# Panasonic®

Operating Instructions
## SD Stereo System

Model No. **SC-PM71SD**

**COMPACT DISC DIGITAL AUDIO**

**ENERGY STAR**

As an ENERGY STAR® Partner, Panasonic has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

- ■ **High speed recording — Performance and convenience!** ⇒ **page 24**
- ■ **More fun with SD — Connect and expand!** ⇒ **page 36**
- ■ **Never forget a recording again with the "Record timer".** ⇒ **page 33**
- ■ **Save your favorite tracks from an external source to SD!** ⇒ **page 35**

## Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully.
Before connecting, operating or adjusting this product, please read the instructions completely.
Please keep this manual for future reference.

**If the display lights up when the unit is turned off, turn the demo function off.** ⇒ **page 10**

Operations in these instructions are described mainly for the remote control, but you can do the operations on the main unit if the controls are the same.

**If you have any questions, contact**
1-800-211-PANA (7262)

P

RQT8046-5P

## Table of contents

**If the display lights up when the unit is turned off, the demo function is set to on.**

**Press and hold until "DEMO OFF" is displayed.**
Every time you press the button:
**DEMO OFF ↔ DEMO ON**

STOP■

–DEMO

RQT8046

3

| System | SC-PM71SD |
|--------|-----------|
| Main unit | SA-PM71SD |
| Speakers | SB-PM71 |

## Accessories

Please check and identify the supplied accessories. Use numbers indicated in parentheses when asking for replacement parts. (As of February 2005)

**To order accessories, refer to "Accessory Purchases" on page 40.**

☐ **1 Remote control**
(N2QAJB000130)
☐ **1 AC power supply cord**
(K2CB2CB00006)
☐ **1 FM indoor antenna**
(RSA0007-L)
☐ **2 Batteries**
for remote control

☐ **1 AM loop antenna**
(N1DAAAA00001)
☐ **1 CD-ROM**

| Note |

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

**User memo:**

DATE OF PURCHASE _____

DEALER NAME _____

DEALER ADDRESS_____

_____

TELEPHONE NUMBER _____

The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and keep for future reference.
MODEL NUMBER _____SC-PM71SD_____

SERIAL NUMBER _____

## Listening caution

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion-and, most importantly, without affecting your sensitive hearing.

We recommend that you avoid prolonged exposure to excessive noise.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing.
Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.
To establish a safe level:
• Start your volume control at a low setting.
• Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:
• Set the dial and leave it there.

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

# IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

*Getting started*

# Disc/Card information

## Discs and cards usable on this unit

| Type | Logo | Indication in these operating instructions | Remarks |
|------|------|------|---------|
| CD | **COMPACT disc DIGITAL AUDIO** | CD | • This unit can play CD-R/RW (audio recording disc) recorded with the formats on the left. Close the session or finalize[1] the disc after recording.<br>• **HighMAT discs**<br>WMA and MP3 files only. |
| CD-R CD-RW | — | WMA MP3 CD | |
| SD Memory Card | — | SD | • Includes miniSD Cards. A miniSD adaptor needs to be inserted before using these cards.<br>• You cannot use multimedia cards.<br>• We recommend using a Panasonic SD card. (⇒ Suitable SD Memory Cards, below)<br>• You can only play audio data (AAC/MP3/WMA) recorded in SD Audio Format.<br>　AAC:　Advanced Audio Coding<br>　MP3:　MPEG- 1 Audio Layer 3 / MPEG- 2 Audio Layer 3<br>　WMA:　Windows Media™ Audio |

[1] A process that allows play on compatible equipment.
• It may not be possible to play the above discs in all cases due to the type of disc or condition of the recording.
• **Note about using a DualDisc**
The digital audio content side of a DualDisc does not meet the technical specifications of the Compact Disc Digital Audio (CD-DA) format so play may not be possible.

## Suitable SD Memory Cards

You can use SD Memory Cards with the following capacities (from 8 MB to 1 GB).

| 8 MB, | 16 MB, | 32 MB, | 64 MB |
|------|------|------|------|
| 128 MB, | 256 MB, | 512 MB, | 1 GB (Maximum) |

Please confirm the latest information on the following website.
**http://panasonic.co.jp/pavc/global/cs**
(This site is in English only.)
• If the SD Memory Card is formatted on other equipment, the time spent for recording may become longer. Also if the SD Memory Card is formatted on a PC, you may not be able to use it on this unit.
In these cases, format the card on this unit.
• This unit supports SD Memory Cards formatted in FAT12 system and FAT16 system based on SD Memory Card Specifications.

## Recording and editing

This unit records data to SD card in SD Audio Format*. This format incorporates CPRM (Content Protection for Recordable Media) technology.
*This is an audio standard for SD Memory cards from the SD association.

### ■ Regarding music protection

SD cards incorporate secure digital music initiative (SDMI) standard copyright protection technology. This uses encryption technology to protect copyrights, to ensure the healthy development of music culture and to protect the rights of valid purchasers.
• This unit records music data in encrypted form. Encrypted data cannot be moved/copied to other equipment for use.
• This unit cannot back up or restore music data recorded in encrypted form.
• Use Panasonic SD-Jukebox software (included) to move data contained in the SD card.
• You may not be able to use a SD card containing copy limitation information.

### ■ Limitations on digital recording

Digital recording from CD to SD is limited by SCMS (serial copy management system). You can record digitally from CD to SD with little signal degradation on this unit. However, you cannot record digitally from a CD that is protected by SCMS.
Analog recordings are not affected.

## Disc and card handling

### ■ How to hold a disc or card

Do not touch the recorded surface or the terminal surface.

### ■ If there is dirt or condensation on the disc

Wipe with a damp cloth and then wipe dry.

### ■ Handling precautions

- Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not expose the terminals of the card to water, garbage or other strange things.
- Do not use the following discs:
  – Discs with exposed adhesive from removed stickers or labels (rented discs, etc).
  – Discs that are badly warped or cracked.
  – Irregularly shaped discs, such as heart shapes.
- Do not place in the following areas:
  – In direct sunlight.
  – In very dusty or humid areas.
  – Near a heater.
  – Where static electricity or electromagnetic waves occur.

### ■ To protect your data

- Switch the write-protect switch ⓐ of the SD Memory Card to "LOCK". Unlock when you want to record or edit the card again.
- Performing the following actions during operation can damage your SD Memory Card and corrupt the data it contains.
  – Inserting or ejecting the SD Memory Card
  – Turning the unit off forcibly (for example, unplugging the AC power supply cord)

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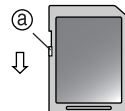
**Tips for making WMA/MP3 discs**

- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- If you have recorded MP3/WMA on the same disc as CD-DA, only the format recorded in the first session can be played.
- This unit is compatible with multi-session but if there are a lot of sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.
- If there is a large amount of JPEG data etc. within a WMA/MP3 file, sound may not be output and play may not be possible.
- The unit can play a maximum of 400 albums and 999 tracks. If there are multiple folders with many levels, there may be files and folders that cannot be recognized.

**WMA**
- This unit is compatible with Windows Media Audio 9 (WMA9), however not with WMA9 Professional/Lossless/Voice and MBR*
  *Multiple Bit Rate: A file that contains the same content encoded at several different bit rates.
- Noise may occur when playing WMA files.
- You cannot play WMA files that are copy protected.

**MP3**
- This unit is not compatible with packet-write format.
- This unit is not compatible with ID3 tags.
- If you play an MP3 track that includes still picture data, it will take some time before the music itself starts playing and the elapsed time will not be displayed during this time. Even after the track starts, the correct play time will not be displayed.

**Naming folders and files**

At the time of recording, prefix folder and file names with 3-digit numbers in the order you want to play them (this may not work at times).
Files must have the extension:
".WMA" or ".wma"
".MP3" or ".mp3"
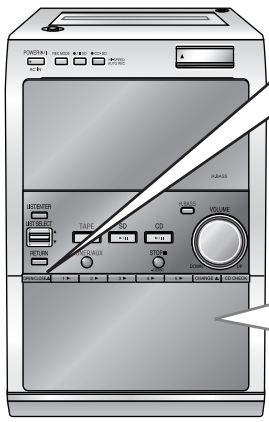
**Example:** MP3
root

**001 group**
- 001 track.mp3
- 002 track.mp3
- 003 track.mp3

**002 group**
- 001 track.mp3
- 002 track.mp3
- 003 track.mp3
- 004 track.mp3

**003 group**
- 001 track.mp3
- 002 track.mp3
- 003 track.mp3
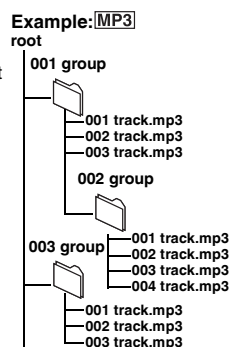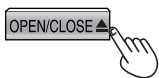
# Inserting/Removing the discs and cards

Adhere to the following to avoid problems.
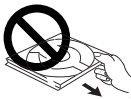
## Inserting discs

**1 Open/close the CD lid only with [OPEN/CLOSE ▲].**

OPEN/CLOSE ▲

**Do not pull.**

**Do not push.**

**2 Insert to fit in the tray guide.**

| **12 cm** | **8 cm** |
|---|---|
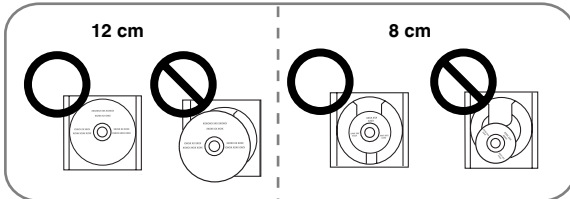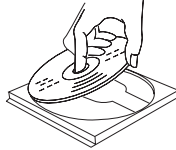
• Place the disc label up in the center of the tray.
• Insert only one disc into each tray.

## Inserting a card

You can use SD cards with capacities between 8MB and 1GB on this unit (⇒ page 6)

**1 Open the lid.**

**2 Insert the SD card.**
• **When using a miniSD card**
  A miniSD adapter is necessary.
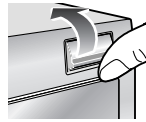
  miniSD adapter
  miniSD card

Press on the center of the card until it clicks into place.

Insert label up with cut-off corner on the right.
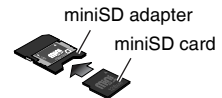
**3 Close the lid securely.**
• The SD card indicator lights on.
• You cannot play, record, or edit the SD card when the lid is open.

SD card indicator

### Removing the card

• Do not open the card lid during play as play stops.
• Do not open the lid while recording/editing. This may cause recording/editing to stop or the data may not be correctly recorded/edited on the SD card.
• Do not open the lid or remove the SD card when "CARD Writing" is displayed or the SD card indicator is flashing. The SD card may become unusable.

**1 Open the lid.**

**2 Press on the center of the SD card.**

**3 Pull straight out.**
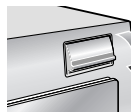
**4 Close the lid securely.**

#### Note

• If you accidentally open the cover when recording from a CD, reinsert the SD card and check your recording. If there is a problem, delete what was recorded, then do the recording again.
  You cannot use high-speed recording to record the same CD for a second time within 74 minutes of finishing the first high-speed recording. (You can record at normal speed.)
• If you accidentally open the cover when recording from the radio, recording stops.
• If you accidentally open the cover when editing an SD card, reinsert the card and check what you have edited. If there is a problem, delete what was edited, then do the editing again.

# Setup
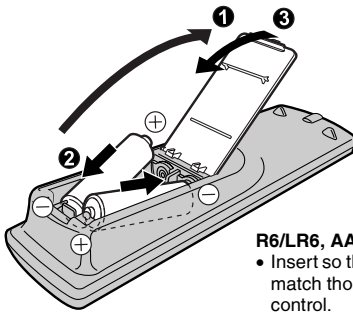
## The remote control



**R6/LR6, AA**
- 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 or 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.

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

■ **Use**
Aim at the sensor, avoiding obstacles, at a maximum range of 7 m (23 feet) directly in front of the unit.

## Positioning the speakers

Place so that the Panasonic logos and super tweeters are on the outside.



Panasonic logo          Super tweeter

Speaker          Main unit          Speaker



**Caution**
- **Use the speakers only with the recommended system. Failure to do so can damage the amplifier and speakers, and can cause fire. Consult a qualified service person if damage occurs or if a sudden change in performance is apparent.**
- **Do not attach these speakers to walls or ceilings.**
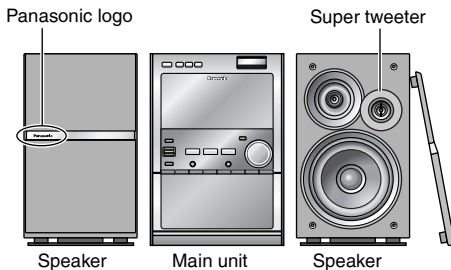
■ **Use only the supplied speakers**
- Using other speakers can damage the unit and sound quality will be negatively affected.
- Set the speakers up on an even surface to prevent them from falling. Take proper precautions to prevent the speakers from falling if you cannot set them up on an even surface.

■ **Positioning for best effect**
How you set up your speakers can affect the bass and the sound field. Note the following points.
- Place speakers on flat secure bases.
- Placing speakers too close to floors, walls, and corners can result in excessive bass. Cover walls and windows with thick curtain.
- Keep your speakers at least 10 mm ($^{13}/_{32}$") away from the system for proper ventilation.
- To avoid damage to the speakers, do not touch the speaker cones if you have taken the nets off.

■ **Notes on speaker use**
- These speakers do not have magnetic shielding. Do not place them near televisions, personal computers or other devices easily influenced by magnetism.
- You can damage your speakers and shorten their useful life if you play sound at high levels over extended periods.
- Reduce the volume in the following cases to avoid damage.
  – When playing distorted sound.
  – When the speakers emit strange noise (howling) from a record player, noise from FM broadcasts, or continuous signals from an oscillator, test disc, or electronic instrument.
  – When adjusting the sound quality.
  – When turning the unit on or off.

**Connections**

**Conserving power**
The unit consumes power (approx. 0.3 W) even when it is turned off with [POWER ⏻/I]. To save power when the unit is not to be used for a long time, unplug it from the household AC outlet. You will need to reset some memory items after plugging in the unit again.

**1**        **AM loop antenna**

Click!

Stand the antenna up on its base.

Keep loose antenna cord away from other wires and cords.

AM ANT ❶

LOOP ❷

EXT

AM ANT    FM ANT

EXT    LOOP    75Ω

**To AUX terminals**
**(⇒ page 34)**

**Video cassette recorder**

**Television**

R AUX L

HIGH
(6Ω)

LOW
(6Ω)

⊕
⊖
⊖
⊕

R — L

SPEAKERS (SB-PM71)
HAUT-PARLEURS
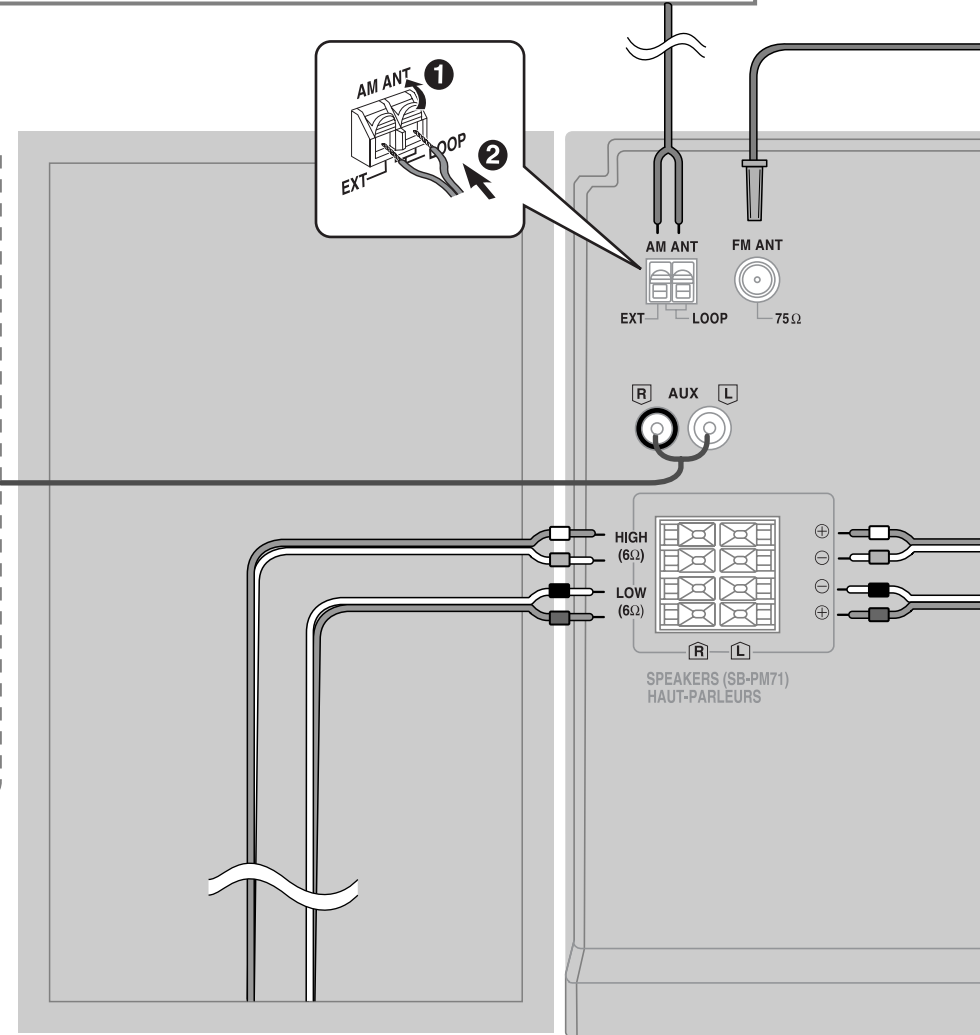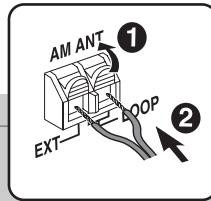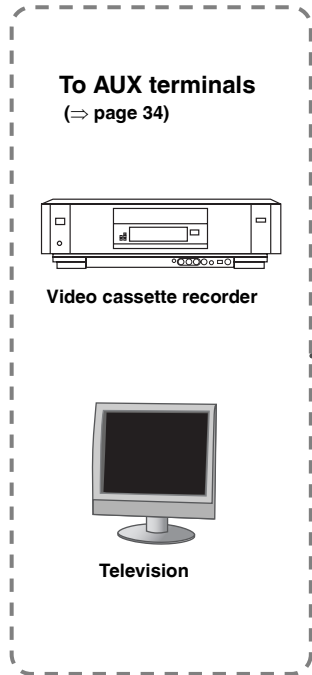
**5**        **DEMO function**

If the display lights up when the unit is turned off, the demo function is set to on.

STOP ■
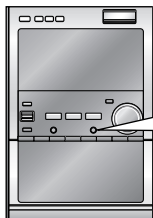
DEMO

**Press and hold until "DEMO OFF" is displayed.**
Every time you press the button:
**DEMO OFF** ↔ DEMO ON

## 2 FM indoor antenna
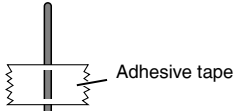
Adhesive tape

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

## 3 Speakers

- If the speaker cords have vinyl tips, twist the vinyl tip and pull off.
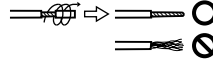
- Confirm the colors of the tags on the ends of the cords.

Red
Black
White
Blue
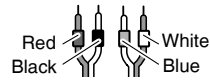
- For White tags, connect to grey terminals.
  For Blue, Black and Red tags, connect so tag colors match the terminal colors.

White
Blue
Black
Red

Grey ⊕
Blue ⊖
Black ⊖
Red ⊕

HIGH
(For high frequency)

LOW
(For low frequency)

R     L
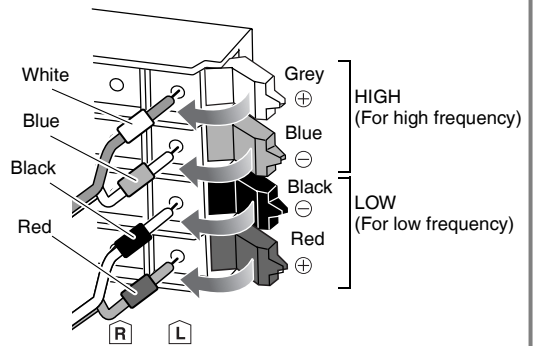
### Note
- Never short-circuit positive (+) and negative (–) speaker wires.
  Incorrect connection can damage the speakers.

AC IN ∼

## 4 AC power supply cord

**Connect the AC power supply cord after all other connections are complete.**

When disconnecting the AC power supply cord
1 Press [POWER ⏻/|].
2 Disconnect after "GOODBYE" disappears from the display.

GOODBYE
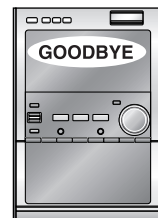
### Note
- You can reduce the power consumed in standby mode by turning the demo function off.
- If you set the clock (⇒ page 32), the demo function will turn off automatically.

To household AC outlet
(AC 120V, 60 Hz)

# Control guide

## Main unit

**POWER ⏻/I (standby/on switch)**
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.
**AC IN (AC supply indicator)**
This indicator lights when the unit is connected to the AC power supply.

**OPEN ▲ (⇒ page 19)**
Press to open the cassette lid.

**Cassette lid (⇒ page 19)**

**PHONES (Headphone jack)**
Reduce the volume level and connect the headphones.
Headphones plug type: 3.5mm (1/8") stereo.
Avoid listening for prolonged periods of time to prevent hearing damage.

**SD card slot (⇒ page 8)**

**REC MODE (⇒ page 24)**

**●/❚❚ SD (⇒ page 24)**

**● CD ▶ SD HI-SPEED AUTO REC (⇒ page 25)**

**▶ TAPE (⇒ page 19)**
**▶/❚❚ SD (⇒ page 15)**
**▶/❚❚ CD (⇒ page 14)**

**LIST/ENTER (⇒ page 16)**

**LIST SELECT ▲, ▼ (⇒ page 16)**
**RETURN (⇒ page 16)**
**TUNER/AUX (⇒ page 22)**

**OPEN/CLOSE ▲ (⇒ page 8)**

**1 ▶ – 5 ▶ (disc direct play buttons) (⇒ page 14)**

**Display (⇒ below)**

**SD card indicator (⇒ page 8)**

**H.BASS indicator (⇒ page 20)**

**H.BASS (⇒ page 20)**

**VOLUME UP/DOWN (⇒ page 15)**

**STOP ■ (⇒ page 15), –DEMO (⇒ page 10)**

**CD CHECK (⇒ page 15)**

**CHANGE ▲ (⇒ page 15)**

**CD lid (⇒ page 8)**

**Remote control sensor**

## Display

The following screen is for explanation purposes.

**Indicates the selected disc tray.**
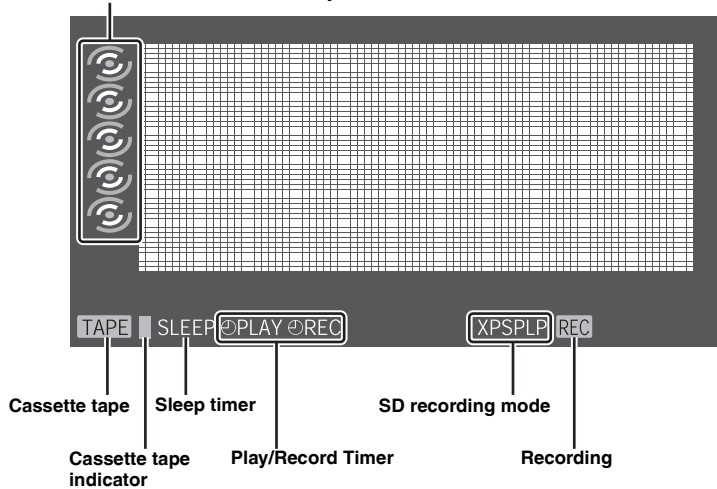
■ **Regarding the screen saver (prevents screen burning)**
If you do not set the auto-off function (⇒ page 32), the screen saver appears on the display when the unit is left unused for 10 minutes. Press any button to clear the screen saver.
The screen saver does not work when the auto-off function is set.

TAPE ❚ SLEEP ⏱PLAY ⏱REC XPSPLP REC

**Cassette tape**

**Cassette tape indicator**

**Sleep timer**

**Play/Record Timer**

**SD recording mode**

**Recording**

## Remote control

**SLEEP (⇒ page 32)**
**−AUTO OFF (⇒ page 32)**

**CLOCK/ (⇒ page 32)**
**TIMER (⇒ page 33)**

SLEEP CLOCK/ ◷ PLAY/
−AUTO OFF TIMER REC

**☼ (⇒ page 33)**

**◷ PLAY/REC (⇒ page 33)**

PLAY MODE DISPLAY
PROGRAM −REPEAT −DIMMER

**PROGRAM (⇒ page 17)**

**DISPLAY (⇒ page 15, 33)**
**−DIMMER (⇒ page 33)**
**PLAY MODE (⇒ page 15)**
**−REPEAT (⇒ page 17)**

DISC ABC DEF
1 2 3

**DISC (⇒ page 15)**

TITLE IN GHI JKL MNO
4 5 6

**TITLE IN (⇒ page 31)**

**Numbered buttons (⇒ page 16)**

CHARA PQRS TUV WXYZ
7 8 9

**CHARA (⇒ page 30)**

EDIT MODE SPACE!"#
0 ≧10

**EDIT MODE (⇒ page 26, 28)**
**DEL (⇒ page 30)**

ALBUM/GROUP ∨/REW ∧/FF

**◄, ► ALBUM/GROUP**
**(⇒ page 16, 18)**

**|◄◄ ∨/REW, ►►| ∧/FF**
**(⇒ page 15)**

TAPE SD CD

**► TAPE (⇒ page 19)**
**►/|| SD (⇒ page 15)**
**►/|| CD (⇒ page 15)**

STOP TUNER/AUX

**■ STOP (⇒ page 15)**

**TUNER/AUX (⇒ page 22, 35)**

VOL LIST/ VOL
− ENTER +

**▲, ▼**
**LIST/ENTER (⇒ page 16)**
**VOL−, + (⇒ page 15)**

MUTING RETURN

**MUTING (⇒ page 21)**

**RETURN (⇒ page 16)**

H.BASS RE-MASTER SURROUND SOUND

**H.BASS (⇒ page 20)**
**RE-MASTER (⇒ page 20)**

**SURROUND (⇒ page 21)**
**SOUND (⇒ page 21)**

REC REC MODE
●/|| SD TAPE

**●/|| REC (⇒ page 24)**

**REC MODE (⇒ page 24)**

−HI-SPEED
CD►SD

**SD, −HI-SPEED CD ► SD**
**(⇒ page 24)**
To record to SD cards

**TAPE (⇒ page 25)**
To record to cassette tapes

*Playing back*



STOP ■

LIST SELECT ▲, ▼

OPEN/CLOSE ▲

►/❚❚ SD
►/❚❚ CD

VOLUME UP/DOWN

CD CHECK
CHANGE ▲
1 ► – 5 ►
CD lid

### Playing discs

**1  Select a disc tray.**

| 1 ► | 2 ► | 3 ► | 4 ► | 5 ► |

- The unit turns on automatically.
- When a CD is already loaded, the unit comes on automatically and starts play (One touch play).

**2  Open the CD lid.**

OPEN/CLOSE ▲

**3  Insert disc. (⇒ page 8)**

Label must face upward.



Disc tray     Tray number

**4  Close the CD lid.**

OPEN/CLOSE ▲

**5  Start play.**

CD

►/❚❚

- It may take some time for play to start but this is normal.

| **Selecting a disc** | Remote control     Within 10 seconds     Main unit |
|---|---|

DISC → ① ② ③ ④ ⑤    1 ▶ ⋯ 5 ▶

| **All disc play** (during stop) | PLAY MODE −REPEAT |
|---|---|

Select "ALL DISC".

1 DISC → **ALL DISC** → 1 DISC RND
↑      ALL DISC RND ←

| **Changing a disc in the desired tray** | Within 10 seconds |
|---|---|

CHANGE ⏏ → 1 ▶ ⋯ 5 ▶

Press [CHANGE ⏏] again to close the tray.
• You can also remove a disc while another is playing.

| **Checking the disc location** | This feature lets you check whether a disc is in a tray. |
|---|---|

CD CHECK

Press again to close the tray.    Tray number



• If a disc is being played, the corresponding tray will not open.
• Do not remove or insert discs during a disc check.
• Do not push or pull out the trays during a disc check.

---

### Playing SD cards

This unit can only play music data (AAC/MP3/WMA) recorded in the SD standard audio format. Other SD audio formats cannot be played.

**1 Insert the SD card. (⇒ page 8)**

**2 Start play.**

SD
▶/Ⅱ

• When a SD card is already loaded, the unit comes on automatically and starts play (One touch play).

**Note**
• Do not open the card lid during play as play stops.
• You can use SD cards with capacities between 8MB and 1GB on this unit (⇒ page 6)
• Playback quality depends on the recording mode (XP/SP/LP) selected. (⇒ page 23)

---

| **Volume adjustment** | Remote control    Main unit |
|---|---|

VOL −    VOL +    VOLUME (DOWN / UP)

| **Stop** | Remote control    Main unit |
|---|---|

STOP ■    STOP ■ −DEMO

| **Pause** | Remote control    Main unit |
|---|---|

CD ▶/Ⅱ    CD ▶/Ⅱ
SD ▶/Ⅱ    SD ▶/Ⅱ

• Press again to restart play.

| **Skip** | Remote control    Main unit |
|---|---|

∨/REW ∧/FF    LIST SELECT
|◄◄ ►►|    ▲ ▼

| **Search** (during play or pause) | Remote control |
|---|---|

Press and hold.
∨/REW ∧/FF
|◄◄ ►►|

• You cannot search through a disc with WMA/MP3 files.

| **Status display** | Remote control |
|---|---|

DISPLAY −DIMMER

• The display changes each time you press the button.

*Playing back*

LIST/ENTER

LIST SELECT
▲, ▼

RETURN

►/❙❙ SD
►/❙❙ CD
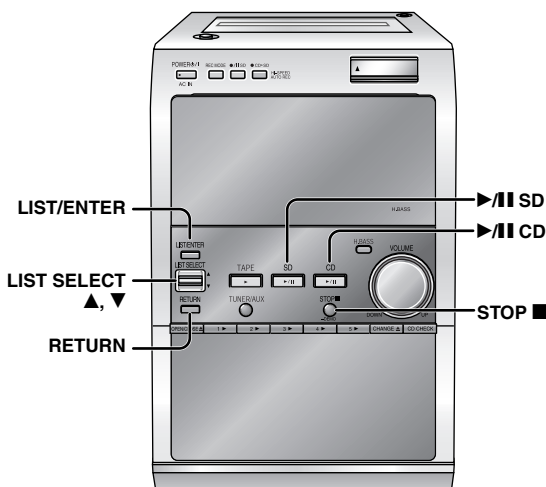
STOP ■

## Other ways of playing discs/cards

**Preparation**
Press [►/❙❙ CD] or [►/❙❙ SD] and then [■ STOP].

| | Selecting a track |
|---|---|

`CD` `WMA` `MP3` `SD`

### Press the numbered button(s) to select and play the track.

Example
To select 12: [≧10] ➡ [1] ➡ [2]
To select 123: [≧10] ➡ [≧10] ➡ [1] ➡ [2] ➡ [3]

**Note**
You cannot use this feature with program play and random play modes.

| PLAY MODE –REPEAT ➡ ALBUM/GROUP | Selecting an album |
|---|---|

`WMA` `MP3`

**1** During stop

**Press [PLAY MODE, –REPEAT] to select "1 ALBUM".**

**2** **Press [◢, ◣ ALBUM/GROUP] to select the album.**

**3** **Press [►/❙❙ CD].**

**To skip an album**
Press [◢, ◣ ALBUM/GROUP].

| LIST/ENTER | Title search |
|---|---|

`CD` `WMA` `MP3` `SD`

**1** During stop

**Press [LIST/ENTER].**

**2** **Press [▲] or [▼] to select the title and press [LIST/ENTER].**

- First select the disc, album or playlist title.
- Select "Track List" to select a track from all the track titles on SD.
- With HighMAT, press [▲] or [▼] to select the method of play (⇒ step 3, page 18).

Main unit
1 Press [LIST/ENTER].
2 Turn [LIST SELECT ▲, ▼] control to select the title and press [LIST/ENTER].

**To return to the previous display**
Press [RETURN].

**Note**
- Up to 32 characters per title can be shown by pressing [DISPLAY, –DIMMER].
- You cannot use this feature with program play, random play, and 1-Album modes.

| PROGRAM | **Program play (up to 24 items)** |

`CD` `WMA` `MP3` `SD`

**1** During stop
**Press [PROGRAM].**

**2** CD/WMA/MP3 only

**Select a disc.**
1    Press [DISC].
2    Within 10 seconds:
     Press [1] - [5] to select the disc.

**3** **Press the numbered button(s) to select the track.**
- Example
  To select 12: [≧10] ➡ [1] ➡ [2]
  To select 123: [≧10] ➡ [≧10] ➡ [1] ➡ [2] ➡ [3]
- Repeat steps 2 and 3 to program other tracks.

**4** **Press [▶/❙❙ CD] or [▶/❙❙ SD].**
Program play will start.

| To | Action |
|---|---|
| cancel program play | Press [PROGRAM] in the stop mode. Programmed contents will be saved in memory.<br>• Your program is retained in memory if the system is unplugged. |
| replay your program | Press [PROGRAM] then [▶/❙❙ CD] or [▶/❙❙ SD]. |
| check program contents | Press [❙◀◀ ∨/REW] or [▶▶❙ ∧/FF] when "PGM" is displayed. |
| add to the program | Repeat steps 2 and 3. |
| clear the program | Press [■ STOP] in the stop mode. |

**When "PGM FULL" appears**
No further tracks can be programmed.

Note
- Times are not displayed while programming (CD/WMA/MP3).
- The program is not cleared even when you switch the unit to standby or select another source.
- The program is cleared when you remove the disc or the card.
- You can search forward or backward only within the current track.
- You cannot clear a specified track from the program.

| PLAY MODE<br>–REPEAT | **Random play** |

`CD` `WMA` `MP3` `SD`

**1** During stop
**Press [PLAY MODE, –REPEAT] to select the mode.**
Every time you press the button:

`CD`

1 DISC → ALL DISC → **1 DISC RND**
         ↑
         └── **ALL DISC RND** ◀───

`WMA` `MP3`

1 DISC ───→ ALL DISC ───→ 1 ALBUM
       ↑
       └── **ALL DISC RND** ◀── **1 DISC RND** ◀──

`SD`
PLAY MODE OFF ◀──▶ **RANDOM**

**2** **Press [▶/❙❙ CD] or [▶/❙❙ SD].**
Random play will start.

**To cancel**
While stopped, press [PLAY MODE, –REPEAT] to select "1 DISC", "ALL DISC", "1 ALBUM", or "PLAY MODE OFF".

Note
- You cannot skip to tracks which have been played.
- You can search forward or backward only within the current track.

| PLAY MODE<br>–REPEAT | **Repeat play** |

`CD` `WMA` `MP3` `SD`

Repeat play according to the current play mode.

During play
**Press and hold [PLAY MODE, –REPEAT] until "REPEAT ON" is displayed.**
"REP)" ["PGM)" in program play and "RND)" in random play] appears on the display.

**To cancel**
Press and hold [PLAY MODE, –REPEAT] until "REPEAT OFF" is displayed.
- Repeat play is canceled when the unit stops play.

Note
Repeat play is not possible when playing HighMAT discs according to a playlist order.

*Playing back*

**LIST/ENTER**

**LIST SELECT ▲, ▼**

**RETURN**

**STOP ■**

---
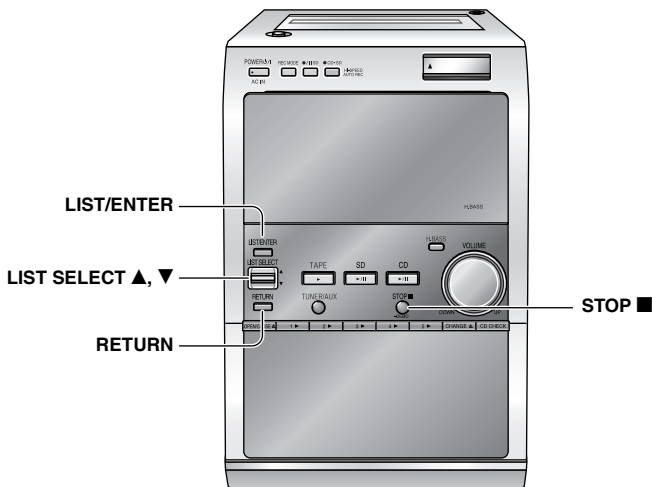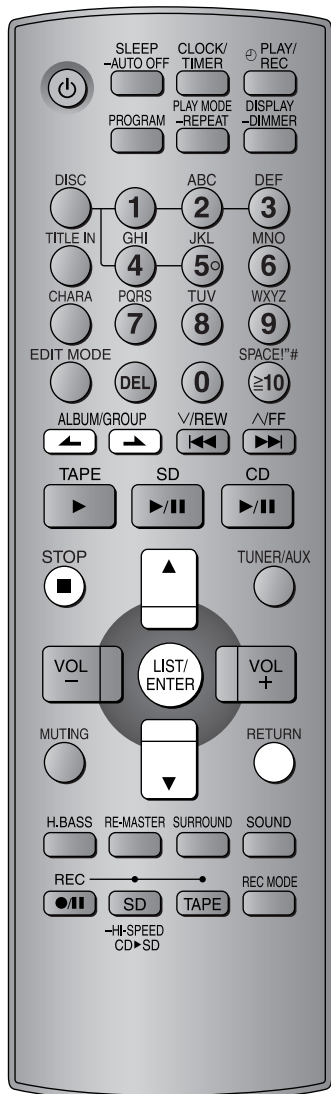
(LIST/ENTER) **Playing HighMAT discs**

WMA MP3
"HighMAT" appears to show that you can use these features.

Remote control
**1** During stop
**Press [LIST/ENTER].**
The CD selection screen appears.
**2 Press [▲] or [▼] to select the disc and press [LIST/ENTER].**
**3 Press [▲] or [▼] to select the method of play and press [LIST/ENTER].**

| HighMAT Menu | Find a playlist in the HighMAT menu |
| All Playlist | Select and play playlists |
| WMA/MP3 | Select and play WMA/MP3 |

**4 Press [▲] or [▼] to select the menu, playlist, or track and press [LIST/ENTER].**
Play starts when you select a playlist or track.

Main unit
1   Press [LIST/ENTER].
2   Turn [LIST SELECT ▲, ▼] control to select the disc and press [LIST/ENTER].
3   Turn [LIST SELECT ▲, ▼] control to select the method of play and press [LIST/ENTER].
4   Turn [LIST SELECT ▲, ▼] control to select the menu, playlist, or track and press [LIST/ENTER].

**To return to the previous display**
Press [RETURN].

**To select a group**
Press [◄─, ─► ALBUM/GROUP] during play.

**To cancel partway**
Press [■ STOP].
The original display appears.

**Note**
You cannot use this feature with program play, random play, and 1-Album modes.

# Cassette tapes

OPEN ▲     Cassette lid

▶ TAPE

LIST SELECT
▲, ▼

VOLUME
UP/DOWN

STOP ■

## 1 Press to open and insert a cassette.

OPEN ▲

Side to be played back facing up.
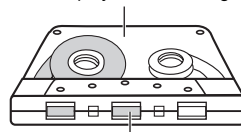
Insert the cassette with the exposed tape facing you.

- Make sure that the cassette is fully inserted and close the cassette lid by hand.
- The cassette tape indicator lights on the display.

## 2 Start play.

TAPE

- To play the other side of the tape, turn the tape over and restart play.

| | Remote control | Main unit |
|---|---|---|
| **Volume adjustment** | VOL −    VOL + | VOLUME DOWN UP |
| **Stop** | STOP ■ | STOP ■ −DEMO |
| **Fast-forward and rewind** (during stop) | ∨/REW ∧/FF | LIST SELECT ▲ ▼ |
| **Finding the beginning of a track (TPS: Tape Program Sensor)** (during play) | ∨/REW ∧/FF | LIST SELECT ▲ ▼ |
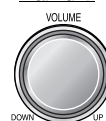
TPS finds the beginning of a track and resumes play from there. Each press increases the number of tracks skipped, up to a maximum of 9.

TPS may not operate correctly in the following situations:
- If the interval between tracks is less than 4 seconds.
- If there is noise between tracks.
- If there are silent parts within tracks.

---

### Cassette tape selection and care

**Use normal position tapes.**
High position and metal position tapes can be played, but the unit is not able to do full justice to the characteristics of these tapes.
- Tapes exceeding 100 minutes are thin and can break or get caught in the mechanism.
- Tape slack can get caught up in the mechanism and should be wound up before the tape is played.
- Endless tapes can get caught up in the deck's moving parts if used incorrectly.

*Playing back*



H.BASS indicator

H.BASS

| H.BASS | **H.BASS** |

You can enjoy more powerful bass on wide range speakers.

### Press [H.BASS].
Every time you press the button:

H.BASS 1 ⟶ H.BASS 2 ⟶ H.BASS OFF ⟶
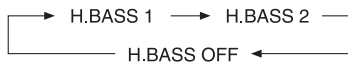
H.BASS 1: Add powerful bass (factory preset)
H.BASS 2: Further increases the power of the bass
• The H.BASS indicator lights on.

**Note**

• You cannot change H.BASS during recording.
• The effect may be less discernible with some sound sources.

| RE-MASTER | **Re-master — Enjoying more natural sound** |

WMA  MP3  SD
**Discs recorded at 32 kHz, 44.1 kHz or 48 kHz**
This feature reproduces the frequencies lost during recording to give you a sound closer to the original.

### During play
### Press [RE-MASTER].
Every time you press the button:

RE-MASTER OFF ⟷ **RE-MASTER ON**

**Note**

• You cannot change RE-MASTER during recording.
• This does not work when playing WMA files recorded to a SD card.

| SURROUND | **SURROUND** |
|---|---|

You can add natural width and depth to the stereo sound.

## Press [SURROUND].
Every time you press the button:

**SURROUND 1:** Natural effect

  ↓

**SURROUND 2:** Enhanced effect

  ↓

**SURROUND OFF:** Cancel (factory preset)
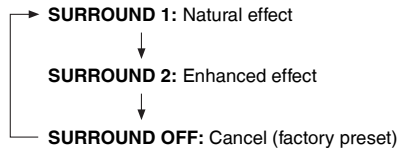
- This does not work or has less effect with some discs.
- Turn off if it causes distortion.
- Do not use in combination with surround effects on other equipment.
- You cannot change SURROUND during recording.

### ■ Optimum seating position

**Speaker**  →|  **A**  |←  **Speaker**

**3 to 4 times distance A**

**Seating position**
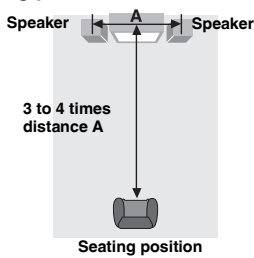
| SOUND | **Changing sound field and quality** |
|---|---|

### Preset EQ

## Press [SOUND].
Every time you press the button:

→ HEAVY → CLEAR → SOFT → VOCAL —
└—— FLAT ←————

**HEAVY** : Adds punch to rock (factory preset)
**CLEAR** : Clarifies higher sounds
**SOFT** : For background music
**VOCAL** : Adds gloss to vocal
**FLAT** : EQ off

### Manual EQ

**1 Press and hold [SOUND].**
"BASS" and "TREBLE" appear on the display.
**2 Press [SOUND] to select a setting.**
BASS ←→ TREBLE
**3 Press [▲] or [▼] while either "BASS" or "TREBLE" is flashing to change the level (–4 to +4) and press [LIST/ENTER].**

- You cannot change SOUND (Sound field and quality) during recording.

| MUTING | **Muting the volume** |
|---|---|

## Press [MUTING].
Volume is reduced to minimum.

**To cancel**
Press [MUTING] again or reduce the volume to minimum, then raise it to the required level.
Muting is also canceled when you switch the unit to standby.

*Playing back*

# The radio

## Manual tuning

**1 Select "FM" or "AM".**

TUNER/AUX

**FM → AM → AUX**

**2 Select "MANUAL".**

PLAY MODE
−REPEAT

**MANUAL ←→ PRESET**

**3 Select the frequency of the desired station.**

∨/REW    ∧/FF
[|◄◄]    [►►|]

**4 Adjust the volume.**

| VOL − |    | VOL + |

- Press and hold [|◄◄ ∨/REW] or [►►| ∧/FF] until the frequency starts scrolling to start automatic tuning. Tuning stops when a station is found.
- "STEREO" is displayed when a stereo FM broadcast is being received.

### ■ If noise is excessive in FM
Press and hold [PLAY MODE, −REPEAT] to display "MONO".
To cancel, press and hold [PLAY MODE, −REPEAT] again.
The mode also cancels when you change the frequency.

### ■ FM frequency step (main unit only)
You can change the frequency step (0.2 MHz or 0.1 MHz).
1. Select "FM".
2. Press and hold [TUNER/AUX] on the main unit.
   After a few seconds, "FM" starts flashing on the display. Continue to hold the button down. The minimum frequency changes and the step is changed.
   - To return to the original step, repeat the above steps.
   - Any preset stations are cleared by this procedure. Preset them again.

## Preset tuning

Preset channels to make selection simpler. Up to 15 stations can each be preset in the FM and AM bands.

### Automatic presetting

**1 Tune to the frequency where presetting is to begin.**
**(⇒ see above)**

**2 Press and hold.**

PROGRAM

- "AUTO MEMORY" starts flashing.
- The tuner presets the stations it can receive into the channels in ascending order. When finished, "SET OK" appears and the last station to be preset is played.

### Manual presetting

**1 Tune to the desired station. (⇒ see above)**

**2 Press.**

PROGRAM

"PGM" appears.

**3 Within 10 seconds:**
**Select the channel.**

ABC  DEF
(1) (2) (3)
GHI  JKL  MNO
(4) (5) (6)
PQRS TUV  WXYZ
(7) (8) (9)
           SPACE!"#
     (0) (≧10)

The station occupying a channel is erased if another station is preset in that channel.

### Selecting channels

1 Press [TUNER/AUX] to select "FM" or "AM".
2 Press [PLAY MODE, −REPEAT] to select "PRESET".
3 Press the numbered buttons or [|◄◄∨/REW] or [►►|∧/FF] to select the channel.

# Recording sources and media

| | | To: | | |
|---|---|---|---|---|
| | | SD card | | Cassette tape |
| From: | | Normal speed | High speed* | Normal speed |
| CD | A disc in play position | ⇒ page 24 | | ⇒ page 25 |
| | All discs in trays | ⇒ page 24 | | ⇒ page 25 |
| | 5CD auto recording | - | ⇒ page 25 | - |
| | Program recording | ⇒ page 25 | - | ⇒ page 25 |
| SD card | All tracks | - | - | ⇒ page 27 |
| | Program recording | - | - | ⇒ page 27 |
| Tape | | ⇒ page 26 | - | - |
| Radio | | ⇒ page 26 | - | ⇒ page 27 |
| AUX | | ⇒ page 35 | - | ⇒ page 35 |

*Please read "High-speed recording" below.

Note
You can only make digital recordings from CD to SD.

## Approximate recording time on SD Memory Card

You can use SD cards with capacities between 8MB and 1GB on this unit.
(⇒ page 6)

| SD card Capacity* | Recording mode | | |
|---|---|---|---|
| | XP: 128 kbps | SP: 96 kbps | LP: 64 kbps |
| 32 MB | 31 min. | 41 min. | 62 min. |
| 64 MB | 64 min. | 85 min. | 128 min. |
| 128 MB | 130 min. | 173 min. | 260 min. |
| 256 MB | 259 min. | 346 min. | 519 min. |
| 512 MB | 523 min. | 698 min. | 1047 min. |
| 1 GB | 1007 min. | 1343 min. | 2014 min. |

* Usable capacity will be less.
• The maximum number of tracks recordable in a SD card: 998
• Recording mode:
  XP: High quality mode
  SP: Normal mode
  LP: Long play mode

## High-speed recording

You can record at up to four times normal speed from a CD to a SD and up to two times normal speed from a CD-RW to a SD.
This means you can complete recording from a 74 minute CD in approximately 19 minutes.

### ■ Limitations on high-speed recording
This unit uses a copy management system to limit the use of high-speed recording.
• **You cannot use high-speed recording to record the same CD for a second time within 74 minutes of finishing the first high-speed recording.** (You can record at normal speed.)
  If you try to start high-speed recording again, "PLEASE WAIT XX MIN." appears on the display. ("XX" is the number of minutes you must wait before starting high-speed recording again.)
• **You can record up to 24 discs within 74 minutes.**
  If you finish recording 24 discs within approximately 74 minutes, you cannot start recording the twenty-fifth disc.

### ■ When recording at high-speed from CD to SD
Use Panasonic SD Memory cards with a transfer speed of 10 MB/sec or better (SUPER HIGH SPEED/PRO HIGH SPEED types) for best results.
• The maximum transfer speed may not be achieved or  high-speed recording may not be possible if you use other cards.
• See our homepage for details.
  **http://panasonic.co.jp/pavc/global/cs**
  (This site is in English only.)
• You can use any kind of SD Memory card when recording at normal-speed.

Note
• Depending on the condition of the disc, it may not be possible to record at four times normal speed or to high-speed record. Record the CD at normal speed.
• You cannot use high-speed recording when discs contain WMA/MP3 files.
• Discs are not recorded continually at four times normal speed. (Different parts of the disc are read at different speeds.)
• You will not hear sound when using high-speed recording.

# Recording CDs

REC MODE ●/II SD

● CD ► SD
HI-SPEED AUTO REC

►/II CD

TAPE ►

STOP ■

OPEN/CLOSE ▲

1 ► – 5 ►

CD lid
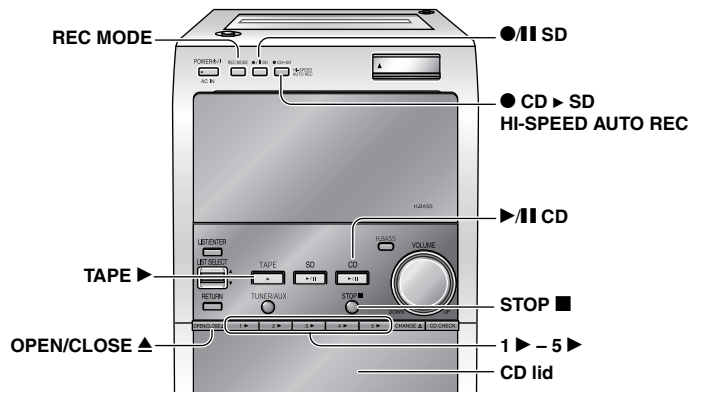
**Preparation**
Insert the SD card (⇒ page 8) or the cassette tape (⇒ page 19).
• Securely close the lid of the SD card slot. You cannot record if the lid is open.

## Recording to SD

(Normal recording/High-speed recording)

**1 Select the disc tray.**

| 1 ► | 2 ► | 3 ► | 4 ► | 5 ► |

The unit turns on automatically.

**2 Open the CD lid and insert the disc.**

OPEN/CLOSE ▲

Press [OPEN/CLOSE ▲] again to close the CD lid.

**3 Select the recording mode (XP/SP/LP).**
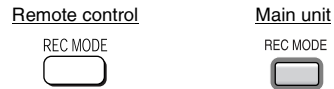
Remote control          Main unit

REC MODE                REC MODE

Every time you press the button:

┌► XP → SP → LP ┐

**4** During stop
**Select "1 DISC" or "ALL DISC".**

PLAY MODE
–REPEAT

Every time you press the button:

┌►**1 DISC** → **ALL DISC** → 1 DISC RND → ALL DISC RND ┐

• You cannot select RANDOM modes when recording.

1 DISC: To record one disc
ALL DISC: To record all the discs

**5** For normal recording
Remote control

REC
●/II    +    SD
        –HI-SPEED
        CD►SD
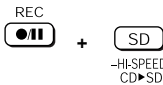
**While pressing [●/II REC], press [SD, -HI-SPEED CD ► SD] to start recording.**

Main unit
●/II SD

**Press [●/II SD] to start recording.**

For high-speed recording
Remote control only

REC
●/II    +    SD
        –HI-SPEED
        CD►SD

**While pressing [●/II REC], press and hold [SD, -HI-SPEED CD ► SD] for two seconds or longer to start recording.**

---

**To stop**
Press [■ STOP].

**To display the remaining time on the SD**
Press [DISPLAY, –DIMMER] several times.
The remaining time depends on the selected recording mode (XP/SP/LP).

| Note |

• WMA/MP3 files are automatically recorded in analog.
• This unit records CDs to SD in AAC format.
• Do not open the lid while recording. This may cause recording to stop or the data may not be correctly recorded onto the SD card.
  If you accidentally open the cover when recording from a CD, reinsert the SD card and check your recording. If there is a problem, delete what was recorded, then do the recording again.
• You can use SD cards with capacities between 8MB and 1GB on this unit. (⇒ page 6)

■ **To automatically create playlists during high-speed recording of all the discs in trays**
⇒ **page 25, 5CD auto recording**

## 5CD auto recording (CD ➡ SD)

(High-speed recording only)

This function high-speed records all loaded CDs in succession from the first tray onto a SD card with one-touch.
• All tracks on one CD are recorded as one playlist.
• All titles on the CDs (⇒ page 31) are copied to the SD.

**1 Insert the CD and select the recording mode. (perform steps 1 to 3 on page 24.)**

**2 Select "CD" as the source.**

CD [►/II] ➡ STOP [■]

**3 Start recording.**

● CD▸SD
HI-SPEED AUTO REC

• Recording starts after the information from all the discs has been read.

#### Note

• Program and random modes are canceled.
• If there is not enough space to record all the tracks, the amount recorded is displayed for approximately 6 seconds.
(The example below indicates that all the tracks until the tenth one on the fifth disc were recorded)
"REC UNTIL DISC 5 TRACK 10"
You can cancel AUTO REC by pressing [■ STOP] while this is displayed. You may be able to fit all the tracks on the SD card if you change the recording mode.
• When "REC RETRY" is displayed
The unit was not able to read the information from the discs properly and is automatically recording again. Do not press any buttons while this is displayed.

## Program recording

(Normal recording only)

Program record allows you to specify the tracks to be recorded to SD or cassette tape.

**1 Insert the CD and select the recording mode. (perform steps 1 to 3 on page 24.)**

**2 Select "CD" as the source.**

CD [►/II] ➡ STOP [■]

**3 Program the desired tracks. (⇒ page 17, Program play, steps 1 to 3)**

**4** For recording to SD
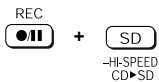
REC [●/II] + SD –HI-SPEED CD▸SD    **While pressing [●/II REC], press [SD, -HI-SPEED CD ► SD] to start recording.**

For recording to tape

REC [●/II] + TAPE    **While pressing [●/II REC], press [TAPE] to start recording.**

## Recording to cassette tape

(Normal recording only)

**Preparation**
Wind up the leader tape so recording can begin immediately.

**1 Select the disc tray.**

1 ►    2 ►    3 ►    4 ►    5 ►

The unit turns on automatically.

**2 Open the CD lid and insert the disc.**

OPEN/CLOSE ▲

Press [OPEN/CLOSE ▲] again to close the CD lid.

**3 During stop
Select "1 DISC" or "ALL DISC".**

PLAY MODE
–REPEAT

Every time you press the button:

➡ **1 DISC** ➡ **ALL DISC** ➡ 1 DISC RND ➡ ALL DISC RND ↴

• You cannot select RANDOM modes when recording.
1 DISC: To record one disc
ALL DISC: To record all the discs
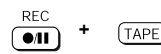
**4** REC [●/II] + TAPE    **While pressing [●/II REC], press [TAPE] to start recording.**

• Recording starts from the first track and automatically stops when play stops.
• To record the other side, turn the tape over.
• Recording automatically stops when play stops on the CD or the end of the side of the tape being recorded to is reached.

**To erase a recorded sound**
1 Press [TAPE ►] and then [■ STOP].
2 Insert the recorded cassette with the tape facing out.
3 While pressing [●/II REC], press [TAPE].

---

#### ■ Regarding cassette tapes

• Use normal position tapes.
High position and metal position tapes can be used, but the unit will not be able to record or erase them correctly.

• Volume, surround effects, sound field and quality
– Recording level is set automatically.
– The volume, sound field and quality have no effect on recording. They can be adjusted for playback.

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

Side A

Tab for side B        Tab for side A
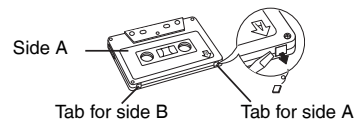
To record on the tape again, cover the hole with adhesive tape.

Adhesive tape
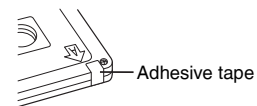
# Recording from cassette tape/the radio to SD

**Preparation**
1 Insert the SD card. (⇒ page 8)
   • Securely close the lid of the SD card slot. You cannot record if the lid is open.
2 Press [REC MODE] to select the recording mode.

## Recording from cassette tape

(Normal recording only)

**1 Insert the cassette tape. (⇒ page 19)**

**2 Select "TAPE" as the source.**

TAPE ► ➔ STOP ■

**3 Select the recording method.**

EDIT MODE

Every time you press the button:
MANUAL: Normal recording

⇕

TIME MARK: Track marks are inserted automatically every five minutes.

**4** REC ●/❚❚ + SD –HI-SPEED CD►SD **While pressing [●/❚❚ REC], press [SD, -HI-SPEED CD ► SD] to start recording.**
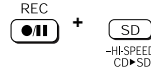
• When recording from cassette tape, recording automatically stops when the end of the side of the tape being recorded from is reached. To record from the other side, turn the tape over.

## Recording from the radio

(Normal recording only)

**1 Tune to the station. (⇒ page 22)**

**2 Select the recording method.**

EDIT MODE

Every time you press the button:
MANUAL: Normal recording

⇕

TIME MARK: Track marks are inserted automatically every five minutes.

**3** REC ●/❚❚ + SD –HI-SPEED CD►SD **While pressing [●/❚❚ REC], press [SD, -HI-SPEED CD ► SD] to start recording.**
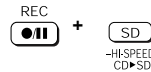
• Do not open the lid while recording. This may cause recording to stop or the data may not be correctly recorded onto the SD card. If you accidentally open the cover when recording from the radio, recording stops.

---

**To stop**
Press [■ STOP].

**To pause**
While pressing [●/❚❚ REC], press [SD, -HI-SPEED CD ► SD].
The SD pauses and the cassette tape or radio continues playing. ("REC" flashes on the display.)
Press again to restart recording.
A track mark is added (⇒ right).

**To display the remaining time on the SD**
Press [DISPLAY, –DIMMER] several times.

**Note**
You can use SD cards with capacities between 8MB and 1GB on this unit. (⇒ page 6)

### ■ Adding track marks on the SD
You can add track marks where the track changes on the cassette tape or radio. These marks separate tracks in a recording. They can be added automatically or manually during recording.

During recording
EDIT MODE

"TR MARKING" is shown on the display and a track mark is added.

# Recording from SD/the radio to cassette tape

**Preparation**
Insert the SD card ($\Rightarrow$ page 8) or the cassette tape. ($\Rightarrow$ page 19)

## Recording from SD

(Normal recording only)
**1** **Select "SD" as the source.**

SD [▶/❙❙] ➡ STOP [■]

**2** REC [●/❙❙] + [TAPE] **While pressing [●/❙❙ REC], press [TAPE] to start recording.**

## Recording from the radio

(Normal recording only)
**1** **Tune to the station ($\Rightarrow$ page 22).**

**2** REC [●/❙❙] + [TAPE] **While pressing [●/❙❙ REC], press [TAPE] to start recording.**

## Program recording

(Normal recording only)
Program record allows you to specify the tracks to be recorded to tape.

**1** **Select "SD" as the source.**

SD [▶/❙❙] ➡ STOP [■]

**2** **Program the desired tracks. ($\Rightarrow$ page 17, Program play, steps 1 to 3)**

**3** REC [●/❙❙] + [TAPE] **While pressing [●/❙❙ REC], press [TAPE] to start recording.**

**To stop**
Press [■ STOP].

**To pause (recording from the radio)**
While pressing [●/❙❙ REC], press [TAPE].
The cassette tape pauses and the radio continues playing. ("REC" flashes on the display.)
Press again to restart recording.

Note
- Recording automatically stops when the end of the side of the tape being recorded to is reached. To record the other side, turn the tape over.
- When recording an AM broadcast, sound is momentarily interrupted when you start and stop the recording.
- You cannot select RANDOM mode when recording.

Note
You can use SD cards with capacities between 8MB and 1GB on this unit. ($\Rightarrow$ page 6)

*Recording*

RQT8046

27

# Editing SDs

**Preparation**
1　Insert the SD card. (⇒ page 8)
   • Securely close the lid of the SD card slot. You cannot edit if the lid is open.
2　Press [▶/ll SD] and then [■ STOP] to select "SD" as the source.

**To stop partway**
Press [■ STOP].

**Note**

• Do not open the SD card lid while editing as the operation in progress stops and the editing is not completed properly.
  If you accidentally open the cover when editing an SD card, reinsert the card and check what you have edited. If there is a problem, delete what was edited, then do the editing again.
• You can use SD cards with capacities between 8MB and 1GB on this unit. (⇒ page 6)

## Erasing tracks — TRACK ERASE/ALL ERASE

### TRACK ERASE

**1** During stop or play
**Select "TRACK ERASE?".**
EDIT MODE

Every time you press the button:
→ **TRACK ERASE?** → ALL ERASE? → MOVE?
← PLAYLIST? ← CARD FORMAT? ←

**2 Press [LIST/ENTER].**

**3 Press [I◀◀ ∨/REW, ▶▶I ∧/FF] to select the track to erase and press [LIST/ENTER].**
   • Repeat this step to select other tracks (up to 24 tracks).
   • During play, the current track is selected.

**4 Press [LIST/ENTER].**
When "CARD Writing" stops flashing editing is complete.

### ALL ERASE

All the SD-Audio tracks on the card are erased.

**1** During stop
**Select "ALL ERASE?".**
EDIT MODE

Every time you press the button:
→ TRACK ERASE? → **ALL ERASE?** → MOVE?
← PLAYLIST? ← CARD FORMAT? ←

**2 Press [LIST/ENTER].**

**3 Press [LIST/ENTER].**
   • When "CARD Writing" stops flashing editing is complete.
   • If you erase all the tracks, "NO TRACK" is displayed.
   • Editing SDs may take time when erasing a lot of tracks at one time or when erasing tracks in multiple playlists.

## Moving tracks — MOVE

**1** During stop or play
**Select "MOVE?".**
EDIT MODE

Every time you press the button:
→ TRACK ERASE? → ALL ERASE? → **MOVE?**
← PLAYLIST? ← CARD FORMAT? ←

**2 Press [LIST/ENTER].**

**3 Press [I◀◀ ∨/REW, ▶▶I ∧/FF] to select the track to be moved and press [LIST/ENTER].**
During play, the current track is selected.

**4 Press [I◀◀ ∨/REW, ▶▶I ∧/FF] to select the new position and press [LIST/ENTER].**

**5 Press [LIST/ENTER].**
When "CARD Writing" stops flashing editing is complete.

## Formatting a card — CARD FORMAT

Formatting erases all the contents of the card and not only the tracks recorded using this unit. Once erased, the contents of the card are lost and cannot be restored. Make certain before proceeding.
- When a card is formatted using this unit, it may not be possible to use it on other equipment.

**1** During stop

**Select "CARD FORMAT?".**

EDIT MODE
◯

Every time you press the button:

→ TRACK ERASE? → ALL ERASE? → MOVE? ─┐
└─ PLAYLIST? ← **CARD FORMAT?** ←

**2** **Press [LIST/ENTER].**

**3** **Press [LIST/ENTER].**

- When "CARD Writing" stops flashing editing is complete.
- Do not open the card lid until "NO TRACK" is displayed. This can render the card unusable.
- Formatting may take time depending on the type of card.

## Editing playlists — PLAYLIST

**Playlists**
You can arrange recorded tracks in the order you want to play them.

| Track | Track | Track | Track |
|-------|-------|-------|-------|

Playlist | Track | Track |
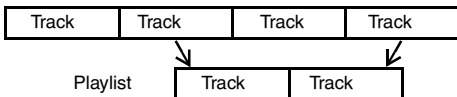
- Playlists only register the order of play so this doesn't use much capacity.
- Editing tracks on playlists doesn't modify the recorded data.
- The maximum number of items on a card
  Playlists: 99
  Tracks in playlists: 99

**Preparation**

**1** During stop

**Select "PLAYLIST?".**

EDIT MODE
◯

Every time you press the button:

→ TRACK ERASE? → ALL ERASE? → MOVE? ─┐
└─ **PLAYLIST?** ← CARD FORMAT? ←

**2** **Press [LIST/ENTER].**

**3** **Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select the playlist operation and press [LIST/ENTER].**

- **Playlist operations**
  PLAYLIST?
  ├─**PL EDIT?** : To add tracks to/erase tracks from playlists — PL EDIT (⇒ right)
  ├─**PL ERASE?** : To erase playlists — PL ERASE (⇒ right)
  ├─**PL CREATE?** : To create a new playlist — PL CREATE (⇒ right)
  └─**PL TITLE?** : Entering a playlist title. (⇒ page 31)

---

### To create a new playlist — PL CREATE

**4** **Press the numbered buttons to select the track.**
- Example:
  **To select 12**
  [≧10] ➡ [1] ➡ [2]
  **To select 123**
  [≧10] ➡ [≧10] ➡ [1] ➡ [2] ➡ [3]
- Repeat this step to select other tracks (up to 99 tracks).

**5** **Press [LIST/ENTER].**

**6** **Enter the name (⇒ page 30) and press [LIST/ENTER].**
When "CARD Writing" stops flashing editing is complete.

---

**To play a playlist**

---

### To erase playlists — PL ERASE

**4** **Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select the playlist and press [LIST/ENTER].**

**5** **Press [LIST/ENTER].**
When "CARD Writing" stops flashing editing is complete.

---

### To add tracks to/erase tracks from playlists — PL EDIT

If you erase all the tracks in a playlist, the playlist is also erased.

**4** **Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select the playlist and press [LIST/ENTER].**

**To add tracks**
1 Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select where to add the track. The track currently in this position becomes the next track in the order of play.
2 Press the numbered buttons to select the track.
   Example:
   To select 12: [≧10] ➡ [1] ➡ [2]
   To select 123: [≧10] ➡ [≧10] ➡ [1] ➡ [2] ➡ [3]

**To erase tracks**
Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select the track and press [DEL].

**5** **Press [LIST/ENTER].**
When "CARD Writing" stops flashing editing is complete.

---

**To check tracks placed in a playlist**
Press [|◀◀ ∨/REW, ▶▶| ∧/FF].

# Entering titles

You can enter titles for discs, tracks, artists and playlists.

**Note**

The maximum number of characters per title: 32

**Preparation**

Show Enter Name screen. (⇒ page 31)

### Entering characters

**1 Press [CHARA] to select upper-case, lower-case, or numeric characters.**

**2 Press the numbered button to select the character.**

The characters change each time you press a button.

| Button | Characters | Button | Characters |
|--------|------------|--------|------------|
| 1 | 1 | 6 | M N O m n o 6 |
| 2 | A B C a b c 2 | 7 | P Q R S p q r s 7 |
| 3 | D E F d e f 3 | 8 | T U V t u v 8 |
| 4 | G H I g h i 4 | 9 | W X Y Z w x y z 9 |
| 5 | J K L j k l 5 | 0 | 0 |
| ≧10 | space ! ” # $ % & ’ ( ) * + , - . / : ; < = > ? @ [ \ ] ^ _ ` { | } ~ | | |

☐ : For SD only

**3 Press [ ⏴ ALBUM/GROUP] to enter the character.**

Repeat steps 1 through 3 to enter the title.

---

**To move the cursor**

Press [⏴, ⏵ ALBUM/GROUP].

**To insert characters**

Press [⏴ ALBUM/GROUP] to move the cursor and then enter the correct character.

**To delete a character**

Move the cursor over the character and press [DEL].

**To stop partway**

Press [■ STOP].

**To change a title**

Enter the title again from the beginning.



*Editing*

## Entering titles on a CD (CD title memory)

The unit can record the disc titles for 100 CDs, 25 track titles per CD.

**Preparation**
1 Insert the CD. (⇒ page 8)
2 Press [▶/‖ CD] and then [■ STOP] to select "CD" as the source.
3 To select a CD
  Press [DISC], then press the numbered button to select the CD and
  press [■ STOP].

**1 Press [TITLE IN].**
**2 Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select the title
  type (Disc title/Artist name/Track title), track
  number, etc. and press [LIST/ENTER].**
**3 Enter the characters (⇒ page 30) and press [LIST/ENTER].**
  Repeat steps 2 and 3 as necessary.
**4 Press [TITLE IN].**
  The title name is entered.

**To stop partway**
Press [TITLE IN].

**To check titles**
Press [DISPLAY, –DIMMER] several times while stopped.
Track titles appear during play or when you skip tracks while stopped.
(Nothing is shown if you only enter spaces.)

**To delete titles**
1 During stop, press [EDIT MODE].
  "TITLE ERASE?" appears.
2 Press [LIST/ENTER].
3 Press [▲, ▼] to select the title and press [LIST/ENTER].
  "TITLE ERASE?" and "PRESS ENTER" alternately appear.
4 Press [LIST/ENTER].
  The title is erased after "COMPLETE" is displayed. All the titles you
  entered for the disc are deleted.
  Repeat to delete the titles on other CDs.
  To cancel, press [■ STOP].

## Entering titles on a SD after recording

**Preparation**
1 Insert the SD card. (⇒ page 8)
  • Securely close the lid of the SD card slot. You cannot edit if the lid is
    open.
2 Press [▶/‖ SD] and then [■ STOP] to select "SD" as the source.

**1 Press [TITLE IN].**
**2 Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select the track
  number and press [LIST/ENTER].**
**3 Enter the track title (⇒ page 30) and press [LIST/ENTER].**
**4 Enter the artist name (⇒ page 30) and press [LIST/ENTER].**
  Repeat steps 2 through 4 as necessary.
**5 Press [TITLE IN].**
  When "CARD Writing" stops flashing editing is complete.

**To stop partway**
Press [TITLE IN].

**Note**
• Do not open the SD card lid while editing as the operation in progress
  stops and the editing is not completed properly.
• You can use SD cards with capacities between 8MB and 1GB on this
  unit. (⇒ page 6)

## Entering a playlist title

**Preparation**
1 Insert the SD card. (⇒ page 8)
  • Securely close the lid of the SD card slot. You cannot edit if the lid is
    open.
2 Press [▶/‖ SD] and then [■ STOP] to select "SD" as the source.

**1 Press [EDIT MODE] to select "PLAYLIST?" and
  press [LIST/ENTER].**
**2 Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select "PL
  TITLE?" and press [LIST/ENTER].**
**3 Press [|◀◀ ∨/REW, ▶▶| ∧/FF] to select the playlist
  and press [LIST/ENTER].**
**4 Enter the characters (⇒ page 30) and press [LIST/ENTER].**
  When "CARD Writing" stops flashing editing is complete.

**To stop partway**
Press [■ STOP].

**Note**
• Do not open the SD card lid while editing as the operation in progress
  stops and the editing is not completed properly.
• You can use SD cards with capacities between 8MB and 1GB on this
  unit. (⇒ page 6)

*Editing*

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| CLOCK/<br>TIMER | **Setting the time** |

**1 Press [CLOCK/TIMER] to select "CLOCK".**

Every time you press the button:

**CLOCK** → ⏰PLAY → ⏰REC
Original display
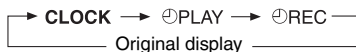
**2 Within 10 seconds:**
**Press [◄◄ ∨/REW, ►► ∧/FF] to set the day and press [LIST/ENTER].**

Every time you press the button:

MON ◄► TUE ◄► WED◄► THU◄
SUN ◄—► SAT ◄—► FRI ◄
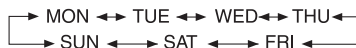
**3 Press [◄◄ ∨/REW, ►► ∧/FF] to set the time and press [LIST/ENTER].**

• Press and hold to change the time faster.
The time is set and the original display is restored.

---

**To display the clock**
When the unit is on, press [CLOCK/TIMER].
When the unit is off, press [DISPLAY, –DIMMER].

**To stop partway**
Press [■ STOP].

Note

• This is a 12-hour clock.
• Reset the clock regularly to maintain accuracy.
• If you set the clock, the demo function will turn off automatically.
• If there is a power failure or the plug is disconnected from the AC outlet, set this again.

| SLEEP<br>–AUTO OFF | **Auto-off function** |

(When disc, card or tape is selected as the source and the unit is stopped)
The unit turns off to save power if it is left unused for 10 minutes.

**Press and hold [SLEEP, –AUTO OFF] until "AUTO OFF" is displayed.**

Every time you press the button:
AUTO OFF ⇄ SCREEN SAVER (Auto off cancel) (⇒ page 12)
This function does not work if the source is tuner or AUX.

| SLEEP<br>–AUTO OFF | **The sleep timer** |

This timer turns the unit off after a set time.

While enjoying the desired source:

**Press [SLEEP, –AUTO OFF] to select the time (minutes).**

Every time you press the button:

SLEEP 30 → SLEEP 60 → SLEEP 90 → SLEEP 120 → SLEEP OFF

---

**To cancel the sleep timer**
Press [SLEEP, –AUTO OFF] to select "SLEEP OFF".

**To confirm the remaining time**
Press [SLEEP, –AUTO OFF] once.
The remaining time is shown for about 5 seconds.

You can use the sleep timer in combination with the play/record timer.
Make sure the unit is off before the play/record timer's start time.

## CLOCK/TIMER — The play/record timer

You can set the timer to come on at a certain time to wake you up (play timer) or to record a radio station or from the external source (record timer).
The play and record timers cannot be used together.

**Preparation**
1  **Switch on the unit and set the clock.** (⇒ Setting the time, page 32)
2  **For the play timer**
   Prepare the desired source (CD, SD, tape, radio, or external), and set the volume.
   **For the record timer**
   – To record to SD:
     Check the card's write-protect switch (⇒ To protect your data, page 7) and insert the card (⇒ page 8).
     To record to cassette tape:
     Check the cassette's erasure prevention tabs (⇒ Erasure prevention, page 25) and insert the tape (⇒ page 19).
   – Tune to the radio station (⇒ page 22) or select the external source (⇒ page 35).

### 1  Press [CLOCK/TIMER] to select the timer function.
Every time you press the button:

→ CLOCK → ⊕**PLAY** → ⊕**REC** →
         Original display ←

⊕PLAY: To set the play timer
⊕REC: To set the record timer

### 2  Within 10 seconds:
**Press [◄◄ ∨/REW, ►►I ∧/FF] to set the day and press [LIST/ENTER].**
Every time you press the button:

→ SUN ←→ MON ←→ TUE ←→ WED ←→ THU ←→ FRI ←→ SAT ←
→ SAT, SUN ←→ MON to FRI ←→ MON to SAT ←→ SUN to SAT ←

▨ : For the play timer only

### 3  ON time setting
**Press [◄◄ ∨/REW, ►►I ∧/FF] to set the start time and press [LIST/ENTER].**

### 4  OFF time setting
**Press [◄◄ ∨/REW, ►►I ∧/FF] to set the finish time and press [LIST/ENTER].**
The start and finish times are now set.

### 5  Press [⊕ PLAY/REC] to display the timer indicator.
⊕ PLAY: To turn the play timer on
⊕ REC-SD: To turn the record timer on (Recording to SD)
⊕ REC-TAPE: To turn the record timer on (Recording to cassete tape)
(The indicator doesn't appear if the start and finish times or the clock have not been set.)

### 6  Press [⏻] to turn the unit off.
**The unit must be off for the timers to operate.**
  • **Play timer:** Play will start in the set condition at the set time with volume increasing gradually to the set level.
  • **Record timer:** The unit comes on 30 seconds before the set time with the volume muted.

**To cancel the timer**
Press [⊕ PLAY/REC] to select "TIMER OFF".
(The timer comes on as set if the timer is on.)

**To check the settings**
Press [CLOCK/TIMER] while the unit is on to select "⊕ PLAY" or "⊕ REC".

**To check the settings while the unit is off**
Press [CLOCK/TIMER].

**If you use the unit after the timers are set**
After using, check that the correct disc, card or tape is loaded before turning the unit off.

## Changing the timer settings

(when the unit is on)

**To change the play/record times**
Do steps 1, 2, 3, 4 and 6. (⇒ left)

**To change the source or volume**
1. Press [⊕ PLAY/REC] to clear the timer indicator from the display.
2. Make changes to the source or volume. (⇒ left, Preparation)
3. Do steps 5 and 6. (⇒ left)

**To change the timer**
Press [⊕ PLAY/REC] to select the desired timer.
Every time the button is pressed:

→ ⊕ PLAY → ⊕ REC-SD → ⊕ REC-TAPE → TIMER OFF →

---
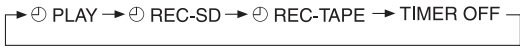
**Note**

• If you turn the unit off and on again while a timer is functioning, the finish time setting will not be activated.
• If you selected AUX as the source, when the timer comes on, the unit turns on and engages "AUX" as the source. If you want to playback or record from a connected unit, set that unit's timer to the same time. (See the connected unit's operating instructions.)

## DISPLAY –DIMMER — Displaying information

Show various types of information during play or recording.

### Press [DISPLAY, –DIMMER].
• Items shown differ depending on the current operation and sound source.

## DISPLAY –DIMMER — Dimming the display

Use this when you are going to sleep or any other time you would prefer to dim the display panel.

### Press and hold [DISPLAY, –DIMMER].
To return to the original brightness, press and hold [DISPLAY, –DIMMER] again.

*Convenient functions*

# Using other equipment

**Before connection**
- Disconnect the AC power supply cord.
- Turn off all equipment and read the appropriate operating instructions.
- The equipment connections described are examples only.

## Using an external unit

You can playback the sound from a video cassette recorder, tape deck, laser disc player, etc., through this unit's speakers.
- **Peripheral cables and equipment are sold separately unless otherwise indicated.**

AUX

**Audio cable**

R  L
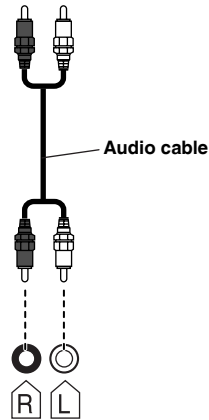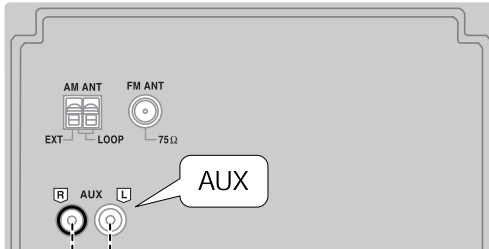
**AUDIO OUT**
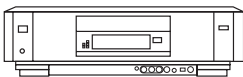
**Video cassette recorder**

**Television**

- **To change the input level (⇒ page 35)**

## Other antenna connections

Use outdoor antennas if radio reception is poor.

### FM outdoor antenna (using a television antenna)

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

Rework your outdoor antenna's 75 Ω coaxial cable as follows.

FM outdoor antenna

FM ANT

75 Ω

**75 Ω coaxial cable**

**Antenna plug**
(not included)

### AM outdoor antenna

AM outdoor antenna

5 m to 12m

AM ANT

EXT    LOOP

**❶**

**❷**

AM loop antenna (included)
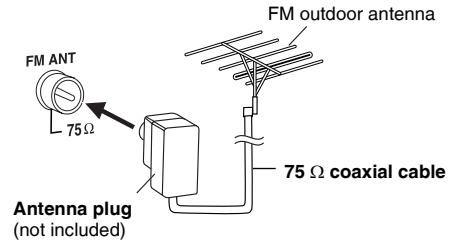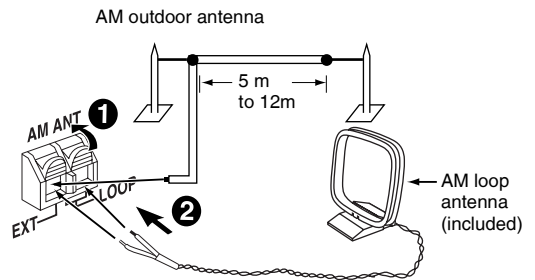
- Run a piece of vinyl wire horizontally across a window or other convenient location.
- Leave the loop antenna connected.

**Note**
Disconnect the outdoor antenna when the unit is not in use. Do not use the outdoor antenna during a lightning storm.

**Preparation**
1  Connect the external unit (⇒ page 34).
2  Turn on the power.
3  Insert the SD card (⇒ page 8) or the cassette tape (⇒ page 19).
4  If recording to SD card, press [REC MODE] to select XP, SP or LP mode.
• With satellite and cable sources, tune to the desired broadcasting station.

**Recording to cards**

(Normal recording only)

**1  Press [TUNER/AUX] to select "AUX".**

**2  Press [EDIT MODE] to select a recording method.**

> MANUAL
>
> SYNCHRO:    Recording starts automatically when you start play on the connected equipment.
>
> TIME MARK:  A track mark is automatically added every 5 minutes.
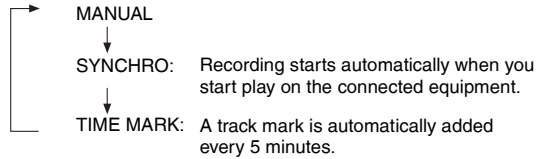
**3  While pressing [●/❚❚ REC], press [SD, -HI-SPEED CD ▶ SD].**

MANUAL/TIME MARK: Recording starts.
SYNCHRO: Goes to recording standby.

**4  Start play on the external source.**

When you have selected "SYNCHRO", recording starts when a signal from the sound source is received

**Recording to cassette tapes**

(Normal recording only)

**1  Press [TUNER/AUX] to select "AUX".**

**2  While pressing [●/❚❚ REC], press [TAPE] to start recording.**

**3  Start play on the external source.**

(For details, refer to the external unit's operating instructions.)

**To change the input level**
Before recording external sources with low volume to a SD card or a cassette tape
1  Start play on the external source.
2  Press [TUNER/AUX] to select "AUX".
3  Press [PLAY MODE, –REPEAT].
   HIGH ↔ NORMAL

**Note**
• There may be an error in the recording time depending on the sound source and the recording method.
• When you have selected "SYNCHRO", recording pauses if a 3-second silence is detected, then starts again when play starts. A track mark is added at the point recording starts.
• Depending on the type of tracks being recorded, the beginning of tracks may be cut off or recording of tracks with low volume may stop partway when you have selected "SYNCHRO" mode. Select "MANUAL" if this happens.
• Recording automatically stops when the end of the side of the tape being recorded to is reached.

**Note**
You can use SD cards with capacities between 8MB and 1GB on this unit. (⇒ page 6)

*Convenient functions*

# Even more fun with SD

You can record music to SD card on this unit and then play it on a SD audio player or save it to computer. You can also write music saved on your computer to SD card and play it on this unit or other equipment like a SD audio player.
- You can use SD cards with capacities between 8MB and 1GB on this unit. (⇒ page 6)

## Listening on portable equipment

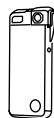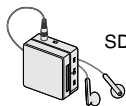You can enjoy playback on an AAC compatible SD audio player, etc.
(⇒ page 39, Additional accessories)

SD Multi Camera
(D-snap)

SD Audio Player

**Note**
- Although your television, DVD recorder or digital camera may have a SD card slot, it must support the SD audio format to enjoy playback.
- Compatibility with products from other manufacturers
  Confirm that the SD audio player can play the AAC format.

## Using a computer

You can save SD tracks (audio data) to your computer, edit titles, make and edit playlists and write tracks on your computer to a SD card by using the Panasonic SD-Jukebox software (included).
You need the Panasonic SD-Jukebox software and a Windows computer with a CPRM (Content Protection for Recordable Media) compatible SD card slot. [You need a SD Memory CARD Reader Writer (not included) if your computer does not have a SD card slot or the SD card slot is not CPRM compatible.]

Install SD-Jukebox (included).
(⇒ right)

A SD Memory CARD Reader Writer (not included) may be necessary.

SD card
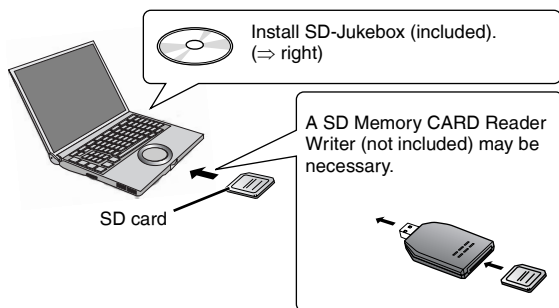
## SD-Jukebox

SD-Jukebox is a software program for recording and managing music CDs on your PC and transferring recorded tracks to a SD Memory Card so you can enjoy the music on your player.

### Important SD-Jukebox usage information

SD-Jukebox incorporates copyright protection technology using encryption technology in order to protect copyrights, to ensure the healthy development of music culture, and to protect the rights of valid purchasers.

- Unique information pertaining to your PC's processor and hard disk drive is used in the encryption process. Therefore, if either the processor or hard disk drive is replaced, previously created music data will no longer be available for use.
- Depending on your computer system, you may experience problems such as being unable to record or use recorded music data. Please note that Panasonic is in no way liable for any music data you lose, or for any other direct or indirect damages.
  – SD-Jukebox cannot work with MMC (MultiMediaCard).

### Installing SD-Jukebox

SD-Jukebox can be found on the included CD-ROM. Follow these steps to install it.

**1 Turn on the computer and start Windows.**
**2 Insert the included CD-ROM into the CD-ROM drive.**
   The installer program starts automatically.
**3 Follow the on-screen instructions.**
**4 Click on "Finish".**
   The SD-Jukebox icon appears on the desktop.

**Note**
If the installation does not start automatically on your computer, follow these steps: From the Windows "start" menu, choose "Run". The "Run" dialog box will open. Type "#:\autorun.exe" and click on "OK". (#: Use the correct CD-ROM drive ID.)

Important: The Serial No. included with the CD is required for the installation of this software onto your PC. Please file the Serial No. in a safe place in case the software needs to be reinstalled.

### Using the PDF Operating Instructions for SD-Jukebox

The operating instructions for SD-Jukebox are installed along with the application as a PDF.
To open the PDF from the "start" menu, select "All Programs" ➡ "Panasonic" ➡ "SD-Jukebox V5" ➡ "SD-Jukebox V5 Operating Instructions".
- You will need Adobe Acrobat Reader to read the file containing the operating instructions.
- Install Adobe Acrobat Reader from the included SD-Jukebox CD-ROM if you do not have it or if your version cannot correctly open the file. From the "start" menu, select "Run...", then select the .exe file for installing Acrobat Reader from the CD-ROM.

### Starting SD-Jukebox

**Double click on the SD-Jukebox icon on the desktop.**
SD-Jukebox starts and the main window is shown.
**For your reference**
If the icon is not on the desktop, from the "start" menu, select "All Programs" ➡ "Panasonic" ➡ "SD-Jukebox V5" ➡ "SD-Jukebox V5".

*Convenient functions*

## System Requirements

| Personal computer | IBM PC/AT compatible personal computer |
|---|---|
| OS | Windows® 2000 Professional SP2, 3, 4<br>Windows® XP Home Edition/Professional, or SP1, 2 |
| CPU | Intel® Pentium® III 500 MHz or higher |
| RAM | 256 MB or more |
| Display | High Color (16 bit) or more<br>Desktop resolution of 800 x 600 pixels or more (1024 x 768 pixels or more recommended) |
| Free hard disk space | 100 MB or more |
| Necessary software | DirectX® 8.1 or later |
| Sound | Windows compatible sound device |
| Drive | CD-ROM drive<br>A CD-ROM drive capable of digital recording is required. Four-speed or higher is recommended. (Recording can not work properly with CD-ROM drives connected through an IEEE1394 connection.) |
| Interface | USB port (When devices are connected through USB hub or by using USB extension cable, operation is not guaranteed.) |
| Other requirements | If you are using the CDDB function, then an Internet connection is also required. |

- Even if the system requirements mentioned in these operating instructions are fulfilled, some personal computers can not be used.
- This software can not be used on Macintosh.
- Operation is not guaranteed when used on Windows OSs except those above.
- Operation on an upgraded OS is not guaranteed.
- Operation on an OS other than the one pre-installed is not guaranteed.
- Multi-boot environment is not supported.
- Only available when the user is logged in as the system administrator.
- This software may not run properly on user-built computers.
- This software can not be used on 64-bit OS.
- This software can not play and record music CDs that do not have the disc mark (⇒ right) on the disc label.
- This system requirements are not guaranteed in the case that any other application runs.
- Depending on your computer system, you may experience problems such as being unable to record or use recorded music data. Please note that Matsushita is in no way liable for any music data you lose, or for any other direct or indirect damages.

## Connecting SD Memory Cards

Follow these steps to connect the SD Memory CARD Reader Writer (not included) to the computer and insert SD Memory Cards.

**1 Turn on the computer and start Windows.**

**2 Connect the SD Memory CARD Reader Writer to the computer.**
Make sure the SD Memory CARD Reader Writer is recognized and displayed in Windows Explorer or your file browser. (If it is not displayed, refer to the PDF Operating Instructions for SD-Jukebox.)

**3 Check the orientation of the SD Memory Card and insert it in the SD Memory CARD Reader Writer.**
Be careful to insert SD Memory Card in the right direction. Cards inserted incorrectly may be damaged or may damage the SD Memory CARD Reader Writer.

## Removing SD Memory Cards

**1 Before removing SD Memory Cards, make sure the cards are not being accessed by the SD Memory CARD Reader Writer.**

**2 Double-click [My Computer] and then right-click on the [Removable Disk] icon for the SD Memory Card.**

**3 Click [Eject].**

**4 Remove SD Memory Cards.**

---

Note

- **Do not remove SD Memory Cards during access by the SD Memory CARD Reader Writer.**
- Operation of SD Memory CARD Reader Writers is not ensured under the following conditions.
  – If the SD Memory CARD Reader Writer is equipped with an adaptor for other types of SD Memory Cards
  – If connected via a USB hub or USB extension cord
- Using SD-Jukebox to check out tracks to SD Memory Cards requires SD Memory CARD Reader Writers that support data security (copyright protection functions). Operation is not ensured with third-party SD Memory CARD Reader Writers.
- **Handling precautions for the SD Memory CARD Reader Writer**
  – Do not wet, drop, or expose the SD Memory CARD Reader Writer to impacts.
  – Do not use or store in locations directly exposed to sunlight, a heat vent, or a heating appliance.
  – Do not disassemble or modify.
  – Do not insert foreign objects into the slot.

- This unit is compliant with SD audio standards and is compatible with SD audio recording and playback. However, operation compatibility with all SD audio units is not guaranteed.

# Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the "Customer Services Directory" on page 40.
**Reference pages are shown in parentheses.**

### Playing back

| | |
|---|---|
| **No sound.** | Turn the volume up.<br>The speaker cords may be shorted. Turn the unit off, check and correct the connections and turn the unit on. (⇒ page 11) |
| **Sound is unfixed, reversed or comes from one speaker only.** | Check the speaker connections. (⇒ page 11) |
| **Humming heard during play.** | An AC power supply cord or fluorescent light is near the cables. Keep other appliances and leads away from this unit's cables. |
| **Poor quality sound.** | Clean the heads of the cassette tapes. (⇒ page 41) |
| **Discs with WMA/MP3 data are not read correctly.** | You have to close sessions on multi-session discs before play.<br>Each session on multi-session discs must be more than approximately 5 MB (approximately two 3-minute songs). |
| **The display is wrong or play won't start.** | The disc may be upside down.<br>Wipe the disc.<br>Replace the disc if it is scratched, warped, or non-standard.<br>Condensation may have formed inside the unit due to a sudden change in temperature. Wait about an hour for it to clear and try again.<br>You haven't inserted a card correctly; insert it correctly. (⇒ page 8)<br>The lid of the SD card slot is not closed; close it securely.<br>You have inserted a card other than a SD card. Insert SD cards only. |
| **The total number of tracks displayed differs each time the same disc is inserted.**<br>**Unusual sound is heard.** | The disc may be scratched, or its data may be defective. Replace the disc. |
| **CD-RW cannot be read.** | The disc was incompletely formatted. Use the recording equipment to fully format the disc before recording. |

### Radio

| | |
|---|---|
| **Noise is heard.**<br>**The stereo indicator flickers or doesn't light.**<br>**Sound is distorted.** | Use an outdoor antenna. (⇒ page 34) |
| **A beat sound is heard.** | Turn the TV off or separate it from the unit. |
| **A low hum is heard during AM broadcast.** | Separate the antenna from other cables and cords. |

### Recording

| | |
|---|---|
| **Recording is not possible.** | If the erasure prevention tabs have been removed, cover the holes with adhesive tape. (⇒ page 25)<br>The card's write protect switch has been moved to the LOCK position. Unlock the switch when you want to record or edit. (⇒ page 7) |
| **There is skipping of sound or noise recorded during high-speed recording to SD.**<br>**Cannot record from CD-R/RW.** | There may be scratches or fingerprints on the CD. Replace the CD if it is scratched.<br>These problems can be relieved in some cases by carefully cleaning the CD and then recording it at normal speed.<br>Depending on the condition of the disc, you may not be able to record from CD-R/RW discs. |
| **Cannot use the 5CD AUTO REC function.** | You cannot use 5CD AUTO REC with WMA and MP3 files. Select another recording method.<br>Depending on the condition of the disc, you may not be able to use 5CD AUTO REC. |
| **Cannot high-speed record.** | You cannot use high-speed recording to record the same CD for a second time within 74 minutes of finishing the first high-speed recording. Wait 74 minutes or record the CD at normal speed. |

### Others

| | |
|---|---|
| **The display lights up when the unit is turned off.** | Turn the demo function off. (⇒ page 10) |
| **Remote control doesn't work.** | Check that the batteries are inserted correctly. (⇒ page 9)<br>Replace the batteries if they are depleted. |
| **Other products respond to the unit's remote control.** | Change the remote control code on this unit to stop other products responding.<br>1 Press [TUNER/AUX] on the main unit to select "AUX".<br>2 While pressing [TUNER/AUX] on the main unit, press the numbered button [1] or [2] on the remote control for 2 seconds. The main unit code is changed.<br>3 While pressing [LIST/ENTER] on the remote control, press the numbered button you selected in step 2 for 2 seconds. The remote control code is changed. |
| **The computer does not respond when a SD is inserted in the SD card slot.** | The computer will not respond if the SD card slot is not CPRM (Content Protection for Recordable Media) compatible. |
| **Cannot play SD on other players or mobile phones.** | The other equipment must be AAC compatible. |
| **The picture on the TV set nearby disappears or stripes appear on the screen.** | The location and orientation of the antenna are incorrect. If you are using an indoor antenna, change to an outdoor antenna. (⇒ page 34)<br>The TV antenna wire is too close to the unit. Separate the antenna wire of the TV set from the unit. |

**Unit displays**

| | |
|---|---|
| **"CAN'T EDIT"** | You cannot edit or enter titles on SD during play. |
| **"CARD FULL"** | There is no space on the SD card. Erase unneeded tracks (⇒ page 28) or record with another card. |
| **"CARD LOCKED"** | You have inserted a SD card the unit cannot play or record on. Insert a compatible card (⇒ page 6). |
| **"CARD PROTECTED"** | The write protect switch has been moved to the LOCK position. Unlock the switch when you want to record or edit. |
| **"CHECK CARD"** | You inserted an unformatted card or a card that was not properly formatted. Format the card (the contents are erased) (⇒ page 29) or insert another card. |
| **"EMERGENCY STOP"** | A problem has occurred. Reinsert the card and try the operation again. |
| **"F☐☐" "H☐☐"**<br>(☐ stands for a number.) | Trouble may have occurred.<br>**Reset procedure:**<br>Press [POWER ⏻/l] to switch the unit to standby mode and then back to ON. If the service numbers fail to clear, note the service number and contact a qualified service person. |
| **"MEMORY FULL<br>ERASE TITLE"** | You cannot enter more than 100 CD titles. Delete titles you no longer need (⇒ page 31) and try again. |
| **"NO PLAY"** | The unit cannot play this track. It skips the track and continues play.<br>There was a problem reading WMA/MP3.<br>If there is a large amount of JPEG data etc. within a WMA/MP3 file, sound may not be output and play may not be possible. |
| **"NO REMAIN"** | You cannot record all of the discs if there is not enough space on the SD. Erase unneeded tracks (⇒ page 28) or record with another SD. |
| **"NO TRACK"** | There are no tracks recorded on the SD. |
| **"NO WMA/MP3"** | There are no WMA/MP3 on the CD-ROM so the unit cannot play it. |
| **"NOT MP3 ERROR"** | You are trying to play a file type that the unit cannot play. It skips the track and continues play. |
| **"PGM FULL"** | You are trying to program more than 24 tracks. |
| **"PLAYBACK CARD"** | You are trying to record or edit a play-only SD card. Replace it with a recordable card. |
| **"READ ERROR"** | The unit was trying to play a WMA/MP3 track, but an error occurred. It skips the track and continues play. |
| **"REMOTE MODE ☐"**<br>(☐ is either 1 or 2) | The remote control and main unit are using different codes. Change the remote control's code. Press and hold [LIST/ENTER] and [1] or [2] (the number shown on the display) for at least 2 seconds. |
| **"SELECT OVER"** | The maximum number of tracks in playlist (99) has been reached. Erase unneeded tracks (⇒ page 29).<br>You are trying to erase more than 24 tracks. |
| **"SCMS CAN'T COPY"** | You cannot record from video CDs or CD-ROM to SD. Use an audio CD.<br>You are trying to record digitally from a CD-R or CD-RW that is protected by SCMS (⇒ page 6). Press and hold [EDIT MODE] until "ANALOG- REC" is displayed. |
| **"TAPE PROTECTED"** | The cassette's erasure prevention tab has been removed. Cover the hole where the tab was with adhesive tape. |
| **"TITLE FULL"** | You cannot enter any more characters for this track's title. Make the title shorter. |
| **"TOC ERROR"** | There was a problem reading WMA/MP3. Turn the unit OFF and then back to ON, and reinsert the disc. |
| **"TOC READING"** | Play will start after the TOC information from CD has been read. |
| **"TRACK FULL"** | The maximum number of tracks (998) has been reached.<br>Erase unneeded tracks (⇒ page 28) or use another card. |
| **"TRACK PROTECTED"** | This track is protected. The unit skips the track and continues play. |
| **"--:--"** | You plugged the AC power supply cord in for the first time or there was a power failure recently. Set the time. (⇒ page 32) |

# Additional accessories

The product numbers are correct as of February 2005.

| Product name | Product number |
|:---:|:---|
| **SD Multi Camera** | SV-AS3, SV-AV50, SV-AV25 etc. |
| **SD Audio Player** | SV-SD100V, SV-SD80 etc. |
| **SD Memory Card** | 1GB      : RP-SDK01GU1A<br>512MB   : RP-SDK512U1A<br>256MB   : RP-SDH256U1A, RP-SD256BU1A<br>128MB   : RP-SD128BU1A<br>64MB    : RP-SD064BPPA<br>32MB    : RP-SD032BPPA |

# Limited Warranty

**Panasonic Consumer Electronics Company,**
**Division of Panasonic Corporation of North America**
One Panasonic Way Secaucus, New Jersey 07094

**Panasonic Puerto Rico, Inc.**
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina, Puerto Rico 00985

## Panasonic/Technics Audio Products
## Limited Warranty

**Limited Warranty Coverage**

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Puerto Rico, Inc. (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

| Product or Part Name | Parts | Labor |
|---|---|---|
| Audio Products (except items listed below) | One (1) year | One (1) year |
| USB Reader-Writer, Personal Computer Card Adapters (in exchange for defective item) | One (1) year | Not Applicable |
| Accessories: Headphones, Cartridges, Microphones, Adapters | Ninety (90) days | Ninety (90) days |
| Rechargeable Batteries (in exchange for defective item) | Ten (10) days | Not Applicable |
| SD Memory Cards, Rechargeable Battery Packs (in exchange for defective item) | Ninety (90) days | Not Applicable |

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in or mail-in your product during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

**Carry-In or Mail-In Service**

For Carry-In or Mail-In Service in the United States call 1-800-211-PANA (1-800-211-7262) or visit Panasonic web site: http://www.panasonic.com
For assistance in Puerto Rico call Panasonic Puerto Rico, inc. (787)-750-4300 or fax (787)-768-2910.

**Limited Warranty Limits And Exclusions**

This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

**THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY.** (As examples, this excludes damages for lost time, travel to and from the servicer, loss of media or images, data or other memory content. The items listed are not exclusive, but are for illustration only.) **ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

**PARTS AND SERVICE WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.**

## *Customer Services Directory*

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Servicenter; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:

*http://www.panasonic.com/consumersupport*

or, contact us via the web at:

*http://www.panasonic.com/contactinfo*

You may also contact us directly at:
1-800-211-PANA (7262),
Monday-Friday 9 am-9 pm; Saturday-Sunday 10 am-7 pm, EST.

For hearing or speech impaired TTY users, TTY: 1-877-833-8855

## *Accessory Purchases*

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:
*http://www.pasc.panasonic.com*
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You may also contact us directly at:
1-800-332-5368 (Phone)  1-800-237-9080 (Fax Only) (Monday – Friday 9 am to 8 pm, EST.)
Panasonic Services Company
20421 84th Avenue South, Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY: 1-866-605-1277

## *Product Repairs SV-SD90 only*

### *Centralized Factory Servicenter*

MAIL TO:

Panasonic Services Company
410B Airport Road,
Elgin, IL 60123-7847
Attention: SD Repair

Please carefully pack and ship, prepaid and insured, to the Elgin Centralized Factory Servicenter.
Customer's in Puerto Rico, please ship or carry in to location below ("Service in Puerto Rico")

## *Service in Puerto Rico*

*Panasonic Puerto Rico, Inc.*
*Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985*
*Phone (787)750-4300, Fax (787)768-2910*

# Product Service

1. **Damage requiring service**—The unit should be serviced by qualified service personnel if:
   (a) The AC power supply cord or the plug has been damaged; or
   (b) Objects or liquids have gotten into the unit; or
   (c) The unit has been exposed to rain; or
   (d) The unit does not operate normally or exhibits a marked change in performance; or
   (e) The unit has been dropped or the cabinet damaged.
2. **Servicing**—Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.
3. **Replacement parts**—When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other hazards.
4. **Safety check**—After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

The servicer will require all components to service your system.
Therefore, should service ever be necessary, be sure to bring the entire system.

### Product information

For product information or assistance with product operation:
In the U.S.A., refer to "Customer Services Directory" on page 40.

# Maintenance

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.

### For a cleaner, crisper sound (cassette deck)

Clean the heads regularly to assure good quality playback and recording. Use a cleaning tape (not included).

# When moving the unit

**1** **Remove all discs, card, and tape.**

**2** **Press [POWER ☉/I] on the main unit to turn it off.**

**3** **Disconnect the AC power supply cord after "GOODBYE" disappears from the display.**

# Specifications

## ■ AMPLIFIER SECTION

**FTC output power both channels driven**
**10 % total harmonic distortion**
**60 Hz to 3 kHz**         (Low channel) 35 W per channel (6 Ω)
**3 kHz to 16 kHz**       (High channel) 35 W per channel (6 Ω)
**Total Bi-Amp power**             70 W per channel
**RMS output power both channels driven**
**10 % total harmonic distortion**
**1 kHz**                (Low channel) 40 W per channel (6 Ω)
**8 kHz**              (High channel) 40 W per channel (6 Ω)
**Total Bi-Amp power**             80 W per channel
**Output impedance**
**HEADPHONE**                   16 Ω to 32 Ω

## ■ FM TUNER SECTION

**Frequency range**   87.9 MHz to 107.9 MHz (Default) (200 kHz steps)
                  87.5 MHz to 108.0 MHz (100 kHz steps)
**Sensitivity**                        1.50 μV (IHF)
**S/N 26 dB**                          1.70 μV
**Antenna terminals**               75 Ω (unbalanced)
**Preset stations**                         15

## ■ AM TUNER SECTION

**Frequency range**       520 kHz to 1710 kHz (10 kHz steps)
**Sensitivity S/N 20 dB at 1000 kHz**          560 μV/m
**Preset stations**                         15

## ■ CASSETTE DECK SECTION

**Track system**                 4-track, 2-channel
**Heads**
**Record/playback**            Solid permalloy head
**Erasure**              Double gap ferrite head
**Motor**                       DC servo motor
**Recording system**                AC bias 100 kHz
**Erase system**                AC erase 100 kHz
**Tape speed**               4.8 cm/s (1-7/8 ips)
**Overall frequency response (+3, -6 dB) at DECK OUT**
**Normal**                   35 Hz to 14 kHz
**Wow and flutter**               0.10 % (WRMS)
**Fast forward and rewind time**
          Approx. 120 seconds with C-60 cassette tape

## ■ CD SECTION

**Disc**         CD, MP3, WMA, CD-R/RW, and HighMAT
                               8 cm/12 cm
**Sampling frequency**
**CD**                           44.1 kHz
**MP3/WMA**         32 kHz, 44.1 kHz, 48 kHz
**Bit rate**
**MP3**                   32 kbps to 320 kbps
**WMA**                40 kbps to 192 kbps
**Decoding**                   16 bit linear
**Pickup**
**Beam source**          Semiconductor laser
**Wavelength**                  780 nm
**Number of channels**                Stereo
**Frequency response**   20 Hz to 20 kHz (+1, -2 dB)
**Wow and flutter**      Below measurable limit
**Digital filter**                     8 fs
**D/A converter**         MASH (1 bit DAC)

## ■ SD SECTION

**Sampling frequency**   32 kHz (LP), 44.1 kHz (SP, XP)
**Coding system**   SD audio playback (AAC/MP3/WMA)
                        SD audio record (AAC)
**Number of channels**          2 channel (stereo)

## ■ OTHER

**CD➡SD Recording speed:**       Maximum 4 times (LP)

## ■ SPEAKER SECTION (Front speakers SB-PM71)

**Type**          3 way, 3 speaker system (Bass-Ref)
**Speaker units**
**Woofer**              10 cm (4") cone type
**Tweeter**        6 cm (2 3/8") cone type
**S-tweeter**               Piezo type
**Impedance**
**High**                        6 Ω
**Low**                        6 Ω
**Input power (IEC MAX)**
**High**                       40 W
**Low**                      40 W
**Output sound pressure**      84 dB/W (1.0 m)
**Crossover frequency**        3 kHz, 10 kHz
**Frequency range**      50 Hz to 50 kHz (−16 dB)
                    60 Hz to 45 kHz (−10 dB)
**Dimensions (WxHxD)**   145 mm x 250 mm x 232 mm
                 (5 23/32" x 9 27/32" x 9 5/32")
**Mass**                     2.4 kg (5.3 lbs)

## ■ GENERAL

**Power supply**            AC 120 V, 60 Hz
**Power consumption**               141 W
**Dimensions (WxHxD)**   175 mm x 249.5 mm x 379.6 mm
                 (6 29/32" x 9 27/32" x 14 31/32")
**Mass**                     5.8 kg (12.8 lbs)

| Power consumption in standby mode | Approx. 0.3 W |
| --- | --- |

**Note**

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

- SD logo is a trademark.

- Microsoft, Microsoft logo, Windows, Windows logo, Windows NT, Windows Media and DirectX are either trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.
- WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

Designed for
**Windows Media**™

- MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.
- Licensed AAC Patents (U.S. patent numbers);

| | | | | | |
|---|---|---|---|---|---|
| 08/937,950 | 5,394,473 | 5,579,430 | 5,481,614 | 5,299,238 | 5,581,654 |
| 5848391 | 5,583,962 | 08/678,666 | 5,592,584 | 5,299,239 | 05-183,988 |
| 5,291,557 | 5,274,740 | 98/03037 | 5,781,888 | 5,299,240 | 5,548,574 |
| 5,451,954 | 5,633,981 | 97/02875 | 08/039,478 | 5,197,087 | 08/506,729 |
| 5 400 433 | 5 297 236 | 97/02874 | 08/211,547 | 5,490,170 | 08/576,495 |
| 5,222,189 | 4,914,701 | 98/03036 | 5,703,999 | 5,264,846 | 5,717,821 |
| 5,357,594 | 5,235,671 | 5,227,788 | 08/557,046 | 5,268,685 | 08/392,756 |
| 5 752 225 | 07/640,550 | 5,285,498 | 08/894,844 | 5,375,189 | |

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# Index

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