

SHARP

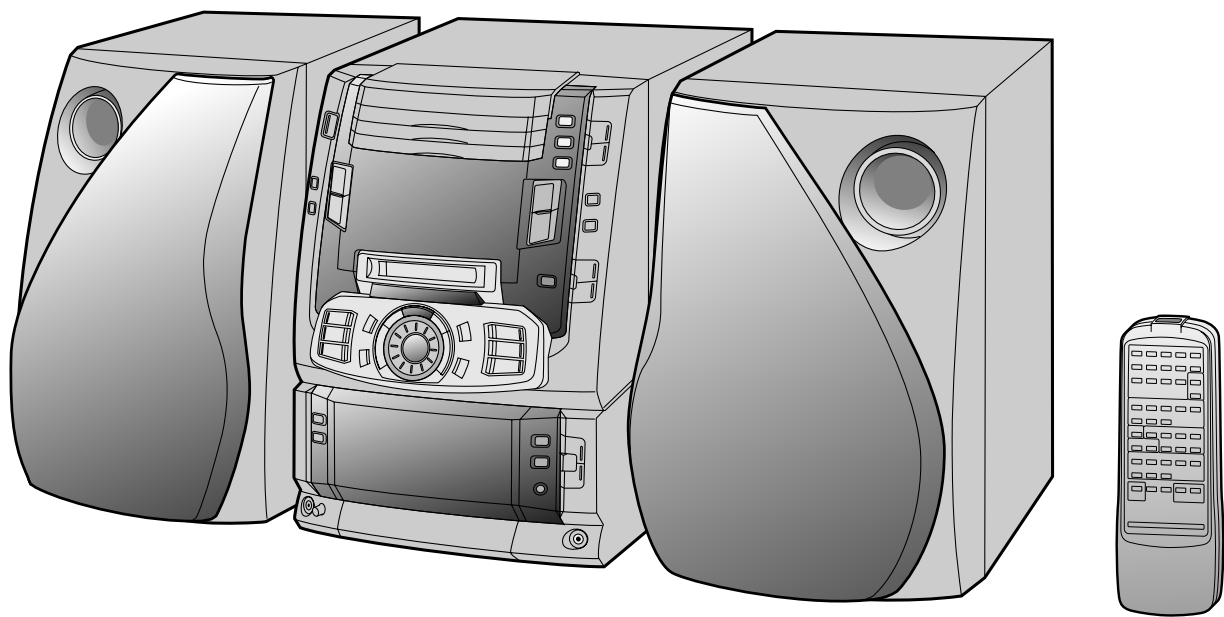
MD/CD COMPONENT SYSTEM

OPERATION MANUAL



Thank you for purchasing this SHARP product.
To obtain the best performance from this product, please read this manual carefully. It will guide you in operating your SHARP product.

MD-X60 MD/CD component system consisting of
MD-X60 MD/CD component system and
CP-X60 speaker system.



Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.



SPECIAL NOTES FOR FCC COMPOSITE DEVICE:

This device is a composite system. The digital device component may not cause harmful interference.

FOR YOUR RECORDS

For your assistance in reporting this unit in case of loss or theft, please record below the model number and serial number which are located on the rear of the unit. Please retain this information.

Model number _____
Serial number _____
Date of purchase _____
Place of purchase _____

	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;"> <p>CAUTION</p> <p>RISK OF ELECTRIC SHOCK DO NOT OPEN</p> </div>	
<p>The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p>	<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>	<p>The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.</p>

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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

IMPORTANT SAFEGUARDS

CAUTION

All the safety and operating instructions should be read before the appliance is operated, and should be retained for future reference. Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. Improper use can result in potential electrical shock or fire hazards. In order not to defeat the safeguards, observe the following basic rules for its installation, use and servicing.

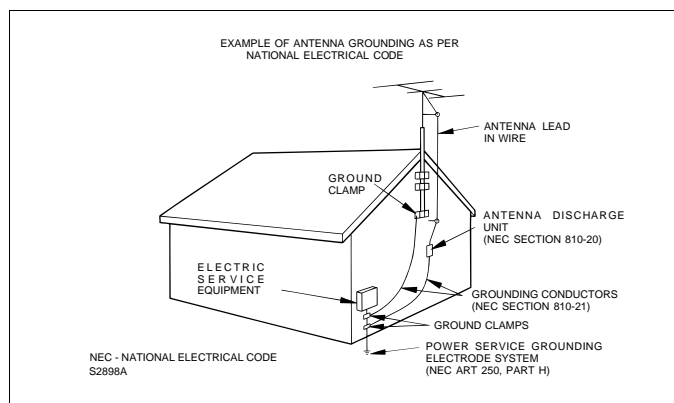
- 1 Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.
- 2 Follow Instructions - All operating and use instructions should be followed.
- 3 Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- 4 Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.

•An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



- 5 Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 6 Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- 7 Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
- 8 Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
- 9 Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
- 10 Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- 11 Power Lines - An outdoor antenna should be located away from power lines.

- 12 Outdoor Antenna Grounding - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

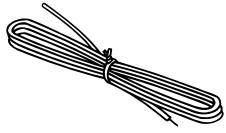
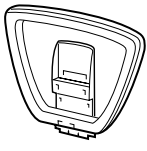

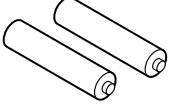


- 13 Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
- 14 Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- 15 Damage Requiring Service - The appliance should be serviced by qualified service personnel when:
 - A The power-supply cord or the plug has been damaged; or
 - B Objects have fallen, or liquid has been spilled into the appliance; or
 - C The appliance has been exposed to rain; or
 - D The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E The appliance has been dropped, or the enclosure damaged.
- 16 Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.
- 17 Grounding or Polarization - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

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ACCESSORIES


 FM antenna × 1 (92LF-ANT1533A)	 AM loop antenna × 1 (92LL-ANT1676A)	 Remote control × 1 (RRMCG0156AWSA)	 "AA" size battery (UM/SUM-3, R6, HP-7 or similar) × 2 (UBATU0001AWZZ)
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Note:

Parts and accessories mentioned in this operation manual other than those in the drawing are not included.

SPECIAL NOTES



- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
- "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

It is the intent of Sharp that this product be used in full compliance with the copyright laws of the United States and that prior permission be obtained from copyright owners whenever necessary.

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

PRECAUTIONS

General

- Please ensure that the equipment is positioned in a well ventilated area and ensure that there is at least 4" (10 cm) of free space along the sides, top and back of the equipment.
- Do not use oil, solvents, gasoline, paint thinners or insecticides on the unit.
- Do not expose the unit to moisture, to temperatures higher than 140°F (60°C) or to extreme low temperatures.
- Keep the unit away from direct sunlight, strong magnetic fields, excessive dust, humidity and electronic/electrical equipment (home computers, facsimiles, etc.) which generates electrical noise.
- Hold the AC power plug by the head when removing it from the AC outlet, since pulling the cord can damage internal wires.
- When cleaning the heads, pinch rollers, etc, remove the AC power plug from the AC outlet as the unit contains high voltages. Do not remove the outer cover, as this may result in electric shock. Refer internal service to your local SHARP service facility.
- Use the unit on a firm, level surface free from vibration, and do not place anything on the top of the unit.
- If the unit does not work properly while in use, disconnect the AC power cord from the AC outlet. Plug the AC power cord back in, and then press the POWER button to turn the power on.
- If an electrical storm is taking place near you, it is suggested that you disconnect the AC power cord from the AC outlet for safety.

Warning:

The voltage used must be the same as that specified on this unit. Using this product with a higher voltage other than which is specified is dangerous and may result in a fire or other type of accident causing damage. SHARP will not be held responsible for any damage resulting from use of this unit with a voltage other than that which is specified.

Volume control

The sound level at a given volume setting depends on a combination of speaker efficiency, location and various other factors. It is advisable to avoid exposure to high volume levels, which occur while turning the unit on with the volume control setting up high, or while continually listening at high volumes.

Condensation

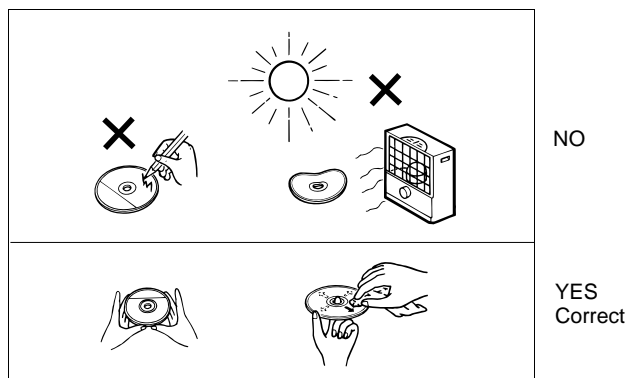
Sudden temperature changes, storage or operation in an extremely humid environment may cause condensation inside the cabinet (CD pickup, MD pickup, tape heads, etc.) or on the transmitter LED on the remote control.

Condensation can cause the unit to malfunction. If this happens, leave the power on with no disc (or cassette) in the unit until normal playback is possible (about 1 hour). Wipe off any condensation on the transmitter LED with a soft cloth before operating the unit.

Care of compact discs

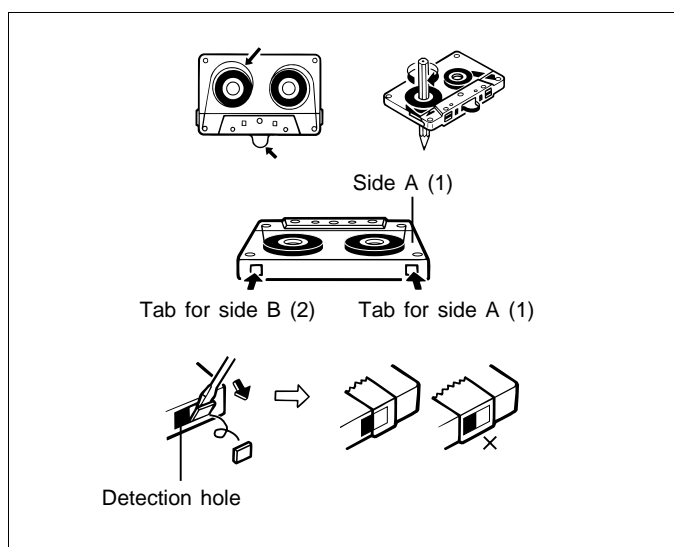
Compact discs are fairly resistant to damage, however mistracking can occur due to an accumulation of dirt on the disc surface. Follow the guidelines below for maximum enjoyment from your CD collection and player.

- Do not write on either side of the disc, particularly the non-label side. Signals are read from the non-label side. Do not mark this surface.
- Keep your discs away from direct sunlight, heat, and excessive moisture.
- Always hold the CDs by the edges. Fingerprints, dirt, or water on the CDs can cause noise or mistracking. If a CD is dirty or does not play properly, clean it with a soft, dry cloth, wiping straight out from the center, along the radius.

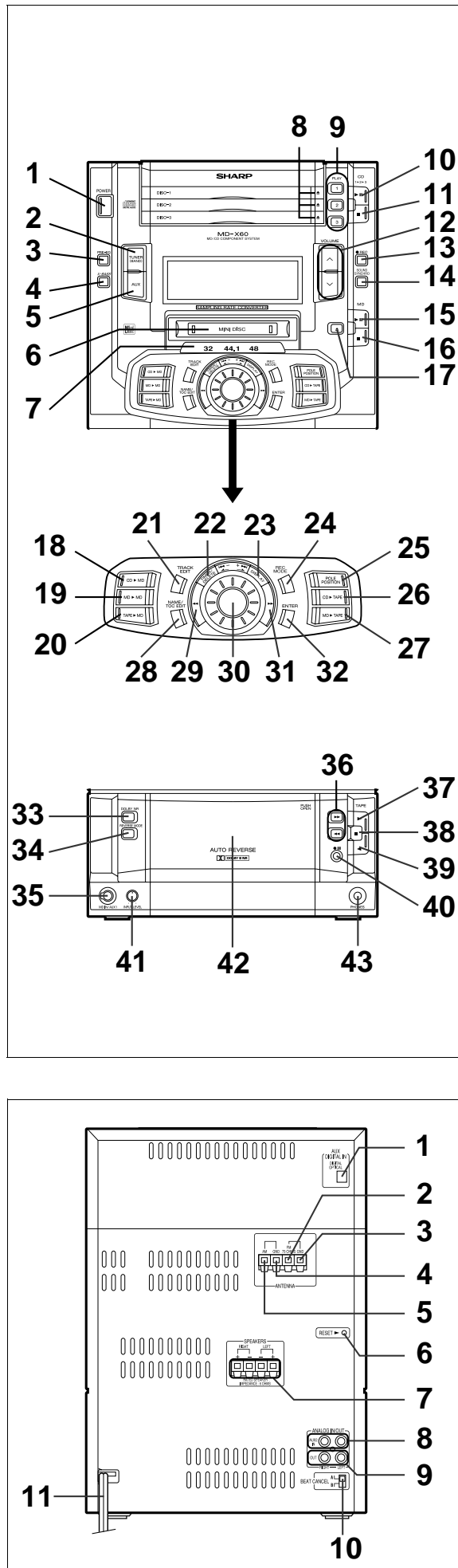


Cassette tape

- This deck features an auto tape selector. Just load a tape, and the tape formula being used will be sensed automatically.
- For playback, use normal (low-noise), CrO₂ or metal tape for the best sound. For recording, use normal (low-noise) or CrO₂ tape. Metal tape cannot be used for recording.
- Do not use C-120 tapes, tapes with large diameter reels, or poor-quality tapes, as they may cause malfunctions.
- Before loading a tape into the cassette compartment, tighten the slack with a pen or pencil.
- Cassettes have removable tabs which prevent accidental recording or erasing from taking place. Removing the tab will protect the corresponding side from being erased. Cover the tab holes with adhesive tape to erase or record again.
- When covering erasure prevention tab holes, do not cover the CrO₂ and metal detection holes located between them. Otherwise, the deck will sense the tape as normal tape.



NAMES OF CONTROLS AND INDICATORS



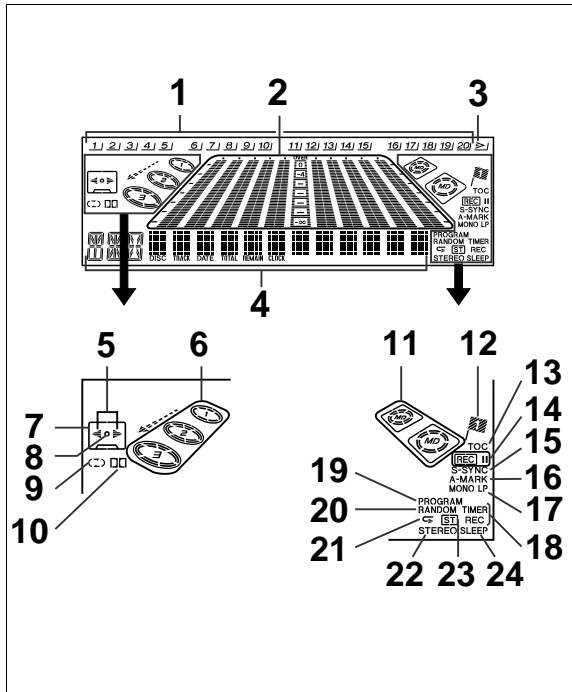
■ Front panel

1. Power Button: POWER
2. Tuner Call (Band Select) Button: TUNER (BAND)
3. Preset Equalizer Button: PRE-EQ
4. Extra Bass Button: X-BASS
5. Auxiliary Input (Digital/Analog) Select Button: AUX
6. MD Compartment
7. Sampling Frequency Indicators
8. (CD) Open/Close Buttons: ▲
9. (CD) Play Buttons: 1 ►, 2 ►, 3 ►
10. (CD) Play/Pause Button and Indicator: ► ||
11. (CD) Stop Button: ■
12. Volume Up/Down Buttons: VOLUME ▲/▼
13. (MD) Record Button: ● REC
14. Sound Synchro Record Button
15. (MD) Play/Pause Button: ► ||
16. (MD) Stop Button: ■
17. (MD) Eject Button: ▲
18. CD ► MD Edit Button: CD ► MD
19. MD ► MD Edit Button: MD ► MD
20. TAPE ► MD Edit Button: TAPE ► MD
21. (CD/MD) Track Edit Button: TRACK EDIT
22. Timer/Delete Button: TIMER/DELETE
23. Display Button: DISPLAY
24. (MD) Record Mode Button: REC MODE
25. (MD) Pole Position Button: POLE POSITION
26. CD ► TAPE Edit Button: CD ► TAPE
27. MD ► TAPE Edit Button: MD ► TAPE
28. (MD) Name/TOC-Edit Button: NAME/TOC EDIT
29. (TUNER) Tuning Down Button: ◀◀
(CD) Track Down/Review Button: ◀◀
(MD) Track Down/Review/Cursor Button: ◀◀
30. Jog Dial
31. (TUNER) Tuning Up Button: ▶▶
(CD) Track Up/Cue Button: ▶▶
(MD) Track Up/Cue/Cursor Button: ▶▶
32. Enter Button: ENTER
33. (TAPE) Dolby NR Button: DOLBY NR
34. (TAPE) Reverse Mode Button: REVERSE MODE
35. MD Edit/Auxiliary 1 (Analog) Input Jack: MD IN/AUX 1
36. (TAPE) Fast Wind Buttons: ◀◀/▶▶
37. (TAPE) Forward Play Button: ▶
38. (TAPE) Stop Button: ■
39. (TAPE) Reverse Play Button: ◀
40. (TAPE) Record Pause Button: ● ||
41. Auxiliary Input Level (Analog) Control: INPUT LEVEL
42. Cassette Compartment
43. Headphone Jack: PHONES

■ Rear panel

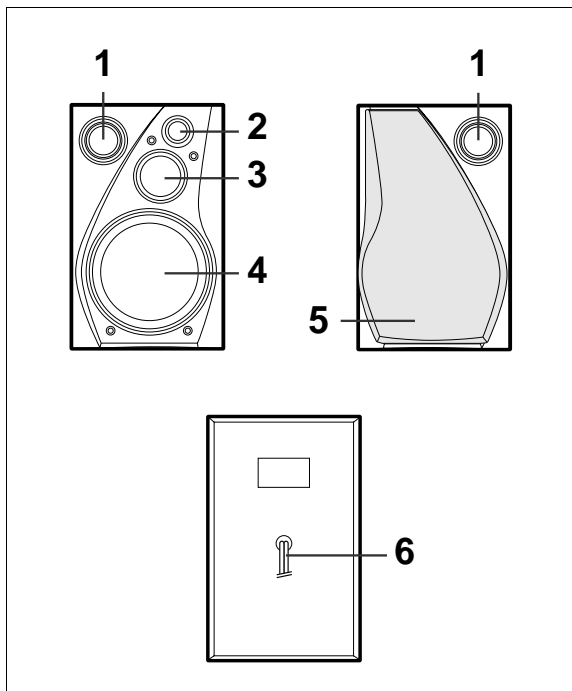
1. Auxiliary Digital Input Jack (Optical)
2. 75 Ohm FM Antenna Terminal
3. FM Antenna Ground Terminal
4. AM Antenna Ground Terminal
5. AM Antenna Terminal
6. Reset Button
7. Speaker Terminals
8. AUX 2 (Analog) Input Jacks
9. Analog Output Jacks
10. Beat Cancel Switch
11. AC Power Cord

(Continued)



■ Display window

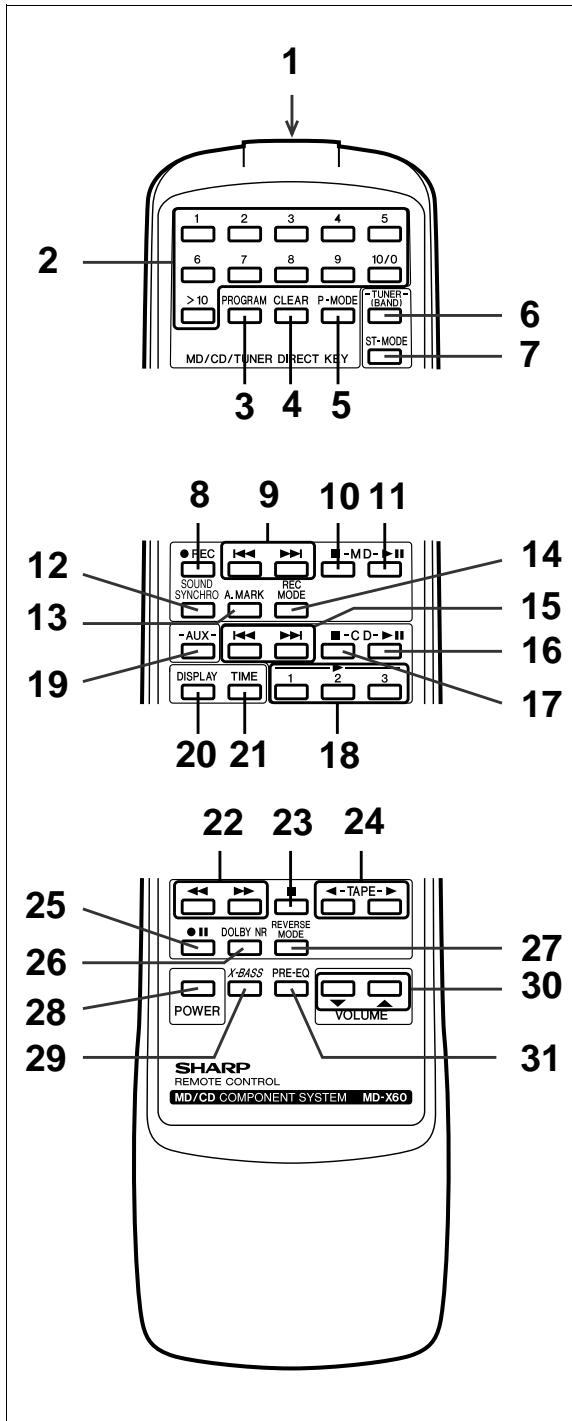
1. (CD/MD) Music Schedule Indicators
2. Level Meters
3. (CD/MD) More Tracks Indicator: ►
4. Character Information Display
5. (TAPE) Direction Indicators: ◀/▶
6. CD Indicator
7. (TAPE) Loading Indicator
8. (TAPE) Recording Indicator
9. (TAPE) Reverse Mode Indicator
10. (TAPE) Dolby NR Indicator:
11. MD Indicator
12. Pole Position Record Indicator
13. (MD) TOC Indicator: TOC
14. (MD) Record Indicator: REC
15. (MD) Sound Synchro Indicator: S.SYNC
16. (MD) Auto Mark Indicator: AUTO MARK
17. (MD) Recording Mode Indicator: MONO LP
18. Timer Play/Timer Record Indicator
19. (CD/MD) Program Indicator: PROGRAM
20. (CD/MD) Random Play Indicator: RANDOM
21. (CD/MD) Repeat Indicator:
22. FM Stereo Mode Indicator: STEREO
23. FM Stereo Indicator: ST
24. Sleep Indicator: SLEEP



■ Speaker section

1. Bass Reflex Duct
2. Super Tweeter
3. Tweeter
4. Woofer
5. Speaker Grille
6. Speaker Wire

(Continued)



■ Remote control

- 1. Remote Control Transmitter LED
- 2. (MD/CD/TUNER) Direct Key
- 3. (CD/MD) Program Button: PROGRAM
- 4. (CD/MD) Program Clear Button: CLEAR
- 5. (CD/MD) Play Mode Button: P-MODE

● Tuner control section

- 6. Tuner Call (Band Select) Button: TUNER/BAND
- 7. FM Stereo Mode Button: ST MODE

● MD control section

- 8. Record Button: ● REC
- 9. Track Up, Cue/Down, Review Buttons: ◀◀/▶▶
- 10. Stop Button: ■
- 11. Play/Pause Button: ▶ ||
- 12. Sound Synchro Record Button: S.SYNC
- 13. Auto Mark Button: A.MARK
- 14. Record Mode Button: REC MODE

● CD control section

- 15. Track Up, Cue/Down, Review Buttons: ◀◀/▶▶
- 16. Play/Pause Button: ▶ ||
- 17. Stop Button: ■
- 18. Play Buttons: 1 ▶, 2 ▶, 3 ▶

19. Auxiliary Input (Digital/Analog) Select Button: AUX

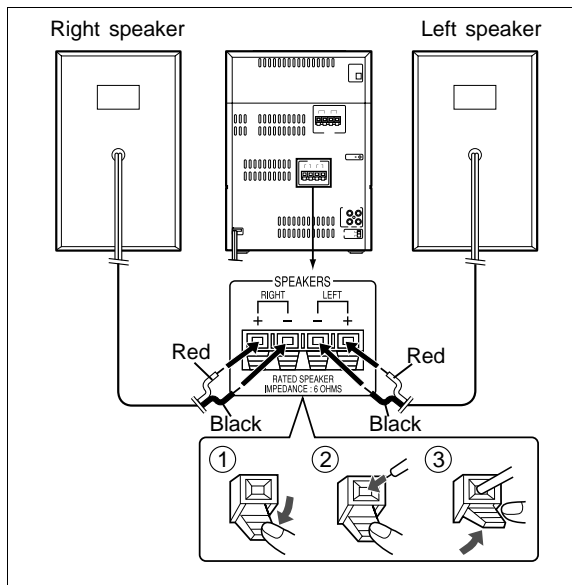
- 20. Display Button: DISPLAY
- 21. Time Display Select Button: TIME

● Tape control section

- 22. Fast Wind Buttons: ◀◀/▶▶
- 23. Stop Button: ■
- 24. Play Buttons: ◀/▶
- 25. Record Pause Button: ● ||
- 26. Dolby NR Button: DOLBY NR
- 27. Reverse Mode Button: REVERSE MODE

- 28. Power Button: POWER
- 29. Extra Bass Button: X-BASS
- 30. Volume Up/Down Buttons: ▲/▼
- 31. Pre-programed Equalizer Button: PRE-EQ

PREPARATION FOR USE



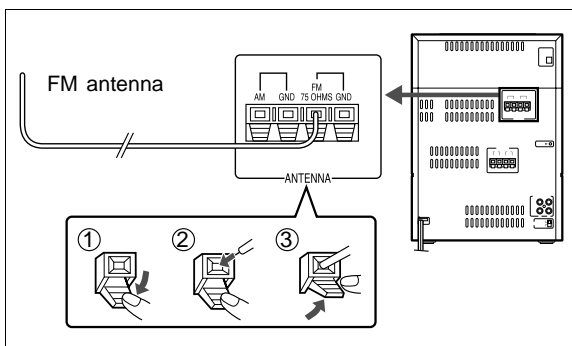
- Unplug the AC power cord from the AC outlet before connecting or disconnecting any component.

■ Speaker connection

Connect each speaker wire to the SPEAKERS terminals as shown. Use speakers with an impedance of 6 ohms or more, as lower impedance speakers can damage the unit.

Cautions:

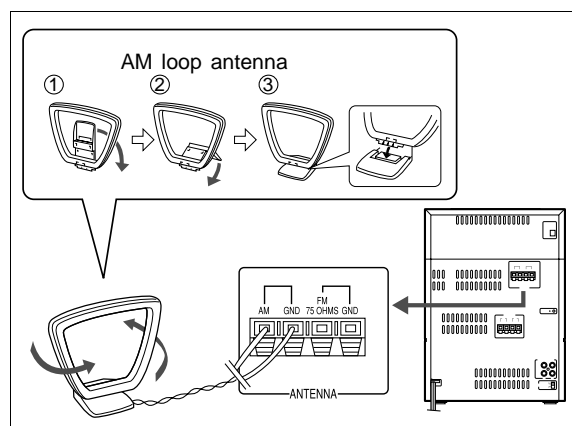
- Connect the black wire to the minus (-) terminal, and the red wire to the plus (+) terminal.
- Do not mistake the right channel for the left channel when connecting the speakers to the unit.
- Do not let the bare speaker wires touch each other as this may damage the amplifier and/or speakers.



■ Antenna connection

(1) Supplied FM antenna

Connect the FM antenna wire to the FM 75 OHMS terminal and position the FM antenna wire in the direction where the strongest signal can be received.

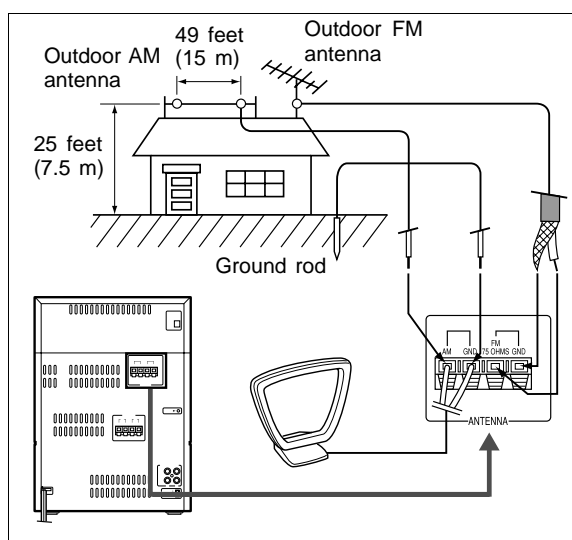


(2) Supplied AM loop antenna

Connect the AM loop antenna wire to the AM and GND terminals. Position the AM loop antenna for optimum reception. Place the AM loop antenna on a shelf, etc., or attach it to a stand or wall with screws (not supplied).

Notes:

- If static is still heard even after adjusting the position of the AM loop antenna, try reversing the wire connections.
- Do not place the AM loop antenna and the FM antenna wire on the unit. It may result in noise generation, as the unit is equipped with digital electronics. Place the AM loop antenna and the FM antenna wire away from the unit for better reception.
- If the AM loop antenna and the FM antenna wire are placed near the AC power cord, interference may result.



(3) Outdoor FM antenna

To connect a 75 ohm, coaxial cable antenna, use the terminals marked FM 75 OHMS and GND.

To connect an outdoor antenna to the unit, it is recommended that a 75 ohm coaxial cable be used. Its shielded construction resists most types of electrical interference that can cause reception noise.

Consult your SHARP audio dealer for suggestions on the type of antenna best suited for your area.

Note:

When an outdoor FM antenna is used, disconnect the supplied FM antenna wire from the FM 75 OHMS terminal.

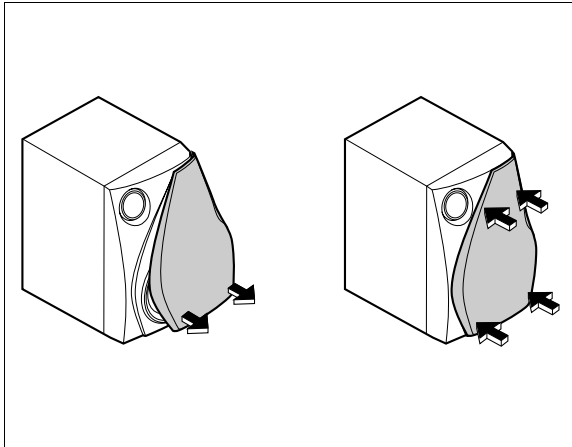
(4) Outdoor AM antenna

Use an outdoor AM antenna if you need better reception. Consult your dealer.

Note:

When using an outdoor AM antenna, be sure to keep the wire of the AM loop antenna connected.

(Continued)



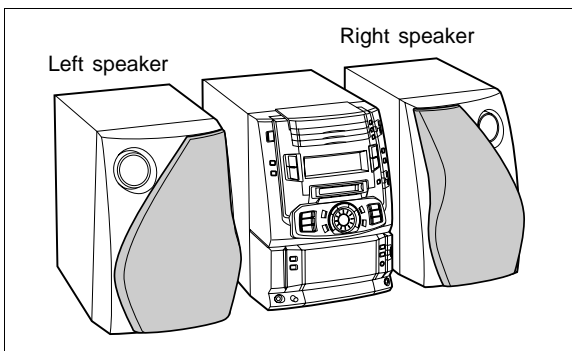
■ Removing the speaker grilles

- 1 Remove the lower part of the speaker grille first.
- 2 Remove the upper part of the speaker grille.

Caution:
When the speaker grilles are removed, the speaker diaphragms are exposed. Make sure nothing comes into contact with the speaker diaphragms.

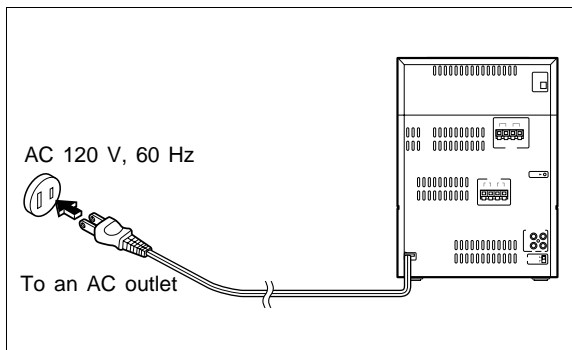
■ Mounting the speaker grilles

Fit the four posts on the speaker grille into the mounting holes and push them lightly with the palm of your hand to secure.



■ Placing the speaker system

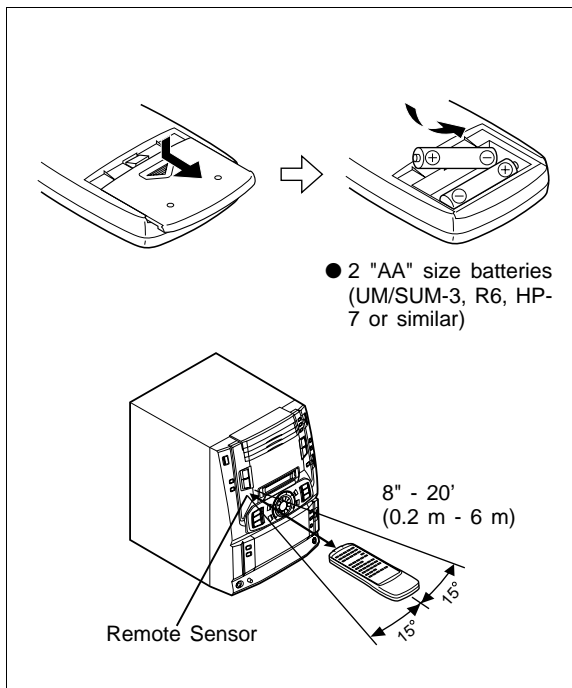
The left and right speakers have individual shapes. For best performance, place the speakers according to the diagram to the left.



■ Connecting the AC power cord

After connecting the speakers, plug the AC power cord into a convenient AC outlet.

- Notes:**
- Unplug the AC power cord from the AC outlet if the unit will not be in use for a prolonged period of time.
 - Never use a power cord other than the one supplied. Use of a power cord other than the one supplied may cause an electric shock or fire.



■ Remote control

- When inserting or removing the batteries, push them toward the ⊖ battery terminals.
- Installing the batteries incorrectly may cause the unit to malfunction.

Precautions for battery use:

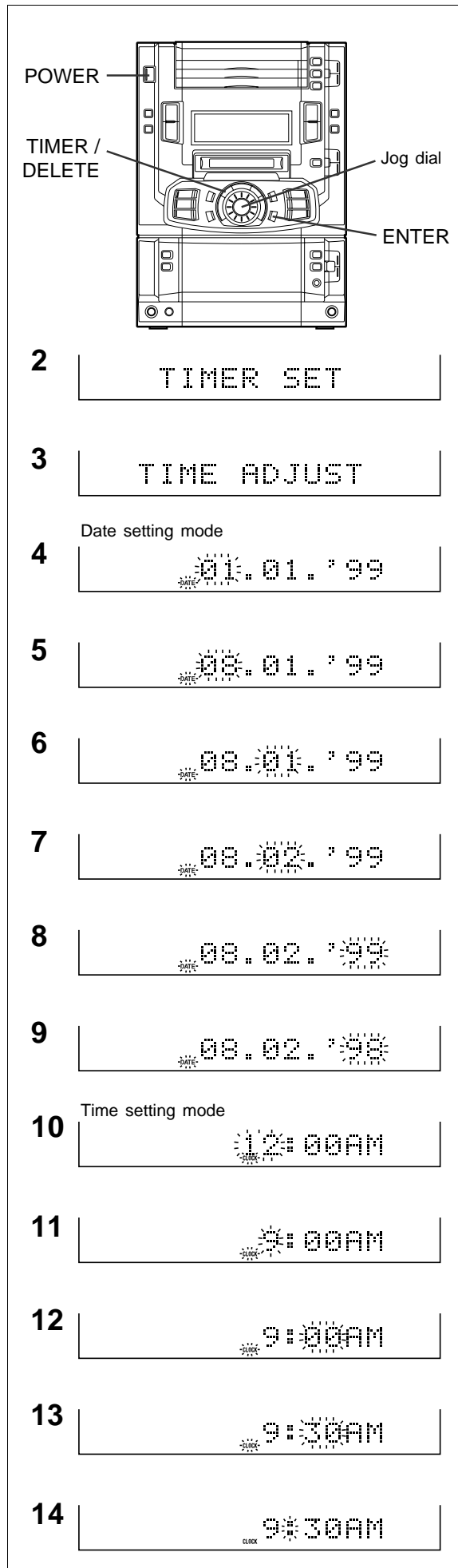
- Insert the batteries according to the direction indicated in the battery compartment.
- Replace all old batteries with new ones at the same time.
- Do not mix old and new batteries.
- Remove the batteries if they are weak or if the unit will not be used for long periods of time. This will prevent potential damage due to battery leakage.

Caution:
Do not use rechargeable batteries (nickel-cadmium battery, etc.).

Notes concerning use:

- Replace the batteries if the operating distance is reduced or if the operation becomes erratic.
- Periodically clean the transmitter LED on the remote control and the sensor on the main unit with a soft cloth.
- Exposing the sensor on the main unit to strong light may interfere with operation. Change the lighting or the direction of the unit.
- Keep the remote control away from moisture, excessive heat, shock, and vibrations.

SETTING THE CLOCK



(Main unit operation)

- 1 Press the POWER button to turn the power on.
- 2 Press the TIMER/DELETE button.
- 3 Within 10 seconds, turn the jog dial until "TIME ADJUST" appears.
- 4 Within 10 seconds, press the ENTER button.
 - The unit will enter the date setting mode.
- 5 Adjust the "month" using the jog dial.
 - When you turn the jog dial and let go, the month will change up or down by one. When you turn and hold it, the month will change continuously.
- 6 Press the ENTER button to set the "month".
- 7 Adjust the "day" using the jog dial.
- 8 Press the ENTER button to set the "day".
- 9 Adjust the "year" using the jog dial.
 - The year 2000 or later is set as follows:
[00] indicates the year 2000.
[01] indicates the year 2001.
 - The range of dates that can be entered is from January 1, 1997 to December 31, 2099.
- 10 Press the ENTER button to set the "year".
 - The unit will enter the time setting mode.
- 11 Adjust the "hour" using the jog dial.
 - When you turn the jog dial and let go, the hour will change up or down by one. When you turn and hold it, the hour will change continuously.
 - On the display, midnight is "AM 12:00" and noon is "PM 12:00". When setting the time, be careful not to confuse AM and PM.
- 12 Press the ENTER button to set the "hour".
- 13 Adjust the "minute" using the jog dial.
- 14 Press the ENTER button to set the "minute".
 - The clock starts operating from "0" seconds. (Seconds are not displayed.)

Notes:

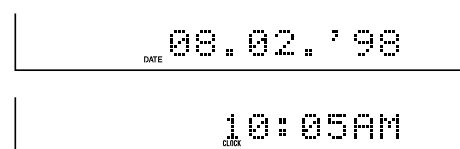
- In the event of a power failure or when the AC power cord is disconnected, the clock setting will be lost. Reset the time.
- While recording an MD, you cannot set the date and clock. Be sure to set the date and clock before recording.

Resetting the date and time:

- Once you have set the date and time, "TIME ADJUST" will not be displayed in step 2. Turn the jog dial to make the date and time appear.
- If you don't need to change the settings, just press the ENTER button without turning the jog dial again.

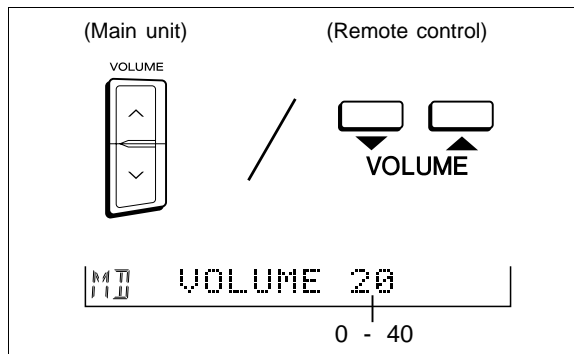
Checking the date and time:

- Press the TIMER/DELETE button. Then turn the jog dial until the date and time are displayed.
- Press the DISPLAY button to switch between the date and the time.



- After about 10 seconds, the original display will appear.
- Once the date and the time have been set, this unit will normally display the time when the unit is in the stand-by mode. To check the date, press the DISPLAY button. The display will switch between the date and the time each time you press the button.

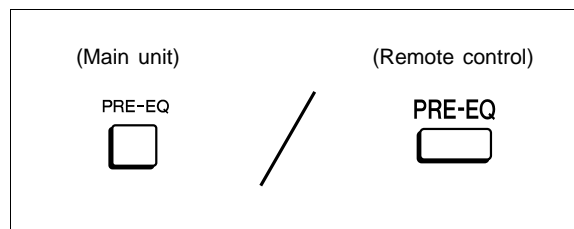
SOUND CONTROL



■ Main volume

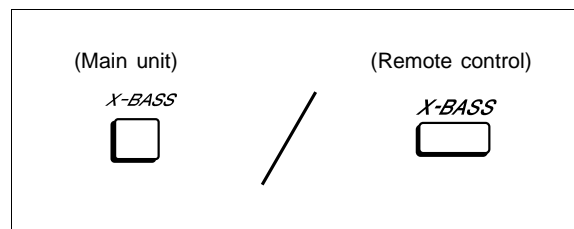
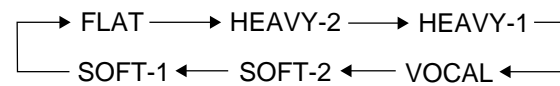
Press the VOLUME ▲ button to increase the volume and the VOLUME ▼ button to decrease the volume.

- The volume display can be changed within the range of "0" to "40".



■ Pre-programmed equalizer

When the PRE-EQ button is pressed, the current mode setting will be displayed. To change to a different mode, press the PRE-EQ button repeatedly.

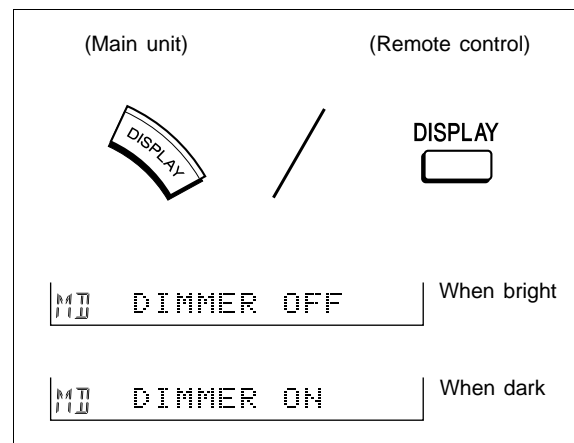


■ Extra bass (X-BASS)

Press the X-BASS button to emphasize the bass region of the frequency spectrum. "X-BASS ON" will appear.

Press the X-BASS button again to cancel the extra bass mode. "X-BASS OFF" will appear.

DISPLAY SECTION



You can change the brightness of the display. When the power is on, press the DISPLAY button for at least two seconds.

- The display section will become brighter.

To return to the original brightness, press the DISPLAY button again for at least two seconds.

Note:

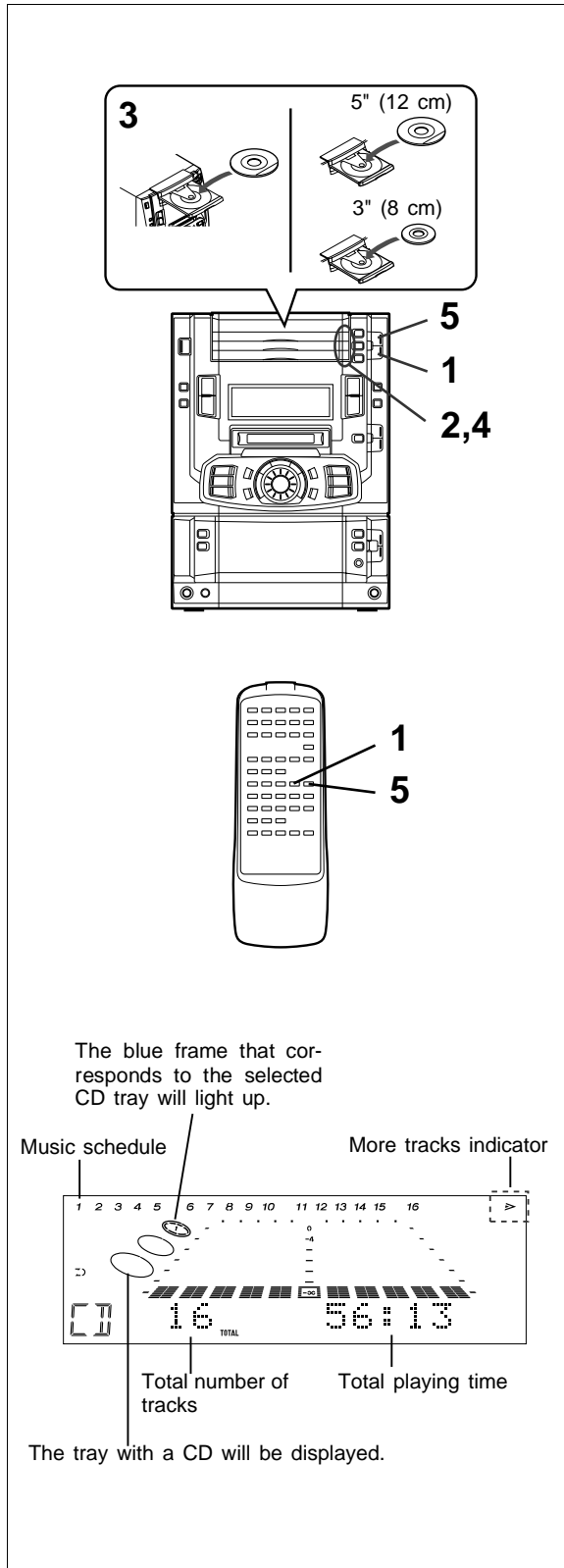
- The brightness setting of the display is maintained even after the unit has entered stand-by mode.

COMPACT DISC OPERATION

Caution:

- Do not carry the unit while CDs are in the trays or a MiniDisc is loaded. The discs may come loose inside the unit and they may be damaged or cause damage to the unit. This may also cause malfunctions.
- Do not place two CDs in one disc position.
- Do not push the disc tray while it is moving.
- Do not attempt to push the disc tray by hand. This may cause malfunctions.
- If the power fails while the tray is open, wait until the power is restored.
- If the disc tray is stopped forcibly, "DISC ERR" will appear in the display and the unit will not function. If this occurs, press the POWER button twice to enter the stand-by mode and turn it on again.
- If TV or radio interference occurs during CD operation, move the unit away from the TV or radio.
- If a disc is damaged, dirty, or loaded upside down, the disc will be skipped and the next disc will automatically play.
- If the CDs are dirty or have label adhesive on their surface, make sure to clean them before loading.
- If the CD ► || button, any of the CD 1 ► - 3 ► buttons or the ▲ button is pressed when a disc tray is open, the disc tray will close automatically. Be careful not to catch your fingers.
- If the unit is shaken by impact or vibration, playback may be disrupted. If the playback volume of a CD is raised excessively, playback may be disrupted. If this occurs, lower the playback volume.

(Continued)



■ Loading and playing CDs

- 1** Press the CD ■ button.
 - The power will be turned on automatically, and the unit will enter the CD mode.
 - 2** Press the CD ▲ button to open a disc tray.
 - Press one of the CD 1 ► - CD 3 ► buttons depending on which disc tray you want to load.
 - You cannot open more than one disc tray at the same time.
 - 3** Place the CD(s) on the disc tray, label side up.
 - Be sure to place 3" (8 cm) disc in the middle of the disc holder.
- Caution:**
Do not place more than one CD in any tray position. This can damage the player and the CDs.
- 4** Press the CD ▲ button of the disc tray that is open.
 - Repeat steps 2 - 3 to load one disc each into the second and third disc trays.
 - The total number of tracks and the total playing time on the selected disc will be displayed. At this time, the blue frame that corresponds to the selected disc tray will light up.
 - The music schedule will be displayed only for the number of tracks on the disc.
 - If the CD contains more than 21 tracks, "►" will appear.
 - 5** Press the CD ► || button.
 - Playback will begin from track 1 on the disc you have selected to play.
 - After the disc finishes playing, the next disc will automatically play.
 - When there is no CD in one of the disc 1 - 3 trays, that tray will be skipped and the next CD will be played.
 - When the CD ► || button is pressed after a track is selected (while the blue frame mark of Disc 1 is lit), the track will be played.
 - If you press the CD ► || button and then the CD 2 ► button, discs 2 and 3 will be played.
 - If the CD 3 ► button is pressed, only disc 3 will played.
 - When the last track on the third disc has finished playing, the unit will stop automatically.

To interrupt playback:

- Press the CD ► || button.
- Press the CD ► || button to resume playback from the same point.

To stop playback:

- Press the CD ■ button.

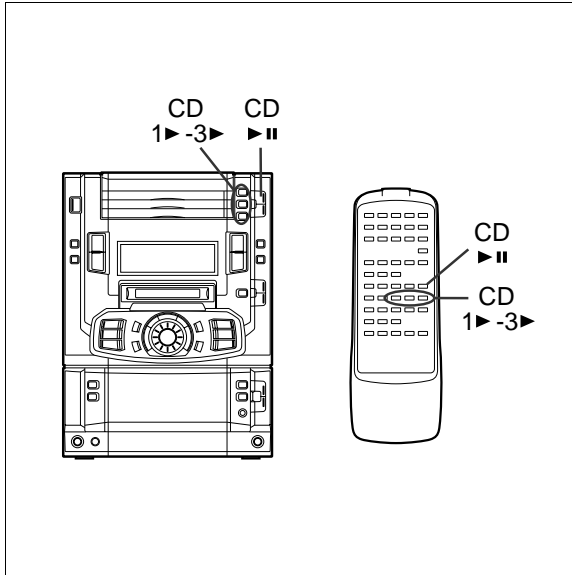
To remove the CDs:

- While in the stop mode, press the ▲ button.
- When playing back a CD, it is possible to remove or change the other two discs.

After use:

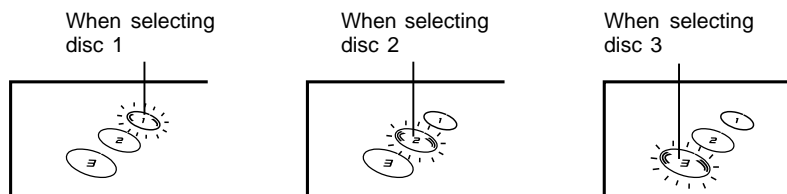
- Press the POWER button to enter the stand-by mode.

(Continued)



When choosing a CD for playback

Press one of the CD 1 ▶ - 3 ▶ buttons to select the CD you want to listen to.
● Only the selected CD will be played back.



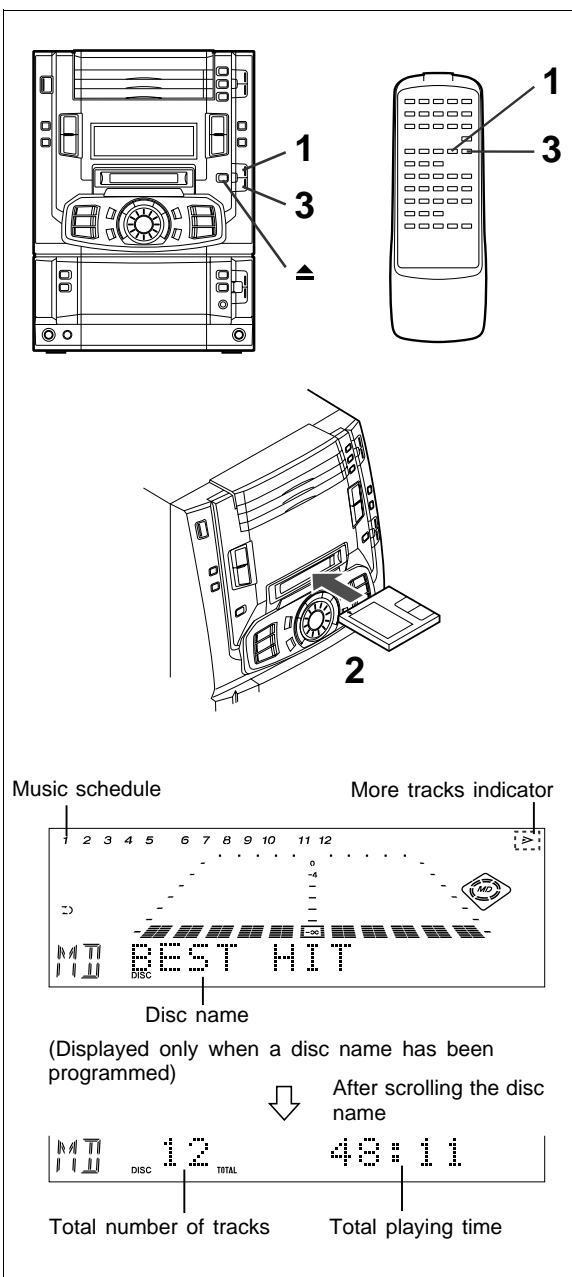
Notes:

- If any disc tray is open, it will be automatically closed.
- If the CD ▶ || button is pressed, continuous playback will begin from the first track of disc 1, even after disc 2 or disc 3 has been selected.

Direct playback:

If a CD is loaded in the unit, pressing the CD ▶ || button turns the power on and begins playback.

MINIDISC OPERATION



Loading and playing MiniDiscs

1 Press the MD ■ button.

- The power will be turned on automatically, and the unit will enter the MD mode.

2 Load a MiniDisc in the direction indicated by the arrow on the MiniDisc, with the labeled side facing up.

- Even if the unit is in the stand-by mode, the power will be turned on automatically when an MD is loaded into the unit.
- The total number of tracks and the total playing time on the MiniDisc will be displayed.
- The music schedule will be displayed only for the number of tracks on the MiniDisc.
- If the MD contains more than 21 tracks, "▶" will appear.

3 Press the MD ▶ || button.

- If the MD has a name, the name will appear and scroll across the display. Then, the elapsed playing time will appear.
- If the MD has no disc or track names, the elapsed playing time will appear.
- When the last track is finished playing, the unit will stop automatically.

To interrupt playback:

- Press the MD ▶ || button.
- Press the MD ▶ || button to resume playback from the same point.

To stop playback:

Press the MD ■ button.

To remove a MiniDisc:

- Press the ▲ button.
- The MiniDisc will be ejected.

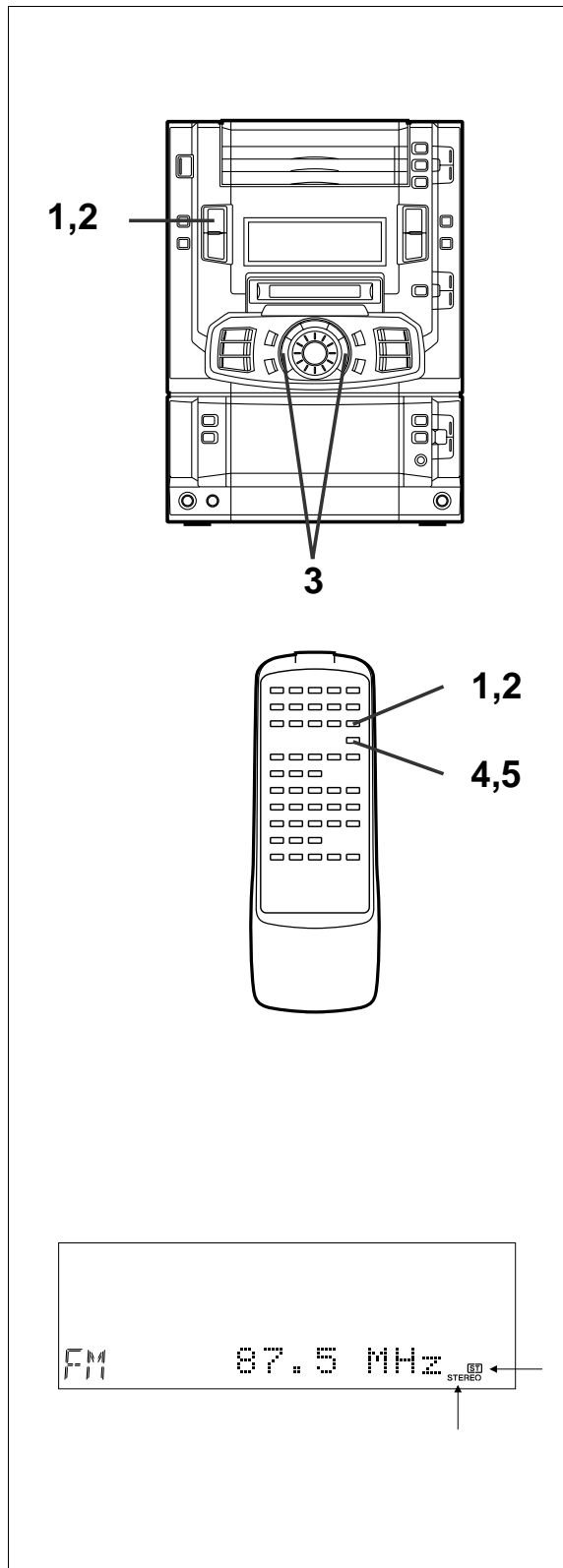
Direct playback:

If a MiniDisc is already loaded in the unit, pressing the MD ▶ || button turns the power on, and begins playback.

Notes:

- The unit cannot enter the stand-by mode when reading the information on a MiniDisc.
- If TV or radio interference occurs when using the MD, move the unit away from the TV or radio.
- Although MiniDiscs will not normally skip due to vibration, you may hear a skip in the sound if there is continuous vibration. If the volume is turned up too high, a skip may occur depending on the contents of the MD. If this happens, turn the volume down and the skipping should stop.
- If "DISC ERR" is displayed during MD operation, see "TROUBLESHOOTING" on page 48, and try again.

RADIO OPERATION



■ Tuning

- 1 Press the TUNER (BAND) button.
 - The power will be turned on automatically, and the unit will enter the tuner mode.
- 2 Press the TUNER (BAND) button to select the desired frequency band. (FM ST, FM or AM)
- 3 Press the TUNING (◀◀ or ▶▶) button to tune into the desired station.

Manual tuning:

Press the TUNING (◀◀ or ▶▶) button as many times as required to adjust the tuner to the desired station.

Auto tuning:

When the TUNING (◀◀ or ▶▶) button is pressed for more than 0.5 seconds, scanning will start automatically and the tuner will stop at the first receivable broadcast station.

Notes:

- When radio interference occurs during auto scan tuning, auto scan tuning may stop automatically at that point.
- If a weak station signal is found during auto scan tuning, the station will be skipped.
- To stop the auto tuning, press the TUNING (◀◀ or ▶▶) button again.

- 4 To receive an FM stereo transmission, press the ST-MODE button on the remote control so that the "STEREO" indicator on the display lights up.

- "ST" will appear when an FM broadcast is in stereo.

- 5 If the FM reception is weak, press the ST-MODE button on the remote control so that the "STEREO" indicator goes out.

- Although the reception changes to monaural, the sound becomes clearer.

After use:

Press the POWER button to enter the stand-by mode.

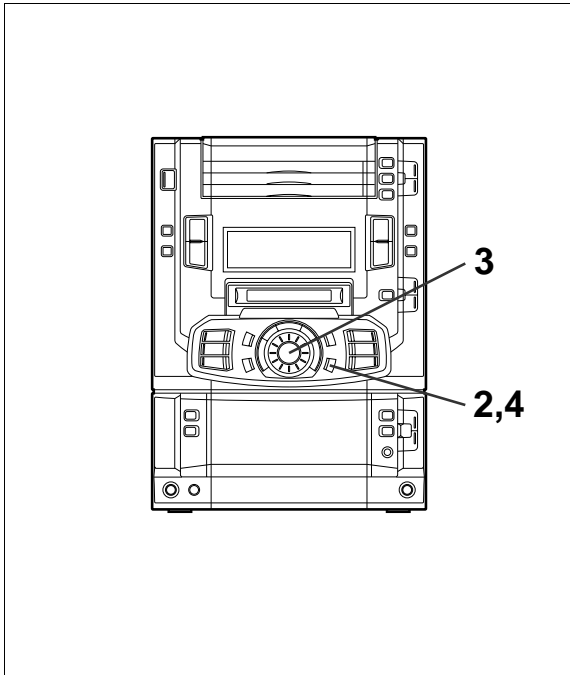
Notes:

- The tuner memory will store the last station you were listening to in each band, even when the unit is in the stand-by mode.
- If the unit's AM/FM tuner interferes with the reception of a nearby TV or radio, move the unit as far away from these items as possible.

Direct playback:

Just pressing the TUNER (BAND) button will turn on the power automatically. The radio station you were listening to last will be tuned in.

(Continued)

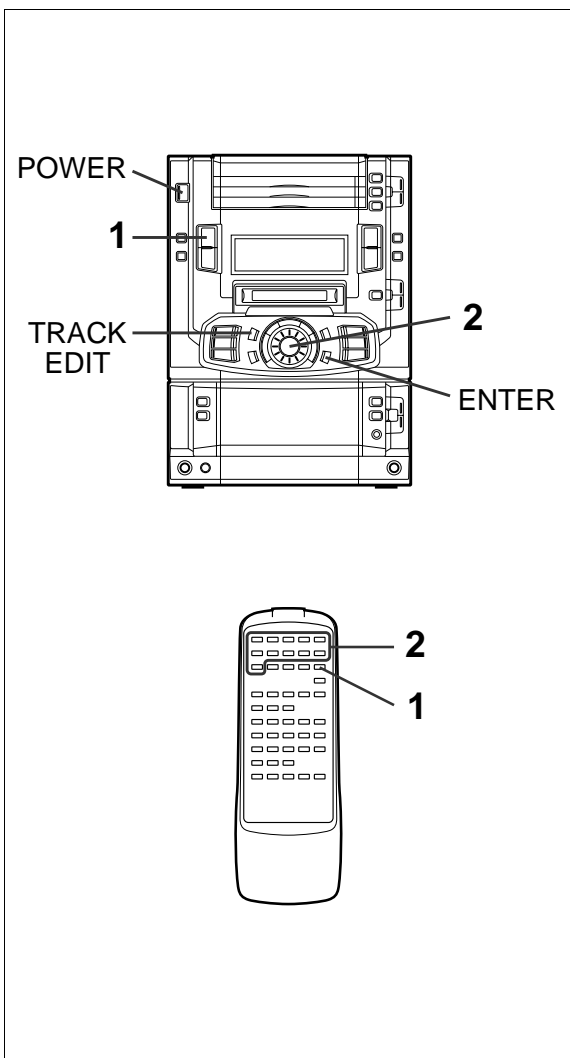


■ Preset tuning

You can store up to 40 stations in memory (40 stations consisting of any combination of AM and FM stations you like) and recall them at the push of a button.

To enter stations into memory:

- 1 Perform steps 1 - 5 in the "Tuning" section.
 - 2 Press the ENTER button.
 - 3 Within 10 seconds, turn the jog dial to make the preset channel number flash in the display.
 - 4 Within 10 seconds, press the ENTER button to store that station in the selected station preset number memory.
- Store the stations in memory, in order, starting with preset channel 1.
 - If the preset number indicators go out before the station is memorized, repeat the operation from step 2.
 - When a new station is stored in the selected station preset number memory, the contents previously memorized will be erased.



To recall a memorized station:

- 1 Press the TUNER (BAND) button.
 - 2 Press the DIRECT KEY on the remote control or turn the jog dial on the main unit to recall the preset channel number.
- The frequency will appear in the display.

For example, to select 5:

Press the "5" button.

For example, to select 23:

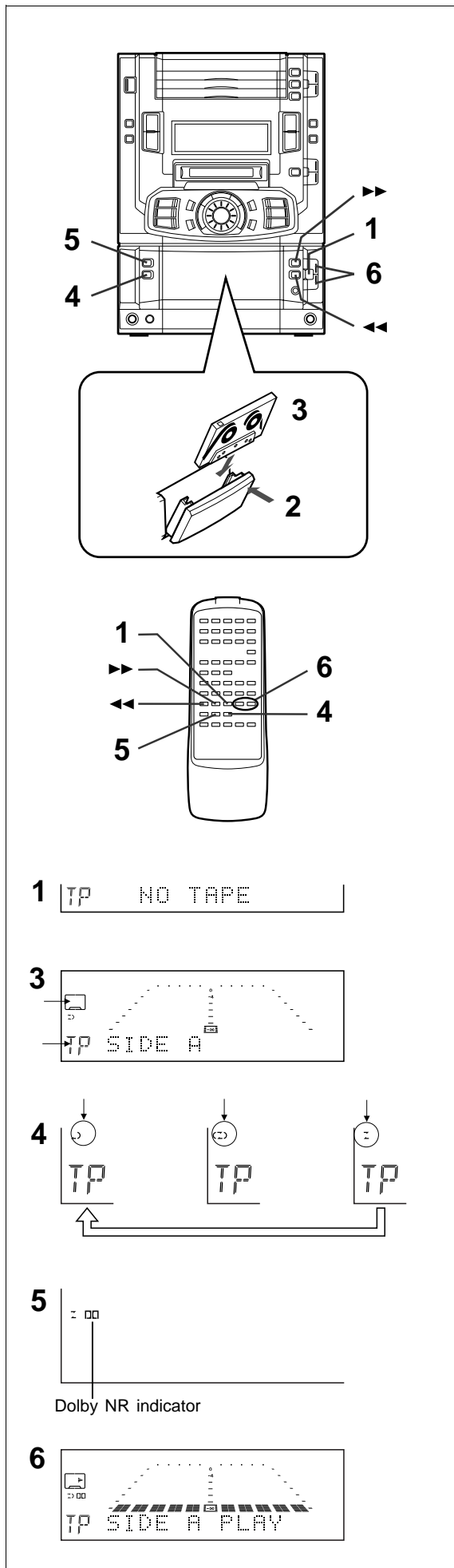
- ① Press the > 10 button.
- ② Within 5 seconds, press the "2" button.
- ③ Within 5 seconds, press the "3" button.

To erase all memorized stations:

When the unit is in the stand-by mode, hold and press the TRACK EDIT and ENTER buttons, and then press the POWER button.

- All of the memorized stations will be erased.

CASSETTE OPERATION



■ Normal playback

- 1 Press the TAPE ■ button.
 - The power will be turned on automatically, and the unit will enter the TAPE mode.
- 2 Open the cassette door by pushing the area marked "PUSH OPEN".
- 3 Load a cassette into the cassette compartment.
- 4 Press the REVERSE MODE button.
 - ⏮ ... To listen to one side of the tape.
 - ⏪ ... To listen to both sides of the tape.
 - ⏩ ... For endless repeat play of both sides of the tape.
- 5 Select the Dolby Noise Reduction (NR) mode by pressing the DOLBY NR button.
 - When a tape recorded with the Dolby NR system is used, turn on the Dolby NR indicator.
 - When a tape not recorded with the Dolby NR system is used, turn off the Dolby NR indicator.
- 6 Press the ► button to listen to side A (1), or the ◀ button for side B (2).
 - To play both sides of the tape (⏪), start from side A (1). When the tape starts playback from side B (2), side A (1) will not be played after side B (2) finishes.

To stop playback:

Press the TAPE ■ button.

To fast-wind the tape onto the left reel:

Press the ◀◀ button when the tape is stopped.

To fast-wind the tape onto the right reel:

Press the ▶▶ button when the tape is stopped.

Listening to the reverse side during playback:

Press the ◀ or ▶ button during playback.

Direct play:

- If a tape is already loaded, when you press the ◀ or ▶ button, the power will be turned on automatically, and playback of the tape will start.

To restart the track being played from the beginning:

Press the ◀◀ or ▶▶ button during playback.

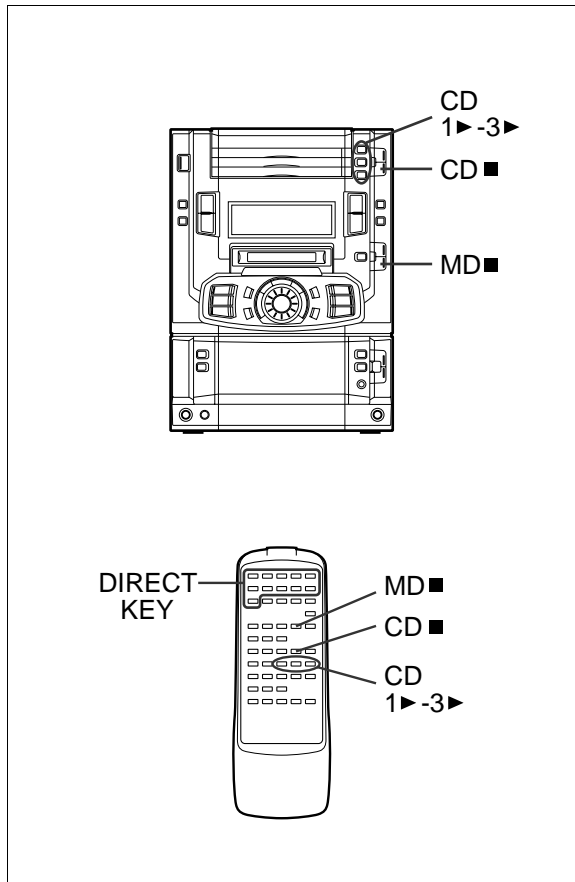
To listen to the next track:

Press the ◀◀ or ▶▶ button during playback.

Precautions:

- When removing the cassette tape, press the TAPE ■ button, and then open the cassette compartment.
- Before changing from one tape operation to another, press the TAPE ■ button.
- If a power failure occurs during tape operation, the tape head will remain engaged with the tape and the cassette door will not open. If this occurs, wait until power is restored.

CONVENIENT CD AND MD OPERATIONS



■ Direct-selection play

By using the DIRECT KEY on the remote control, you can play any track directly.

When CD is selected:

- 1 Press one of the CD 1 ▶ - 3 ▶ buttons to select the CD you want to listen to.
- 2 Press the CD ■ button.
- 3 Use the DIRECT KEY to select the desired track number.

When MD is selected:

- 1 Press the MD ■ button.
- 2 Use the DIRECT KEY to select the desired track number.

A. To select track numbers 11 to 99

Press the > 10 button first, then press the track number.

For example, to select 36:

- ① Press the > 10 button.
- ② Within 5 seconds, press the "3" button.
- ③ Within 5 seconds, press the "6" button.

B. To select a track number 100 or higher (only for MDs)

Press the > 10 button twice, then press the track number.

For example, to select 128:

- ① Press the > 10 button.
- ② Within 5 seconds, press the > 10 button.
- ③ Within 5 seconds, press the "1" button.
- ④ Within 5 seconds, press the "2" button.
- ⑤ Within 5 seconds, press the "8" button.

The beginning of the selected track will be found, and play will begin automatically.

Notes:

- A track number higher than the number of tracks on the disc cannot be selected.
- During APMS play or random play, track number selection play is not possible.

■ APSS (Auto Program Search System)

APSS automatically locates the beginning of any track.

To move to the beginning of the next track:

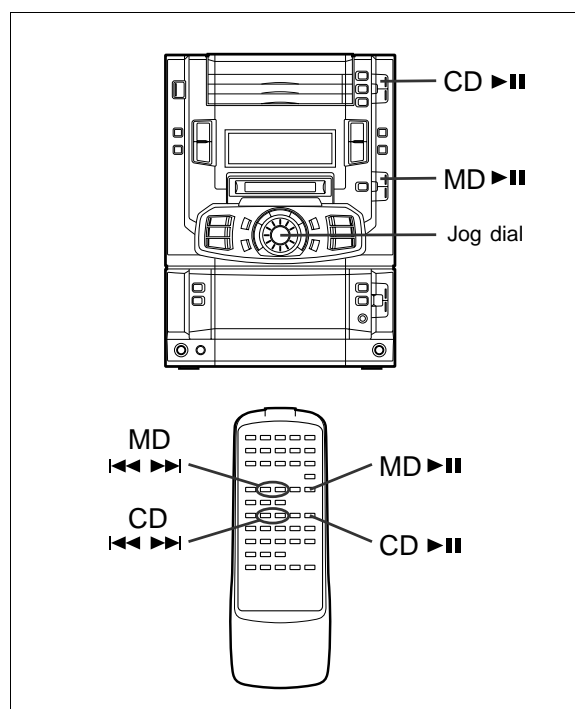
During playback ... Turn the jog dial clockwise.
Or press the ►► button on the remote control.

To restart the track being played:

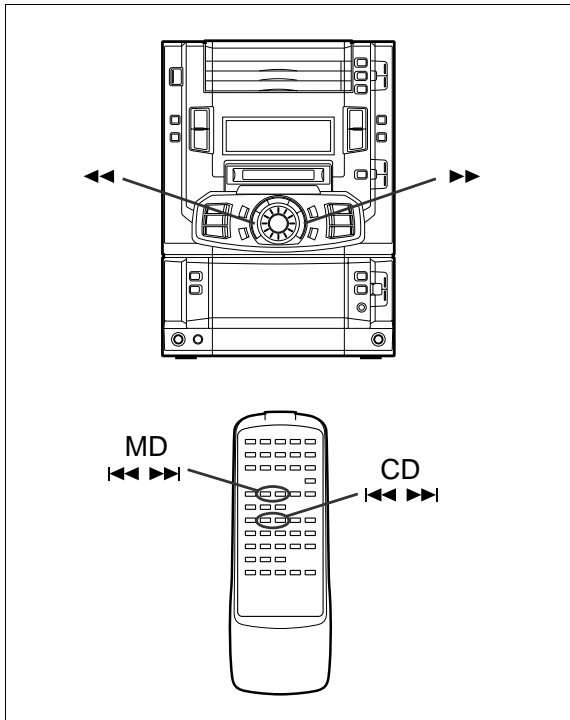
During playback ... Turn the jog dial counterclockwise.
Or press the ◀◀ button on the remote control.

When using the jog dial while in the stop mode:

Every time the jog dial is turned (or each time the ◀◀ or ►► button on the remote control is pressed), the track number will go up or down by one. If you press the ►|| button, playback will begin from the track being displayed.



(Continued)



■ Cue and review

During playback hold the ►► button (►► button on the remote control) down for audible fast forward, and hold the ◀◀ button (◀◀ button on the remote control) down for audible fast reverse. Normal playback will resume when the ►► or ◀◀ (►► or ◀◀) button is released.

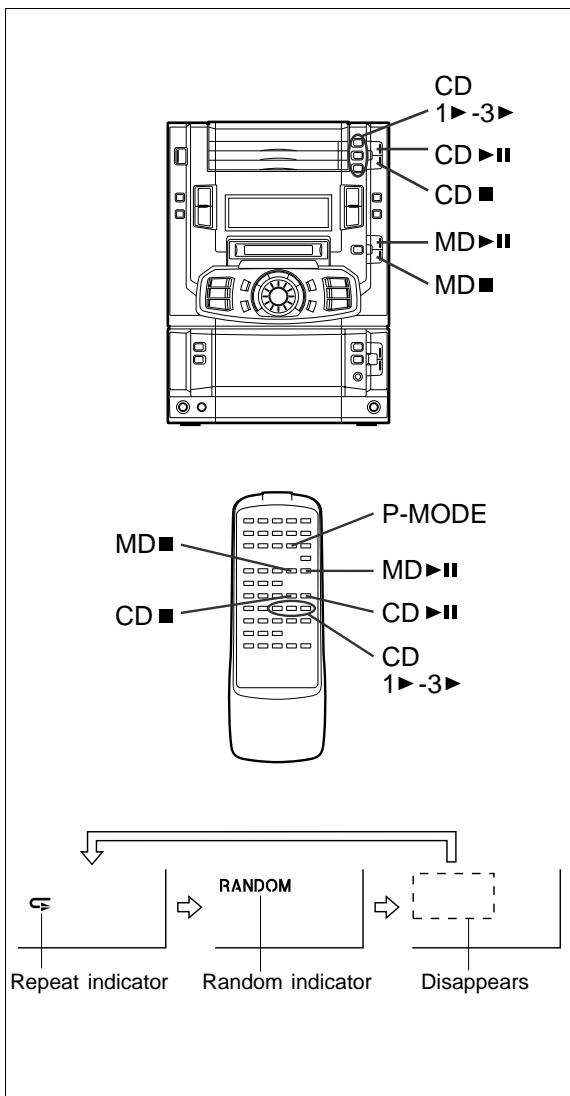
Notes:

- When the beginning of the first track is reached, normal playback will start.
- When the end of the last track is reached, "DISC END" will light, and the unit will pause. If you want to listen to a portion of a track again, press the ◀◀ (◀◀) button to return to the point in the track you want to listen to. Normal playback will start from that point.

To search very quickly:

When fast forward or fast reverse is used while in the pause mode, the playback point will move more quickly than when using audible fast forward or audible fast reverse playback.

- In this mode, no sound is heard. Therefore, you should refer to the time display.
- When you lift your finger, the unit will re-enter the pause mode.



■ Repeat and random play

1 Select the desired program source, CD or MD, by pressing the CD ■ or MD ■ button.

2 Press the P-MODE button on the remote control.

- Each time this button is pressed, the mode will change in the following order: Repeat play → Random play → Normal play → Repeat play

3 Press the CD ►► or MD ►► button to start playback.

- To specify a disc from disc trays 1 - 3, press one of the CD 1 ► - 3 ► buttons (only for CDs).

● Repeat play

After the last track has been played, playback will return to the first track and begin again.

● Random play

When the CD ►► or CD 1 ► - 3 ► buttons are pressed, all of the tracks will be played at random, and then playback will stop. (The same track will not be played back twice.)

To cancel repeat or random play:

Press the P-MODE button until the "C" or "RANDOM" display disappears.

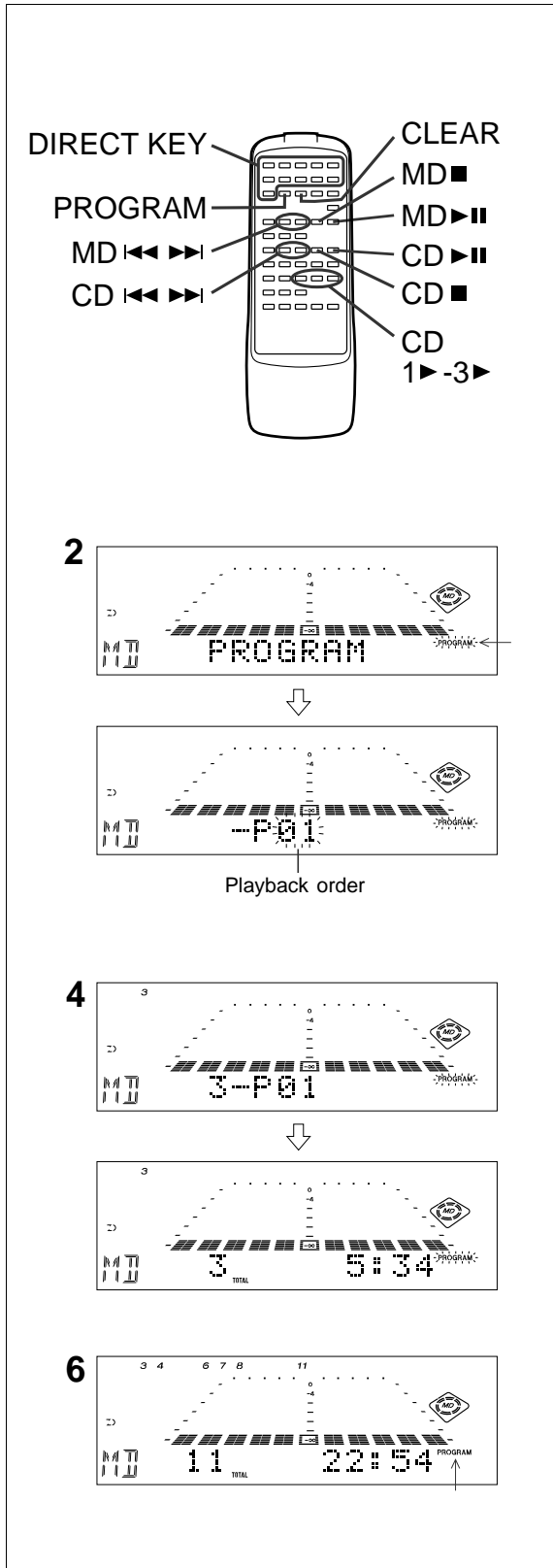
To repeat playback of selected tracks:

Enter the program for the tracks you want and start repeat play. You can program a single track and play it repeatedly (Refer to page 18).

Notes:

- During APMS play, random play is not possible.
- When random or repeat play is selected during CD or MD playback, random or repeat play will start at that point.

(Continued)



■ APMS

(Automatic Programmable Music Selector)

(Remote control operation)

- 1** Select the desired program source, CD or MD, by pressing the CD ■ or MD ■ button.
- 2** Press the PROGRAM button.
 - "PROGRAM" will flash.
- 3** If you have selected CD, press one of the buttons (1 ► - 3 ►) to select the disc to be played.
- 4** Use the DIRECT KEY to select the desired track number.
- 5** Repeat steps 3 and 4 for any other tracks. (Repeat step 4 only for MDs). Up to 20 MD tracks or 32 CD tracks can be programmed.
 - To select another track on an MD or on the same CD, skip step 3.
 - The programmed playback order and the total playing time of the programmed tracks will be automatically displayed, and only those track numbers will appear in the music schedule.
 - If the total playing time of the programmed tracks exceeds 999 minutes 59 seconds, "--:--" will be displayed. In this case, the programmed tracks are stored. (only for CDs).
 - If the total playing time of the programmed tracks exceeds 255 minutes 59 seconds, "255:59" will be displayed. In this case, the programmed tracks are stored. (only for MDs).
- 6** Press the CD ■ or MD ■ button.
 - "PROGRAM" will appear.
- 7** Press the CD ► || or MD ► || button to start playback of the programmed selections.
 - After all of the programmed tracks have finished playback, the unit will automatically stop.

To clear the programmed selections:

- Press the CLEAR button while the "PROGRAM" indicator is flashing.
- Each time the button is pressed, one track will be cleared, beginning with the last track programmed.

To cancel the APMS:

- While the unit is stopped in the APMS mode, press the CLEAR button to turn off the "PROGRAM" display.
- The program contents will be erased.
 - When you open the disc tray or a MiniDisc is removed, the APMS mode will be canceled.

To check which tracks are programmed:

- While the unit is stopped in the APMS mode, turn the jog dial. Or press the ◀◀ or ▶▶ button on the remote control.
- When the jog dial is turned clockwise, the next track number will appear. When it is turned counterclockwise, the previous track number will appear.

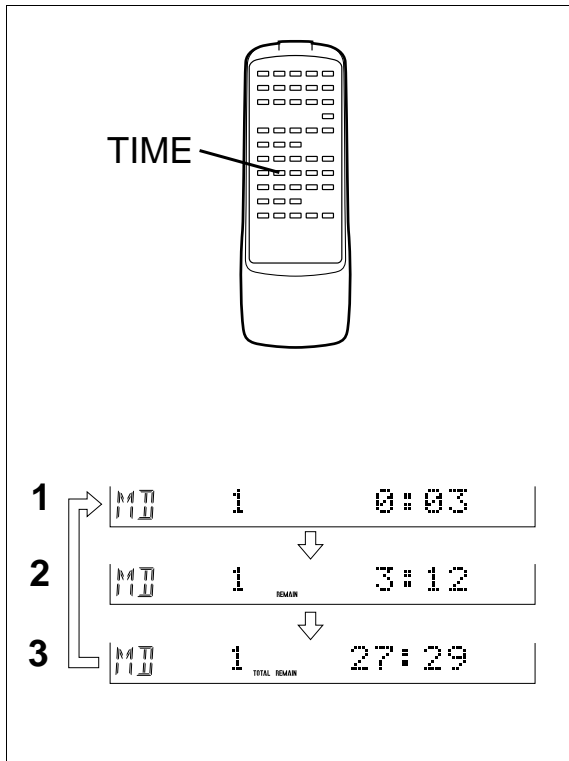
Adding tracks to the program

If a program has been previously stored, the "PROGRAM" indicator will be displayed. Then follow steps 2 - 6 to add additional tracks, and they will be stored after the last track you entered.

Notes:

- It is not possible to insert an additional track between programmed tracks that have already been entered.
- Programming and canceling are not possible during playback or in the pause mode.

(Continued)



Switching the time display

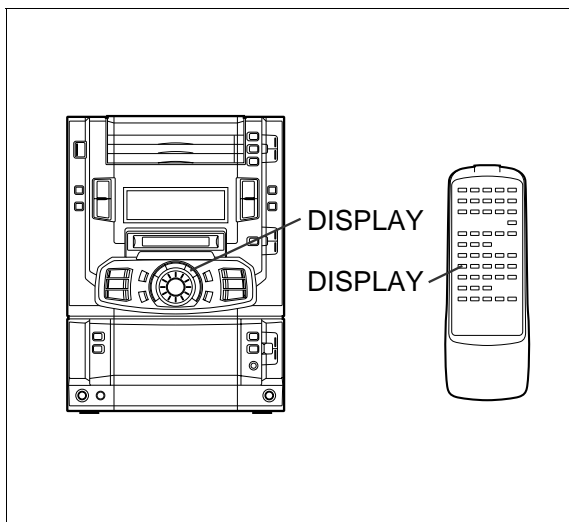
Each time the TIME button is pressed during playback or when in the pause mode, the display will change as described below.

See the diagram to the left

- 1 The elapsed playing time for each track will be displayed.
- 2 The remaining playing time for the current track will be displayed.
- 3 The total remaining playing time for the disc from the point being played at that time will be displayed.

Notes:

- During random play, only the elapsed playing time for each track will be displayed. The display cannot be switched.
- Depending on a CD or MD to be played, the playing time display may not match the total playing time which is indicated on the CD or MD jacket, as the time between the tracks is not included.



Changing the display during MD playback

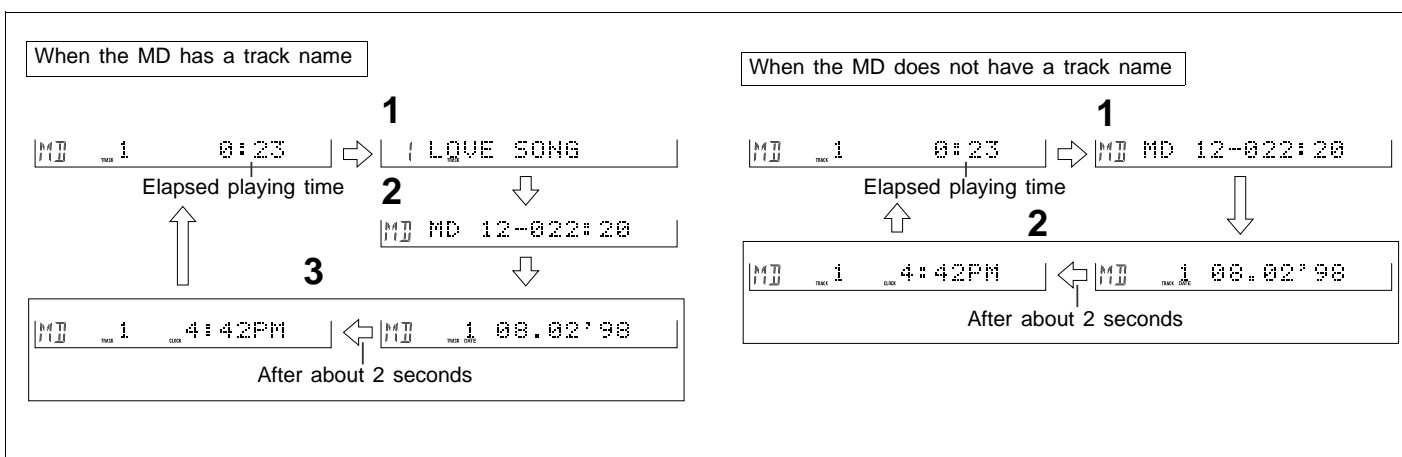
Each time the DISPLAY button is pressed during playback or when in the pause mode, the display will change as described below.

When the MD has a track name:

- 1 The track name will be displayed.
- 2 The total number of tracks and the remaining recording time will be displayed.
- 3 The date and time recorded will be displayed.

When the MD does not have a track name:

- 1 The total number of tracks and the remaining recording time will be displayed.
- 2 The date and time recorded will be displayed.



RECORDING

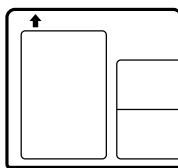
■ Differences from tape recordings

You cannot record music on the reverse side of a MiniDisc.

MiniDiscs are single sided and should only be inserted with the correct side up.

You don't need to search for the starting point at which to record.

The unit automatically finds the point at which recording can start. Recording will start from that point.

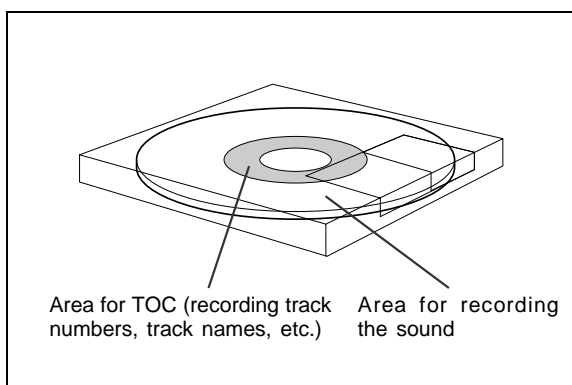


You can check the total or remaining recordable time (possible recording) before recording.

This lets you plan a recording session so that the last song will not come to an abrupt end before it has finished.

The date and time of a recording are automatically saved with the recording.

If you have set the date and time, they will be automatically recorded when a recording is made.



■ Disc writing (TOC)

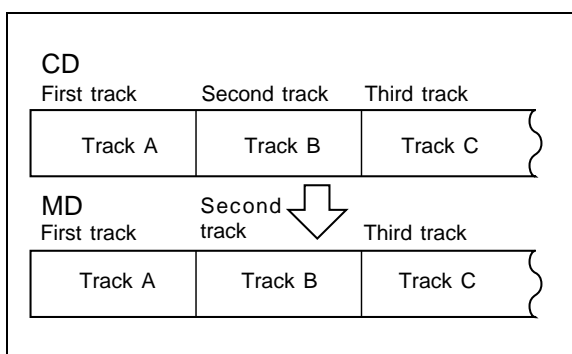
The TOC (Table of Contents) is information on track numbers and recording areas to allow the unit to recognize musical selections or sounds. The entire MD is controlled depending on this TOC, which enables the unit to find the beginning of a track quickly or to automatically record in a vacant area.

When you start recording or editing, "TOC" will appear in the display window. This indicates that information in the TOC is now being changed according to recording or editing being performed. (The changed TOC is not yet recorded on the MiniDisc at this time.)

The TOC is recorded when

- you stop recording.
- you switch to another input source.
- you eject the MiniDisc.
- you turn the power off.

Do NOT unplug the power cord while the TOC is being recorded ("TOC" is flashing) and do NOT impart shock to the unit. Otherwise, TOC will not be correctly recorded, and consequently proper playback may not be possible.



■ About track numbers

When recording from a CD

New track numbers will be created automatically according to the original tracks (Synchro mark function).

- When you record from a CD to a MiniDisc, the track numbers recorded on the MiniDisc may not match the track numbers on the CD. If this happens, correct the track numbers using the DIVIDE (page 33) and COMBINE (page 33) functions after recording.

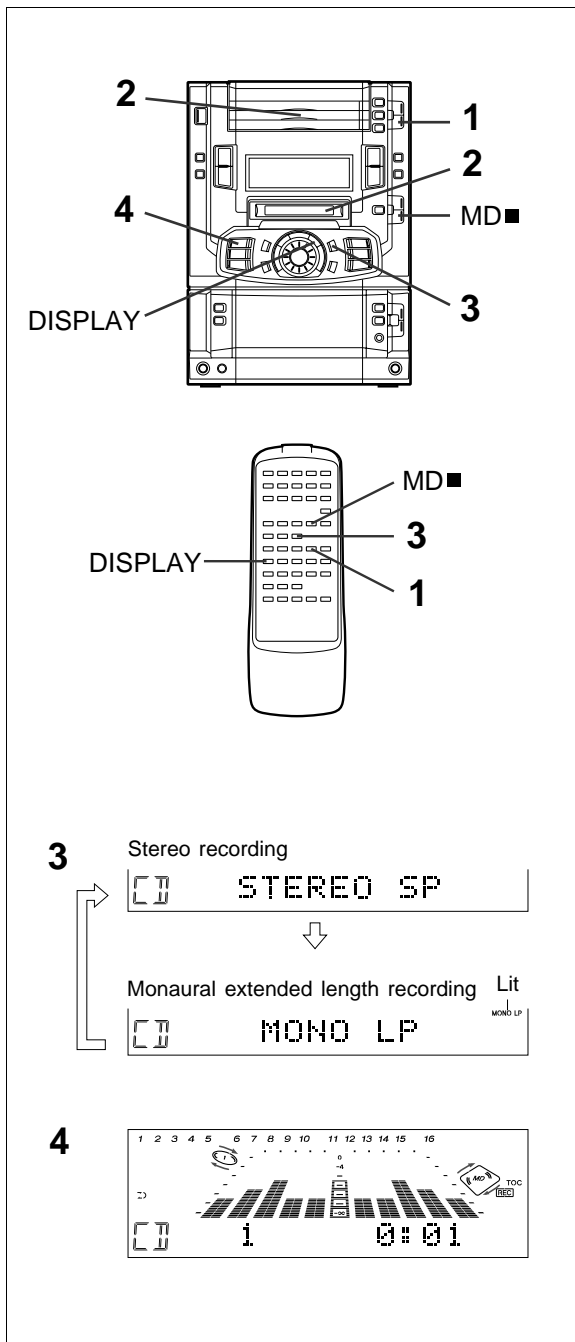
Recordings cannot be made in the following situations.

- If you try recording on a playback-only MiniDisc (commercially available music)
- If a MiniDisc is protected against accidental erasure (Page 44)
- If there is no more recording time left on the disc (Page 45)
- When the "TOC FULL" message appears (Page 45)
- If a disc's TOC has been damaged
- If you are trying to copy a digital signal that has been encoded with the SCMS signal (Serial Copy Management System)

Notes:

- When recording important selections, be sure to make a preliminary test to ensure that the desired material is being properly recorded.
- The VOLUME and X-BASS controls may be adjusted with no effect to the recorded signal. (Variable Sound Monitor)

(Continued)



Recording from a CD onto a MiniDisc (One-Touch Editing)

A CD can be recorded to a MiniDisc, starting from the first track, with a one-touch operation. More than one CD can be recorded consecutively.

- 1** Press the CD ■ button.
- 2** Load a compact disc and a recordable MiniDisc.
 - The total number of tracks and the total playing time on the CD will be displayed.
 - When a new recordable MiniDisc is loaded, it will take about 15 seconds to enter the recording stand-by mode.
- 3** Check the recording mode by pressing the REC MODE button.
 - Each time the button is pressed, the display will switch between the stereo mode and the monaural long-play mode.
 - This mode cannot be changed while recording.
 - When a track which was recorded in monaural sound is played back, "M" will be displayed after the track number.
- 4** Press the CD ► MD button.
 - The compact discs loaded in DISC-1 - DISC-3 will be recorded in order, starting from the first track on DISC-1. When a MiniDisc runs out of recording space or when a compact disc has been completely recorded, the CD and the MD will stop automatically.

If recording does not begin

When a disc is loaded in each of DISC-1 - DISC-3, if all of the tracks on the discs cannot be recorded, the number of tracks that cannot be recorded will be displayed. Next the number of tracks that can be recorded will appear. The unit will then enter the recording stand-by mode.

- Press the CD ► MD button.
- Recording will begin, starting from the first track on DISC-1.
 - After recording all of the tracks that can be recorded, the unit will stop automatically.

To cancel the operation:

Before pressing the CD ► MD button, press the CD ■ or MD ■ button.

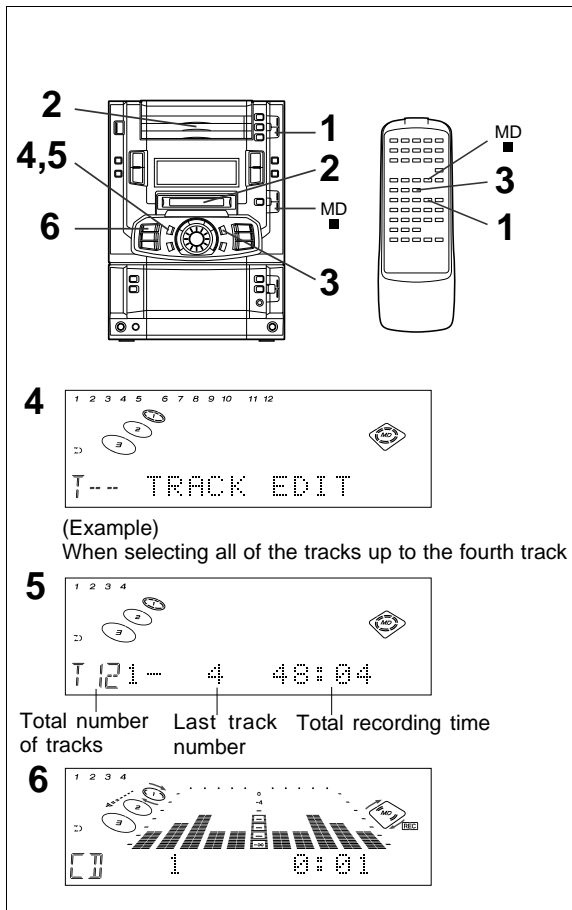
To stop recording:

- Press the CD ■ or MD ■ button.
- Playback and recording will stop after the track numbers have been written to the MiniDisc.
 - It is not possible to pause in the recording mode.

To check the remaining time available for recording:

- ① Press the MD ■ button.
 - ② Load a MiniDisc.
 - ③ Press the DISPLAY button.
- After the number of tracks are recorded, the available time remaining will be displayed. Five seconds later, the unit will return to the original display.

(Continued)



Recording desired tracks from a CD onto a MiniDisc (Track Editing)

Several consecutive tracks, starting from the first track on a CD (for example: from the first track to the fourth track), can be recorded onto an MD.

- 1** Press the CD ■ button.
- 2** Load a compact disc and a recordable MiniDisc.
- 3** Check the recording mode by pressing the REC MODE button.
- 4** Press the TRACK EDIT button.
 - To record a single track, skip to step 6.
- 5** Select the last track to record by pressing the TRACK EDIT button.
 - Each time you press the TRACK EDIT button, the track number will increase.
 - If you select more than 100 tracks or more tracks than there are on the CD or if the total recording time exceeds 150 minutes, "EDIT OVER" will be displayed. Then, pressing the TRACK EDIT button will not select the next track number.
- 6** Press the CD ► MD button.
 - If recording does not begin, press the CD ► MD button again. (See page 21.)
 - Recording will start from the tracks selected in disc 1, disc 2 and disc 3, in that order. After recording, the CD and the MD will stop automatically.

To cancel the track edit operation:

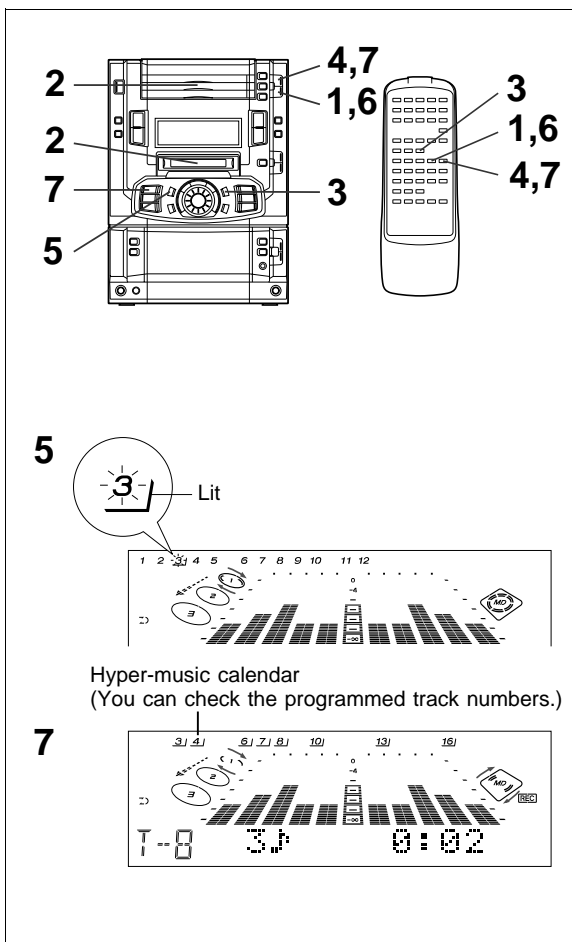
Press the CD ■ button before pressing the CD ► MD button.

To stop recording:

Press the CD ■ or MD ■ button.

- After the track numbers have been written to the MiniDisc, playback and recording will stop.
- It is not possible to pause in the recording mode.

Recording only your favorite tracks onto a MiniDisc while listening to a CD (Hypertrack Editing)



- 1** Press the CD ■ button.
 - 2** Load a compact disc and a recordable MiniDisc.
 - 3** Check the recording mode by pressing the REC MODE button.
 - 4** Press the CD ► || button.
 - 5** Press the TRACK EDIT button while playing a track you want to record.
 - Repeat this operation while continuing to listen to the CD.
- If the number of programmed tracks exceeds 32 or if the total recording time exceeds 150 minutes:**
- Pressing the TRACK EDIT button will not add any track to the program after the track which encountered the limit.
- 6** Press the CD ■ button.
 - Playback will stop.
 - If the CD is played to the end, the unit will stop automatically.
 - 7** Press the CD ► MD button.
 - If recording does not begin, press the CD ► MD button again. (See page 21.)
 - Recording will start.
 - After recording is finished, the CD and the MD will stop automatically.

To cancel a programmed track

Press the CD ■ button to stop playing the CD. Then, press the CD ■ button again.

To change a programmed track

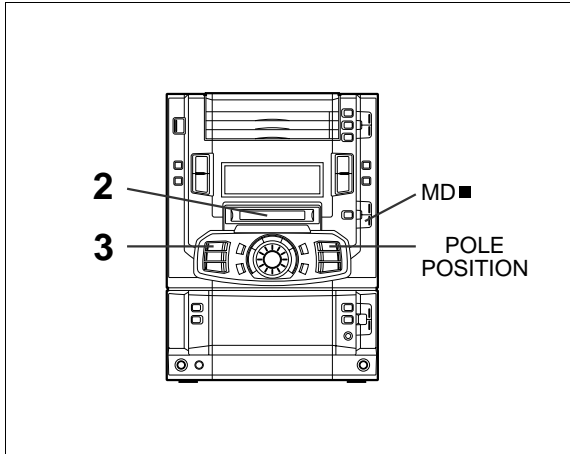
Cancel the programmed track. Then perform the operation from step 4 again.

You can also perform the following operation.

When you know the track number you want to record, you can record it using the Hypertrack Edit function while the CD is in the stop mode.

- ① Select the track number you want to record using the jog dial.
- ② Press the TRACK EDIT button.
 - Repeat steps 1 and 2 to add other track numbers you want to record to the program.
- ③ Press the CD ► MD button.

(Continued)

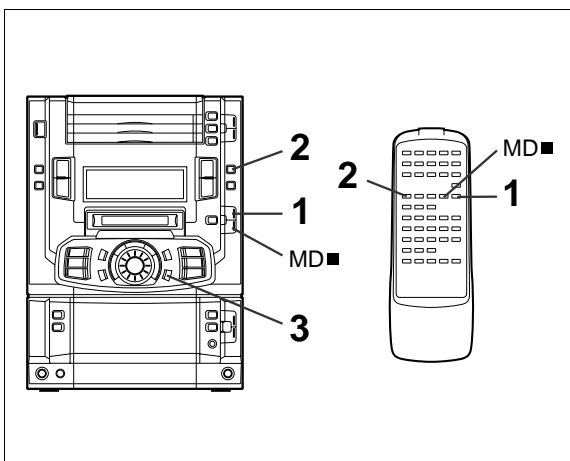


■ APMS recording

- 1 Select tracks for APMS playback. (Page 18)
- 2 Load a recordable MiniDisc.
- 3 Press the CD ► MD button.
 - APMS playback will start, and recording will start automatically.
 - Programmed tracks will be recorded in order. After the unit has finished recording the last track, recording will stop automatically.
 - If you press the POLE POSITION button before pressing the CD ► MD button, a recording can be made from the beginning of the MiniDisc. (Page 25)
 - If recording does not begin, press the CD ► MD button again. (See page 21.)

To stop recording:

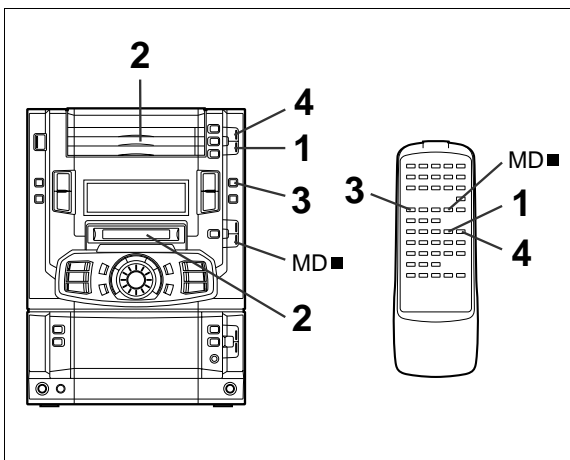
Press the MD ■ button.



■ To re-record

When you want to re-record, you can erase a track that is already recorded, starting from any point in the old track, to begin a new recording. Be aware that when you do this, all of the tracks and track names that follow the newly recorded track will be erased.

- 1 During playback, press the MD ► || button at the point where you want to begin re-recording.
 - The unit will pause.
- 2 Press the MD ● REC button.
 - "R. ERASE OK?" will be displayed.
- 3 Press the ENTER button.
 - This unit will be in the recording pause mode.
 - To cancel the operation, press the MD ■ button.
- 4 Select the recording source and start recording.



■ To record without using One-Touch Editing

Without using one-touch recording, the following operation allows you to record from the first track.

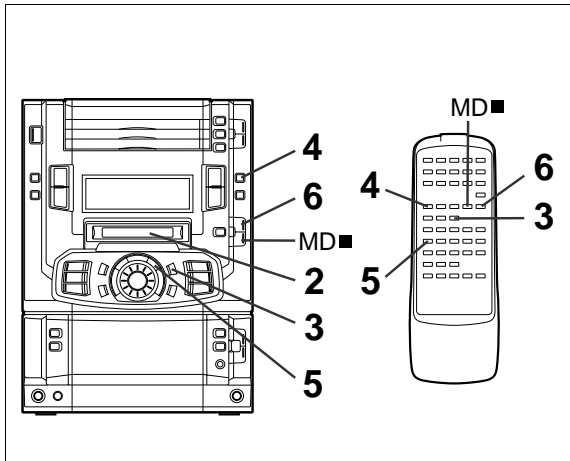
- 1 Press the CD ■ button.
- 2 Load a compact disc and a recordable MiniDisc.
- 3 Press the MD ● REC button.
 - The unit will enter the recording stand-by mode.
- 4 Press the CD ► || button.

To stop recording:

Press the MD ■ button.

- After the track number has been written on the MiniDisc, the recording will stop. However, CD playback will continue.

(Continued)



To record the track number while recording:

The recording is performed as a single track. To identify different sections of a recording you can increase the track number at any point during the recording process. To create a new track number, while in the recording mode, press the MD ● REC button.

- The track number will increase by one, and then the recording will continue.

■ Recording from the built-in radio onto a MiniDisc

- 1 Tune in to the desired station. (pages 13 - 14.)
- 2 Load a recordable MiniDisc.
- 3 Check the recording mode by pressing the REC MODE button.
- 4 Press the MD ● REC button.
 - The unit will enter the recording stand-by mode. At this time, auto tuning is impossible.
- 5 Check the recordable time by pressing the DISPLAY button.
- 6 Press the MD ► || button.
 - During recording, you cannot change the station.

Note:

- Before recording an AM broadcast, enter the recording stand-by mode, and then separate the AM loop antenna from the main unit. Adjust it so that the AM broadcast can be tuned in most clearly.

To stop recording:

Press the MD ■ button.
After the track number has been written on the MiniDisc, the recording will stop.

To interrupt recording:

Press the MD ► || button while recording.
Press the MD ► || button again to resume recording. The track number will increase.

■ Recording from a cassette onto a MiniDisc (One-Touch Editing)

The contents of a tape recording can be recorded onto an MD with a one-touch operation.

- 1 Load a cassette for playback.
- 2 Load a recordable MiniDisc.
- 3 Check the playback direction by pressing the REVERSE MODE button.
- 4 Select the DOLBY NR mode.
 - When recording with the Dolby NR system, turn on the indicator.
- 5 Check the recording mode by pressing the REC MODE button.
- 6 Check the recordable time by pressing the DISPLAY button.
- 7 Press the TAPE ► MD button.
 - Recording will begin.

To stop recording:

Press the MD ■ or TAPE ■ button.

What is the space-cut function?

If there is a silence in the playback signal that lasts 3 seconds during a synchro recording, the recording will stop automatically and unit will enter the recording stand-by mode. Then, when sound from the playback unit resumes, recording will automatically restart. (A space of 3 seconds is placed between tracks.)

- If there is noise between tracks of the sound source, the synchro recording or the space-cut function may not work properly. If this happens, make the recording manually.
- When you need to record tracks or audio that include very quiet passages lasting 3 seconds or more, manual recording is recommended.

Auto Mark function

If there is 1 second or more of silence, a new track number is created automatically.

■ Recording from a cassette onto a MiniDisc (MD Synchronized Recording System)

When a tape is played, the MD recording will start simultaneously.

- 1 Load a cassette for playback.
- 2 Load a recordable MiniDisc.
- 3 Check the playback direction by pressing the REVERSE MODE button.
- 4 Select the DOLBY NR mode.
 - When recording with the Dolby NR system, turn on the indicator.
- 5 Check the recording mode by pressing the REC MODE button.
- 6 Check the recordable time by pressing the DISPLAY button.
- 7 Press the MD ● REC button.
 - The unit will enter the recording stand-by mode.
- 8 Press the TAPE ► button.
 - Recording will begin.

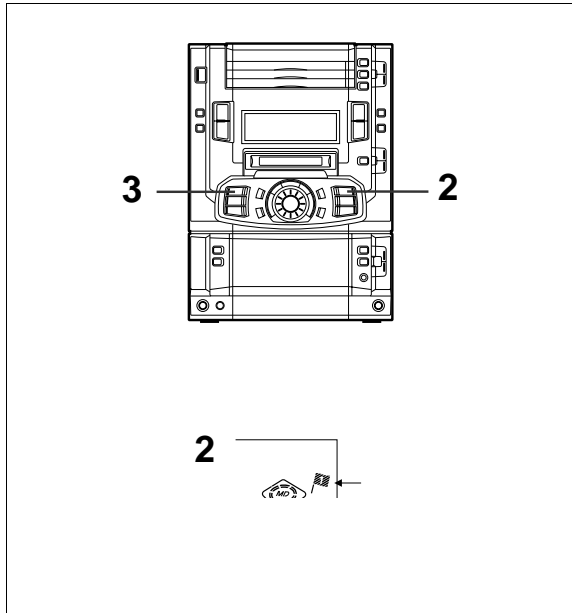
To stop recording:

Press the TAPE ■ button after pressing the MD ■ button.

To interrupt recording:

Press the MD ► || button while recording.
Press the MD ► || button again to resume recording. The track number will increase.


(Continued)



■ Recording a track you want to add at the beginning of a MiniDisc (Pole Position Editing)

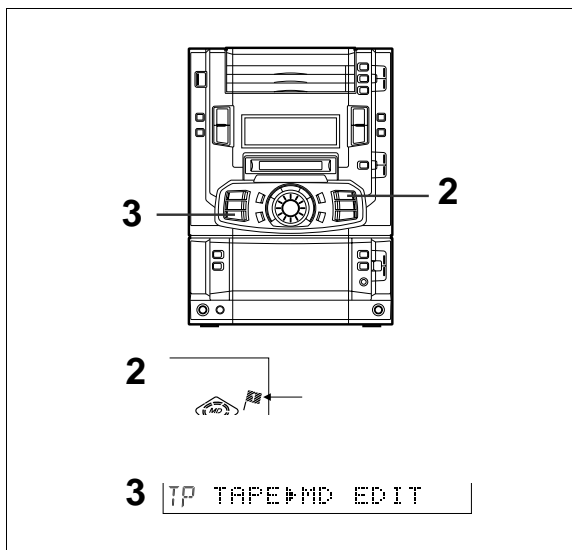
When a track is added to an MD which already has recordings on it, and the POLE POSITION button is pressed, the track can be recorded at the beginning of the MD.

To record from a CD onto a MiniDisc:


- 1** Prepare for recording.
One-Touch Editing: (Page 21. Steps 1 to 3)
Track Editing: (Page 22. Steps 1 to 5)
Hypertrack Editing: (Page 22. Steps 1 to 6)
- 2** Press the POLE POSITION button.
● "  " will be displayed.
- 3** Press the CD ► MD button.
● Recording will begin.

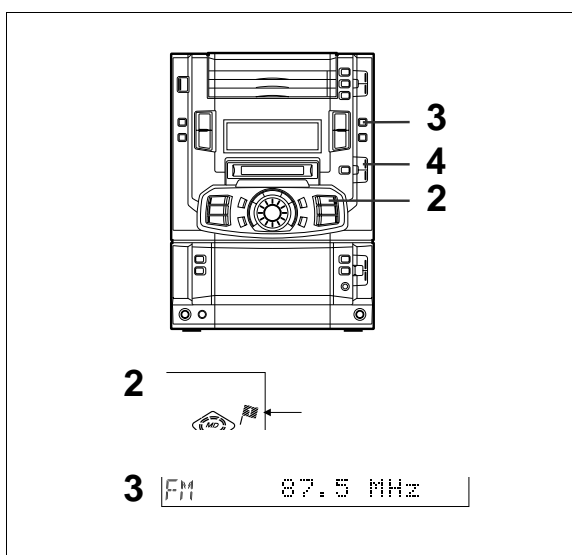
If recording does not start when the CD ► MD button is pressed:

If you cannot record all of the tracks you have selected from a CD, the number of tracks and the amount of time that can be included on the recording, and the number of tracks and the amount of time that cannot be included will both be displayed. The unit will then enter the recording stand-by mode.





To record from a cassette tape:

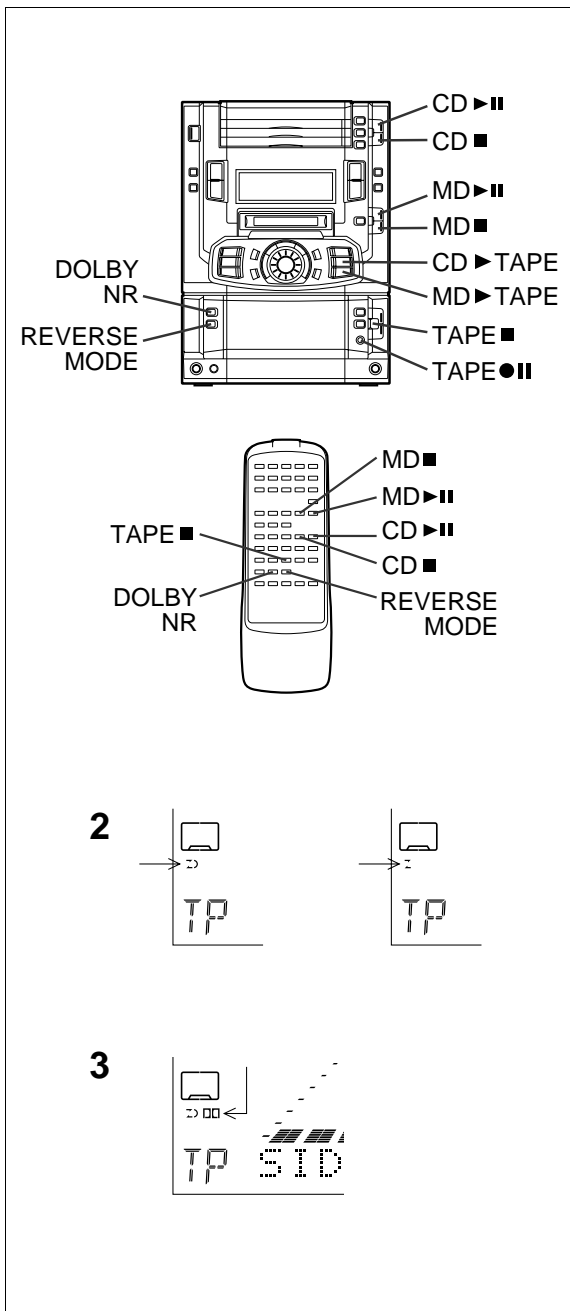
- 1** Perform steps 1 to 6 on page 24 "One-Touch Editing".
- 2** Press the POLE POSITION button.
● "  " will be displayed.
- 3** Press the TAPE ► MD button.
● Recording will begin.



To record from the built-in radio onto a MiniDisc:

- 1** Perform steps 1 to 5 on page 24 "Recording from the built-in radio onto a MiniDisc".
- 2** Press the POLE POSITION button.
● "  " will be displayed.
- 3** Press the MD ● REC button.
● The unit will enter the recording stand-by mode.
- 4** Press the MD ►  button.
● Recording will begin.

(Continued)



■ Recording from a CD or an MD to a cassette tape (One-Touch Editing)

A CD or an MD can be recorded, starting from the first track, with a one-touch operation.

- 1 Load a blank cassette into the cassette compartment.
 - Wind past the tape leader which cannot be recorded on.
- 2 Press the REVERSE MODE button.
 - ≡ ... To record on only one side.
 - ↔ ... To record on both sides.
- 3 Select the Dolby NR mode by pressing the DOLBY NR button.
 - When recording with the Dolby NR system, turn on the indicator.
 - When not recording with the Dolby NR system, turn off the indicator.

4 Recording from a CD:

Press the CD ► TAPE button.

Recording from a MiniDisc:

Press the MD ► TAPE button.

To stop recording:

Press the CD ■ (MD ■) or TAPE ■ button.

■ Recording from a CD or an MD to a cassette tape (Synchronized Recording System)

When a CD or an MD is played, recording will start automatically.

- 1 Load a blank cassette into the cassette compartment.
 - Wind past the tape leader which cannot be recorded on.
- 2 Press the REVERSE MODE button.
 - ≡ ... To record on only one side.
 - ↔ ... To record on both sides.
- 3 Select the Dolby NR mode by pressing the DOLBY NR button.
 - When recording with the Dolby NR system, turn on the indicator.
 - When not recording with the Dolby NR system, turn off the indicator.
- 4 Press the TAPE ●|| button.
 - The unit will enter the recording stand-by mode.

5 Recording from a CD:

Press the CD ► || button.

Recording from a MiniDisc:

Press the MD ► || button.

To interrupt recording:

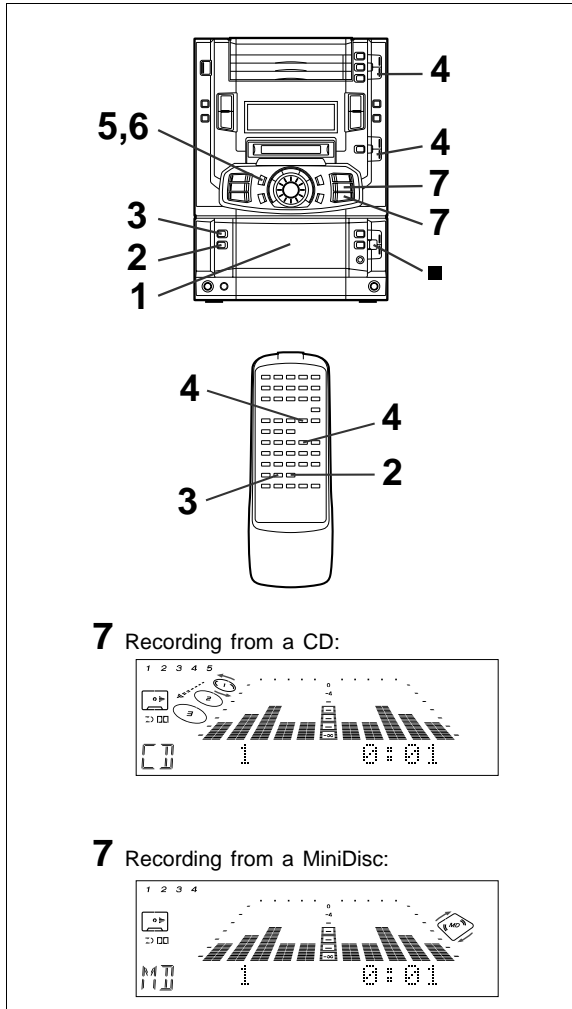
Press the CD ► || (MD ► ||) button.

Press the CD ► || (MD ► ||) button again to resume recording.

To stop recording:

- 1 Press the CD ■ (MD ■) button, while recording.
 - The CD or MD will stop, and the unit will enter the stand-by mode.
- 2 Press the TAPE ■ button.
 - The tape will stop.

(Continued)

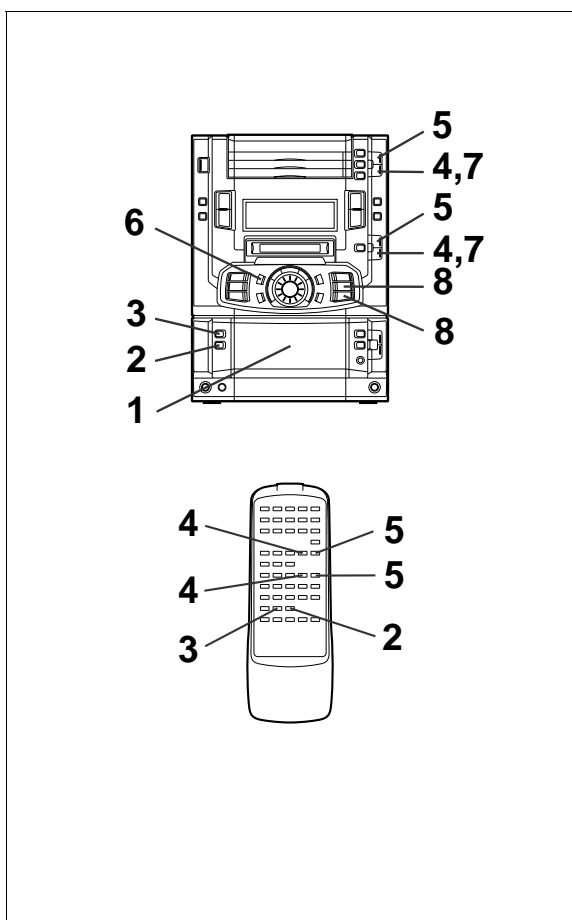


Recording desired tracks from a CD or an MD to a cassette tape (Track Editing)

Several consecutive tracks, starting from the first track on a CD or an MD (for example: from the first track to the fourth track), can be recorded onto a tape.

- 1** Load a blank cassette into the cassette compartment.
- 2** Press the REVERSE MODE button.
 - ≡ ... To record on only one side.
 - ↔ ... To record on both sides.
- 3** Select the Dolby NR mode by pressing the DOLBY NR button.
 - When recording with the Dolby NR system, turn on the indicator.
 - When not recording with the Dolby NR system, turn off the indicator.
- 4** Select the desired source CD or MiniDisc by pressing the CD or MD button.
- 5** Press the TRACK EDIT button.
- 6** Select the last track to record by pressing the TRACK EDIT button.
- 7** Recording from a CD:
 - Press the CD ▶ TAPE button.
- Recording from a MiniDisc:
 - Press the MD ▶ TAPE button.

To stop recording:
Press the CD or TAPE button.

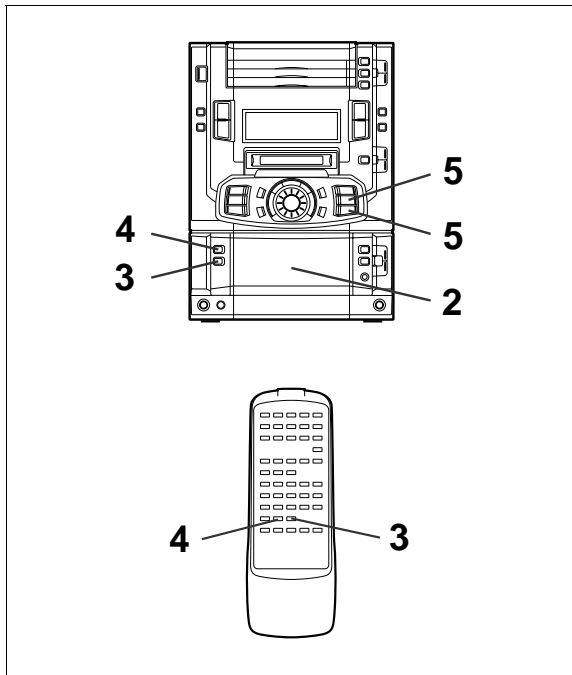


Recording only your favorite tracks on a tape while listening to a CD or an MD (Hypertrack Editing)

If you program your favorite tracks while listening to a CD or an MD, you can record the programmed tracks all together onto a tape after listening to the disc.

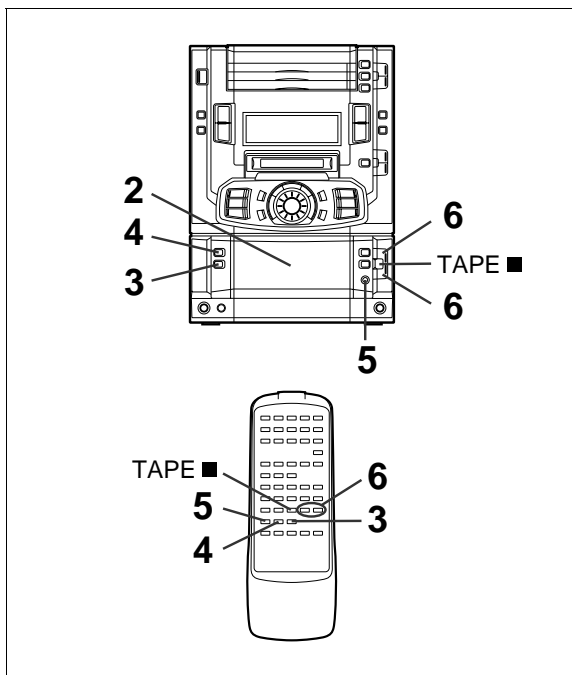
- 1** Load a blank cassette into the cassette compartment.
- 2** Press the REVERSE MODE button.
 - ≡ ... To record on only one side.
 - ↔ ... To record on both sides.
- 3** Select the Dolby NR mode by pressing the DOLBY NR button.
 - When recording with the Dolby NR system, turn on the indicator.
 - When not recording with the Dolby NR system, turn off the indicator.
- 4** Select the desired source CD or MiniDisc by pressing the CD or MD button.
- 5** Press the CD ▶ or MD ▶ button.
- 6** Press the TRACK EDIT button while playing the track you want to record later.
- 7** Stop the CD or MiniDisc by pressing the CD or MD button.
- 8** Recording from a CD:
 - Press the CD ▶ TAPE button.
- Recording from a MiniDisc:
 - Press the MD ▶ TAPE button.

(Continued)



■ APMS recording

- 1 Select tracks for APMS playback. (Page 18. Steps 1 - 6.)
- 2 Load a blank cassette into the cassette compartment.
- 3 Press the REVERSE MODE button.
 - ≡ ... To record on only one side.
 - ⤵ ... To record on both sides.
- 4 Select the Dolby NR mode by pressing the DOLBY NR button.
 - When recording with the Dolby NR system, turn on the indicator.
 - When not recording with the Dolby NR system, turn off the indicator.
- 5 **Recording from a CD:**
Press the CD ► TAPE button.
Recording from a MiniDisc:
Press the MD ► TAPE button.
 - Programmed tracks will be recorded in order. After the unit has finished recording the last track, recording will stop automatically.



■ Recording from the built-in radio to a cassette tape

- 1 Tune in to the desired station. (pages 13 - 14.)
- 2 Load a blank cassette into the cassette compartment.
 - Wind past the tape leader which cannot be recorded on.
- 3 Press the REVERSE MODE button.
 - ≡ ... To record on only one side.
 - ⤵ ... To record on both sides.
- 4 Select the Dolby NR mode by pressing the DOLBY NR button.
 - When recording with the Dolby NR system, turn on the indicator.
 - When not recording with the Dolby NR system, turn off the indicator.
- 5 Press the TAPE ● || button.
 - "◀▶" will flash.
- 6 Press the ► button to record side A (1), or the ◀ button to record side B (2).
 - To record on both sides, begin on side A.
When recording is finished on side A, the tape will switch over to side B automatically.

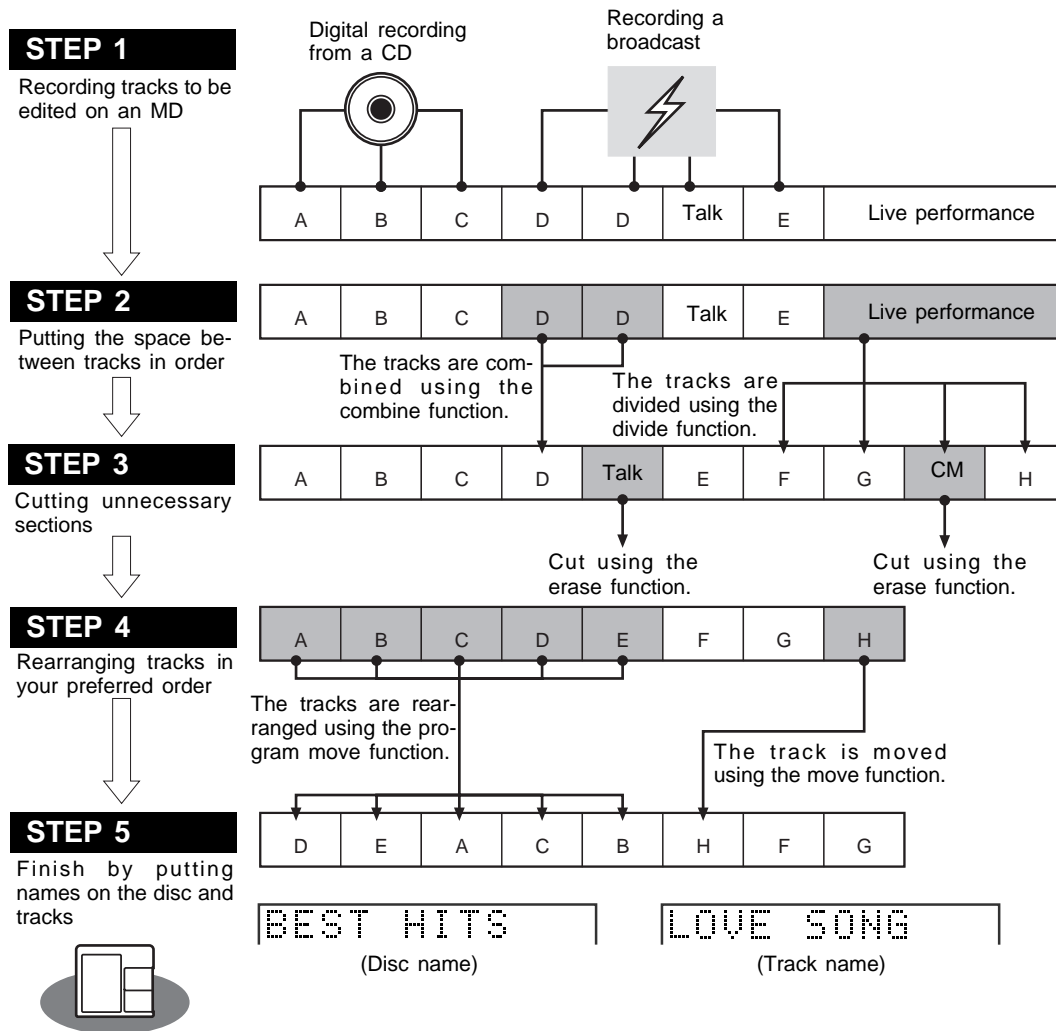
To stop recording:
Press the TAPE ■ button.

To interrupt recording:
Press the TAPE ● || button.
Press the TAPE ► button or TAPE ◀ button again to resume recording.

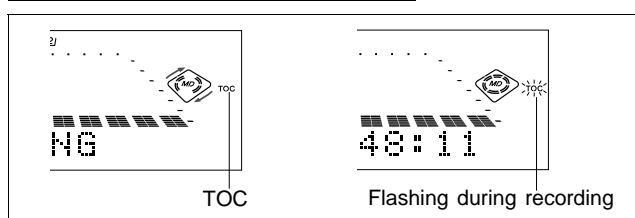
EDITING

Using the editing function

We will show you some examples of how to use the editing functions. You can create a disc of your favorite selections by recording tracks from a variety of input sources such as CDs and radio broadcasts.



Recording the editing results



While editing, the "TOC" indicator is displayed. This means the edit results have not been recorded on the MiniDisc. To record the results, select another input or turn the power off. During writing, the "TOC" display will flash. Once the "TOC" goes out, all editing changes have been recorded to the disc.

Note:

- Storing the edited contents on the disc can be done after several pieces of editing have been finished.

(Continued)

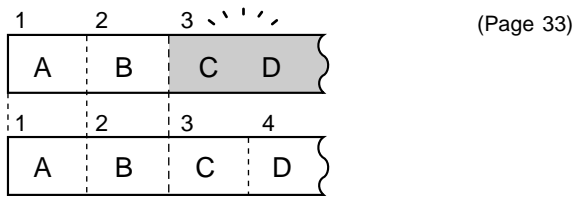
We will explain the 6 editing functions with which you can create your own original discs from recorded MiniDiscs. Playback-only MiniDiscs cannot be edited.

DIVIDE

A track can be divided into two tracks. If two selections were recorded as a single track because there was not enough silent space between the pieces, you can use the DIVIDE function to separate the selections.

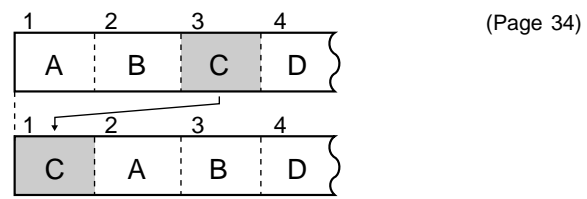
This feature is also convenient for identifying specific points with one selection so that you can locate those points easily whenever you like.

This unit can hold up to 255 tracks. However, even if the number of tracks assigned has not reached 255, it might not be possible to make any further divisions of tracks.



MOVE

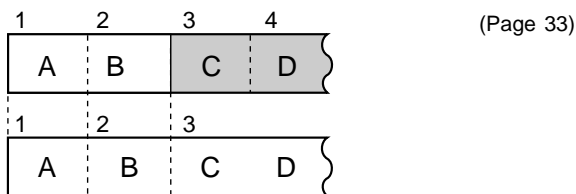
The order of the recorded tracks can be changed. This feature is different from program play. A new track order can be recorded directly on the disc. When the power is turned off, the revised order will not be changed.



COMBINE

Two adjacent tracks (for example, the third and fourth tracks) can be combined.

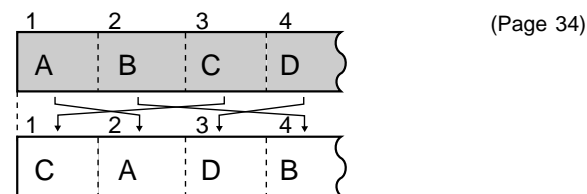
If there is a prolonged silent section in the middle of a selection that is recorded, a single piece of music may be recorded as two tracks. If this happens, these two tracks can be combined into a single track.



Programmed move

This function allows the track numbers to be automatically rearranged in the order specified for programmed playback. The track numbers will be adjusted as needed, automatically.

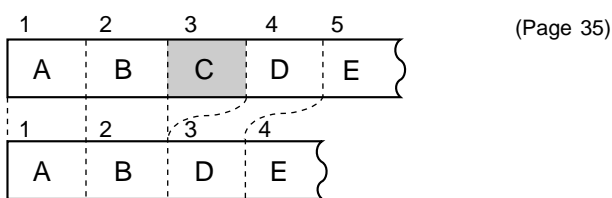
(The tracks that are not included in the programmed selections will be put at the end of the new track numbers.)



ERASE/ALL ERASE

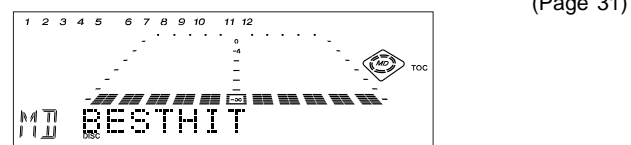
Tracks you want to erase can be erased one at a time or all at once.

Once a track has been erased, it cannot be recovered. Double-check the track number before erasing it.



TRACK/DISC NAME

You can assign titles to recorded tracks and to discs. The characters must be capital and lowercase letters, or symbols. Track and disc names can use up to 100 characters per name.



■ Type of characters used

Type of characters	Characters <symbols>
Capital letters	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z . /
Lower-case letters	a b c d e f g h i j k l m n o p q r s t u v w x y z . /
Symbols	1 2 3 4 5 6 7 8 9 0 ! " # \$ % & ' () * + , - . / : ; < = > ? @ _ `

Number of characters you can enter

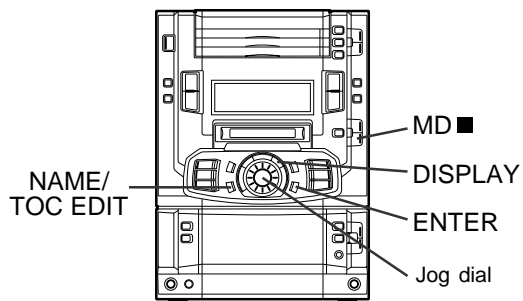
● **Disc names and track names**

Up to 100 characters (including spaces) can be entered for each name. If more than 100 characters are entered, "NAME FULL" will appear.

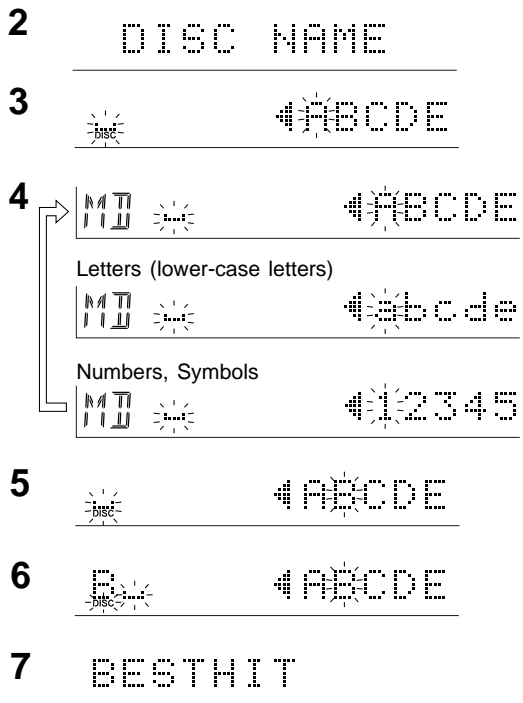
● **Total number of characters per MiniDisc**

A total of approximately 1700 characters can be used for all of the disc and track names. If more than 1700 characters are entered, "TOC FULL NAME" will appear.

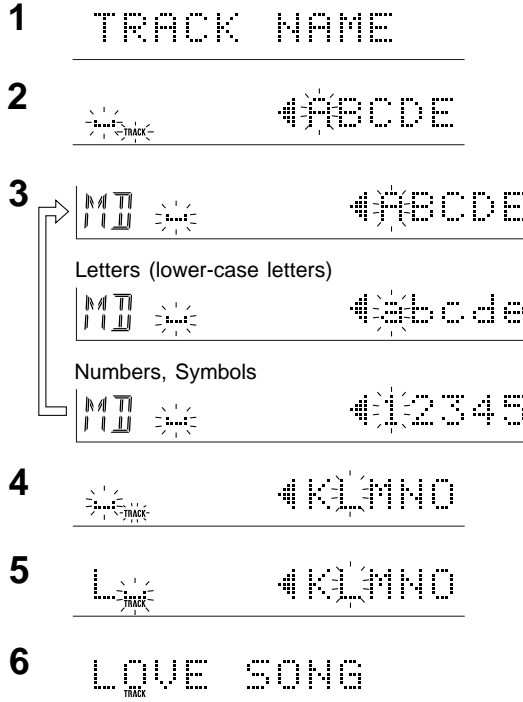
(Continued)



To create a disc name



To create a track name



■ To create a disc name

A name for the whole disc. Disc names are displayed when an MD is inserted.

- 1** Press the MD ■ button.
 - The total number of tracks and the total playing time on an MD will appear.
- 2** Press the NAME/TOC EDIT button, and then select "DISC NAME" using the jog dial.
- 3** Within 10 seconds, press the ENTER button.
 - The unit will enter the character input mode.
- 4** Press the DISPLAY button to select the type of characters you want to use.
- 5** Select the character you want using the jog dial.
- 6** Press the ENTER button to enter the character.
 - Repeat steps 4 to 6 above to enter the characters in the name. When the next character's type is the same as the previous character, step 4 can be skipped.
- 7** After entering all of the characters in the name, press the NAME/TOC EDIT button.
 - The disc name will be recorded.

To erase a disc name:

After performing steps 1 to 3.

- 1** Press the TIMER/DELETE button for 2 seconds or more.
 - "NAME CLEAR?" will appear.
- 2** Press the ENTER button.

■ To create a track name

Name each track.

A track's name will be displayed whenever you select it and during playback.

- 1** During playback, press the NAME/TOC EDIT button.
 - "TRACK NAME" will appear.
- 2** Within 10 seconds, press the ENTER button.
 - The unit will enter the character input mode.
 - The track you are listening to will be played repeatedly.
- 3** Press the DISPLAY button to select the type of characters.
- 4** Select the character you want using the jog dial.
- 5** Press the ENTER button to enter the character.
 - Repeat steps 3 to 5 above to enter the characters in the name. When the next character's type is the same as the previous character, step 3 can be skipped.
- 6** After entering all of the characters in the name, press the NAME/TOC EDIT button.
 - The track name will be recorded.
 - The unit will return to normal playback.

To erase a track name:

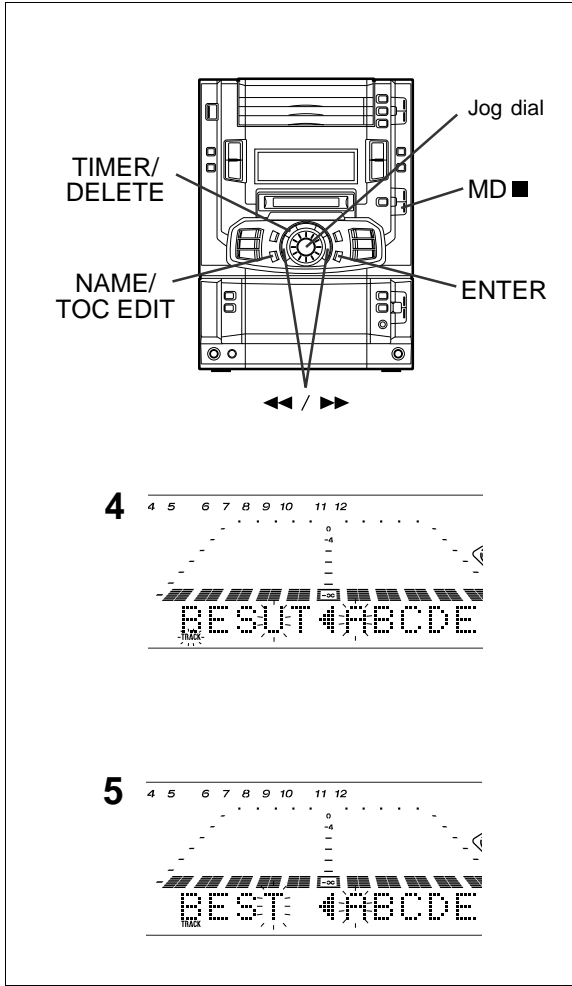
After performing steps 1 to 2.

- 1** Press the TIMER/DELETE button for 2 seconds or more.
 - "NAME CLEAR?" will appear.
- 2** Press the ENTER button.

Notes:

- This function cannot be used while a program is being entered ("PROGRAM" is lit: Page 18) or while in the random play mode ("RANDOM" is lit: Page 17). First, cancel the program or random play mode before trying to use this function.
- The track name function can be used while in the stop mode (when selecting a track), in the pause mode, or in the recording mode. (Select "TRACK NAME" from the edit menu.)
- If you create a track name while recording the track, make sure you finish entering the name before you finish recording the track. If the end of the recording is reached before you have entered the complete name, only the characters entered before the recording ended will be recorded.

(Continued)



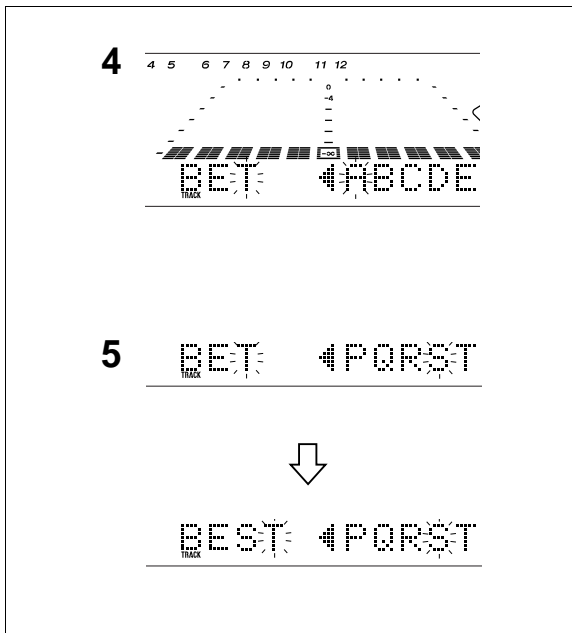
■ To change disc names and track names

To change disc names:

- 1 During playback, press the MD ■ button.
- 2 Press the NAME/TOC EDIT button, and then select "DISC NAME" using the jog dial.

To change track names:

- 1 While in the stop mode, select the track name you want to change, using the jog dial.
- 2 Press the NAME/TOC EDIT button.
- 3 Within 10 seconds, press the ENTER button.
 - The unit will enter the character input mode.
 - To cancel the operation, press the MD ■ button.
- 4 Press the ◀ / ▶ button to make the character you want to erase begin flashing.
- 5 Press the TIMER/DELETE button.
- 6 Press the NAME/TOC EDIT button.

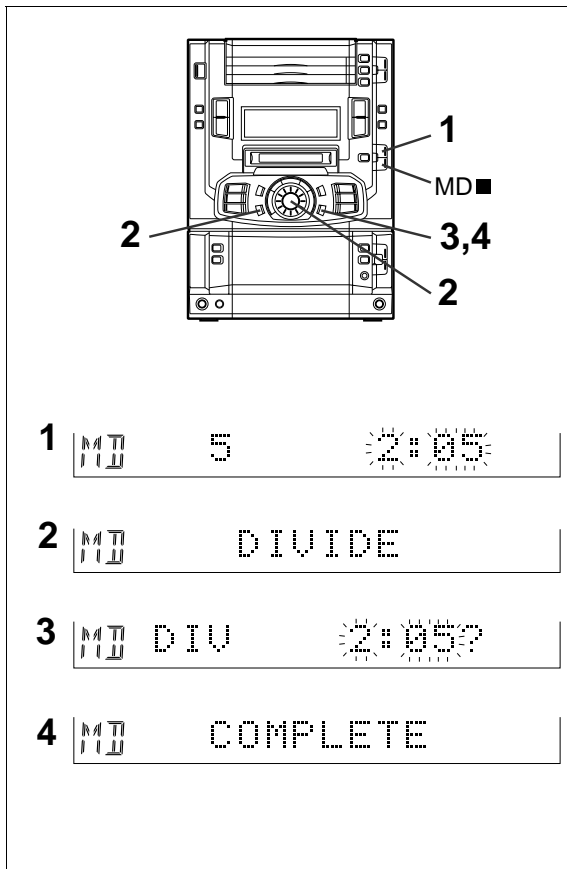


To add a character:

After performing steps 1 to 3 above, do the following:
Example: To change "BST" to "BEST"

- 4 Press the ◀ / ▶ button to make the character at the place you want to add a letter begin flashing.
- 5 Select the character you want to add, using the jog dial. Then, press the ENTER button.
- 6 Press the NAME/TOC EDIT button.

(Continued)

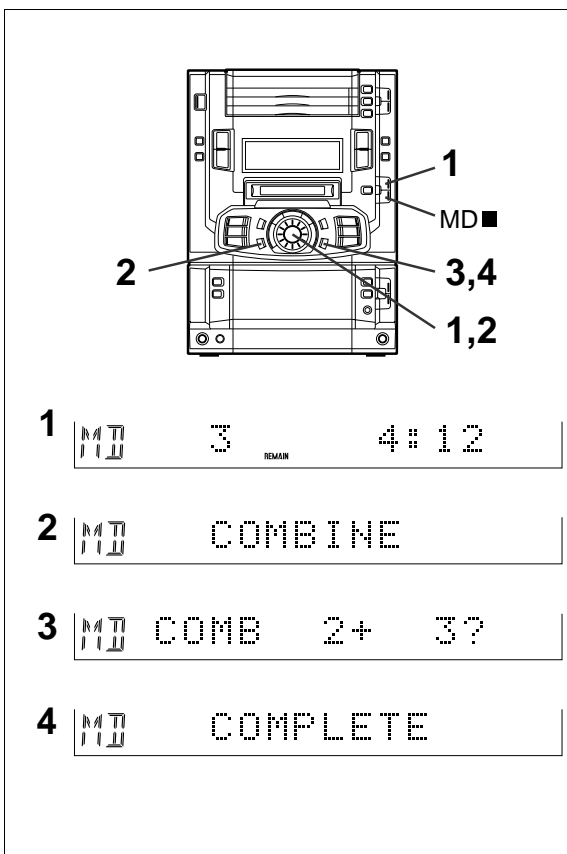


■ Divide

- 1 Play the track which you want to divide into two, and press the MD ►|| button at the point where you want to divide the track.
 - The unit will enter the pause mode.
- 2 Press the NAME/TOC EDIT button, and within 10 seconds, select "DIVIDE" using the jog dial.
- 3 Within 10 seconds, press the ENTER button.
 - To cancel the operation, press the MD ■ button.
- 4 Press the ENTER button again.
 - The track is divided, and the unit is stopped at the beginning of the second of the two tracks.
 - The numbers of the tracks which come after the divided track are automatically increased by one.
 - When a track which has been given a name is divided, the two new tracks will have the same name and date. If the "TOC FULL" message is seen, the second track may not be given a name. (Page 45)

Notes:

- This unit can hold up to 255 tracks. However, even if the number of tracks assigned has not reached 255, it might not be possible to make any further divisions of tracks. (Page 45)
- This function cannot be used while a program is being entered ("PROGRAM" is lit: Page 18) or while in the random play mode ("RANDOM" is lit: Page 17). First, cancel the program or random play mode before trying to use this function.



■ Combine

- 1 While in the stop mode, select the second of the two adjacent tracks you want to combine using the jog dial. Or start playing the second of the two tracks you want to combine, and then press the MD ►|| button.
 - The unit will enter the pause mode.
 - 2 Press the NAME/TOC EDIT button, and within 10 seconds, select "COMBINE" using the jog dial.
 - 3 Within 10 seconds, press the ENTER button.
 - To cancel the operation, press the MD ■ button.
 - 4 Press the ENTER button again.
 - The two tracks are combined, and the unit is stopped at the beginning of the combined track.
 - The numbers assigned to the tracks following the combined track are automatically decreased by one.
- When both tracks have a name:**
- When only the first track has a name → That name will be used.
 - When only the second of the two tracks has a name → That name will be used.
 - When both tracks have a name → The name of the first track will be used.

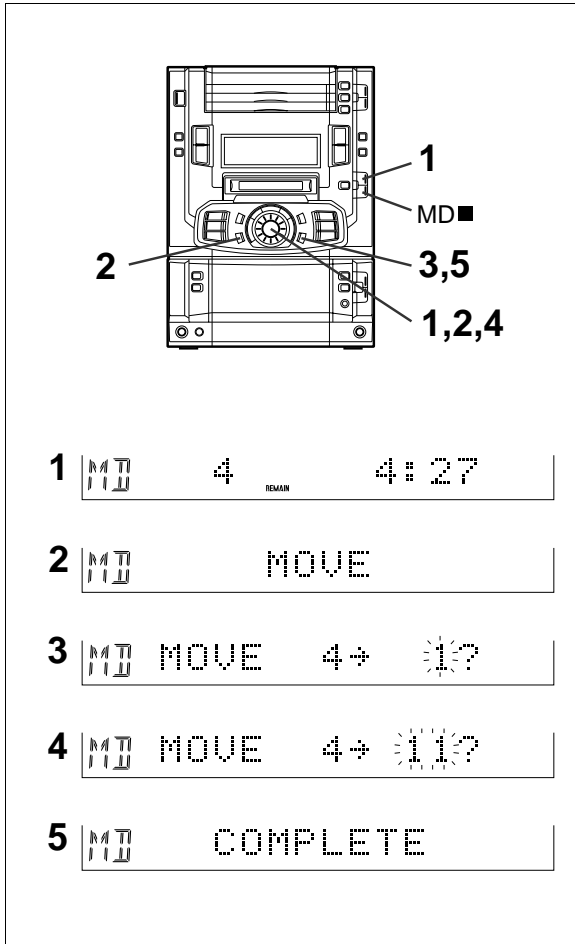
To combine two non-contiguous tracks:

(Example: the first and third tracks)
Move the third track to the second track using the MOVE function. (Page 34)
Then, combine the first and second tracks using the COMBINE function.

Notes:

- Tracks recorded from analog inputs cannot be combined with tracks recorded from CDs or MDs using the digital inputs.
- Tracks recorded in the stereo mode cannot be combined with tracks recorded in the monaural long-play mode.
- Tracks where either track's recording time is less than 15 seconds may not be combined.
- This function cannot be used while a program is being entered ("PROGRAM" is lit: Page 18) or while in the random play mode ("RANDOM" is lit: Page 17). First, cancel the program or random play mode before trying to use this function.

(Continued)



■ Move

- 1 While in the stop mode, select the track you want to move using the jog dial. Or start playing the track to be moved, and then press the MD ► button.
 - The unit will enter the pause mode.
- 2 Press the NAME/TOC EDIT button, and within 10 seconds, select "MOVE" using the jog dial.
- 3 Within 10 seconds, press the ENTER button.
- 4 Select the new track position using the jog dial.
 - To cancel the operation, press the MD ■ button.
- 5 Press the ENTER button again.
 - The track is moved, and the unit is stopped at the beginning of the track.

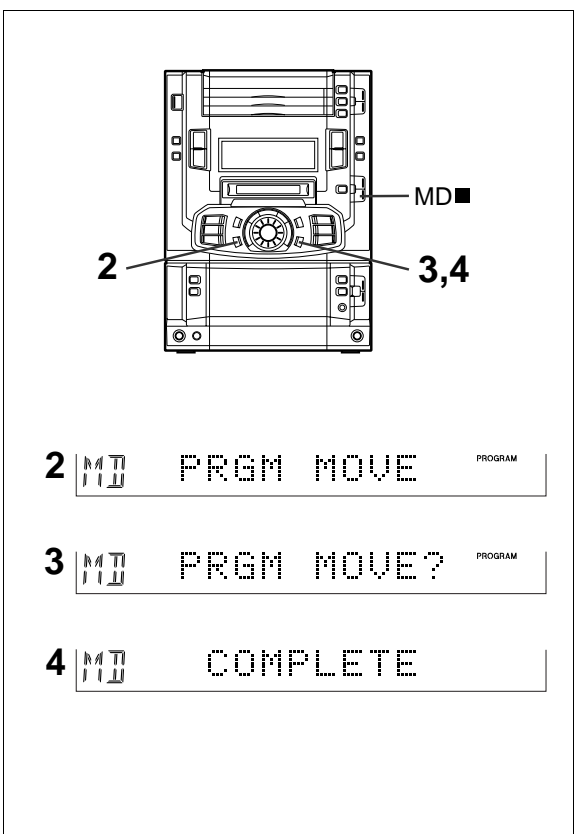
Note:

- When a track has been moved, the other tracks which are affected will be assigned new track numbers automatically.

Example:

When moving the fifth track to the third track, the old third track will become the new fourth track, and the old fourth track will become the new fifth track.

- This function cannot be used while a program is being entered ("PROGRAM" is lit: Page 18) or while in the random play mode ("RANDOM" is lit: Page 17). First, cancel the program or random play mode before trying to use this function.



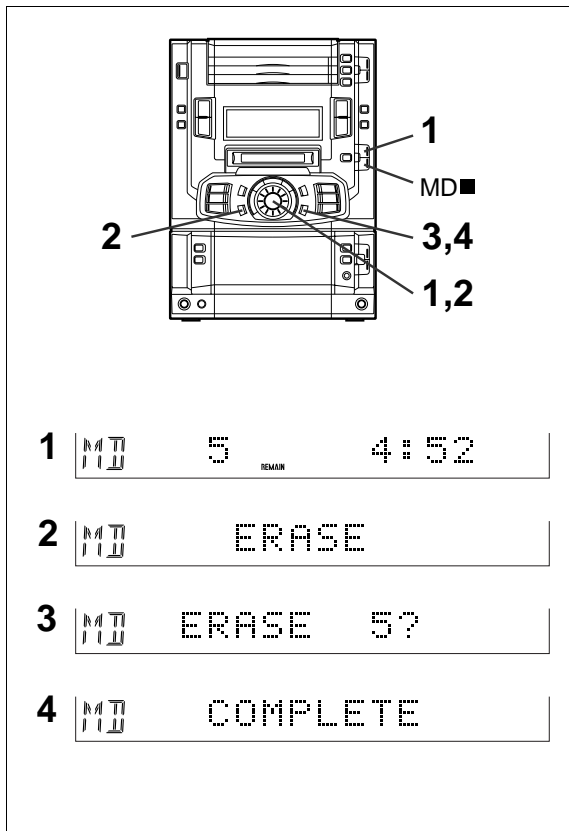
■ Programmed move

- 1 Select the tracks you want to move and enter them into a program. (Page 18)
- 2 Make sure that the "PROGRAM" indicator is lit, and then press the NAME/TOC EDIT button.
 - "PRGM MOVE" will appear.
- 3 Within 10 seconds, press the ENTER button.
 - To cancel the operation, press the MD ■ button.
- 4 Press the ENTER button again.
 - The tracks will be moved, and the programmed move mode will end.

Notes:

- The tracks that are not included in the programmed selections will be put at the end of the new track numbers.
- When the same track has been entered into the program twice or more, the last programmed position will have priority.

(Continued)



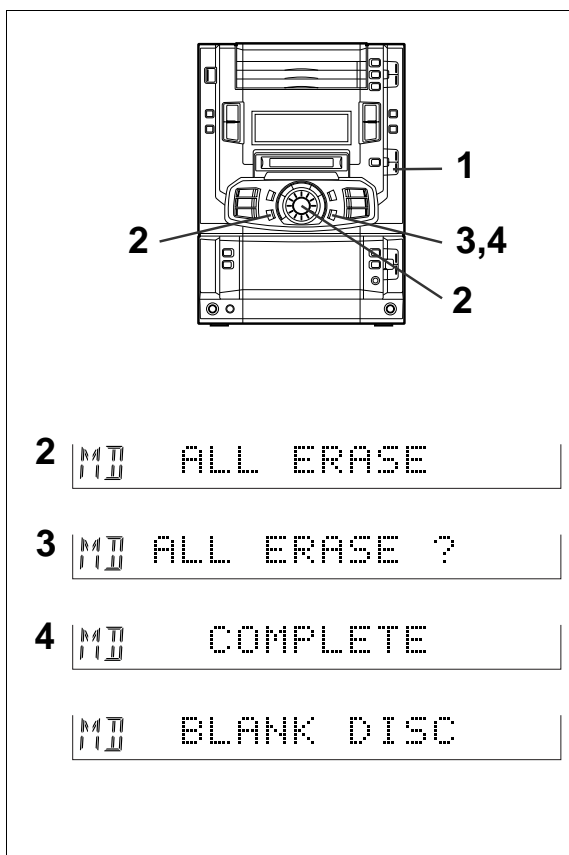
■ Erase

To erase tracks one at a time:

- 1** While in the stop mode, select the track you want to erase using the jog dial. Or start playing the track to be erased, and then press the MD ►|| button.
 - The unit will enter the pause mode.
- 2** Press the NAME/TOC EDIT button, and within 10 seconds, select "ERASE" using the jog dial.
- 3** Within 10 seconds, press the ENTER button.
 - To cancel the operation, press the MD ■ button.
- 4** Press the ENTER button again.
 - The track is erased, and the unit is stopped at the beginning of the previous track.

Notes:

- Once a track has been erased, it cannot be recovered. Double-check the track number before erasing it.
- When a track is erased, the numbers assigned to the tracks following the erased track will be automatically decreased by one.
- When a track is erased, the track name will be erased at the same time.
- This function cannot be used while a program is being entered ("PROGRAM" is lit: Page 18) or while in the random play mode ("RANDOM" is lit: Page 17). First, cancel the program or random play mode before trying to use this function.



To erase all of the tracks at once:

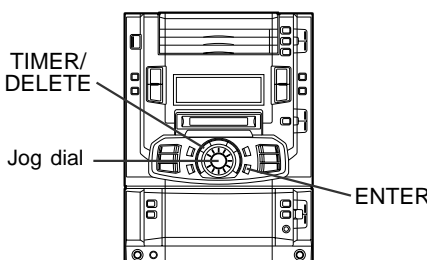
- 1** Press the MD ■ button.
 - The total number of tracks and the total playing time on an MD will appear.
- 2** Press the NAME/TOC EDIT button, and within 10 seconds, select "ALL ERASE" using the jog dial.
- 3** Within 10 seconds, press the ENTER button.
 - To cancel the operation, press the MD ■ button.
- 4** Press the ENTER button again.
 - All of the track numbers and track names will be erased.

Note:

- This function cannot be used while a program is being entered ("PROGRAM" is lit: Page 18) or while in the random play mode ("RANDOM" is lit: Page 17). First, cancel the program or random play mode before trying to use this function.

HOW TO USE THE BUILT-IN TIMER

- Before setting the timer, make sure that the clock setting is correct. (Page 9)
- The start time and stop time, which are set with this operation, will be kept in memory until the AC power cord is unplugged or the setting is changed.



2 | TIMER SET

3,4 | TIMER PLAY

5 | ON 1:00AM

6 | ON 7:00AM

7 | ON 7:30AM

8 | OFF 7:30AM


9 | OFF 7:45AM

10 | MD

11,12 | VOLUME 15

1 | T-STANDBY

2 |



■ To select the timer playback mode

Before timer playback, the following preparations are required.

- Load a CD, MD or Tape.
- Select a CD to be played.
- Preset the radio station.

- 1 Press the TIMER/DELETE button.
- 2 Within 10 seconds, turn the jog dial so that the "TIMER SET" display appears.
- 3 Within 10 seconds, press the ENTER button.
- 4 Select "TIMER PLAY" by using the jog dial.
- 5 Press the ENTER button.
- 6 Turn the jog dial to set the hour to start, and then press the ENTER button.
- 7 Turn the jog dial to set the minute to start, and then press the ENTER button.
- 8 Turn the jog dial to set the hour to stop, then press the ENTER button.
- 9 Turn the jog dial to set the minute to stop, then press the ENTER button.
- 10 Turn the jog dial to select the function.

→ MD → CD → TAPE → TUNER → AUX 1 → AUX 2 → AUX OPT. →

- If TUNER is selected, press the ENTER button, then select the preset number using the jog dial.
- When no stations have been programmed, "NO PRESET" will be displayed, and the program operation will end. In this case, program some stations and then reprogram from the beginning.

- 11 Press the ENTER button.
- 12 Adjust the sound level using the jog dial.
- 13 Press the ENTER button.

- Be careful not to turn the volume up too high. (When the start time is reached in timer playback, the volume will increase gradually to the level previously set.)

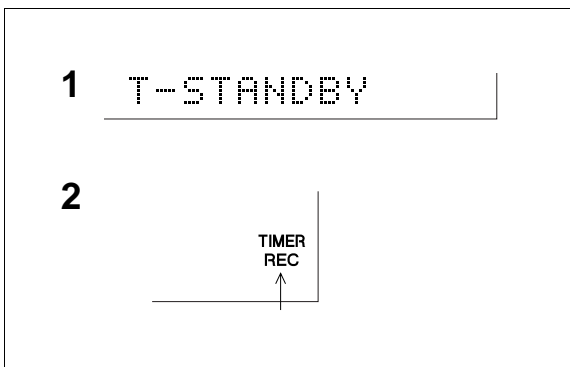
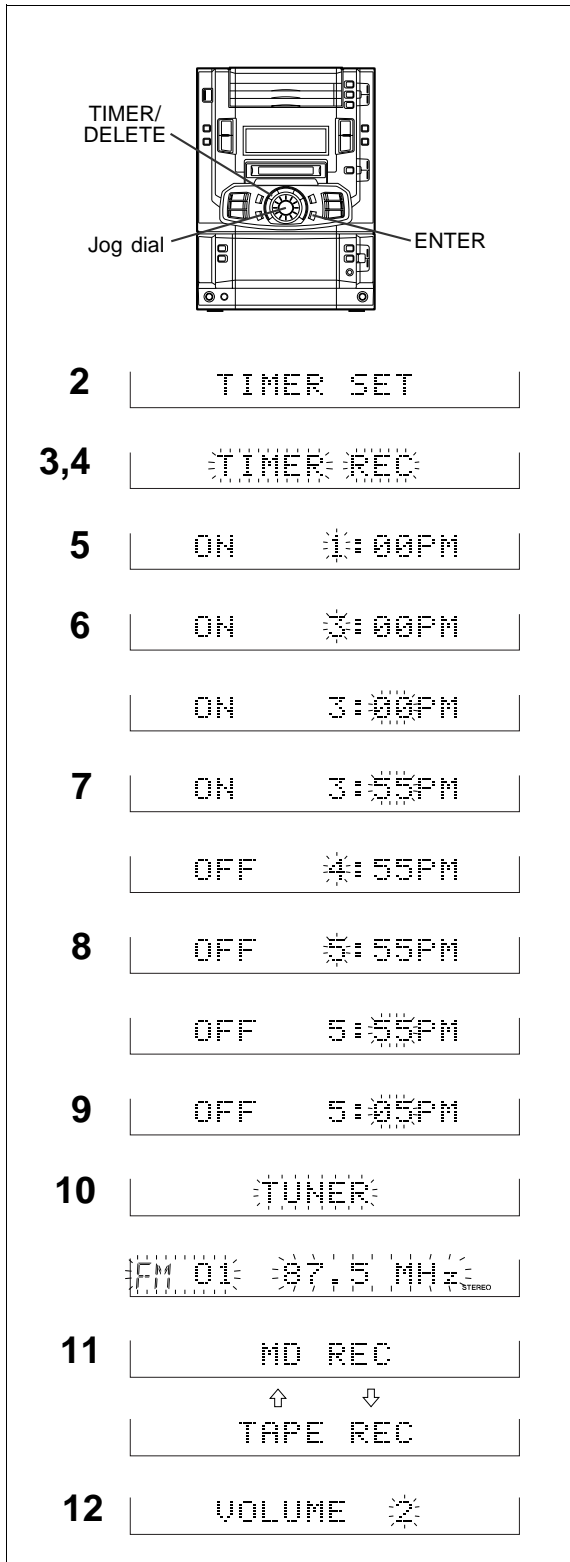
To change the timer setting:

Start again from steps 1 - 13.

■ Setting timer playback

- 1 Press the TIMER/DELETE button.
 - 2 Press the ENTER button.
- Turn the jog dial so that the "T-STANDBY" display appears.
 - If the start and stop times have not been set, the "T-STANDBY" display does not appear. Set the time.
 - The settings will appear in order, and the unit will enter the timer playback stand-by mode. (The unit will enter the stand-by mode.)

(Continued)

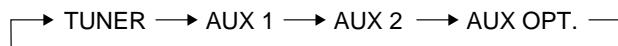


■ To select the timer recording mode

Before timer recording, the following preparations are required.

- Load a recordable MD or Tape.
- Preset the radio station.
- Before making an MD recording, make sure that the unit is in the recording mode.
- Before making a tape recording, select the recording system and set the Dolby B NR on or off.

- 1 Press the TIMER/DELETE button.
- 2 Within 10 seconds, turn the jog dial so that the "TIMER SET" display appears.
- 3 Within 10 seconds, press the ENTER button.
- 4 Select "TIMER REC" by using the jog dial.
- 5 Press the ENTER button.
 - The start time setting display will appear.
- 6 Turn the jog dial to set the hour to start, and then press the ENTER button.
- 7 Turn the jog dial to set the minute to start, and then press the ENTER button.
 - If not set manually, the ending time will automatically be set for one hour after the starting time.
- 8 Turn the jog dial to set the hour to stop, then press the ENTER button.
- 9 Turn the jog dial to set the minute to stop, then press the ENTER button.
- 10 Turn the jog dial to select the function, and then press ENTER button.



- If TUNER is selected, press the ENTER button, then select the preset number using the jog dial.
- When no stations have been programmed, "NO PRESET" will be displayed, and the program operation will end. In this case, program some stations and then reprogram from the beginning.

11 Select "MD REC" or "TAPE REC" by using the jog dial and then press the ENTER button.

12 Adjust the sound level using the jog dial and then press the ENTER button.

- Be careful not to turn the volume up too high.

To change the timer setting:

Start again from steps 1 - 12.

■ Setting timer recording

- 1 Press the TIMER/DELETE button.
 - Turn the jog dial so that the "T-STANDBY" display appears.
 - If the start and stop times have not been set, the "T-STANDBY" display does not appear. Set the time.
- 2 Press the ENTER button.
 - The settings will appear in order, and the unit will enter the timer recording stand-by mode. (The unit will enter the stand-by mode.)

Caution:

In the following cases, the timer recording function will not work

- When a MiniDisc has not been inserted
- When a playback-only MiniDisc is inserted
- When the MiniDisc you inserted is protected against accidental erasure
- When there is no recording space left on the MiniDisc you have inserted (when the "TOC FULL" or "DISC FULL" messages appear)

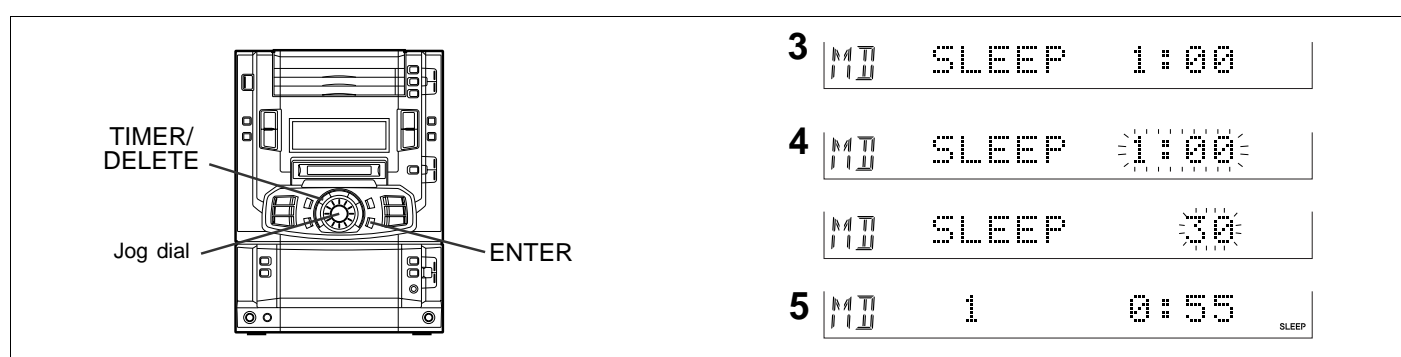
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To check the timer setting:

- ① While in the timer stand-by mode, press the TIMER/DELETE button.
 - ② Within 10 seconds, turn the jog dial so that the "TIMER CALL" display appears.
 - ③ Within 10 seconds, press the ENTER button.
- The timer settings will appear in order, and then the original display will reappear.

To cancel the timer operation:

- If the power is turned on, the timer will be canceled. The timer operation can also be canceled as follows.
- ① While in the timer stand-by mode, press the TIMER/DELETE button.
 - ② Turn the jog dial so that the "TIMER CANCEL" display appears.
 - ③ Within 10 seconds, press the ENTER button.
- The timer operation will be canceled ("TIMER" or "TIMER REC" will go off.) The start and stop times will be stored.



■ Sleep operation

The radio, compact disc and MiniDisc can all be turned off automatically.

- 1 Play the desired sound source.
 - 2 Press the TIMER/DELETE button.
 - 3 Within 10 seconds, turn the jog dial so that the "SLEEP" display appears.
 - 4 Within 10 seconds, press the ENTER button.
- If you do not need to change the time, go to step 5.

To change the sleep time:

While the sleep time is displayed, turn the jog dial to adjust the time. (Maximum: 2 hours - Minimum: 1 minute)
The amount of sleep time can also be changed during the sleep operation.

- 2 hours - 5 minutes → 5-minute intervals
 - 5 minutes - 1 minute → 1-minute intervals
- 5 Press the ENTER button.
 - 6 The unit will enter the stand-by mode automatically after the preset sleep time has elapsed.
- The volume will decrease gradually 1 minute before the preset sleep time has elapsed. At this time, you cannot change the volume.

To confirm the sleep timer setting:

- ① Press the TIMER/DELETE button.
- ② Turn the jog dial so that the "SLEEP" display appears.

To cancel the sleep operation:

If the unit enters the stand-by mode, the sleep operation will be canceled. The timer operation can also be canceled as follows if the power cannot be turned off during recording.

- ① Press the TIMER/DELETE button.
 - ② Turn the jog dial so that the "SLEEP OFF" display appears.
 - ③ Within 10 seconds, press the ENTER button.
- The sleep operation will be canceled. ("SLEEP" will go off.)

Notes:

- Once the sleep time is set, it will remain the same duration until the setting is changed.
- The sleep functions of this unit cannot be used to control equipment connected to this unit. You must use the sleep functions of the other equipment, if it has them.

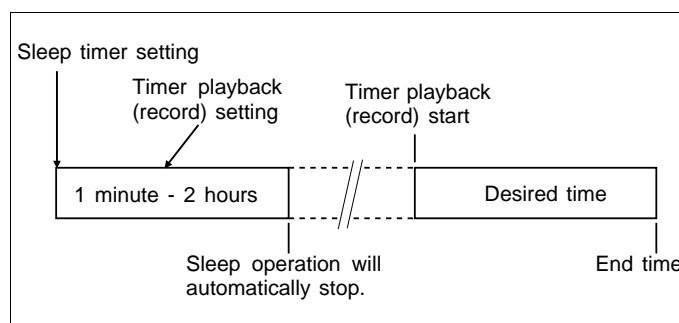
■ Simultaneous sleep and timer operation

To use sleep and timer playback in combination:

- ① Perform steps 1 - 13 on page 36 "To select the timer playback mode".
- ② Perform steps 1 - 5 on page 38 "Sleep operation".
- ③ Perform steps 1 - 2 on page 36 "Setting timer playback".

To use sleep and timer recording in combination:

- ① Perform steps 1 - 12 on page 37 "To select the timer recording mode".
- ② Perform steps 1 - 5 on page 38 "Sleep operation".
- ③ Perform steps 1 - 2 on page 37 "Setting timer recording".



Notes:

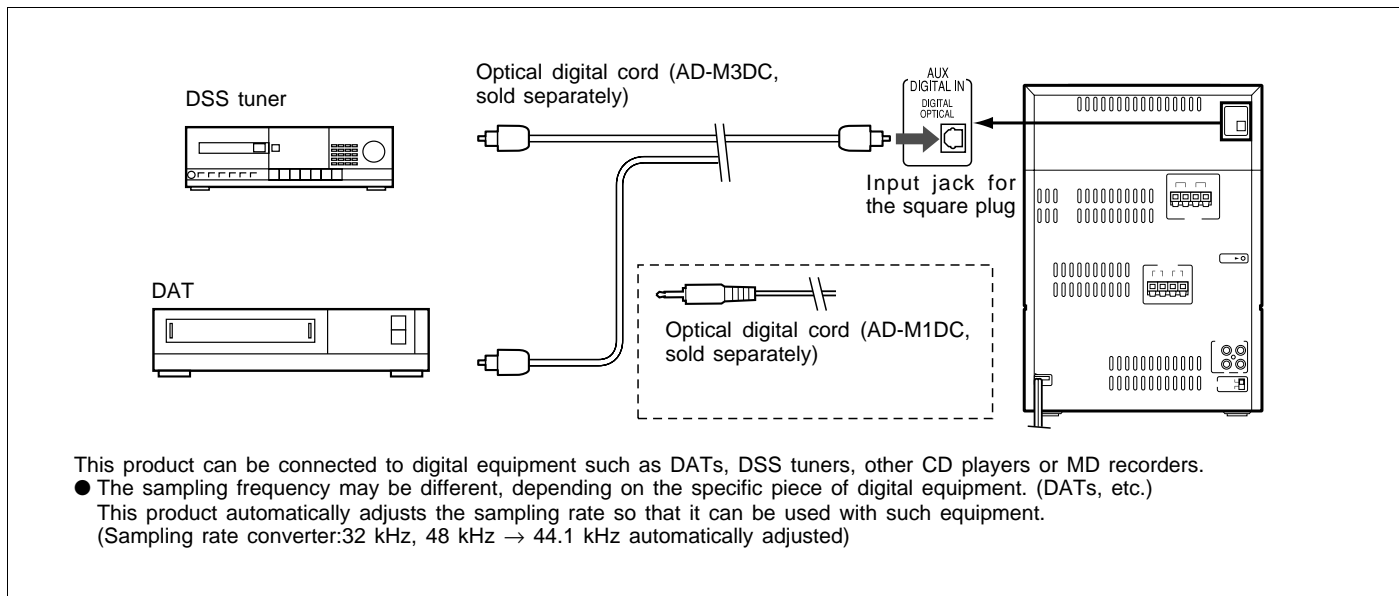
- When the CD or MD is played to the end, playback will stop before the stop time. If you wish to play to the stop time, set repeat play for the CD or MD.
- Timer recording starts about 15 seconds before the start time.

USING EXTERNAL UNITS

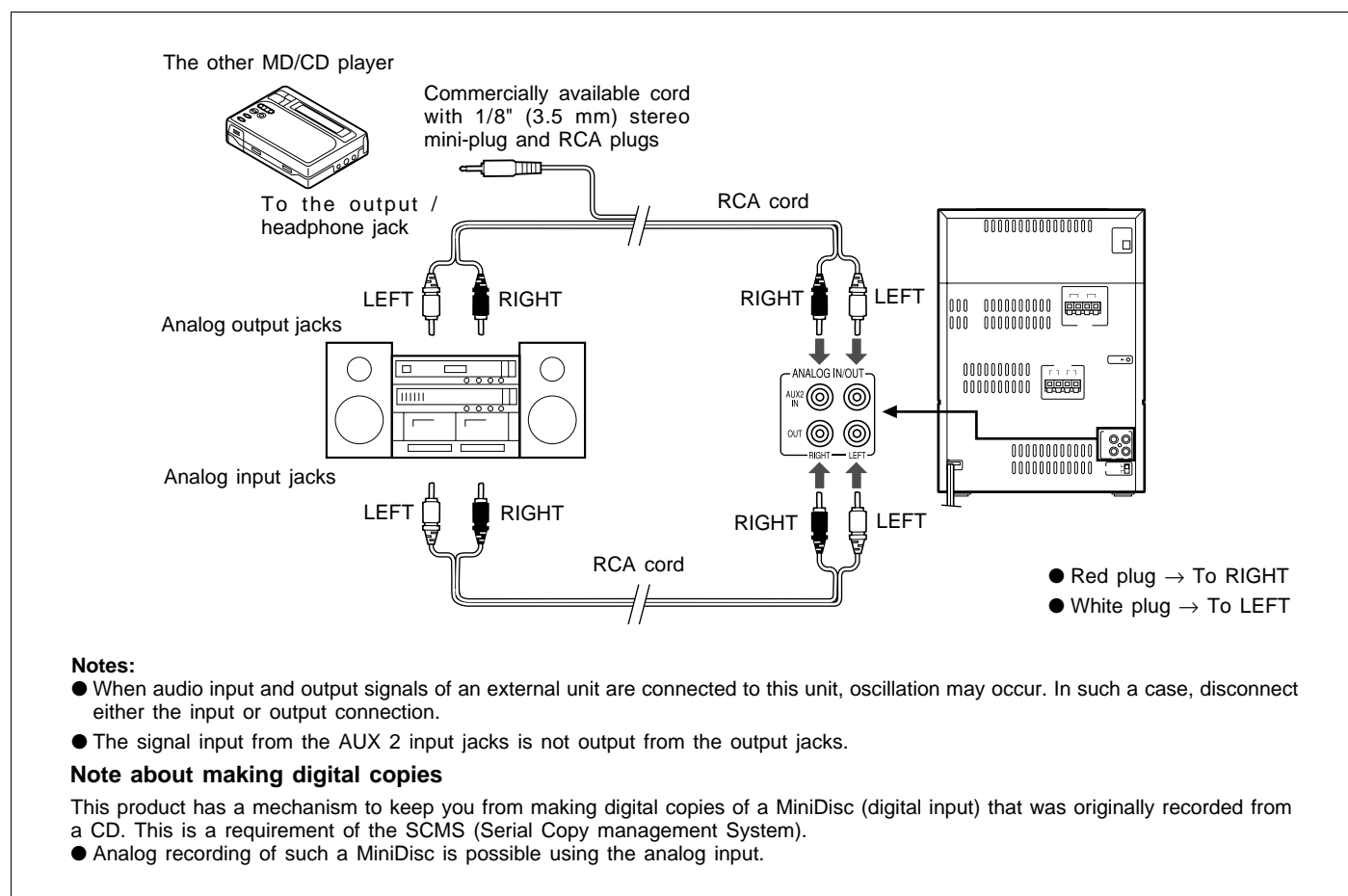
■ Connecting external units

Before connecting external units, set this unit to the stand-by mode and turn off the power to the external units.

Connecting this unit to a DSS tuner or a DAT (equipment which can output digital signals)

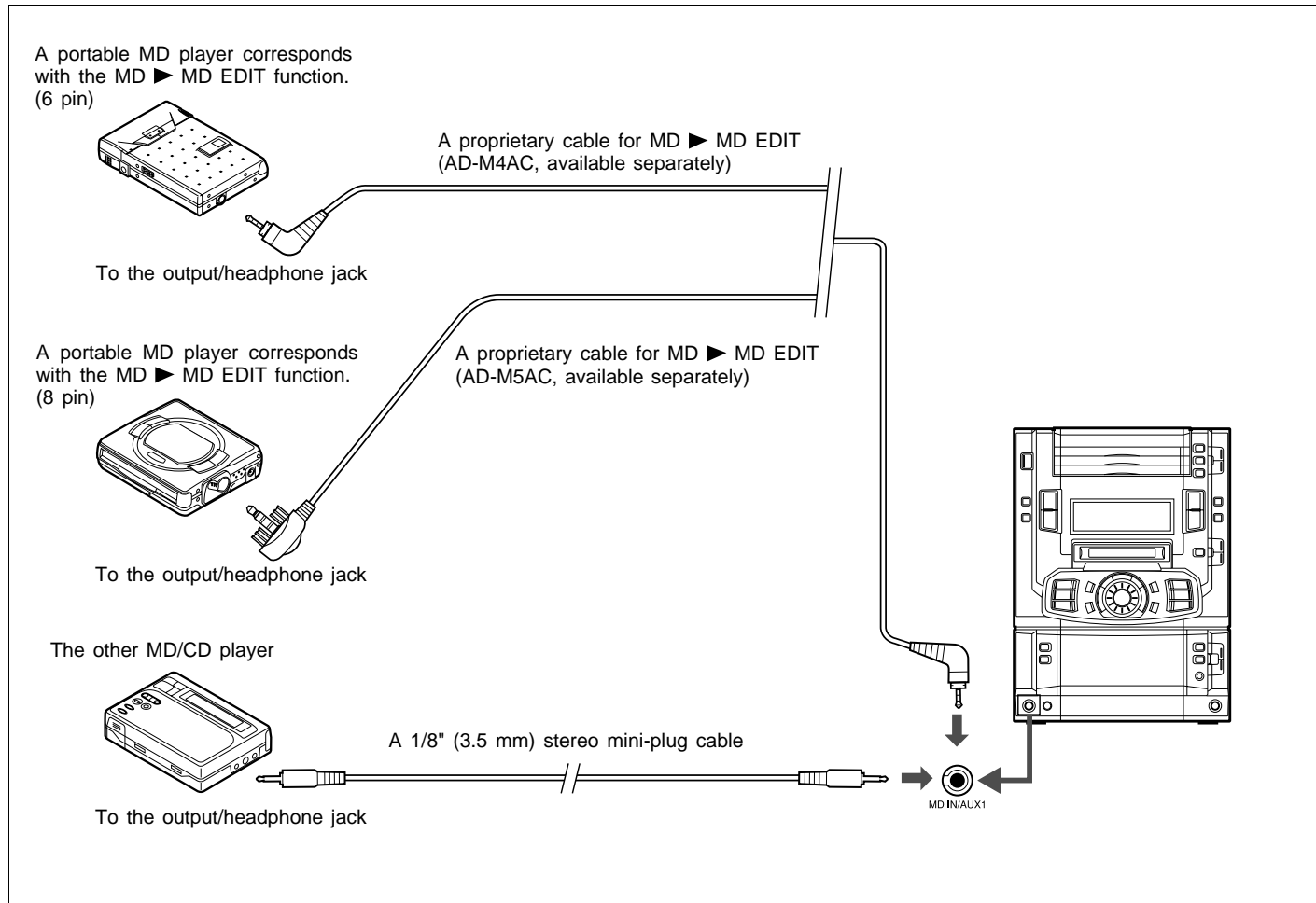


Connecting to stereos or MD/CD players (equipment which can output analog signals)

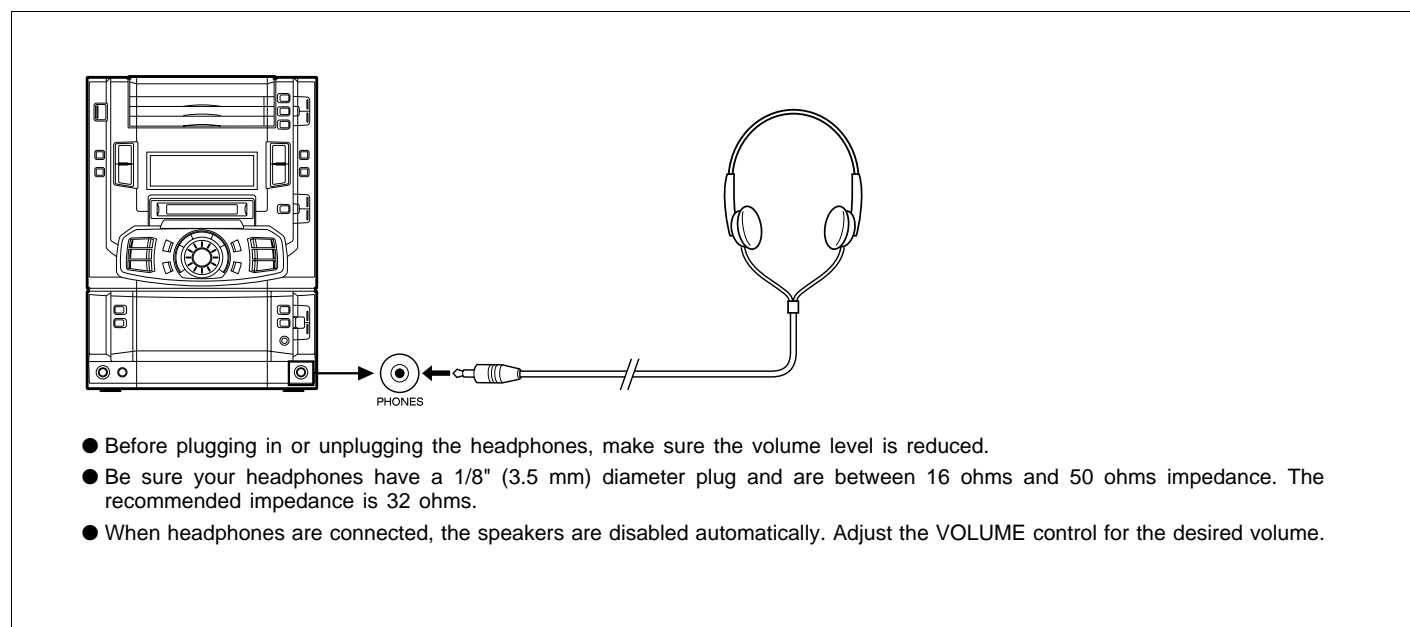


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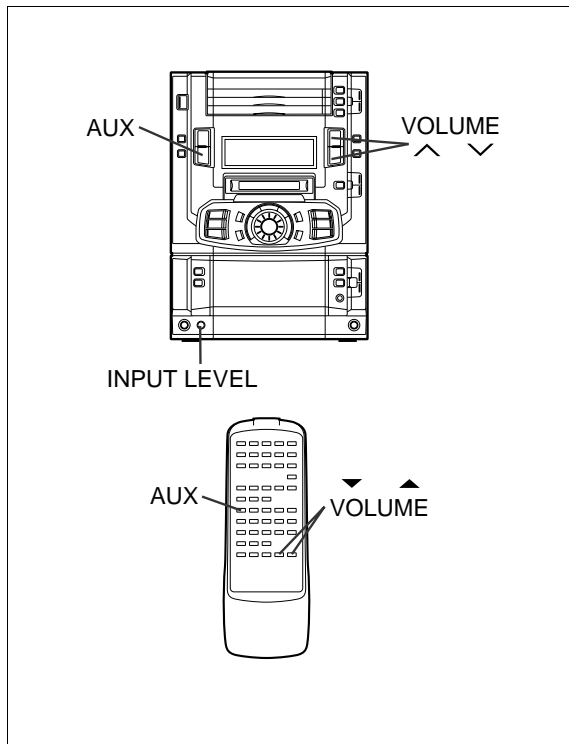
■ Connecting a portable MD player



■ Headphones



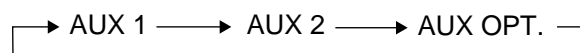
(Continued)



■ Listening to sound from an external unit

To listen to sound from an external unit connected to the digital input terminal:

1 Press the AUX button.



● Select "AUX OPT."

2 Start playback on the external unit.

3 Adjust the sound level using the VOLUME buttons on this unit.

To listen to sound from an external unit connected to the analog input terminals:

1 Press the AUX button.



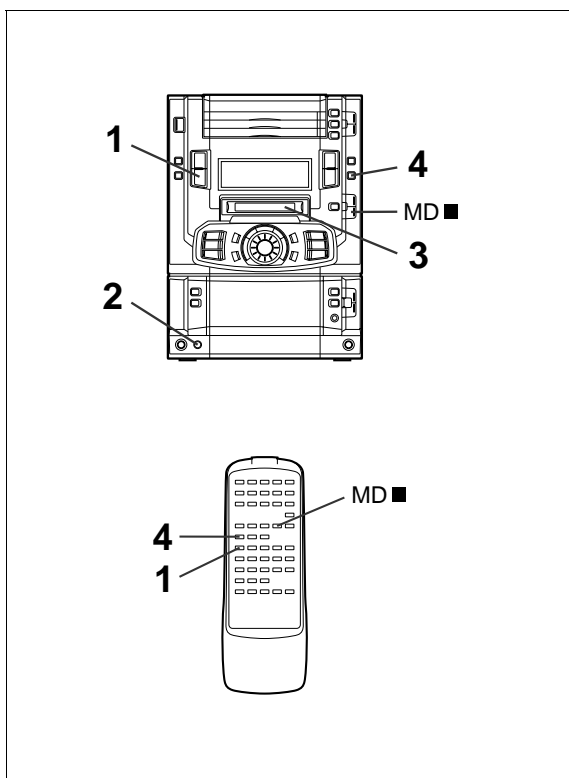
● Select "AUX 1", "AUX 2" or "AUX OPT."

2 Start playback on the external unit, and adjust the input sound level using the INPUT LEVEL control.

● When the INPUT LEVEL control is set to Min, no sound is obtained.

● The maximum level should not exceed "0 dB".

3 Adjust the sound level using the VOLUME buttons on this unit.



■ Recording sound from an external unit

To start recording the moment the external unit starts playback (synchro recording):

MD recording will start automatically, as soon as playback starts on the external unit. This applies to both digital inputs and analog inputs.

● The space-cut function and auto-mark function will work automatically during synchro recording.

1 Press the AUX button.

● Select "AUX 1", "AUX 2" or "AUX OPT."

● Select the input that corresponds to the terminals where the external unit you will record from is connected.

2 Start the recording on the external unit, and adjust the recording level using the INPUT LEVEL control. (This is only necessary when recording from analog inputs.)

● In the case of digital inputs, it is not necessary to adjust the recording level.

● The maximum level should not exceed "0 dB".

● Adjust the recording level, and then stop the external unit.

3 Load a recordable MiniDisc.

4 Press the S.SYNC button.

5 Start playing the music you want to record on the external unit.

● Recording will start automatically.

6 When playback has finished on the external unit, this unit will automatically enter the recording stand-by mode.

● Cancel the mode by pressing the MD ■ button.

When the MD ■ button is pressed, the TOC will be recorded.

If you want to perform other operations at this point, wait until this display disappears.

To stop recording:

Press the MD ■ button.

Note:

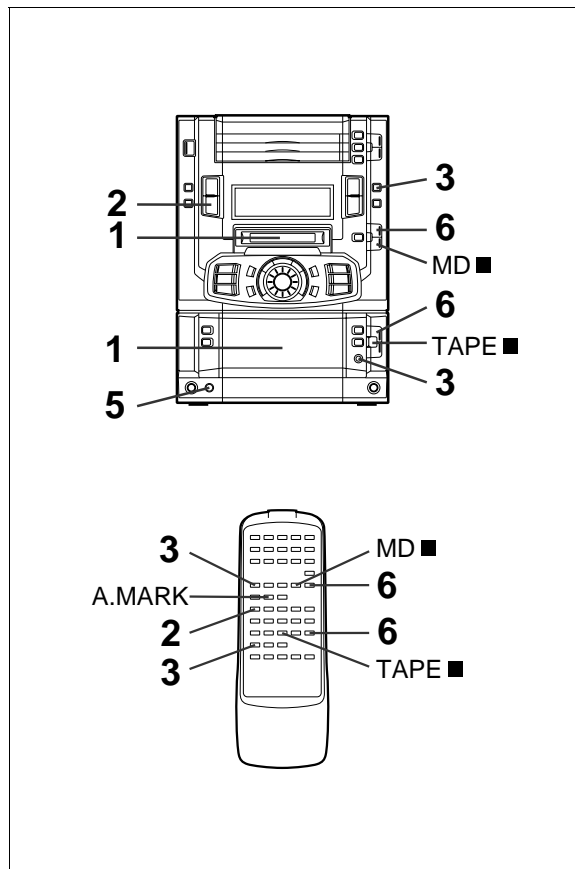
● On some CD players, the track numbers cannot be recorded automatically.

(Continued)

What is the space-cut function?

If there is a silence in the playback signal that lasts 3 seconds during a synchro recording, the recording will stop automatically and unit will enter the recording stand-by mode. Then, when sound from the playback unit resumes, recording will restart automatically.
(A space of 3 seconds is placed between tracks.)

- If there is noise between tracks of the sound source, the synchro recording or the space-cut function may not work properly. If this happens, make the recording manually.
- When you need to record tracks or audio that include very quiet passages lasting 3 seconds or more, manual recording is recommended.



Manual recording

You can start recording by yourself while listening to the playback from other equipment (tuner or CD).

- 1 Load a recordable MD or Tape.
- 2 Press the AUX button to select the auxiliary input.
 - Select the input that corresponds to the terminals where the external unit you will record from is connected.
 - Each time the button is pressed, the display will change as follows:
→ AUX 1 → AUX 2 → AUX OPT.
- 3 Press the MD ● REC or TAPE ● II button.
- 4 Start playback on the external unit.
 - To record analog signals, perform steps 5 - 6.
 - To record digital signals, perform step 6.
- 5 Adjust the recording level using the INPUT LEVEL control.
 - The maximum level should not exceed "0 dB".
- 6 Press the MD ► II or TAPE ► button.

To stop recording:
Press the MD ■ or TAPE ■ button.

To turn off the auto mark function:

- Press the A.MARK button on the remote control.

Track numbers

Recording CDs from a digital source:

Track numbers are automatically created to mark the beginning of each track in the signal being recorded.

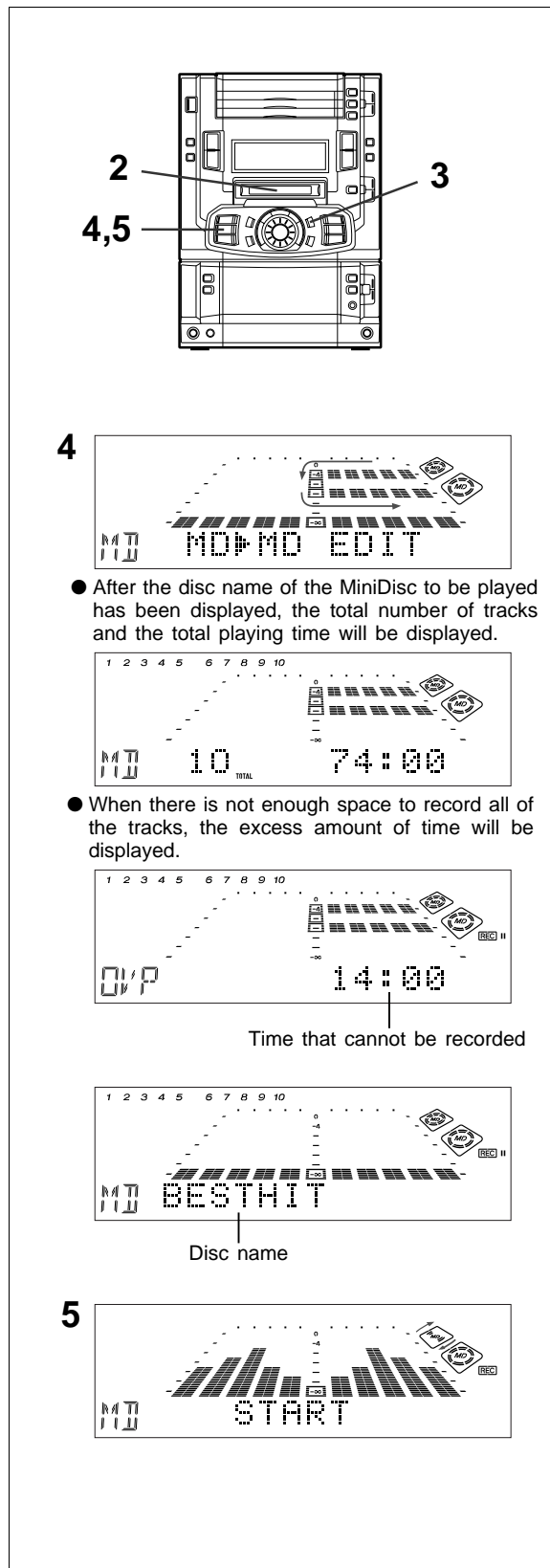
- When making digital recordings using a CD player as the source, track numbers may not be created automatically, depending on the CD player used.

Other considerations:

When there is a period of silence of 1 second or longer in the playback signal, a track number will be automatically created.
If there is no silence, tracks will be recorded as one track.

- If there is a lot of noise in the playback signal, track numbers may not be created.
- Recordings can be made without using the auto mark function.

(Continued)



■ Recording from a portable MD player (MD ► MD Edit)

By connecting a portable MD player which has an MD ► MD Edit function, you can easily record the sound and the character information all at the same time.

- 1 Connect the unit to a portable MD player. (Page 40)
- 2 Load a recordable MD into this unit, and load the MD to be played into the portable MD player.
- 3 Check the recording mode by pressing the REC MODE button.
- 4 Check the recordable time by pressing the MD ► MD button.
- 5 Press the MD ► MD button again.
 - Recording will begin.
 - If the MiniDisc to be played has track names, "NAME READING" will flash and then the track names will be displayed and recorded.
 - If the playback MiniDisc has a disc name, after all of the tracks have been recorded, the disc name will be recorded. Then, the unit will stop automatically.

To record from a track which is in the middle of a MiniDisc:

- 1 After performing step 4, select the track number you want to record using the jog dial.
- 2 Press the MD ► MD button.

To record only a single track:

- 1 After performing step 4, select the track number you want to record using the jog dial.
- 2 Press the TRACK EDIT button.
- 3 Press the MD ► MD button.
 - When only a single track is recorded, the disc name will not be recorded.

Before performing the MD ► MD Edit operation

The MD ► MD Edit function makes analog recordings.

- If the MiniDisc you are recording on already has a disc name, the disc name cannot be recorded over. If you want to record a new disc name, you must erase the existing disc name before entering a new disc name.
- In the case of a commercially manufactured MD music disc, "PLAY BACK MD" will be displayed. The sound will be recorded, however, the disc name and track names will not be recorded.
- If the length of a track is very short, it may be impossible to record the complete track name.
- A maximum of 100 characters can be recorded in the MD ► MD Edit function, including both the disc name and all of the track names.
- The volume, sound quality and recording level will be adjusted automatically. The level meter may swing to "OVER", depending on the sound to be played while recording. However, this will not affect the recording.
- It is better to use the AC adaptor for the portable MD player. Otherwise, the recording may be stopped if the batteries run down while recording.
- A MiniDisc containing 255 tracks cannot use the MD ► MD Edit function. To use it, first delete some tracks using the edit function.
- If you want to record a specific track, or if you start recording from a track in the middle of the disc, the recordable time will not be displayed. If there is not enough recordable time on the target MiniDisc, the recording will stop in the middle of a track.
- The shorter the track names are, the shorter the period of time that "NAME READING" will be displayed.
- If the MiniDisc has a scratch or is dirty, the disc name and the track names may not be recorded. In such a case, restart the recording again or add the disc name and track names using the DISC NAME function and the TRACK NAME function, after you are through recording.

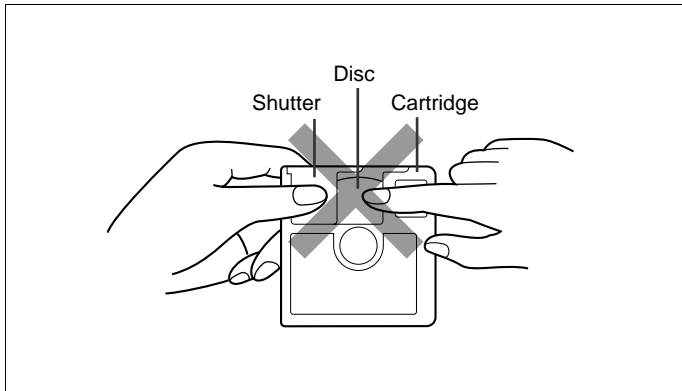
WHAT IS A MINIDISC?

The disc is stored in a cartridge. You can handle it easily without worrying about dust, fingerprints, etc. However, dust entering the opening of the cartridge, dirt on the cartridge, warping, etc. may cause malfunctions. Please note the following.

■ Handling the MiniDisc

Do not touch the disc directly!

Do not open the shutter or touch the disc directly. If the shutter is opened forcibly, it may break.



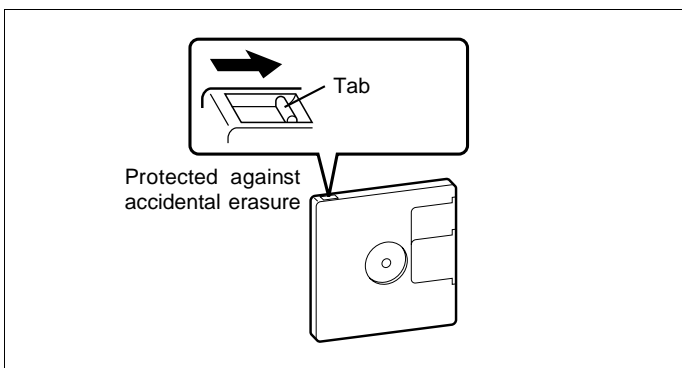
Where not to store discs:

Do not store discs in places with high temperatures or humidity. Specifically, do not leave discs in places exposed to direct sunlight or in cars with doors and windows closed. Do not leave discs in places where sand can get into the cartridge easily (e.g., beaches).

■ To prevent recorded discs from being erased accidentally (accidental erasure prevention)

Slide the accidental erasure prevention tab, located on the side of the disc, in the direction indicated by the arrow.

- The disc will then be protected against accidental erasure.
- To add a recording to such a disc, slide the accidental erasure prevention tab back to its original position.



■ What is a MiniDisc?

- A MiniDisc is a 2-1/2" (64 mm) diameter disc which is stored in a cartridge. MiniDiscs are easy to handle, compared to compact discs, because they are protected against dust and scratches.
- Recording and playback use a digital system with a sound quality that is similar to that found on compact discs. MiniDiscs cannot twist or stretch like tapes. The quality of sound will not deteriorate. MiniDiscs are extremely durable.
- Never disassemble MiniDiscs.

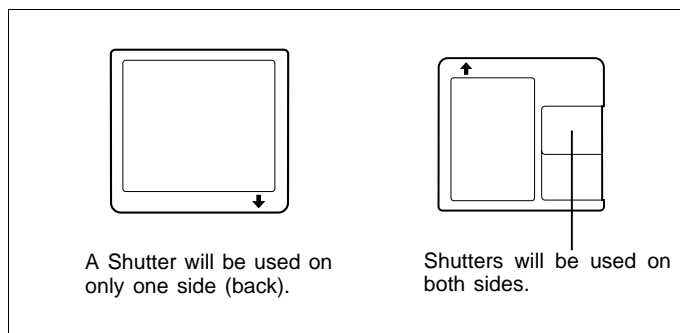
■ Adaptive TRansform Acoustic Coding [ATRAC]

The ATRAC (Adaptive TRansform Acoustic Coding) is a new technology that is designed to eliminate the information in sounds which you can not hear and to compress the remaining sound data so that the recording uses about 1/5 of the original sound information. Sound data is analyzed and filtered to take advantage of psycho acoustic masking. The acoustic quality of the sound is not impaired.

■ Types of discs

There are two types of discs: playback-only and recordable type.

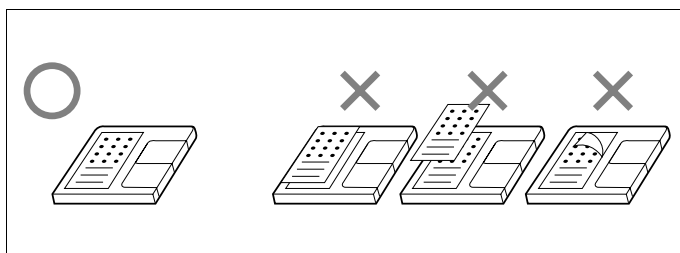
- Playback-only MiniDisc: This type of MiniDisc is used for commercially available pre-recorded music. This is the same kind of optical disc as CDs. Playback is performed using an optical pickup. (Recording and editing are not possible.)
- Recordable MiniDisc: This is a "raw disc" on which recording can be performed. A magneto optical disc is used. Recordings are made using a laser and magnetic field. Repeated recording is possible.



■ How to apply labels

When sticking a label on an MD cartridge, be sure to observe the following. If a label is not affixed properly, an MD may become jammed in the unit such that it can not be removed.

- Stick a label correctly to the specified area. (Do not stick labels to areas other than the specified one.)
- Do not stick one label upon another.
- If a label is peeling off or starts to come loose, replace it with a new one.



■ Shock Resistant Memory

During playback, approximately 10 seconds of information is stored in the semiconductor memory. Therefore, even when the pickup cannot read information for a second or two due to an external shock, the sound continues without interruption because the information stored in memory is output.

MINIDISC SYSTEM LIMITATIONS

Even if the maximum recording time of a MiniDisc has not been reached, "TOC FULL" may be displayed.	In the MD system, the delimiter of the recording area on an MD is programmed in a TOC. If partial erasing, recording and editing are repeated several times, TOC information will fill up, even though the number of tracks has not reached the limit (255 tracks), and further recording will be impossible. (If you use the all erase function, this MD can be used from the beginning.)
Even if the maximum recording time of a MiniDisc has not been reached, "DISC FULL" may be displayed.	If there is any flaw on the MiniDisc, that part is automatically excluded from the space available for recording. Therefore, the recording time becomes shorter.
Even if several short tracks are erased, the remaining recording time may not show an increase.	When the remaining recording time of a disc is displayed, short tracks less than 12 seconds long may not be included in the total.
Two tracks may not be combined in editing.	For MiniDiscs on which repeated recording and editing operations were performed, the COMBINE function may not work. A track recorded from a CD (digital recording) and a track recorded from a radio or other equipment (analog recording) cannot be combined.
The total of the recorded time and time remaining on a disc may not add up to the maximum possible recording time.	A cluster (about 2 seconds) is normally the minimum unit of recording. So, even if a track is less than 2 seconds long, it will use about 2 seconds of space on the disc. Therefore, the time actually available for recording may be less than the remaining time displayed. If there are scratches on discs, those sections will be automatically avoided (no recording will be placed in those sections). Therefore, the recording time will be reduced.
If recorded tracks are fast reversed or fast forwarded, the sound may skip.	An MD which has been recorded or edited repeatedly may skip during fast reverse or fast forward.

TROUBLESHOOTING

■ If a problem occurs

If this unit functions abnormally during operation, first check the following items. If the unit continues to function abnormally, or if an abnormality appears other than listed below, turn off the player's power and disconnect the AC power plug, then consult your SHARP dealer or service personnel.

General

SYMPTOM	POSSIBLE CAUSE	REMEDY
● The clock is wrong.	● Did a power failure occur?	● Try setting it again.
● When a button is pressed, the unit does not respond.		● Set this unit to the stand-by mode and then turn it back on. Then, retry the operation.
● No sound is heard.	● Is the volume level is set to "0"? ● Are the headphones connected? ● Are the speaker wires disconnected?	● Increase the volume level. ● Disconnect the headphones. ● Connect the wires securely.
● Radios make unusual noise or the picture on the TV screen is distorted.	● When a radio or TV which uses an indoor antenna is placed near the unit, the picture on the TV screen may be distorted or the radio may not function properly.	● It is recommended that you use an external antenna.

CD playback

SYMPTOM	POSSIBLE CAUSE	REMEDY
● Even though a disc has been loaded, "NO DISC" or "ERR" is displayed.	● The disc is loaded up-side down. ● The disc is very dirty.	● Load the disc with the correct side up. ● Clean the disc.
● Playback stops in the middle of a track, or playback is not performed properly.	● The disc which does not satisfy the standards.	● Load the correct disc.
● Playback sounds are skipped.	● Is the unit located near excessive vibrations? ● Has condensation formed inside the unit?	● Place the unit on a firm, level surface free from vibration. ● Remove the disc and leave the power turned on. The unit should function properly in about 1 hour.

(Continued)

MD recording and playback

SYMPTOM	POSSIBLE CAUSE	REMEDY
● A recording cannot be made.	● Is the MiniDisc protected against accidental erasure? ● Did you try to make recording on a playback-only MiniDisc? ● Can you see the "TOC FULL" message in the display?	● Slide the accidental erase prevention tab back to its original position. ● Replace it with a recordable disc. ● Put in another recordable disc with recording space on it.
● Even though a disc has been loaded, "NO DISC" or "ERR" is displayed. ● Playback sounds are skipped.	● The disc is very dirty. ● Is the unit located near excessive vibrations? ● Has condensation formed inside the unit?	● Clean the disc. ● Place the unit on a firm, level surface free from vibration. ● Remove the disc and leave the power turned on. The unit should function properly in about 1 hour.

Tape recording and playback

SYMPTOM	POSSIBLE CAUSE	REMEDY
● A recording cannot be made.	● Is the tape protected against accidental erasure?	● Cover the accidental erase prevention hole.
● Sound is skipped. ● Sound in high-frequency range cannot be reproduced. ● Sound quivers.	● The tape is damaged. ● The capstan and pinch roller are very dirty.	● Replace the tape. ● Clean the capstan and pinch roller.
● The cassette cannot be ejected.	● Did a power failure occur?	● Wait until the power is supplied.

Radio reception

SYMPTOM	POSSIBLE CAUSE	REMEDY
● Radios make unusual noise consecutively.	● The unit is placed near the TV or computer. ● The antenna direction is not placed properly.	● When the unit receives a radio broadcast near a TV set, a computer or a wordprocessor, it may pick up noise. If this happens, try to move the unit from the place where the noise is picked up. ● Correct the antenna direction.
● The preset channel cannot be recalled.	● Did you erase the programmed station?	● Preset the channel again. ● Redo programming.

Remote control

SYMPTOM	POSSIBLE CAUSE	REMEDY
● The remote control does not function or does not operate properly.	● The batteries (polarity) are not inserted properly. ● The batteries inside the remote control are dead. ● The remote control is operated from an incorrect distance or angle.	● Insert properly. ● Replace the batteries. ● Operate it within a range of 8' (0.2 m) to 20' (6 m) and within an angle of 15 ° to either side of center.
● The power cannot be turned on from the remote control.	● Is the AC power cord plugged in?	● Connect the AC power cord.

(Continued)

■ Moisture condensation

In the following cases, condensation may form inside the unit.

- Shortly after turning on a heater.
- When the unit is placed in a room where there is excessive steam or moisture.
- When the unit is moved from a cool place to a warm place.

When the unit has condensation inside, the disc signals cannot be read, and the product may not function properly.

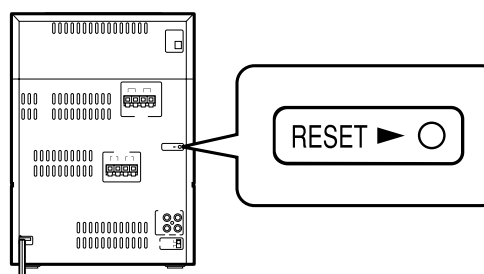
- If this happens, remove the disc. The condensation should evaporate in approximately 1 hour. The unit will then function properly.

■ If a problem occurs

If this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction or the display may not function correctly. If such a problem occurs, do the following:

Connect the AC power cord to the AC outlet, and press the RESET button once on the rear of the main unit.

- When the RESET button is pressed, all of the contents in memory (clock and timer settings, and CD presets) other than the tuner stations will be erased.
- If strange sounds, smells or smoke come out of the unit or if a foreign object falls into the unit, turn off the power, unplug the AC power cord from the AC outlet, immediately. Contact the shop where you purchased the unit.

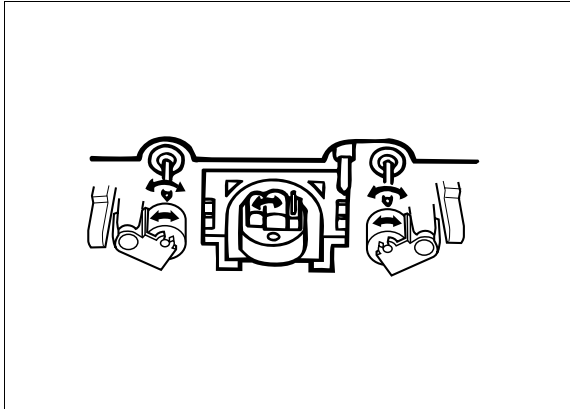


(Continued)

When an error message is displayed, proceed as follows:

Error messages	Meaning	Remedy
BLANK MD	● Nothing is recorded.	● Replace it with another disc.
Can't COPY	● You tried to record from a copy-protected disc.	● Replace it with a regular disc that can be copied.
Can't EDIT	● A track cannot be edited.	● Change the stop position of the track and then try editing it.
Can't REC	● Recording cannot be performed correctly due to vibration or shock in the unit.	● Re-record.
Can't T REC	● Timer recording is impossible or there is no available space on the MD.	● Replace it with another disc.
CH ERROR	● There is something wrong with the CD changer.	● Set this unit to the stand-by mode and then back to on, and press the ► button.
CONNECT ERR	● While an MD player is being edited on this unit, incorrect digital signals are input from the portable MD player.	● Make sure the cable is connected correctly and that power is being supplied to the portable MD player.
DEFECT	● Since this disc has scratches on it, the recording operation was skipped.	● Replace it with another disc.
Din UNLOCK	● Incorrect digital signals are input.	● Connect correct digital signals. ● Use the analog input jacks.
DISC ERR	● The disc is damaged. ● A TOC is not written on the MD or there is something wrong with data.	● Reload the disc or replace it.
DISC FULL	● The disc is out of recording space.	● Replace the disc with another recordable disc.
EDIT OVER	● There is no space to make CD editing on the disc.	● Replace it with a disc that has enough time to record.
FOCUS ERROR	● A disc has not been loaded. ● The disc data cannot be read.	● Reload the MiniDisc.
MD ERROR	● No operation.	● Contact the shop where you purchased the unit.
MECHA ERR* (*:Number or symbol)	● There is a mechanical problem and the disc is not working properly.	● Set this unit to the stand-by mode and press the ▲ button.
NAME FULL	● The number of characters for the disc name or track name exceeds 100.	● Shorten the disc or track name.
NO DISC	● A disc has not been loaded. ● The disc data cannot be read.	● Load a disc. ● Reload the disc.
NOT AUDIO	● The data recorded on this disc is not audio data.	● Select another track. ● Replace the disc.
PLAYBACK MD	● You tried to record on a playback-only disc.	● Replace it with another recordable disc.
PROTECT	● Trouble is found.	● Restart the unit. If the unit doesn't work, contact a SHARP Authorized Servicing Dealer or SHARP Authorized Service station.
PROTECTED	● The disc is write protected. ● The tape is protected against accidental erasure.	● Move the write protection tab back to its original position. ● Cover the accidental erase prevention hole.
TAPE ERROR	● The tape mechanism is defective.	● Try pressing the RESET button.
TEMP OVER	● The temperature is too high.	● Set this unit to the stand-by mode and wait for a while.
TOC ERR* (*:Number or symbol)	● The disc is damaged. ● TOC information cannot be read. ● MD not specified.	● Replace it with another disc.
TOC FULL* (*:Number or symbol)	● There is no space left for recording character information (track names, disc names, etc.).	● Replace it with another recordable disc.
TOC W ERROR	● Recording is impossible.	● Contact the shop where you purchased the unit.
TRAY ERROR	● The CD tray operates incorrectly.	● Unplug the AC power cord, plug it back, and then turn the power on.
U TOC ERR* (*:Symbol)	● TOC information recorded on the MD does not match the MD specifications or it cannot be read.	● Replace it with another disc. ● Erase all of the track, and try recording.
U TOC W ERR	● The TOC information could not be created properly due to a mechanical shock or to scratches on the disc.	● Turn off the power, and try to write the TOC again. (Remove any source of shock or vibration while writing.)
? DISC	● The data contains an error.	● Replace it with another disc.
00:00	● Music is not being recorded.	● Replace the disc with another recordable disc.

MAINTENANCE



Internal care

- Dirty heads, capstans or pinch rollers can cause poor sound and tape jams. Clean these parts with a cotton swab moistened with commercial head/pinch roller cleaner or isopropyl alcohol.
- After long use, the deck's heads and capstans may become magnetized, causing poor sound. Demagnetize these parts once every 30 hours of playing/recording time by using a commercial tape head demagnetizer. Read the demagnetizer's instructions carefully before use.
- In order to ensure proper operation of the CD player, preventative maintenance (cleaning of the Laser Pick-up lens) should be performed periodically in order to keep the lens dust-free. Lens cleaners are commercially available. Contact your local CD software dealer for options.

External care

- Periodically wipe the cabinet with a soft cloth and a diluted soap solution, then wipe with a dry cloth.
- Do not use chemically treated cleaning cloths or other chemicals.

SPECIFICATIONS

As part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

● MiniDisc recorder section

Type:	MiniDisc recorder
Signal readout:	Non-contact, 3-beam semi-conductor laser pickup
Audio channel:	Stereo; 2 channels Monaural; 1 channel (long-time recording mode)
Frequency response:	20 - 20,000 Hz
Rotation speed:	400 - 900 rpm CLV, Approx
Quantization:	16-bit linear
Filter:	8-times oversampling digital filter
Error correction:	ACIRC (Advanced Cross Interleave Reed-Solomon Code)
Coding:	ATRAC (Adaptive TRansform Acoustic Coding)
Recording method:	Magnetic modulation overwrite method
D/A converter:	1-bit D/A converter
Sampling frequency:	44.1 kHz
Wow and flutter:	Unmeasurable (less than 0.001% W. peak)
Signal/noise ratio:	95 dB (1 kHz)
Dynamic range:	90 dB (1 kHz)

● Compact disc player section

Type:	3-disc multi-play compact disc player
Signal readout:	Non-contact, 3-beam semi-conductor laser pickup
Rotation speed:	200 - 500 rpm CLV, Approx.
Error correction:	CIRC (Cross Interleave Reed-Solomon Code)
Quantization:	16-bit linear
D/A converter:	1-bit D/A converter
Filter:	8-times oversampling digital filter
Frequency response:	20 - 20,000 Hz
Signal/noise ratio:	95 dB (1 kHz)
Dynamic range:	90 dB (1 kHz)
Wow and flutter:	Unmeasurable (less than 0.001% W. peak)

● Tuner section

Frequency range:	FM; 87.5 - 108 MHz AM; 530 - 1,720 kHz
Sensitivity:	FM; 2.5 μ V (75 ohms unbalanced) AM; 650 μ V/m

● Cassette deck section

Type:	Compact cassette tape
Frequency response:	50 - 14,000 Hz (Normal tape) 50 - 15,000 Hz (CrO ₂ tape)
Motor:	DC motor with electronic governor \times 1
Signal/noise ratio:	50 dB (Recording/Playback, Dolby NR off) Dolby NR effect; 10 dB (at over 5 kHz)
Bias and erasure system:	AC
Tape speed:	1-7/8 ips. (4.76 cm/sec.)
Wow and flutter:	0.15 % (WRMS)
Heads:	Record/playback \times 1 Erase \times 1

● General

Power source:	AC 120 V, 60 Hz
Power consumption:	101 W
Output power:	40 watts per channel minimum RMS into 6 ohms from 60 Hz to 20 kHz with no more than 10 % total harmonic distortion
Input terminals:	MD IN/AUX (Analog-1); 500 mV/47 kohms Auxiliary (Analog-2); 500 mV/47 kohms Auxiliary (Digital); optical
Output terminals:	Auxiliary; 2.0 V/1 kohm Headphones; 16 - 50 ohms (recommended; 32 ohms) Speakers; 6 ohms
Dimensions:	Width; 9-1/2" (240 mm) Height; 13-1/8" (332 mm) Depth; 12-13/16" (325 mm)
Weight:	19.0 lbs. (8.6 kg)

● Speaker section

Type:	3-way type [6" (150 mm) woofer, 2-1/2" (65 mm) tweeter and super tweeter]
Maximum input power:	100 W
Rated input power:	50 W
Impedance:	6 ohms
Dimensions:	Width; 8-1/8" (205 mm) Height; 13-1/8" (332 mm) Depth; 12-3/4" (323 mm)
Weight:	9.3 lbs. (4.2 kg)/each

MEMO

CONSUMER LIMITED WARRANTY

SHARP ELECTRONICS CORPORATION warrants to the first consumer purchaser that this Sharp brand product (the "Product"), when shipped in its original container, will be free from defective workmanship and materials, and agrees that it will, at its option, either repair the defect or replace the defective Product or part thereof with a new or remanufactured equivalent at no charge to the purchaser for parts or labor for the period(s) set forth below.

This warranty does not apply to any appearance items of the Product nor to the additional excluded item(s) set forth below nor to any Product the exterior of which has been damaged or defaced, which has been subjected to improper voltage or other misuse, abnormal service or handling, or which has been altered or modified in design or construction.

In order to enforce the rights under this limited warranty, the purchaser should follow the steps set forth below and provide proof of purchase to the servicer.

The limited warranty described herein is in addition to whatever implied warranties may be granted to purchasers by law. ALL IMPLIED WARRANTIES INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE PERIOD(S) FROM THE DATE OF PURCHASE SET FORTH BELOW. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Neither the sales personnel of the seller nor any other person is authorized to make any warranties other than those described herein, or to extend the duration of any warranties beyond the time period described herein on behalf of Sharp.

The warranties described herein shall be the sole and exclusive warranties granted by Sharp and shall be the sole and exclusive remedy available to the purchaser. Correction of defects, in the manner and for the period of time described herein, shall constitute complete fulfillment of all liabilities and responsibilities of Sharp to the purchaser with respect to the Product, and shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise. In no event shall Sharp be liable, or in any way responsible, for any damages or defects in the Product which were caused by repairs or attempted repairs performed by anyone other than an authorized servicer. Nor shall Sharp be liable or in any way responsible for any incidental or consequential economic or property damage. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Model Specific Section

Your Product Model Number & Description: MD-X60 MD/CD Component System
(Be sure to have this information available when you need service for your Product.)
One (1) year parts and labor from the date of purchase.

Warranty Period for this Product:

Additional Item(s) Excluded from

Warranty Coverage (if any):

Where to Obtain Service:

Non-functional accessories, supplies and consumable items.
At a Sharp Authorized Servicer located in the United States. To find a location of the nearest Sharp Authorized Servicer, call Sharp toll free at 1-800-BE-SHARP.
Ship prepaid or carry in your Product to a Sharp Authorized Servicer. Be sure to have **Proof of Purchase** available. If you ship the Product, be sure it is insured and packaged securely.

What to do to Obtain Service:

TO OBTAIN SUPPLY, ACCESSORY OR PRODUCT INFORMATION, CALL 1-800-BE-SHARP.

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