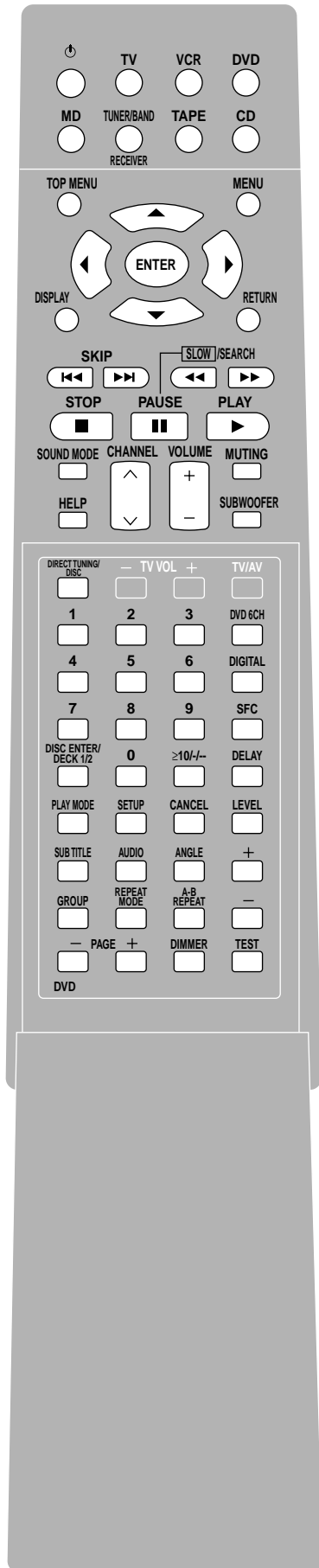
To turn the unit on/off	TUNER/BAND ○ → ○ ⏻ RECEIVER
To select an input source and switch the remote control to each operation mode	TV ○ VCR ○ DVD ○ MD ○ TUNER/BAND ○ TAPE ○ CD ○ RECEIVER
To adjust the volume	VOLUME + −
To select the DSP sound mode (18)	SOUND MODE ▭
To select the SFC mode (18)	SFC ▭
To start a test signal (15)	TEST ▭
To select the speaker channel and adjust its output level (15, 17, 21)	LEVEL ▭ → + ▭ −
To adjust subwoofer output level (21)	SUBWOOFER ▭
To change the surround channel delay time (17)	DELAY ▭ → + ▭ −
To select DVD 6CH INPUT mode (19)	DVD 6CH ▭
To select DIGITAL INPUT mode (18)	DIGITAL ▭
To mute the volume (26)	MUTING ▭
To dim the display (26)	DIMMER ▭
To display help messages and confirm the remote control mode (37)	HELP ▭
To select "FM" or "AM" (22)	TUNER/BAND ○ RECEIVER
To change radio channels sequentially (23) (Preset tuning)	CHANNEL ∧ ∨
To select radio channels directly (23) (Preset tuning)	1 ▭ 2 ▭ 3 ▭ 4 ▭ 5 ▭ 6 ▭ 7 ▭ 8 ▭ 9 ▭ 0 ▭ ≧10/-/-- ▭
To select radio stations by frequency (22) (Direct tuning)	DIRECT TUNING/DISC ⬇ 1 ▭ 2 ▭ 3 ▭ 4 ▭ 5 ▭ 6 ▭ 7 ▭ 8 ▭ 9 ▭ 0 ▭

To turn the DVD player on/off	DVD → ⏻
To turn the CD player on/off	CD → ⏻
To turn the MD deck on/off	MD → ⏻
[5 CD changer only] **To start play from a specific disc**	DIRECT TUNING/ DISC → 1 2 3 4 5
[MEGA CD changer only] **To start play from a specified disc** (When selecting discs, [≥10/-/--] does not respond to touch.) "MEGA CD changer" means any Technics CD changer that takes more than 50 discs.	DIRECT TUNING/ DISC ↓ 1 2 3 4 5 6 7 8 9 0 ↓ DISC ENTER/ DECK 1/2 ↓ PLAY ▶
To skip to the beginning of a track or chapter	SKIP ◄◄ ►►
To start play	PLAY ▶
To display the top menu	TOP MENU
To display the menu	MENU
To display the on-screen menu icons	DISPLAY
To return to the previous menu	RETURN
To select items Press to select items after you press [TOP MENU], [MENU], or [DISPLAY].	1 2 3 4 5 6 7 8 9 0 ≥10/-/-- ◄ ▲ ▶ ▼
To enter the selected items	ENTER

To display the random play screen or program play screen	PLAY MODE
To clear the program	CANCEL
To change subtitles	SUB TITLE
To change soundtracks	AUDIO
To select a repeat play mode	REPEAT MODE
To specify start and finish points for A-B repeat	A-B REPEAT
To change angles	ANGLE
To pause play	PAUSE ❚❚
To search through the disc	SLOW/SEARCH ◄◄ ►►
To start slow-motion play	PAUSE ❚❚ → SLOW/SEARCH ◄◄ ►►
To view frame-by-frame	PAUSE ❚❚ → ◄ ▶
To start play from a selected track or chapter	1 2 3 4 5 6 7 8 9 0 ≥10/-/--
[DVD Audio only] **To select a group**	GROUP
[DVD Audio only] **To select still pictures**	− PAGE +
To display player menus	SETUP
To stop play	STOP ■

Remote control
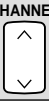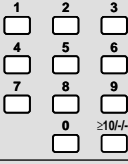
TV Operating a TV

To turn the TV on/off	TV ➡ ⏻
To select the television's input mode	TV/AV
To change channels sequentially	CHANNEL ∧ ∨
To select channels directly	1 2 3 / 4 5 6 / 7 8 9 / 0 ≥10/-/--
To adjust the television's volume	— TV VOL +

VCR — Operating a VCR

To turn the VCR on/off	VCR ⟳
To change channels sequentially	CHANNEL ∧ ∨
To select channels directly	1 2 3 4 5 6 7 8 9 0 ≥10/-/--
To start play	PLAY ▶
While the tape is stopped **To fast-forward or rewind**	SLOW/SEARCH ◀◀ ▶▶
To pause play	PAUSE ❙❙
To stop play	STOP ■

TAPE — Operating a cassette deck

To turn the deck on/off	TAPE ⟳
Only when using a double cassette deck **To select deck 1 or 2**	DISC ENTER/ DECK 1/2
To start play	PLAY ▶
While the tape is stopped **To fast-forward or rewind** With TPS-equipped decks, you can move to the beginning or end of a track by pressing these buttons while the tape is playing.	SLOW/SEARCH ◀◀ ▶▶
To pause play	PAUSE ❙❙
To stop play	STOP ■

Remote control

To change the remote control codes

Change the remote control code:
- To operate a Panasonic or Technics TV, VCR, or DVD player with a different code.
- To operate another brand of TV, VCR, or DVD player.

Note

- If there is more than one code number indicated in the code table, repeat the procedure until you find a code number which switches the component on or off.
- Even after changing the code there may be cases where certain operations cannot be done or operation is not possible at all.
- Changes to the codes are canceled when the remote control's batteries are replaced. Reenter the code.
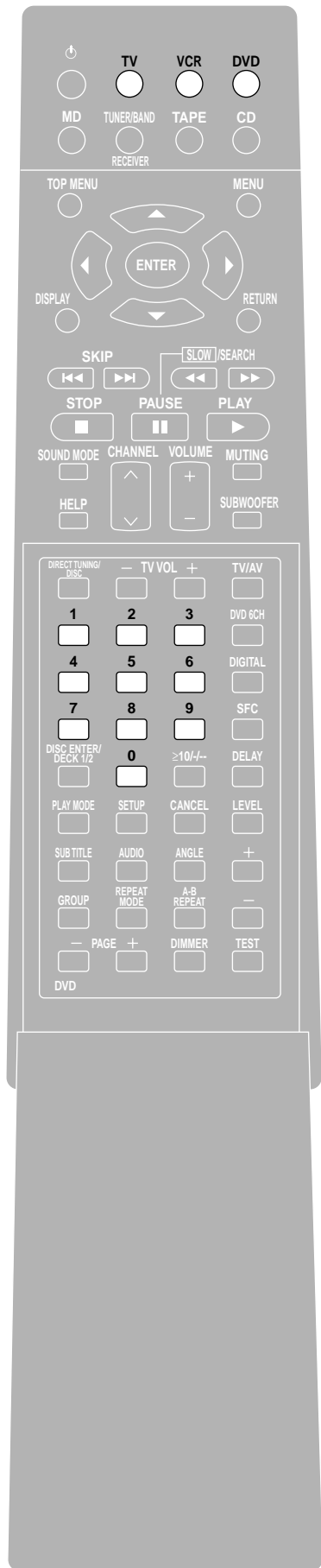
Hold down the button corresponding to the component you wish to operate.

Continue to hold the button down and...

Aim the remote control at the component you wish to operate and carefully and slowly press the numbered buttons to enter the appropriate two-digit code.
(Refer to the table on the facing page.)

When the code is entered, the remote control automatically outputs the on/off signal.
If you change the code correctly, the component switches on or off.
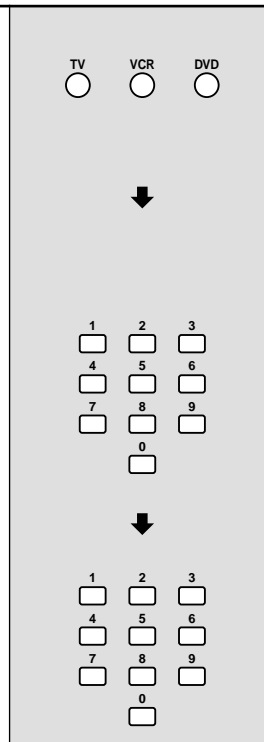
TV codes					
PANASONIC	01, 29, 30, 31	INNO HIT	34	SALORA	07, 37
AKAI	07, 11, 28, 36, 37	ITT/NOKIA	05, 07, 37	SAMSUNG	11, 12, 15, 21, 25, 34, 39
ALBA	05, 11, 12	JVC	18		
BAUR	32	KENDO	40	SANYO	07, 17, 25, 37
BLAUPUNKT	28, 36	LOEWE	14, 33	SCHNEIDER	11, 12
BRANDT	26, 41	LOEWE OPTA	32	SEG	39, 40
BUSH	02, 05, 10, 11, 12, 32, 38	LUXOR	37	SELECO	11, 24
		MATSUI	02, 05, 06, 07, 10, 11, 12, 25, 37, 38	SHARP	17, 20
DAEWOO	11, 12, 32			SIEMENS	11, 12, 17, 28, 36
DUAL	32	MITSUBISHI	14, 19, 28, 36	SINUDYNE	02, 05, 11, 12, 22, 24, 38, 40
FERGUSON	11, 12	NOKIA	05, 07, 37		
FINLUX	11, 12, 22, 23, 24, 25, 40	NORDMENDE	26, 41	SONY	16
		OCEANIC	27, 35	THOMSON	05, 26, 41
FISHER	37	ORION	02, 03, 05, 10, 11, 12, 38	THORN	06, 08, 11, 12, 14, 16, 25, 32
FUNAI	02, 38				
GOLDSTAR	11, 12	PHILIPS	11, 12, 13, 15	TOSHIBA	03, 04, 06, 08
GOODMANS	11, 12, 25, 32	PHONOLA	11, 12	UNIVERSUM	39
GRUNDIG	28, 36	RADIOLA	11, 12	WHITE WESTIN HOUSE	11, 12, 22, 40
HITACHI	01, 09, 26, 41	ROADSTAR	39		
ICE	21, 39	SABA	26, 41		

VCR codes					
PANASONIC	01, 29, 30	JVC	20, 21	ROADSTAR	02, 03, 18, 23, 27
AKAI	06, 08, 16, 17, 19, 37	KENDO	08, 09, 37	SABA	21
ALBA	02, 06, 23	LOEWE	03, 32	SALORA	08, 11, 17, 19, 37
BAIRD	08, 10, 37	LUXOR	08, 10, 11, 17, 19, 37	SAMSUNG	15, 16, 18, 27
BLAUPUNKT	01, 26, 29, 30, 33	MATSUI	03, 05, 09	SANYO	07, 10, 11
BUSH	02, 09, 23	METZ	01	SCHAUB LORENZ	10
DAEWOO	15	MITSUBISHI	17, 19, 21, 32	SCHNEIDER	02, 03, 18, 23, 27, 32
FERGUSON	31	NEC	04, 21, 36, 37	SEG	02, 18, 23, 27
FISHER	05, 07, 10, 11, 12	NOKIA	08, 10, 11, 18, 22, 27, 37	SHARP	22
GOLDSTAR/LG	03, 04, 36, 37			SIEMENS	03, 10, 11, 32
GOODMANS	02, 03, 18, 23, 27, 33	NORDMENDE	20, 21	SONY	24, 25, 26
GRUNDIG	02, 23, 26, 28, 32, 33	OKANO	06	THOMSON	21
HCM	02, 23	ORION	05, 09	THORN	10
HITACHI	13, 14	PHILIPS	22, 32, 33, 34, 35	TOSHIBA	15, 17, 19, 32
ITT	08, 10, 11, 37	PHONOLA	32	UNIVERSUM	03, 08, 32, 37
ITT/NOKIA	18, 27, 37	RFT	33		

DVD player codes					
PANASONIC	01	PHILIPS	04, 16	SONY	05
DENON	01, 17	PIONEER	03	TECHNICS	01
FERGUSON	02	RAITE	13	THOMSON	02
HITACHI	11	RCA	02	TOSHIBA	04
JVC	09	SABA	02	YAMAHA	01
KENWOOD	15	SAMPO	14	ZENITH	07, 12
MITSUBISHI	06	SAMSUNG	10		
NORDMENDE	02	SHARP	08		

WAKE

1

TIMER

○

-MODE
–TIME

$SLEEP$ **SLEEP** 30

↓

WAKE $WAKE$ $5H$

↓

OFF

2

TIMER

○

-MODE
–TIME

WAKE $WAKE$ $5H$

↓

WAKE FM 88.10 **MHz**

3

⏻/|

Timer function

There are two timer functions: the sleep timer and the wake timer.
● **Sleep timer:**
The unit turns off after a set time.
It can be set for 30, 60, or 90 minutes.
● **Wake timer:**
The unit can be set to turn on a certain number of hours after it is
turned off.
It can be set for 5, 7, or 9 hours.
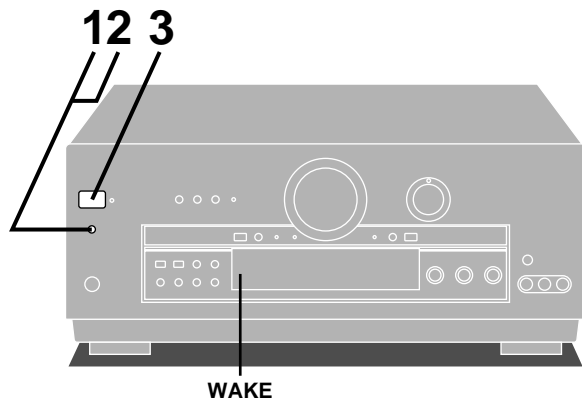
Setting the timers

1 Press [TIMER, -MODE, –TIME] to select the desired timer mode.

2 [Within 5 seconds]
Press [TIMER, -MODE, –TIME] and release when the time you require is displayed.

The display changes as follows:
● In sleep timer mode
30 → 60 → 90 (minutes)
↑_____|

● In wake timer mode
5H → 7H → 9H (hours)
↑_____|

The display is restored 5 seconds after the setting is
completed.

3 Wake timer mode only

Press [⏻/|] to turn off the unit.
The "WAKE" indicator lights up.

**Checking the remaining time on the sleep timer and the
time set for the wake timer**
Press [TIMER, -MODE, –TIME] once.

Note

Do not press [TIMER, -MODE, –TIME] again before the remaining
time indication goes out. The setting may change if you do this.

Changing a setting
Repeat steps 1 and 2.

To cancel the timer
Press [TIMER, -MODE, –TIME] until "OFF" is displayed.
"SLEEP" or "WAKE" will go out.

Note

● The timers cannot be used together.
● The sleep timer turns off the receiver, and the wake timer turns
on the receiver, but they do not turn off/on any externally
connected components.

A

HELP

B

⏻/❙   **DIGITAL INPUT**
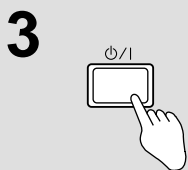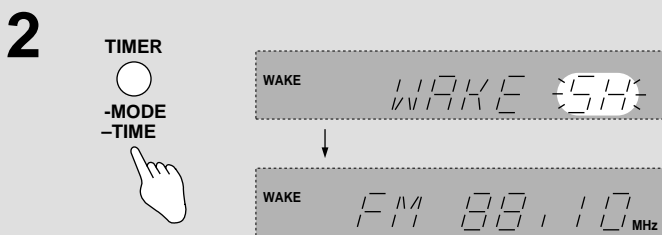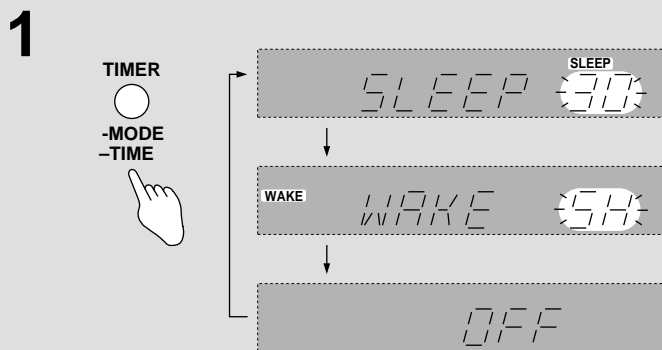
The HELP function

If you make a mistake in operation or if sound output stops, the HELP function displays information that indicates how you can remedy the situation.

If "ERROR" or scrolling characters ("SPEAKER OFF NOW", for example) appear on the display, do the following.

Press [HELP].

The remedy for the situation is displayed.

One of the source buttons (TV, VCR , DVD, MD, TUNER/BAND RECEIVER, TAPE, CD) lights to indicate the current remote control mode.
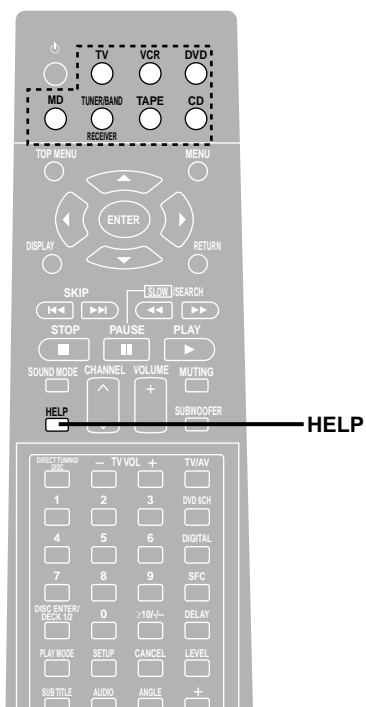
The RESET function

While the unit is on

While pressing and holding [DIGITAL INPUT], press [⏻/❙].

"RESET" appears on the display.

The operation settings for the unit will be initialized to the settings made at the time of shipment.

However, any preset radio stations will not be erased.

Maintenance

If the surfaces are dirty

To clean this unit, wipe with a soft, dry cloth.

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

Reference

Troubleshooting guide

Before requesting service, make the below checks. If you can't fix the system as described below, or if something not listed here occurs, refer to the enclosed directory to locate an Authorized Service Center convenient to you or contact your dealer.

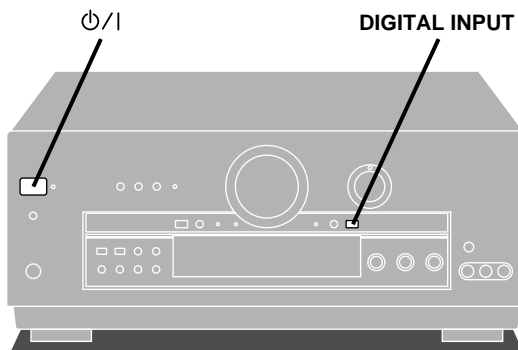| Common problems		Ref.Pages
No power.	● Ensure the AC mains lead is connected.	9
No sound.	● Turn the volume up. ● Turn muting off. ● Check connections to speakers and other equipment. ● Turn on the speakers. ● Turn off the tape monitor. ● Select the correct source. ● Change the DIGITAL input setting to suit the type of connection you have made. ● Check that the digital signals can be decoded by this unit. ● Turn PCM FIX or DTS FIX off.	18 26 6–11 18 26 18 12, 13 16 16
Sound stops. "OVERLOAD" appears on the display.	● Switch off the unit, determine and correct the cause, then switch the unit on. Causes include shorting of the positive and negative speaker wires, using speakers with an impedance lower than rated for this unit, straining of the speakers through excessive volume or power, and using the unit in a hot environment. ● Use speakers with the right impedance rating.	– 10, 11
"F 70" appears on the display.	● Turn the unit off, disconnect the AC mains lead, then reconnect and turn the unit on. Consult your dealer if "F 70" remains on the display.	–
The picture doesn't appear on the television.	● Change the television's input mode to suit the connections between this unit and the television.	–

DSP sound modes		Ref.Pages
Sound is not heard from the center, surround, or subwoofer speakers.	● Ensure the size settings for your speakers are correct. ● Check the DSP sound mode. ● Turn off the VGCA.	12, 13 16, 17 20
DSP sound modes cannot be selected.	● Turn off the VGCA. ● Turn SPEAKERS B off. ● Turn DVD 6CH INPUT off.	20 19 19

Radio		Ref.Pages
The radio cannot be tuned in or there is a lot of noise and interference.	● Adjust the position of the FM or AM antenna. ● Reduce the treble. ● Turn on the VGCA. ● Turn off nearby televisions, video decks, DVD players, and satellite receivers. ● You may need an outdoor antenna or an antenna with more elements. ● Separate the antenna from other cables, leads, and appliances.	8, 9 21 20 – 9 –
The correct AM frequency cannot be tuned in.	● Change the frequency step. Hold [BAND] down for 3 seconds to change the step to 9 kHz.	22

Specifications (DIN 45 500)

■ AMPLIFIER SECTION

Power output (at 230 V for Continental Europe)
(at 240 V for the United Kingdom)

DIN 1 kHz (T.H.D. 1 %)	2 x 100 W (6 Ω)
20 Hz–20 kHz continuous power output	
both channels driven	2 x 80 W (6 Ω)

Total harmonic distortion

rated power at 20 Hz–20 kHz	0.05 % (6 Ω)
half power at 1 kHz	0.03 % (6 Ω)

DVD 6CH power output

DIN 1 kHz (T.H.D. 1 %)

Front	2 x 100 W (6 Ω)
Center	100 W (6 Ω)
Surround	2 x 100 W (6 Ω)

Power bandwidth

both channels driven, –3 dB	10 Hz–100 kHz (6 Ω, 0.9 %)
Damping factor	30 (6 Ω)

Load impedance

Front

A or B	4–16 Ω
A and B	8–16 Ω
BI-WIRE	6–16 Ω
Center	6–16 Ω
Surround	6–16 Ω

Frequency response

PHONO	RIAA standard curve (30 Hz–15 kHz) ±0.8 dB
CD, TAPE/MD, DVD, TV, VCR 1, VCR 2, VCR 3	
	10 Hz–100 kHz, ±3 dB

Input sensitivity and impedance

PHONO	3 mV/47 kΩ
CD, TAPE/MD, DVD, TV, VCR 1, VCR 2, VCR 3	200 mV/22 kΩ

S/N at rated power (6 Ω) (VGCA ON)

PHONO	70 dB (IHF, A: 80 dB)
CD, TAPE/MD, DVD (L/R/C/LS/RS), TV, VCR 1, VCR 2, VCR 3	
113 dB (IHF, A rated power, S=2 V), 98 dB (IHF, A: 100 dB)	

Tone controls

BASS	50 Hz, +10 to –10 dB
TREBLE	20 kHz, +10 to –10 dB

Output voltage

TAPE/MD REC (OUT), VCR 1 OUT	200 mV
Channel balance (250 Hz–6.3 kHz)	±1 dB
Channel separation	55 dB
Headphones output level and impedance	430 mV/330 Ω
Subwoofer frequency response (–6 dB)	7–200 Hz

Digital input	
Optical	2
Coaxial	1

■ FM TUNER SECTION

Frequency range	87.50–108.00 MHz

Sensitivity

S/N 30 dB	1.5 µV/75 Ω
S/N 26 dB	1.3 µV/75 Ω
S/N 20 dB	1.2 µV/75 Ω
IHF usable sensitivity (IHF'58)	1.5 µV/75 Ω
IHF 46 dB stereo quieting sensitivity	22 µV/75 Ω

Total harmonic distortion

MONO	0.2 %
STEREO	0.3 %

S/N

MONO	60 dB (75 dB, IHF)
STEREO	58 dB (71 dB, IHF)

Frequency response

20 Hz–15 kHz	+1 dB, –2 dB

Alternate channel selectivity

±400 kHz	65 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	70 dB
AM suppression	50 dB

Stereo separation

1 kHz	40 dB

Carrier leak

19 kHz	–30 dB (–35 dB, IHF)
38 kHz	–50 dB (–55 dB, IHF)
Channel balance (250 Hz–6.3 kHz)	±1.5 dB
Limiting point	1.2 µV

Bandwidth

IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminal	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	522–1611 kHz (9 kHz steps)
	530–1620 kHz (10 kHz steps)
Sensitivity	20 µV, 330 µV/m
Selectivity (at 999 kHz)	55 dB
IF rejection (at 999 kHz)	50 dB

■ VIDEO SECTION

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

■ GENERAL

Power supply

For Continental Europe	AC 230 V, 50 Hz
For the United Kingdom	AC 230–240 V, 50 Hz
Power consumption	270 W
Dimensions (W x H x D)	[SA-DA20] 430 x 180 x 370 mm
	[SA-DA15] 430 x 158 x 370 mm
Mass	[SA-DA20] 13.7 kg
	[SA-DA15] 11.7 kg

Power consumption in standby mode:	**2 W**

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

Reference

WARNING:
TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

CAUTION!
- **DO NOT INSTALL, OR PLACE THIS UNIT, IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

SUOMI

VAROITUS:
TULIPALO-, SÄHKÖISKUVAARAN TAI TUOTETTA KOHTAAVAN MUUN VAHINGON VÄHENTÄMISEKSI EI LAITETTA SAA ALTISTAA SATEELLE, KOSTEUDELLE, VESIPISAROILLE TAI ROISKEELLE, EIKÄ NESTETTÄ SISÄLTÄVIÄ ESINEITÄ, KUTEN ESIMERKIKSI MALJAKOITA, SAA ASETTAA LAITTEEN PÄÄLLE.

VAROITUS!
- **ÄLÄ ASENNA TAI LAITA TÄTÄ LAITETTA KABINETTITYYPPISEEN KIRJAKAAPPIIN TAI MUUHUN SULJETTUUN TILAAN, JOTTA TUULETUS ONNISTUISI. VARMISTA, ETTÄ VERHO TAI MIKÄÄN MUU MATERIAALI EI HUONONNA TUULETUSTA, JOTTA VÄLTETTÄISIIN YLIKUUMENEMISESTA JOHTUVA SÄHKÖISKU- TAI TULIPALOVAARA.**
- **ÄLÄ PEITÄ LAITTEEN TUULETUSAUKKOJA SANOMALEHDELLÄ, PÖYTÄLIINALLA, VERHOLLA TAI MUULLA VASTAAVALLA ESINEELLÄ.**
- **ÄLÄ ASETA PALAVAA KYNTTILÄÄ TAI MUUTA AVOTULEN LÄHDETTÄ LAITTEEN PÄÄLLE.**
- **HÄVITÄ PARISTOT LUONTOA VAHINGOITTAMATTOMALLA TAVALLA.**

TÄMÄ LAITE ON TARKOITETTU KÄYTETTÄVÄKSI LEUDOSSA ILMASTOSSA.

NORSK

ADVARSEL:
FOR Å REDUSERE FAREN FOR BRANN, ELEKTRISK STØT ELLER SKADER PÅ PRODUKTET, MÅ DETTE APPARATET IKKE UTSETTES FOR REGN, FUKTIGHET, VANNDRÅPER ELLER VANNSPRUT. DET MÅ HELLER IKKE PLASSERES GJENSTANDER FYLT MED VANN, SLIK SOM BLOMSTERVASER, OPPÅ APPARATET.

ADVARSEL!
- **APPARATET MÅ IKKE PLASSERES I EN BOKHYLLE, ET INNEBYGGET KABINETT ELLER ET ANNET LUKKET STED HVOR VENTILASJONSFORHOLDENE ER UTILSTREKKELIGE. SØRG FOR AT GARDINER ELLER LIGNENDE IKKE FORVERRER VENTILASJONSFORHOLDENE, SÅ RISIKO FOR ELEKTRISK SJOKK ELLER BRANN FORÅRSAKET AV OVERHETING UNNGÅS.**
- **APPARATETS VENTILASJONSÅPNINGER MÅ IKKE DEKKES TIL MED AVISER, BORDDUKER, GARDINER OG LIGNENDE.**
- **PLASSER IKKE ÅPEN ILD, SLIK SOM LEVENDE LYS, OPPÅ APPARATET.**
- **BRUKTE BATTERIER MÅ KASSERES UTEN FARE FOR MILJØET.**

DETTE APPARATET ER BEREGNET TIL BRUK UNDER MODERATE KLIMAFORHOLD.