

YAMAHA YST-NC1

Natural Sound Compact Component System

Active Servo Processing Speaker System

30 Station Random Access Preset Tuning

Double Cassette Tape Deck with Automatic Reverse Function

Tape A and B Continuous Playback Capability

Automatic Synchronized Recording with CD/Tape Playback

Automatic CD Editing Function for Recording to Tape

6 Adjustable Equalizer Modes/4 Sound Expander Modes

User Sound Field Control Mode Storing Capability

SOUND DIRECT button for Reproducing the Purest Source Sound

Multi-Use Timer/Sleep Timer

Remote Control Capability

Thank you for selecting this YAMAHA compact component system.
This system is composed of YST-NC1c, YST-NC1k and YST-SNC1.



OWNER'S MANUAL

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IMPORTANT!

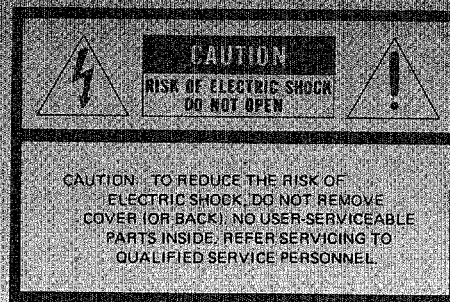
Please make a note of the serial number of this unit in the space indicated below.

Model:
Serial No.:

The serial number is inscribed on the rear of the unit.
Keep this Owner's Manual in a safe place for future reference.

WARNING

To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.



• Explanation of Graphical Symbols




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



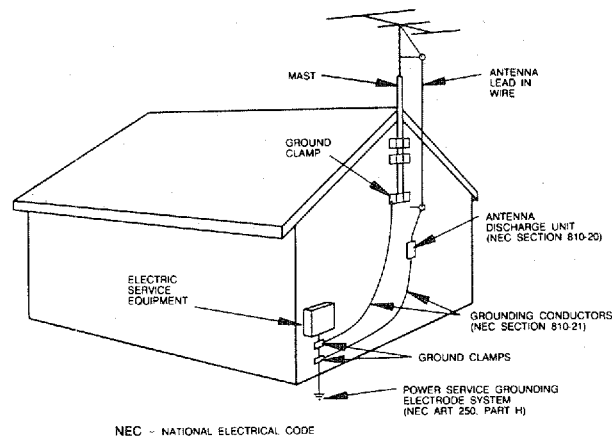
The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SAFETY INSTRUCTIONS

- 1 Read Instructions – All the safety and operating instructions should be read before the unit is operated.
- 2 Retain Instructions – The safety and operating instructions should be retained for future reference.
- 3 Heed Warnings – All warnings on the unit and in the operating instructions should be adhered to.
- 4 Follow Instructions – All operating and other instructions should be followed.
- 5 Water and Moisture – The unit 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.
- 6 Carts and Stands – The unit should be used only with a cart or stand that is recommended by the manufacturer.
- 6A A unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn. 
- 7 Wall or Ceiling Mounting – The unit should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 8 Ventilation – The unit should be situated so that its location or position does not interfere with its proper ventilation. For example, the unit 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.
- 9 Heat – The unit should be situated away from heat sources such as radiators, stoves, or other units that produce heat.
- 10 Power Sources – The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.
- 11 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 unit.
- 12 Cleaning – The unit should be cleaned only as recommended by the manufacturer.
- 13 Nonuse Periods – The power cord of the unit 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 into and liquids are not spilled into the inside of the unit.
- 15 Damage Requiring Service – The unit 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 unit; or
 - C. The unit has been exposed to rain; or
 - D. The unit does not appear to operate normally or exhibits a marked change in performance; or
 - E. The unit has been dropped, or the cabinet damaged.

- 16 Servicing – The user should not attempt to service the unit beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.
- 17 Power Lines – An outdoor antenna should be located away from power lines.
- 18 Grounding or Polarization – Precautions should be taken so that the grounding or polarization is not defeated.
- 19 Outdoor Antenna Grounding – If an outside antenna is connected to this unit, 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.

EXAMPLE OF ANTENNA GROUNDING



Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the manufacture of this product contains LEAD. In addition, the electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT REMOVE ANY ENCLOSURE COMPONENTS!
There are no user serviceable parts inside. All service

should be performed by a service representative authorized by Yamaha to perform such service.

IMPORTANT MESSAGE: Yamaha strives to produce products that are both user safe and environmentally "friendly". We sincerely believe that our products meet these goals. However, in keeping with both the spirit and the letter of various statutes we have included the preceding messages and others in various locations in this manual.

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE : DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT :

When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. NOTE :

This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices.

Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Electronics Corp., U.S.A. 6722 Orangethorpe Ave, Buena Park, CA 90620.

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

SUPPLIED ACCESSORIES

After unpacking, check that the following parts are contained.

- MW/LW (AM) loop aerial
- Indoor FM aerial (300 ohm)
- Remote control transmitter
- Batteries (size "AA", UM/SUM-3, R6, HP-7)
- Speaker cords

PRECAUTIONS: READ THIS BEFORE OPERATING YOUR UNIT

- To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- This unit is equipped with the newly developed Active Servo Processing Speaker System. It is not designed for use with conventional speakers. Therefore, **do not attempt to connect other speakers than the provided speaker system, that is YST-NC1.**
- Choose the installation location of this unit carefully. Avoid placing it in direct sunlight or close to a source of heat. Also avoid locations subject to vibration and excessive dust, heat, cold or moisture. Keep it away from sources of hum such as transformers and electric motors.
- Do not operate this unit upside-down. It may overheat, possibly causing damage.
- Never open the cabinet. If something drops into the set, contact your dealer.
- Do not place CD or other objects on top of this unit.
- Do not use force on switches, controls or connection wires. When moving the unit, first disconnect the power plug and the wires connected to other equipment. Never pull the wire itself.
- Do not attempt to clean the unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
- Be sure to read the "TROUBLESHOOTING" section regarding common operating errors before concluding that the unit is faulty.
- To prevent lightning damage, disconnect the AC power plug and disconnect the antenna cable when there is an electrical storm.
- Do not plug the AC power plug to the wall socket before you finish all connections.
- Never allow metallic items (e.g. screwdrivers, tools, etc.) to come near the cassette deck's record/playback head assembly in this unit. Doing so may not only scratch or damage the head's mirror-smooth finish, it may change the magnetic characteristics of the heads, causing a deterioration in reproduction performance quality.
- Although the cassette deck's record/playback heads used in this unit are high quality heads with outstanding reproduction characteristics, they can become dirty through the use of old tapes or from dust accumulation over time. This can have a serious effect on reproduction quality. Clean the heads regularly with one of commonly available head cleaners or with cleaning solutions.
- The voltage to be used must be the same as that specified on this unit. Using this product with a higher voltage than that which is specified is dangerous and may result in a fire or other type of accident causing damage. YAMAHA will not be held responsible for any damage resulting from use of this unit with a voltage other than that which is specified.
- Sudden temperature changes and storage or operation in an extremely humid environment may cause condensation inside the cabinet. Condensation can cause the unit to malfunction. Follow the procedure below to eliminate condensation.
 - **CD pickup**
Leave the power on with no disc in the unit until normal playback is possible (about 1 hour).
 - **Tape head**
Leave the power on with no cassette in the unit until normal playback is possible (about 1 hour).
Note:
If condensation forms on the tape head, foreign matter may accumulate during use.
 - **Remote control**
Wipe off condensation on the transmitter window with a soft cloth before operating the unit.
- The sound level at a given volume setting depends on a combination of speaker efficiency, location and many other factors. Care should be taken to avoid exposure to sudden high levels of sound, which may occur when turning on the unit with the volume control setting at high, and to continuous high levels of sound.

STAND BY mode

While the power is on, pressing the POWER switch (or the POWER button on the remote control transmitter) switches the unit to the STAND BY mode. (In this mode, the indicator on the right side of the POWER switch illuminates.) In this mode, main voltage is still present inside the unit. If you want to switch off the unit completely, disconnect the AC power plug from the wall socket.

NOTE:

Please check the copyright laws in your country to record from records, compact discs, radio, etc. Recording of copyright material may infringe copyright laws.



Dolby and the double D mark are trademarks of Dolby Laboratories Licensing Corp. Dolby noise reduction system manufactured under license from Dolby Laboratories Licensing Corp.

WARNING

DANGER

Invisible laser radiation when open and interlock failed or defeated.
Avoid direct exposure to beam.

CAUTION

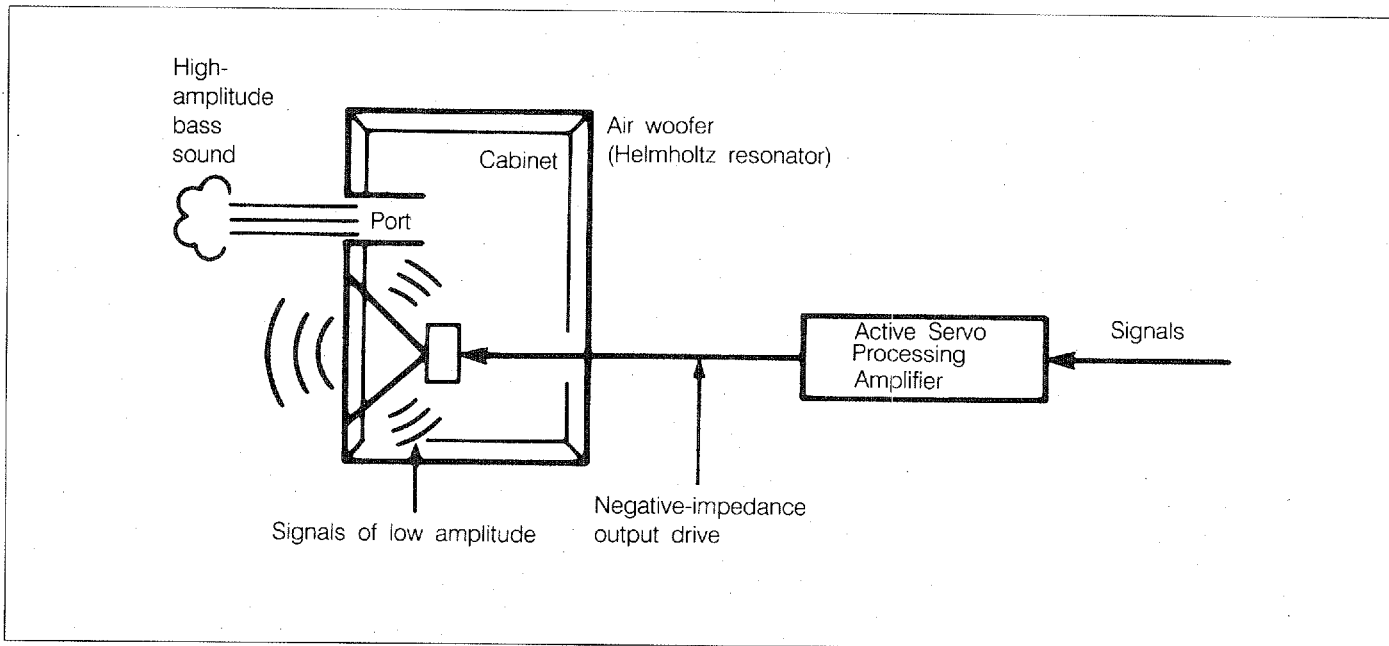
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

As the laser beam used in this compact disc player is harmful to the eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

To avoid electrical shock, do not open the unit. Refer servicing to qualified personnel only.

Laser Diode Properties

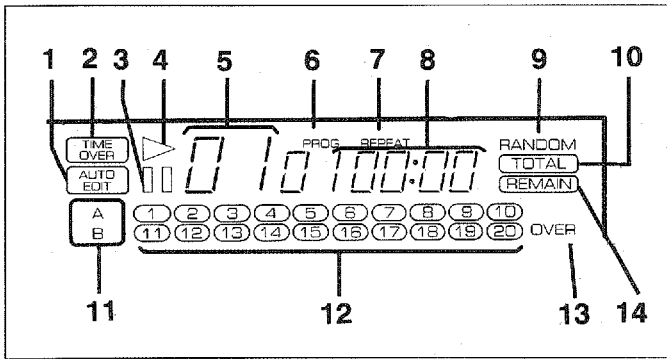
- Material: GaAlAs
- Wavelength: 780nm
- Emission Duration: continuous
- Laser Output: max. 44.6 μ W*
- * This output is the value measured at a distance of about 200mm from the objective lens surface on the Optical Pick-up Block.



The theory of the Active Servo Technology is based upon two major factors, the Helmholtz resonator and negative-impedance drive. Active Servo Processing speakers reproduce the bass frequencies through an "air woofer", which is a small port or opening in the speaker's cabinet. This opening is used instead of, and performs the functions of, a woofer in a conventionally designed speaker system. Thus, signals of low amplitude within the cabinet can, according to the Helmholtz resonance theory, be output from this opening as waves of great amplitude if the design is such that the size of the opening and the volume of the cabinet are in the correct proportion to satisfy a certain ratio. In order to accomplish this, moreover, the amplitudes within the cabinet must be both precise and of sufficient power because these amplitudes must overcome the "load" presented by the air that exists within the cabinet.

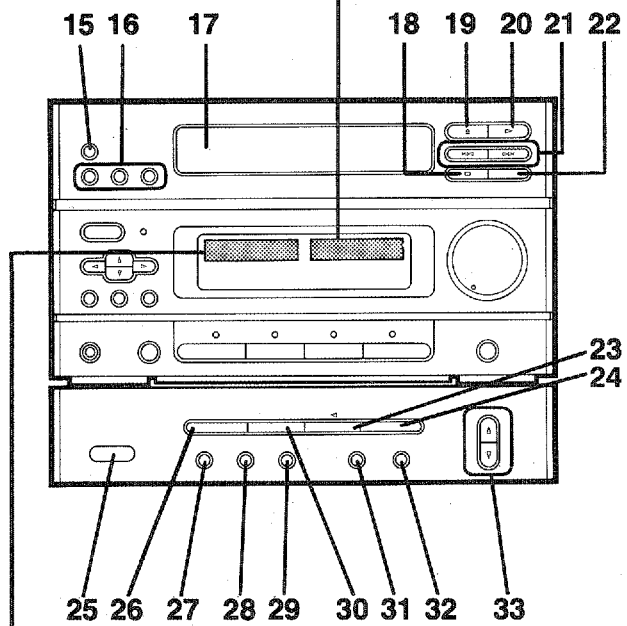
Thus it is this problem that is resolved through the employment of a design in which the amplifier functions to supply the signals. If the electrical resistance of the voice coil is reduced to zero, the movement of the speaker unit would become linear with respect to signal voltage, and, to accomplish this, a special negative-impedance output-drive amplifier for subtracting output impedance of the amplifier is used. By employing negative-impedance drive circuits, the amplifier is able to generate precise, low-amplitude low-frequency waves with superior damping characteristics, and these waves are then radiated from the cabinet opening as high-amplitude signals. The system can, therefore, by employing the negative-impedance output drive amplifier and a speaker cabinet with the Helmholtz resonator, reproduce an extremely wide range of frequencies with amazing sound quality and less distortion. The features described above, then, are combined to be the fundamental structure of the Active Servo Technology.

NAMES OF CONTROLS AND INDICATORS



■ CD control section

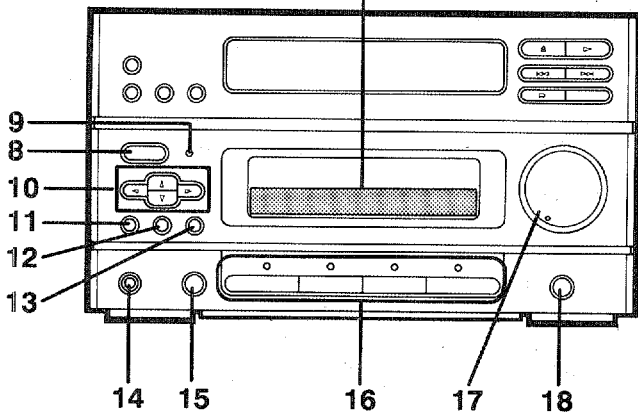
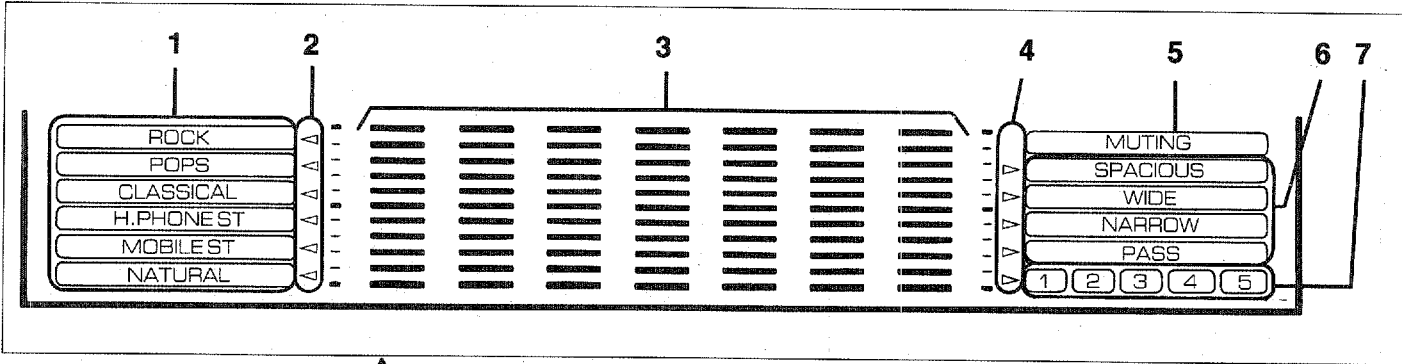
1. Auto Editing Indicator
2. Time Over Indicator
3. Pause Indicator: $\square\square$
4. Play Indicator: \blacktriangleright
5. Track Number Indicator
6. Programme Indicator
7. Repeat Indicator
8. Minutes and Seconds Indicator
9. Random Play Indicator
10. Total Time Indicator
11. Tape Side Indicators
12. Music Schedule Indicators
13. Music Schedule Over Indicator
14. Remaining Time Indicator



15. Editing Button
16. Auto Tape Edit Button
17. Disc Table
18. Stop Button: \square
19. Open/Close Button: \blacktriangle
20. Play Button: \blacktriangleright
21. Track Up/Down Buttons: $\blacktriangleleft / \blacktriangleright$
22. Random Play Button

■ Tuner/Timer Control section

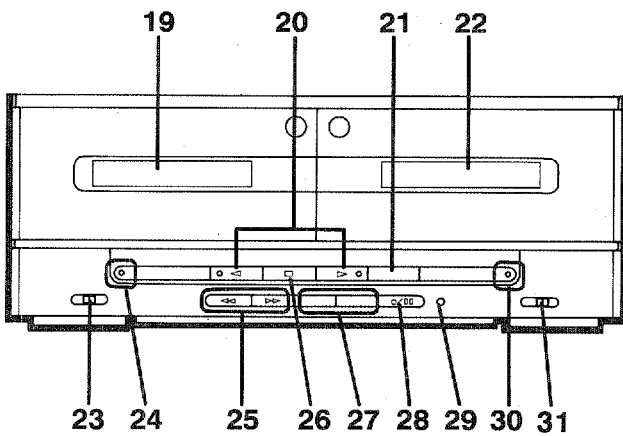
23. Tuning Down/Hour Button
 24. Tuning Up/Minute Button
 25. Remote Control Sensor
 26. Band Selector Button
 27. Display Button
 28. Timer Button
 29. Sleep Button
 30. Auto Memory Button
 31. Memory/Time Adjust Button
 32. FM Mode/Clear Button
 33. Preset Search
34. Band Indicator
 35. Radio Frequency/Clock Display
 36. Preset Channel Indicator
 37. Timer Set Indicator
 38. Sleep Indicator
 39. On Time Indicator
 40. FM Stereo Mode Indicator
 41. FM Stereo Indicator
 42. Memory Indicator



■ Graphic equalizer control section

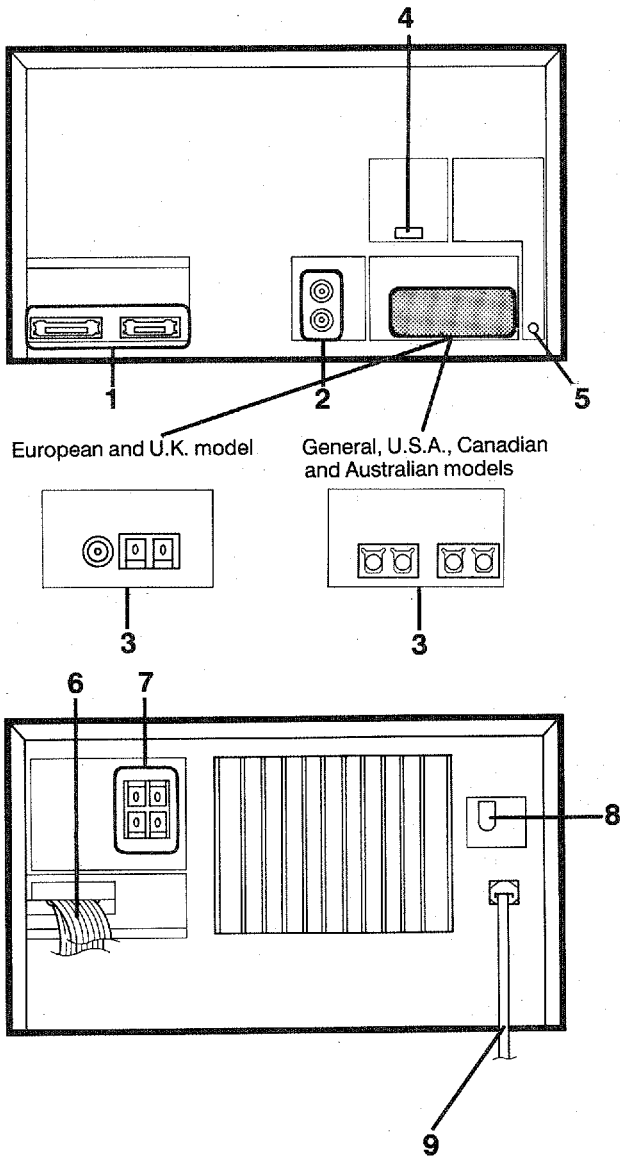
- 1. Preprogrammed Equalizer Mode Indicators
- 2. Preprogrammed Equalizer Cursor Point Indicator
- 3. Level Meters
- 4. Sound Expander/User Memory Cursor Point Indicator
- 5. Muting Indicator
- 6. Sound Expander Mode Indicators
- 7. User Memory Indicators

- 8. Power Switch
- 9. Stand by Indicator
- 10. Sound Control Buttons
- 11. Graphic Equalizer Control Button
- 12. Graphic Equalizer Flat Button
- 13. Memory Button
- 14. Headphones Socket
- 15. Sound Direct Button
- 16. Input Selector Buttons and Indicators
- 17. Volume Control
- 18. Muting Button



■ Tape control section

- 19. TAPE A Cassette Compartment
- 20. Play Buttons and Indicators
- 21. Tape A/B Select Button
- 22. TAPE B Cassette Compartment
- 23. Reverse Mode Switch
- 24. TAPE A playback Indicator
- 25. Fast Wind Buttons: << / >>
- 26. Stop Button: □
- 27. Dubbing Buttons
- 28. Record Pause Button: ○/□
- 29. Record Indicator
- 30. TAPE B rec/playback Indicator
- 31. Dolby NR Switch



■ Rear panel of CD player/pre-amplifier section

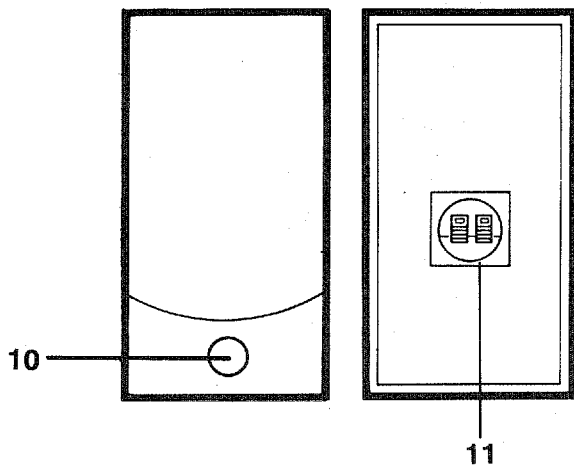
- 1. System Control Sockets
- 2. Auxiliary inputs
- 3. Aerial terminals
- 4. Frequency Step Switch (General and Australian models)
- 5. Reset Button

FREQUENCY STEP switch (General and Australian Models only)
Because the interstation frequency spacing differs in different areas, set the FREQUENCY STEP switch (located at the rear) according to the frequency spacing in your area.
Before setting this switch, disconnect the AC power plug of this unit from the AC outlet.

■ Rear panel of tape deck/power amplifier section

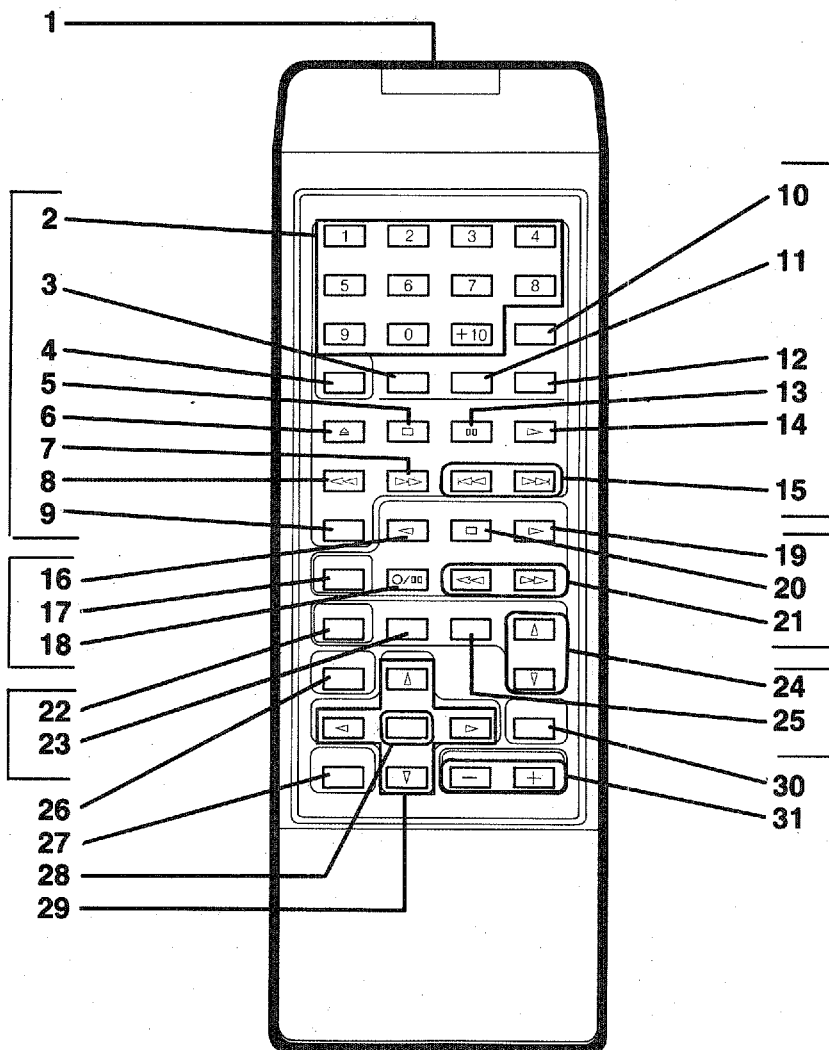
- 6. System Control Connectors
- 7. Speaker Terminals
- 8. Voltage Selector (General model only)
- 9. AC Supply Lead

Voltage Selector (General Model only)
The voltage selector on the rear panel of this unit must be set for your local main voltage BEFORE plugging into the AC main supply.
Voltages are 110/120/220/240 V AC, 50/60 Hz.



■ Speaker section

- 10. AST Port
- 11. Speaker Terminals



Names of controls

1. Remote Control Transmitter Window

● **CD control buttons**

- 2. Track Number Input Buttons
- 3. Programme Button
- 4. CD Call Button
- 5. Stop Button: □
- 6. Open/Close Button: △
- 7. Cue Button: ▷▷
- 8. Review Button: ◀◀
- 9. Repeat Button
- 10. Time Display Selector Button
- 11. Clear Button
- 12. Call Button
- 13. Pause Button: ◻◻
- 14. Play Button: ▷
- 15. Track Up/Down Buttons: ◀◀ / ▷▷

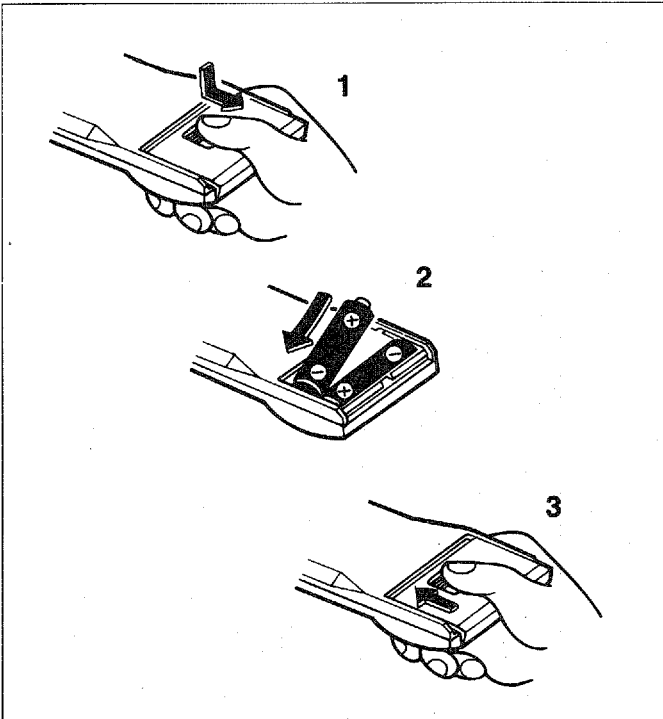
● **Tape control buttons**

- 16. Play Button: ◀
- 17. Tape A/B Select Button
- 18. Record Pause Button: ○/◻◻
- 19. Play Button: ▷
- 20. Stop Button: ◻
- 21. Fast Wind Buttons: ◀◀ / ▷▷

● **Tuner control buttons**

- 22. Tuner Call Button
- 23. Band Selector Button
- 24. Preset Up/Down Buttons: △ / ▽
- 25. FM Mode Button

- 26. Auxiliary Call Button
- 27. Power Button
- 28. Sound Direct Button
- 29. Sound Control Buttons
- 30. Muting Button
- 31. Volume Down/Up Buttons: - / +

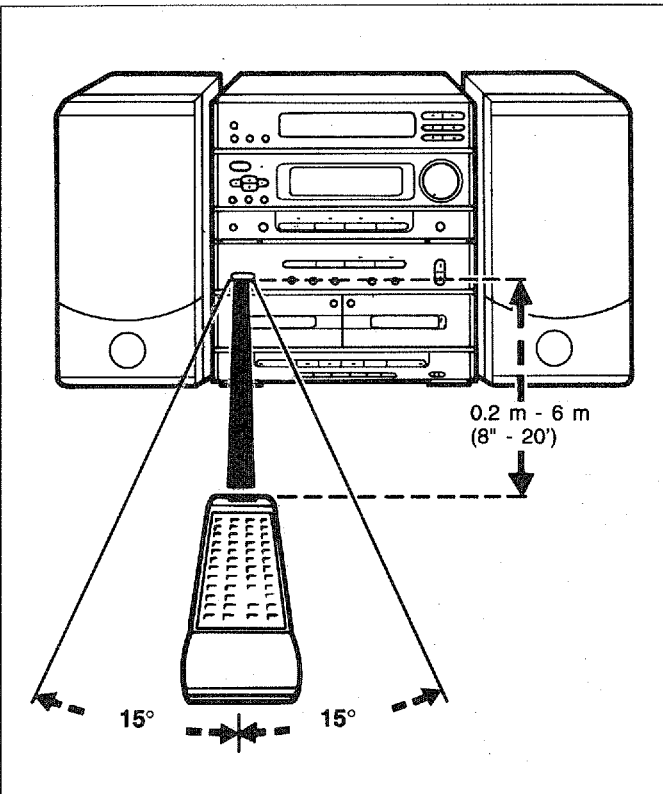


■ Loading the batteries for the remote control transmitter

- 1 Remove the battery compartment cover.
- 2 Insert 2 "AA" size batteries (UM/SUM-3, R6, HP-7 or equivalent) into the battery compartment.
 - Placing the batteries the wrong way round will cause malfunction.
- 3 Replace the battery compartment cover.

Precautions for battery use:

- Insert the batteries according to the direction indicated in the battery compartment.
- Replace all batteries with new ones at the same time.
- Remove the batteries if they are weak or if the unit is not in use for long periods.
- Don't mix normal batteries with rechargeable batteries.



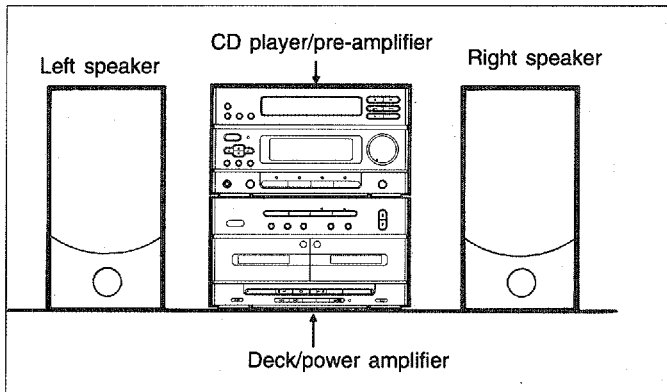
■ Proper use of the remote control transmitter

Aim (within the range of 30° with no obstacles) the remote control transmitter at the remote control sensor and operate as shown.

Notes concerning use:

- Replace the batteries if control distance decreases or operation becomes erratic.
- Periodically clean the transmitter window on the remote control transmitter 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 transmitter away from moisture, excessive heat, shock, and vibrations.
- The remote control transmitter's usable range is within 0.2 m (8") and 6 m (20') away from the sensor.

PREPARATION FOR USE



■ Placing the system

This system is designed to be stacked vertically.

Notes:

- If the system is stacked vertically, be sure to place the CD player/pre-amplifier on top.
- If the system is put in a rack, allow a space of at least 3 cm (1-3/16") above and 10 cm (4") at the back of the unit.
- Turn off the power before connecting or disconnecting any component.

■ Aerial connection

(1) Supplied FM aerial

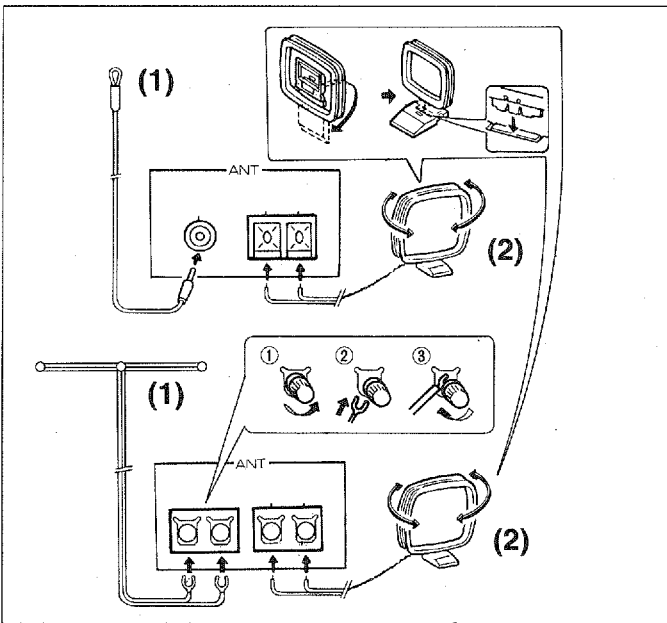
Depending on your model, connect the FM aerial wire to the corresponding terminal and direct the FM aerial wire to the direction where the strongest signal can be received.

(2) Supplied MW/LW (AM) loop aerial

Connect the MW/LW (AM) loop aerial wire to the corresponding terminals. Position the MW/LW (AM) loop aerial for optimum reception. Place the MW/LW (AM) loop aerial on a shelf etc., or install it on the rack or wall with screws (not supplied).

Notes:

- When static is still heard even after adjusting the position of the MW/LW (AM) loop aerial, try reversing the connection (right to left).
- Do not place the MW/LW (AM) loop aerial on the unit. It will result in noise generation, since the unit is equipped with digital electronics. Place the MW/LW (AM) loop aerial away from the unit.



For U.S.A., Canadian, General customers

(3) External FM aerial

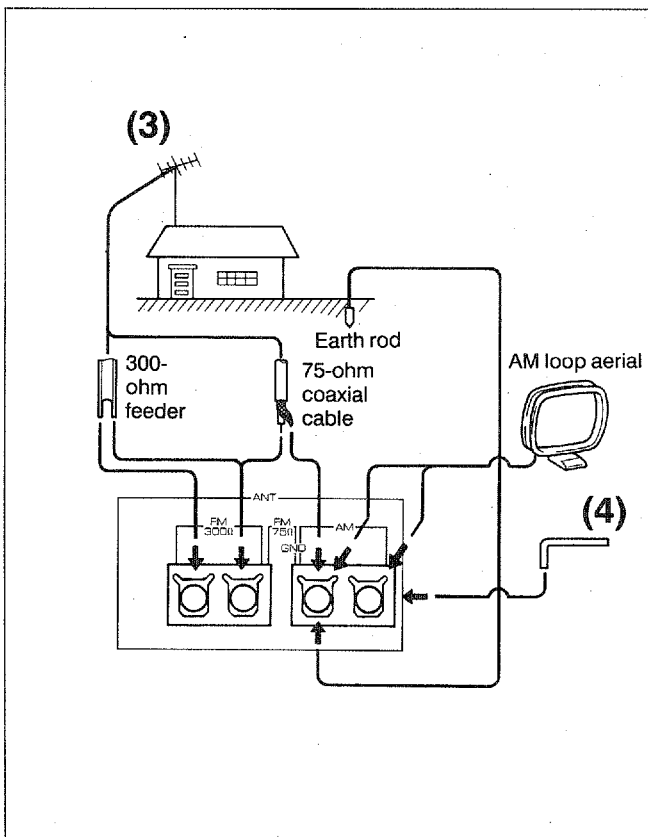
Use an external FM aerial instead of an indoor FM aerial if you need better reception. Consult your dealer.

(4) External AM aerial

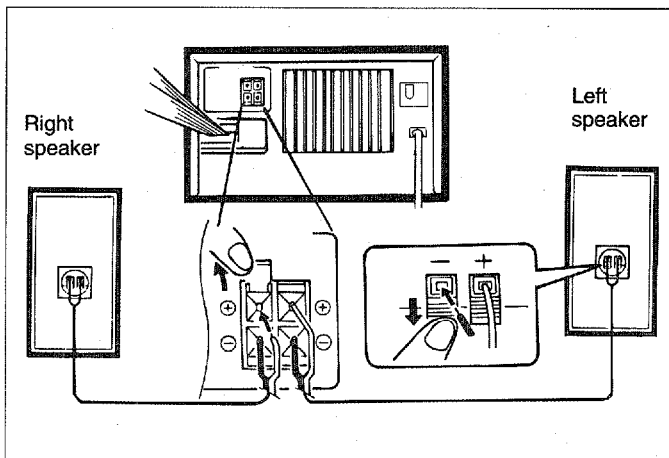
Use an external AM aerial if you need better reception. Consult your dealer.

Note:

When using an external AM aerial, be sure to keep the wire of the AM loop aerial connected.



(Continued)

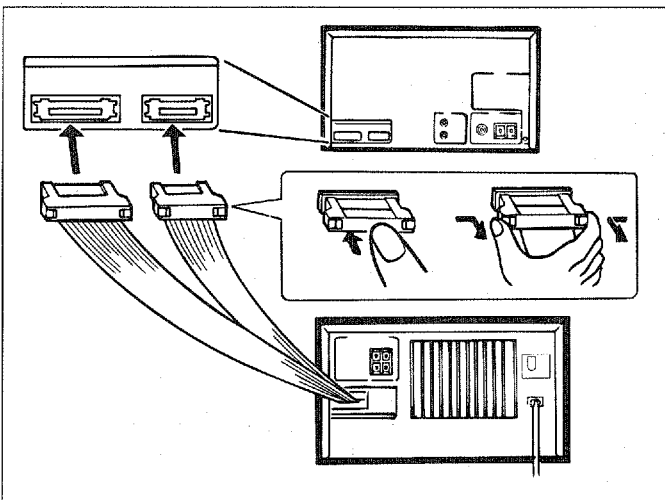


■ Speaker connection

Connect each speaker wire to the SPEAKER terminals as shown. (Black wire with white line → plus (+) terminal, black wire → minus (-) terminal)

Cautions:

- Do not let the bare speaker wires touch each other as this could damage the amplifier and/or speakers.
- When connecting the speakers to the unit, be sure to connect the speaker wires properly. Do not mistake the right channel for the left channel and the plus (+) terminal for the minus (-) terminal.
- Use these SPEAKER terminals for YST-NC1 only, do not connect it to speakers other than YST-NC1.

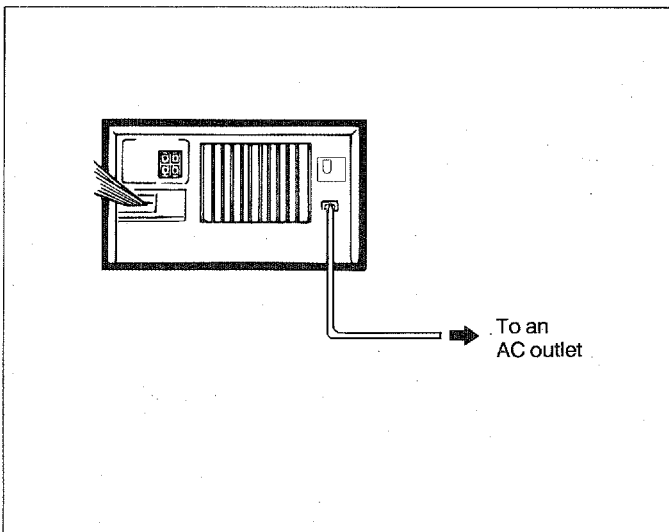


■ System connection

- Connect the red connector to the red socket.
- Connect the white connector to the white socket.

How to disconnect the system connector:

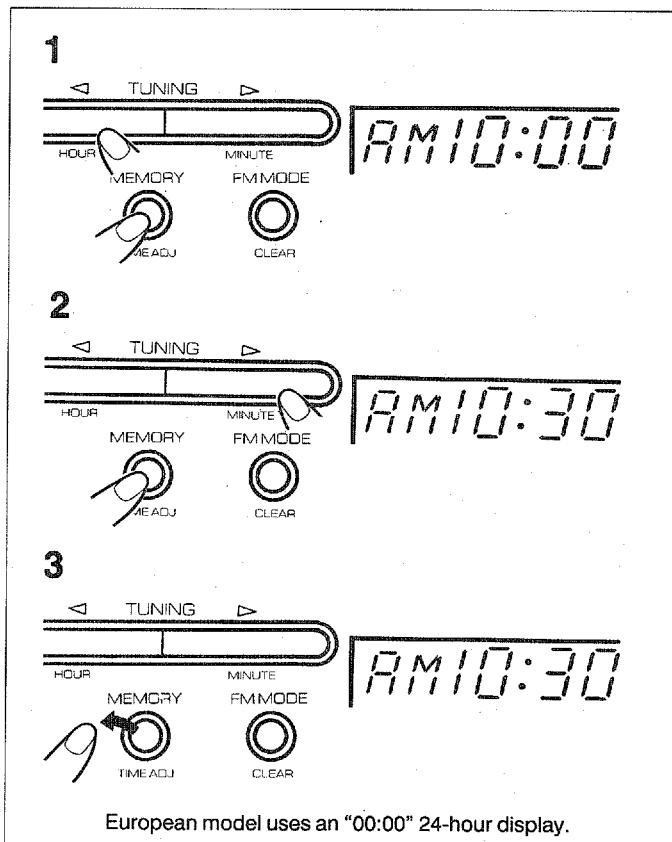
Grasp both sides of the connector to disconnect the connector.



■ Connecting the AC supply lead

- After connecting the speakers and system connectors, plug the AC supply lead into a convenient AC outlet.
- Unplug the AC supply lead from the AC outlet if the unit is not to be used for a prolonged period of time.

SETTING THE CLOCK



- While the frequency indicator on the tuner or the "ON TIME" indicator is lit, press the DISPLAY button to display the time.

1 While pressing the TIME ADJUST button, press the HOUR button and set the hour.

- Press the HOUR button once to advance the time by 1 hour. Press for more than 0.5 seconds to advance continuously.

2 While pressing the TIME ADJUST button, press the MINUTE button and set the desired time.

- Press the MINUTE button once to advance the time by 1 minute. Press for more than 0.5 seconds to advance continuously.
- The hour setting will not advance even if minutes advance from "59" to "00".

3 Release the TIME ADJUST button to start the clock at the correct time.

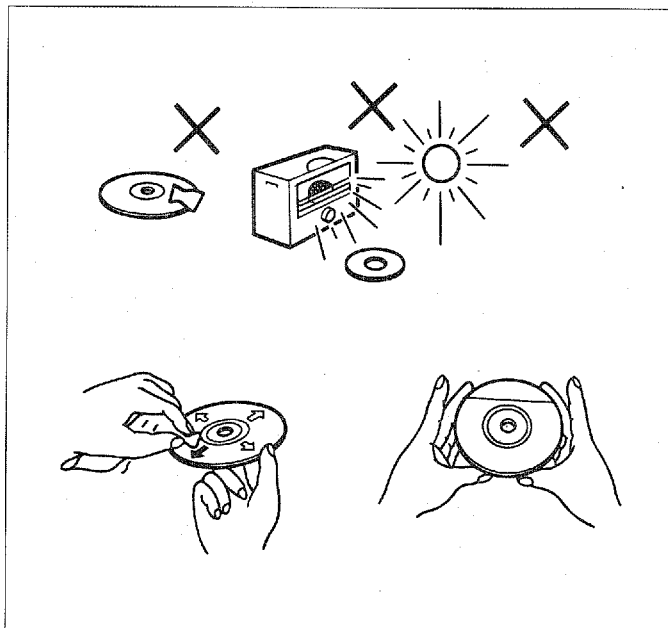
- The clock starts operating from "0" seconds. (Seconds are not displayed.)

In the event of a power failure or when the AC supply lead is disconnected.

The clock display will go out.

When the AC power supply is resumed, the clock display will flash on and off to indicate that the time must be reset.

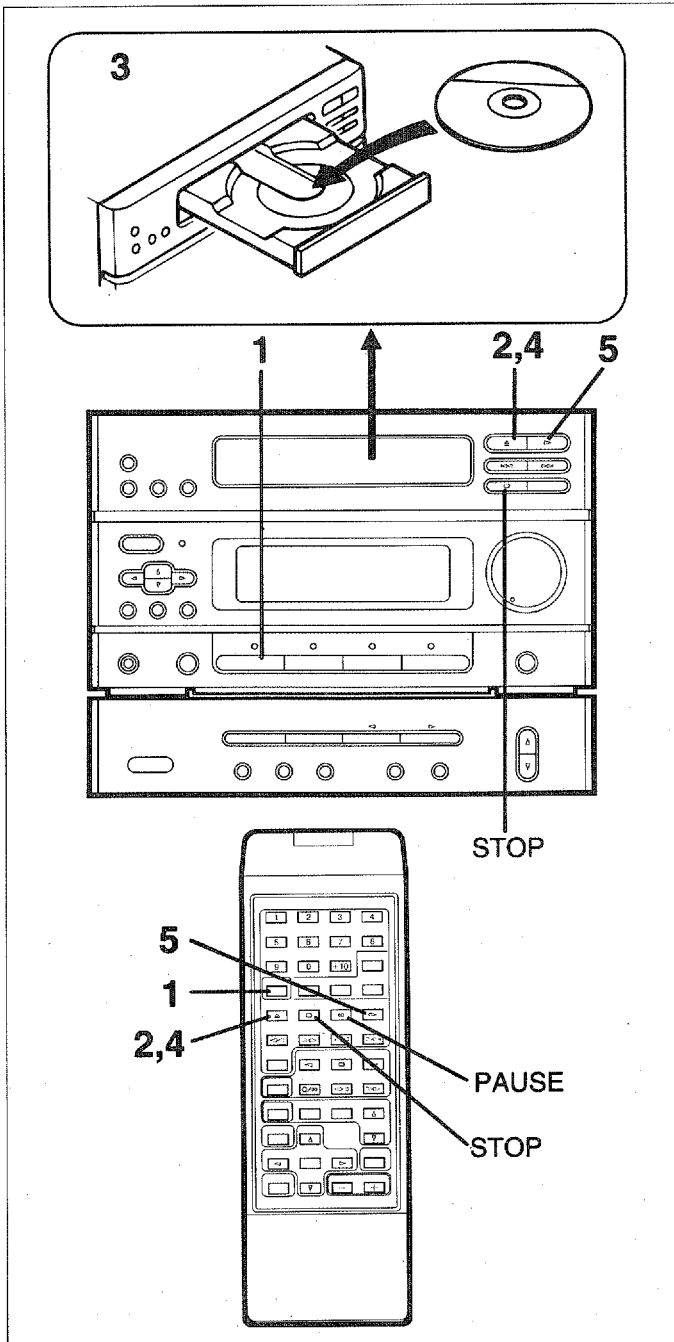
COMPACT DISC OPERATION



Care of compact discs

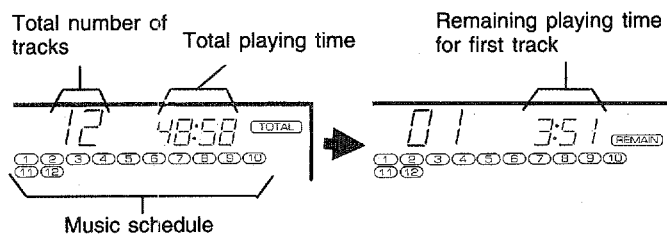
Compact discs are fairly resistant to damage, however mistracking can occur due to an accumulation of dirt on the disc surface. Follow the guidelines below for maximum enjoyment from your CD collection and player.

- 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 centre, along the radius.



CD playback

- 1 Press the CD button.
 - When the CD button is pressed, the power will be automatically turned on.
- 2 Press the OPEN/CLOSE button to open the disc table.
- 3 Place a disc on the table, label side up.
 - 8 cm (3") discs may be played without an adaptor.
- 4 Press the OPEN/CLOSE button to close the disc table.
 - The total number of tracks and the total playing time will be displayed for several seconds.
 - The music schedule will be displayed only for the number of tracks on the disc.
 - If the compact disc contains more than 21 tracks, the "OVER" indicator will light up on the music schedule.



- 5 Press the PLAY button to start playback from track 1.
 - The "▶" indicator will appear and playback will begin. As the playback of each track on the music schedule is finished, that track number will go out.

Direct playback:

If a compact disc is already in the disc table, just press the PLAY button to automatically turn on the power and start playback.

To interrupt playback:

- 1 Press the PAUSE button.
 - The "⏸" indicator will light up.
- 2 Press the PLAY button to resume playback from the same point.

To stop playback:

Press the STOP button.

- The display will return to the original indications.

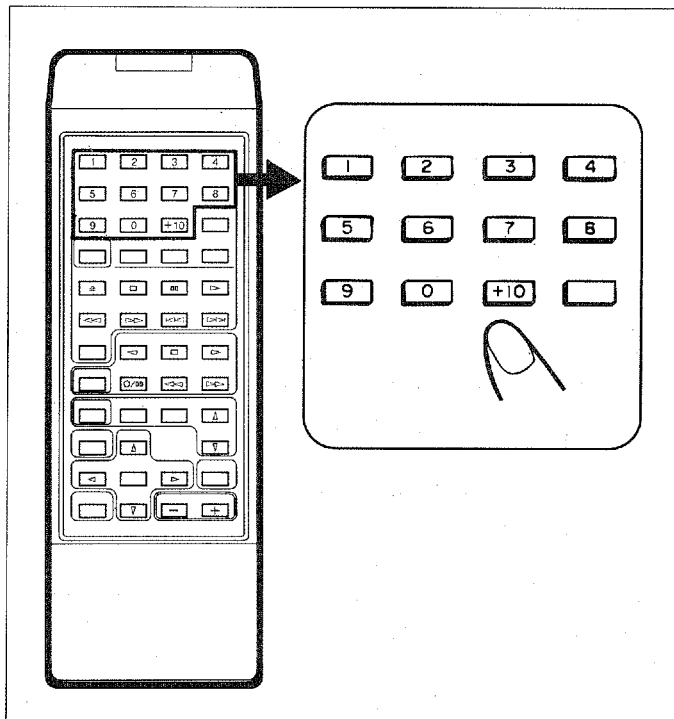
To switch the unit off after use:

Set the unit to the STAND BY mode by pressing the POWER switch or POWER button. (The indicators except STAND BY indicator will go off.)

Precautions:

- If the disc is damaged, dirty, or loaded upside down, the display will show error signs as follows:
 - "no disc" is displayed.
 - The total track number or "01" is not displayed.
 - "Er 0:00" is displayed. Clean, replace, or load the disc properly.
- If TV or radio interference occurs during CD operation, move the unit away from the TV or radio.
- Subjecting the unit to shock or vibration can cause mistracking.

- Playing some compact discs at high volume can cause mistracking. In this case, listen at lower volume.
- Do not push the disc table while it is moving.
- Press the OPEN/CLOSE button if your finger, a disc, or other object is caught by the table. (The table motor will stop after 4 seconds even if the OPEN/CLOSE button is not pressed.)
- If the power fails while the table is open, wait until the power supply returns or gently push the table manually to close it.
- The temperature range for playing compact discs is recommended to be 5°C (41°F) - 35°C (95°F).



■ Direct-selection play

By using the track number input buttons on the remote control transmitter, any track you wish to listen to can be played directly.

1 Use the track number input buttons to select the desired track number.

A. For example, to choose selection 12

- (1) Press the "+10" button.
- (2) Within 3 seconds, press the "2" button.

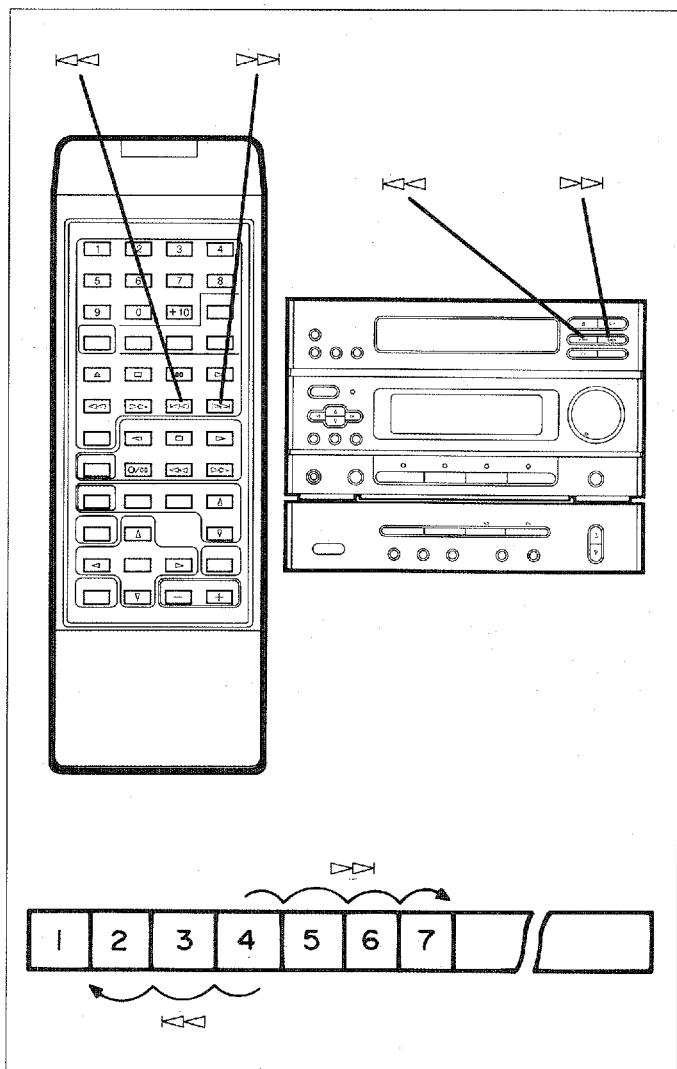
B. For example, to choose selection 20

- (1) Press the "+10" button.
- (2) Within 3 seconds, press the "+10" button again.
- (3) Within 3 seconds, press the "0" button.

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

Note:

A track number higher than the number of tracks on the disc cannot be selected. Also, if a higher track number is selected while the disc table is open, play will begin from track 1 when the disc table is closed.



■ Skip search

The beginning of any track can be found automatically.

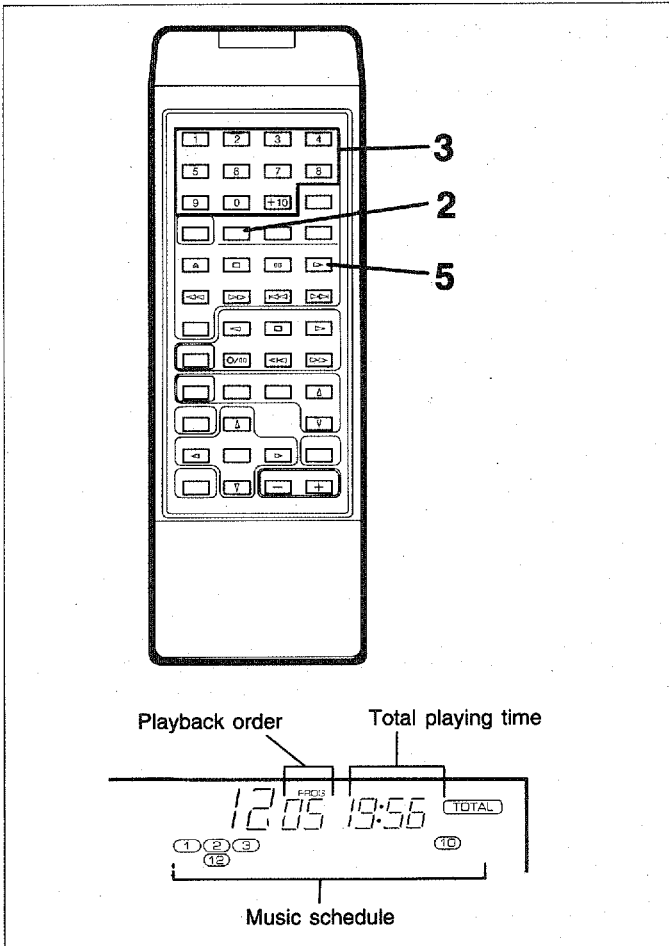
1 Load a disc and begin playback.

2 Press the \gg button to forward or \ll button to reverse through the CD.

- The "P" indicator flashes while searching for the track beginning.
- If the \gg button or \ll button is pressed repeatedly during playback, playback will begin from the beginning of the track shown in the track number indicator.
- If the \gg button or \ll button is pressed while in the stop mode, the CD player will stop at the beginning of the track shown in the track number indicator. Press the PLAY button to begin playback.

Note:

This function will be performed forward or backward from any point on the disc before playback begins. However, it will not move forward during playback of the final track.



Program play

You can program up to 20 tracks in any desired order.

- 1 Load a disc and close the disc table.
- 2 When in the stop mode, press the PROGRAM button to prepare for programming.
 - The "PROG" indicator will flash.
- 3 Use the track number input buttons to select the desired track number.
 - The selected track number will be displayed.
 - The programmed playback order and the total play time of the programmed tracks will be automatically displayed, and only those track numbers will appear in the music schedule.
- 4 Repeat step 3 for any other track. Up to 20 tracks can be programmed.
- 5 Press the PLAY button to start playback of programmed selections.

Notes:

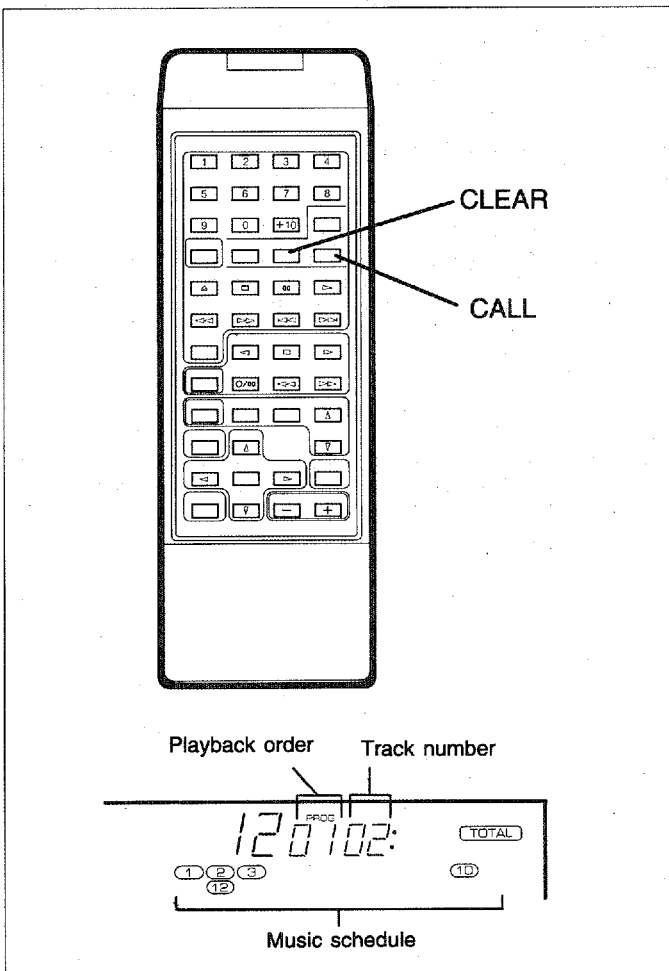
- It is also possible to program a sequence of tracks while looking at the list of tracks on the disc before closing the disc table.
- During playback or pause, programming is not possible.

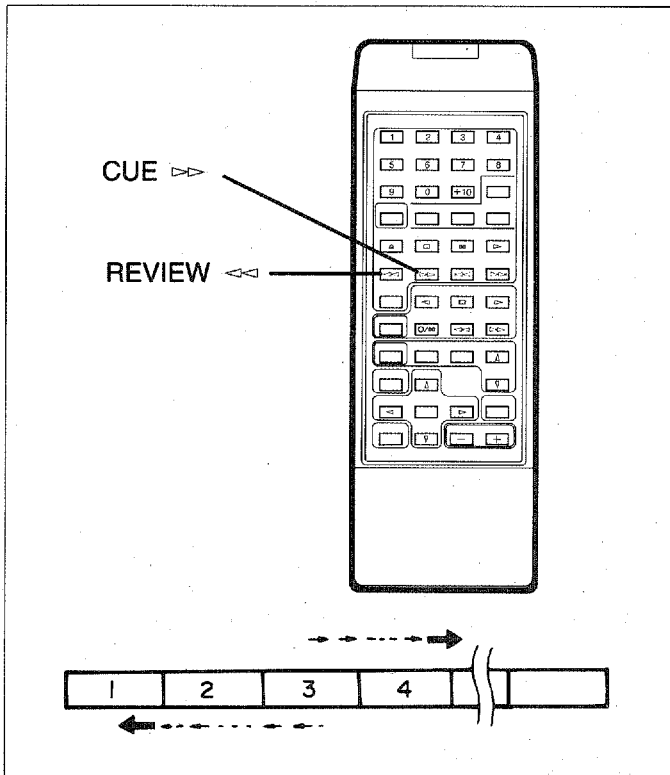
Call, Clear

- 1 Press the CALL button while the disc is stopped to review the order of the programmed sequence before playback begins.
 - While the playback order and track numbers are displayed, the track numbers on the music schedule will also flash on and off in the same order.
- 2 Press the CALL button during playback or pause to check the number of the next track to be played.
- 3 To cancel a programmed sequence, press the CLEAR button while the disc is stopped and the "PROG" indicator is lit.
 - To cancel the last programmed track during programming, press the CLEAR button when the "PROG" indicator is flashing.

Notes:

- Opening the disc table automatically cancels the programmed sequence.
- Programming and cancelling are not possible during playback or pause.



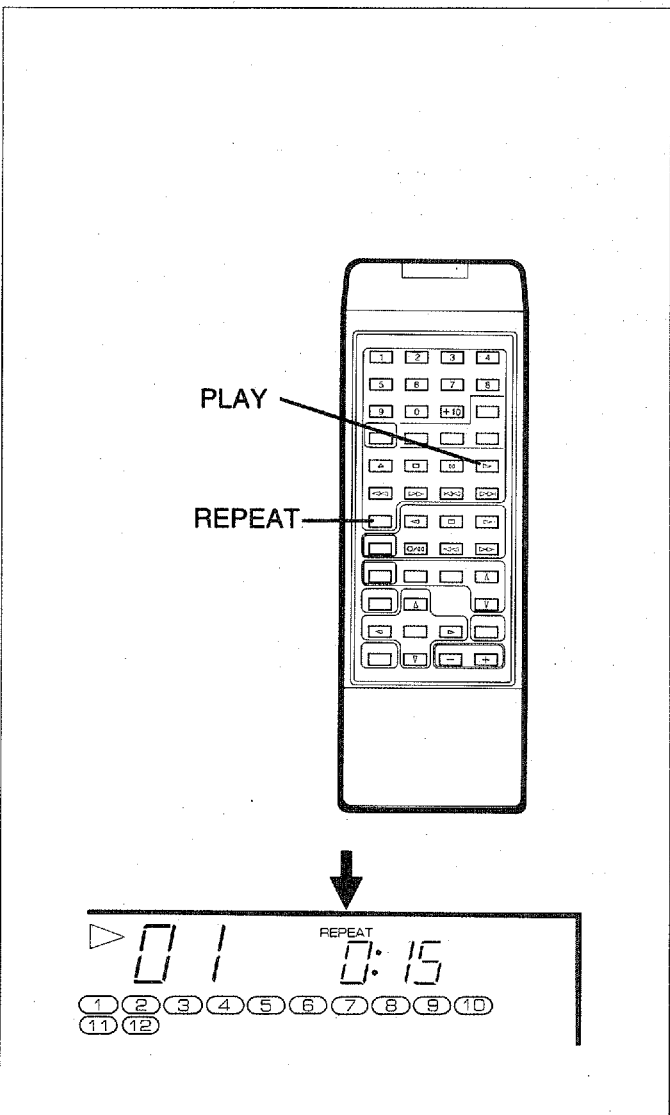


■ Cue and review

- 1 Load a disc and begin playback.
- 2 Hold the CUE \Rightarrow button down for audible fast forward, and hold the REVIEW \Leftarrow button down for audible fast reverse.
 - Cue and review proceeds at twice the normal playback speed for about 2 seconds, and then increases to 15 times the normal playback speed.
- 3 Normal playback will resume when the CUE \Rightarrow or REVIEW \Leftarrow button is released.

Notes:

- Cue and review are not possible during random play.
- If the end of the disc is reached while cueing, the "End" indicator lights and CD operation is paused. Press the STOP button to stop CD operation.



■ Repeat play

An entire disc, a single track, or a programmed sequence can be continuously repeated.

To repeat an entire disc:

- 1 Press the REPEAT button.
 - The "REPEAT" indicator will light up.
- 2 Press the PLAY button.

To repeat a programmed sequence:

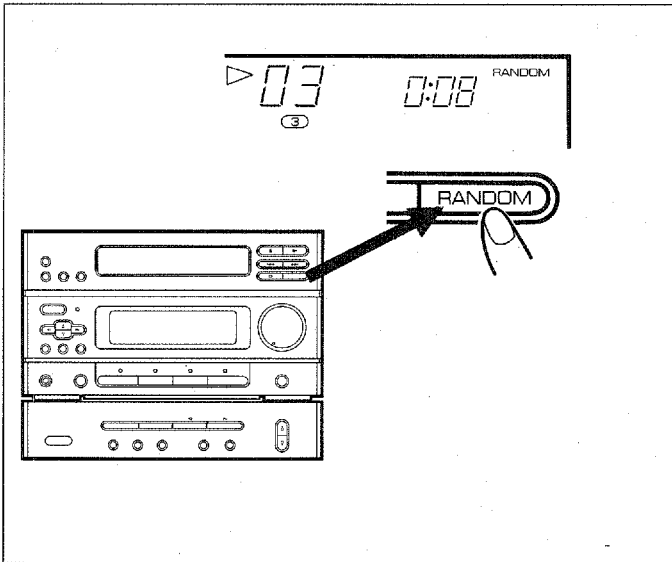
- 1 Programme a sequence of up to 20 tracks.
- 2 Press the REPEAT button.
 - The "REPEAT" indicator will light up.
- 3 Press the PLAY button.

To repeat a single track:

- 1 Programme a single track.
- 2 Press the REPEAT button.
 - The "REPEAT" indicator will light up.
- 3 Press the PLAY button.

To cancel the repeat play:

Press the REPEAT button again.
(The "REPEAT" indicator goes out.)



■ Random play

The tracks on the disc can be played in random order.

1 Load a disc and close the disc table.

2 Press the RANDOM button to begin random play.

- The "RANDOM" indicator will light up.
- As the tracks to be played are selected, the track numbers "[1]","[2]","[3]" ... "[20]" in the music schedule will flash on and off and the track number display will change accordingly.

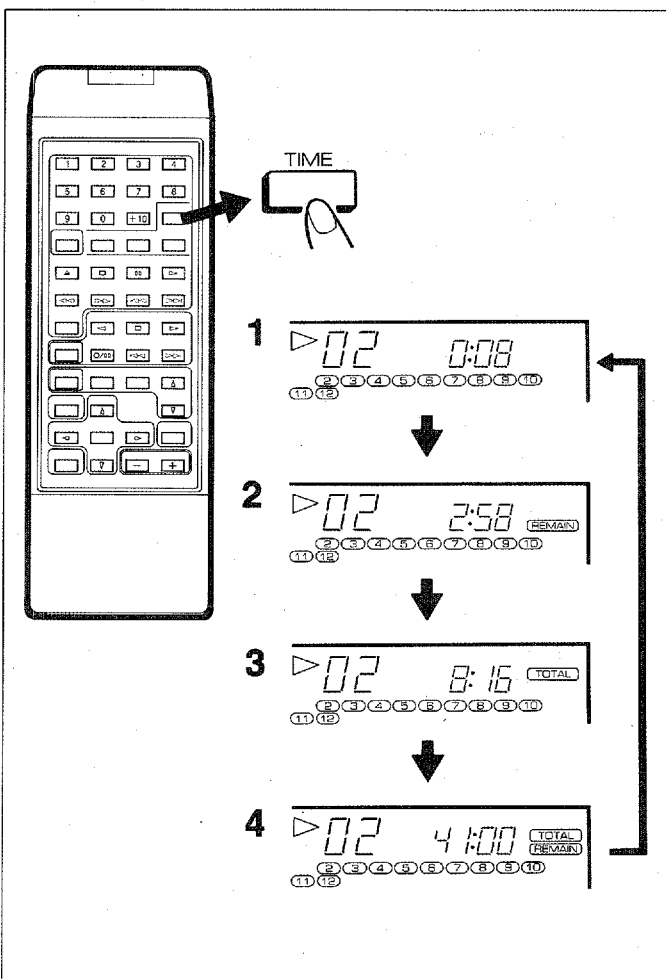
To cancel the random play:

Press the PLAY button.

- The "RANDOM" indicator goes out.

Notes:

- When using random play or repeat play, be sure to press the STOP button, or switch off the power when you have finished listening. Otherwise, the CD(s) will be played endlessly.
- While programmed tracks are being played, random play is not possible.



■ Switching the time display

Each time the TIME button is pressed, the display will change as described below.

[Example]

When the second track is being played back.

1 The elapsed play time for each track will be displayed.

- 8 seconds have passed since the beginning of the second track.

2 The remaining play time for the current track will be displayed.

- 2 minutes and 58 seconds remain till the end of the second track.

3 The total play time up to the current track will be displayed.

- 8 minutes and 16 seconds have passed since the beginning of the first track.

4 The total remaining play time from the point being played at that time will be displayed.

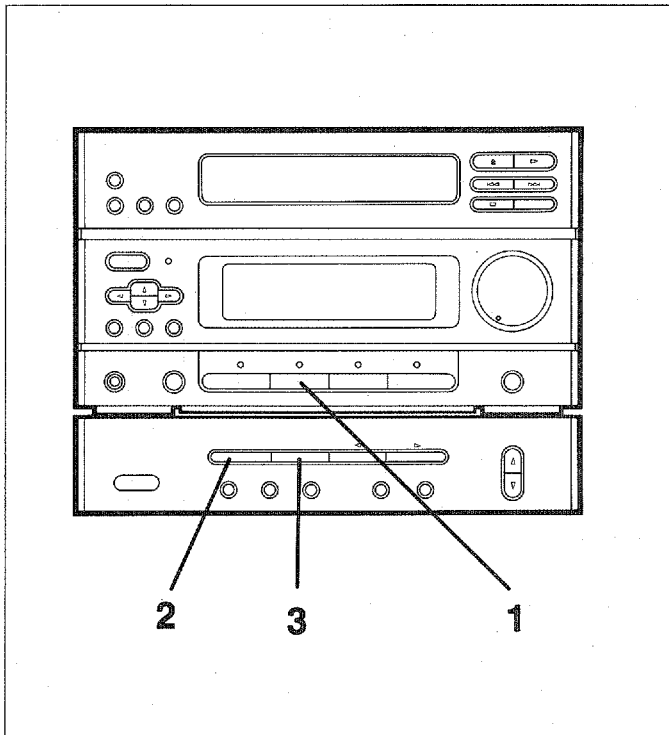
- 41 minutes remain till the end of the disc.

Notes:

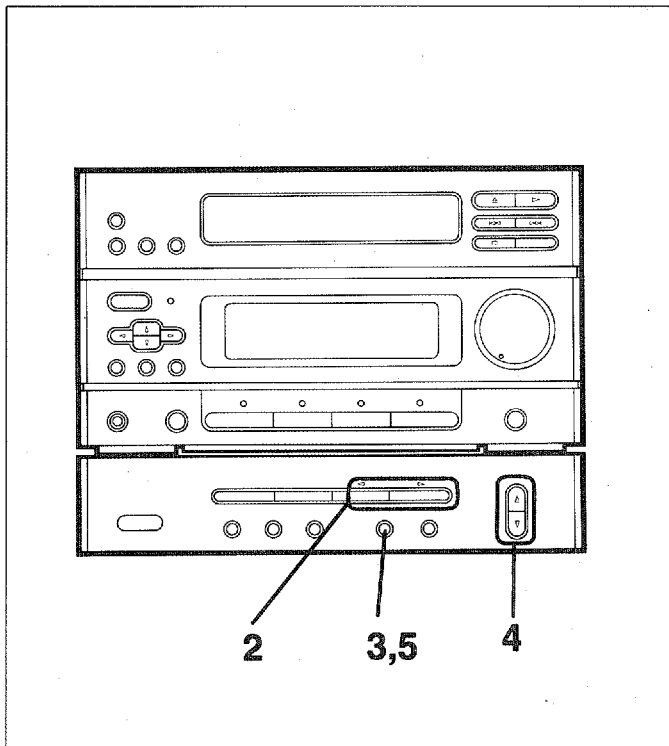
- During random play, the elapsed play time for each track will be displayed, and the display cannot be switched.

- When a disc that has more than 21 tracks is used, "----" will be displayed in the following cases:

- ① When an attempt is made to display a track number higher than 21 by using the >>> button when the disc is stopped.
- ② When an attempt is made to display the remaining time while a track after 21st is being played back.
- ③ When you program a track number higher than 21. (When the total play time exceeds 100 minutes.)



"AM" is for U.S.A., Canadian, Australian and General models.
 "MW/LW" is for U.K. and European models.



Auto scan memory

You can store up to 30 stations (20 FM stations and 10 AM (LW or MW) stations) and recall them together with their FM reception mode (stereo or mono), at the push of a button.

- 1** Press the TUNER button.
 - When the TUNER button is pressed, the power will be automatically turned on.
- 2** Select the desired frequency band. [FM or AM (LW or MW)]
- 3** Press the AUTO MEMORY button.
 - The "MEMORY" indicator will flash.
 - After auto scan memory is finished, the "MEMORY" indicator goes out, and you can hear the broadcast station which was stored last into memory.
 - If fewer than 20 FM stations or 10 AM (LW or MW) stations have been stored in memory, auto scan memory will stop at the highest frequency and reception mode will begin.
 - When the desired broadcasting station is stored in memory and then stored again in auto scan memory, the previous contents are erased.

Note:
 The auto scan memory function may be affected by radio interference generated by electric equipment. For example, home computers, facsimiles, etc. If you have difficulty using the auto scan memory (auto memory), move the unit away from electric equipment and adjust the position of the aerial to minimize the interference. Should you be unable to minimize the interference, please use the manual memory function as described below.

Manual memory

When auto scan memory does not function due to a weak signal, frequencies are deviated due to a strong signal, or the memory contents are changed partially, perform the following operation.

- 1** Perform steps 1 - 2 of the "Auto scan memory" section.
- 2** Use the TUNING (< or >) button to tune into the desired station.

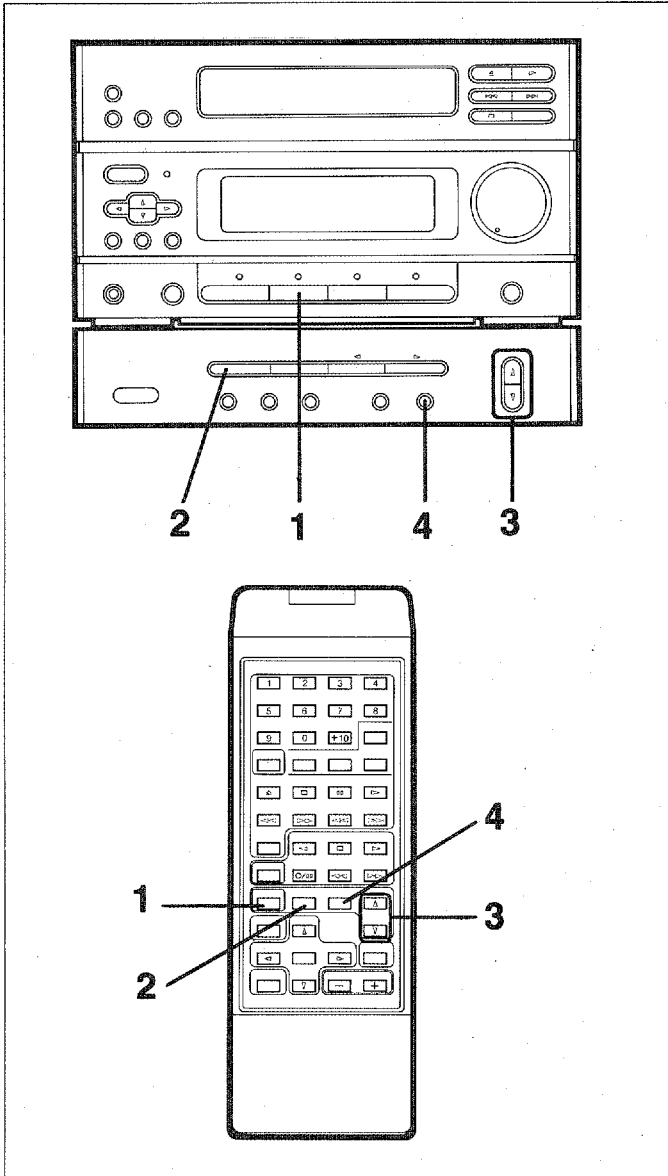
Auto tuning:

When the TUNING (< or >) button is pressed for more than 0.5 second and then released, the tuning stops at the first receivable broadcast station.

Manual tuning:

Press the TUNING (< or >) button multiple times to adjust the frequency display to the frequency of the desired station.

- 3** Press the MEMORY button, so that the display's "MEMORY" indicator flashes.
- 4** Press the PRESET SEARCH (∇ or Δ) button until the preset number to be programmed flashes in the display.
- 5** Press the MEMORY button to store that station in the selected station preset number memory.
 - 20 FM stations can be preset (preset channels 1 through 20).
 - 10 AM (LW or MW) stations can be preset (preset channels 1 through 10). (There are no presets 11 through 20 for AM (LW or MW) stations.)
- 6** Repeat steps 1 - 5 to set the other preset stations, or to change a preset station.



■ To recall a memorized station

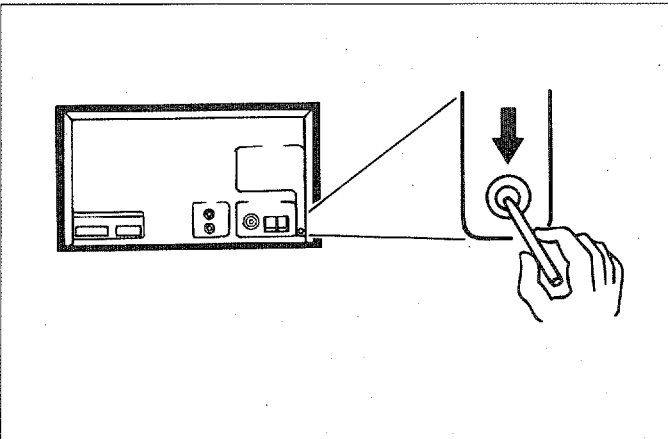
- 1 Press the TUNER button.
 - 2 Select the desired frequency band. [FM or AM (LW or MW)]
 - 3 Press the PRESET SEARCH (∇ or Δ) button to recall the desired preset channel number. The caption FM or AM (LW or MW) and a frequency will appear in the display.
 - 4 To set to FM stereo, press the FM MODE button so that the "STEREO" indicator on the display lights up. If the reception is poor, press the FM MODE button so that the "STEREO" mode indicator goes out.
- The "ST" indicator lights up when an FM broadcast is in stereo.
 - Please note that when the unit is being tuned in the FM stereo mode, interim station noise as well as weak stations are suppressed. Only in the FM monaural mode, can weak and noisy stations be received.

To switch the unit off after use:

Set the unit to the STAND BY mode by pressing the POWER switch or POWER button. (The indicators except STAND BY indicator will go off.)

Notes:

- Memory recalls the last station received even after changing the band selector button or setting the unit to the STAND BY mode.
- After a power failure that lasts for some time, the contents of the memory will be lost. When power is restored, store your selections in memory again. (For power failures of just a few hours, the contents of the memory will not be lost.)

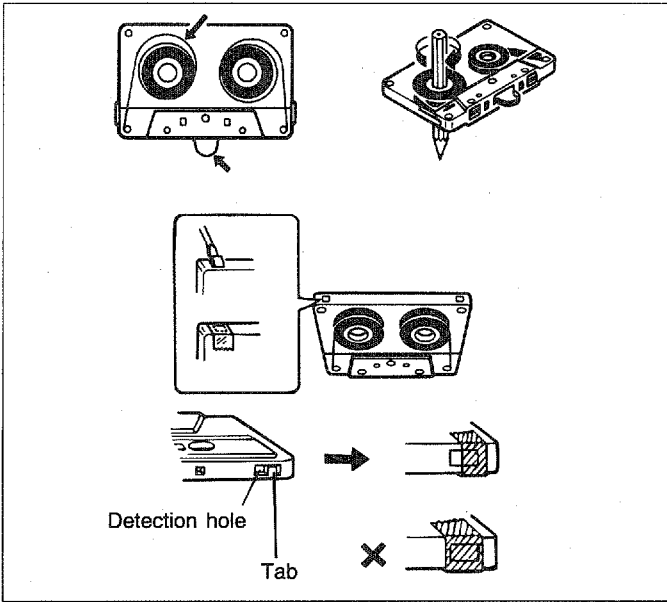


■ To clear all memorized stations

To clear all the memory contents or when the display is incorrect:

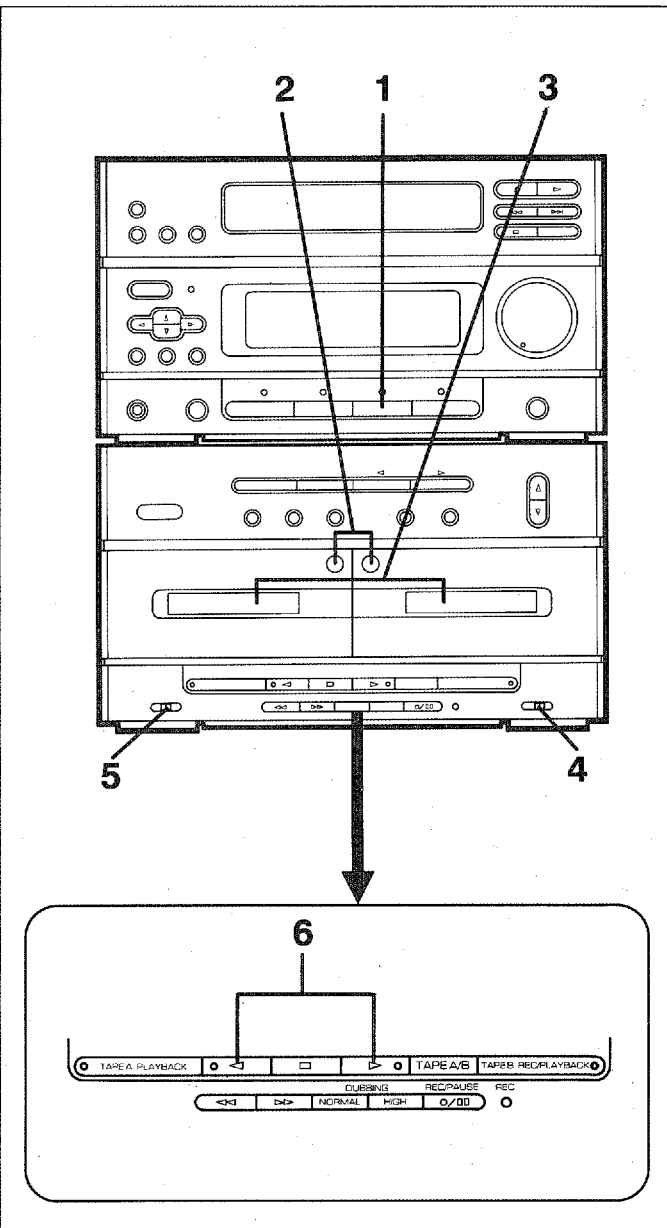
- 1 Set the unit to the STAND BY mode.
- 2 Disconnect the AC supply lead from the AC outlet.
- 3 Press the RESET button for at least 60 seconds.

CASSETTE OPERATION



General information

- Do not use C-120 tapes, tapes with internal reels, or poor-quality tapes, since they can cause malfunctions.
- Before loading a tape into the cassette compartment, tighten the slack tape with a pen or pencil.
- Cassettes have removable tabs which prevent accidental recording or erasing from taking place. Removing the tab on the top left protects the side facing you from erasure. Cover the tab holes with adhesive tape to erase or record again.
- TAPE A: Playback only.
TAPE B: Playback or recording.
- This deck features an auto tape selector. Just load the tape, and the tape formula being used will be sensed automatically.
- When covering erasure prevention tab holes, do not cover the chrome and metal detection holes. Otherwise, the deck will treat tape as normal tape.



TAPE A or TAPE B playback

- 1 Press the TAPE button.
- 2 Open the cassette door by pushing the area marked "EJECT"
- 3 Load the cassette into the TAPE A or TAPE B cassette compartment.
- 4 Set the DOLBY NR switch to ON if the tape has been recorded with Dolby noise reduction, and to OFF if Dolby NR was not used.
- 5 Set the REVERSE MODE switch as desired.

The REVERSE MODE switch can be operated before or during playback, and changes tape playback as follows:

	→ ←	↶	↷
	Side A only	Side A → Side B	Side A → Side B Continuous play
	Side B only	Side B only	Side B → Side A Continuous play

- 6 Press the PLAY ▷ button to listen to side A, or the PLAY ◁ button for side B.

Direct playback:

If a cassette tape is already in the cassette compartment, just press the PLAY button to automatically turn on the power and start playback.

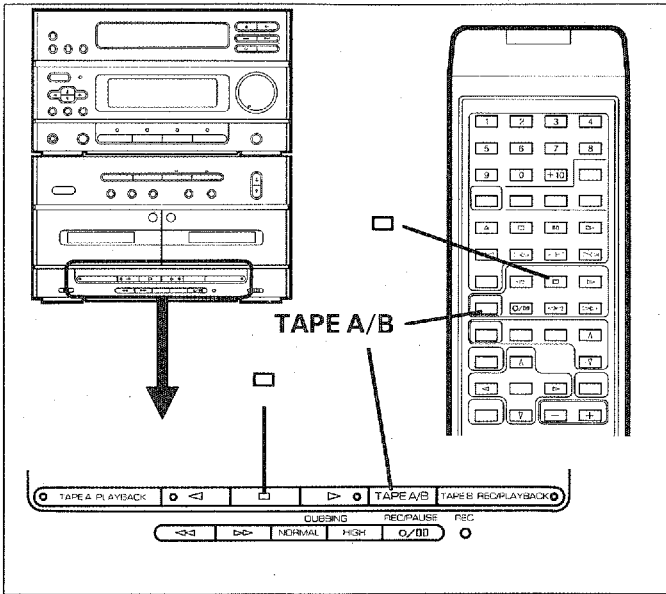
To stop playback:

Press the □ button.

Note:

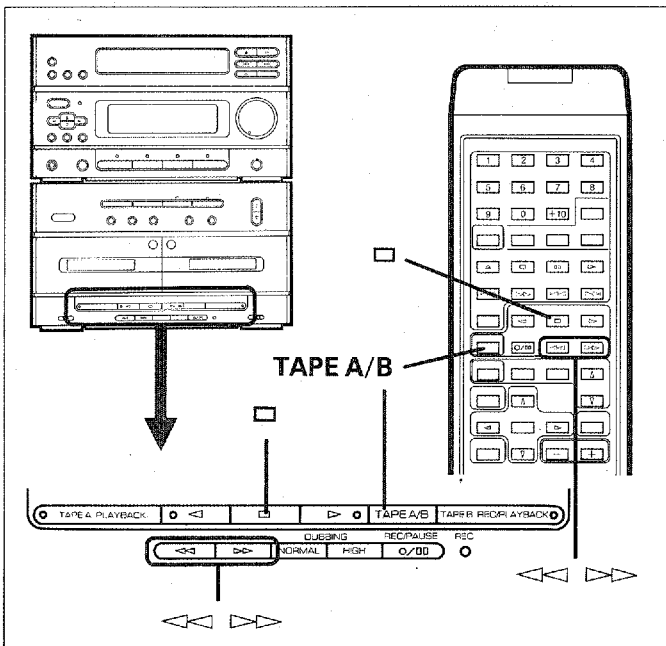
- When removing the cassette tape, press the □ button, and then open the cassette compartment.

(Continued)



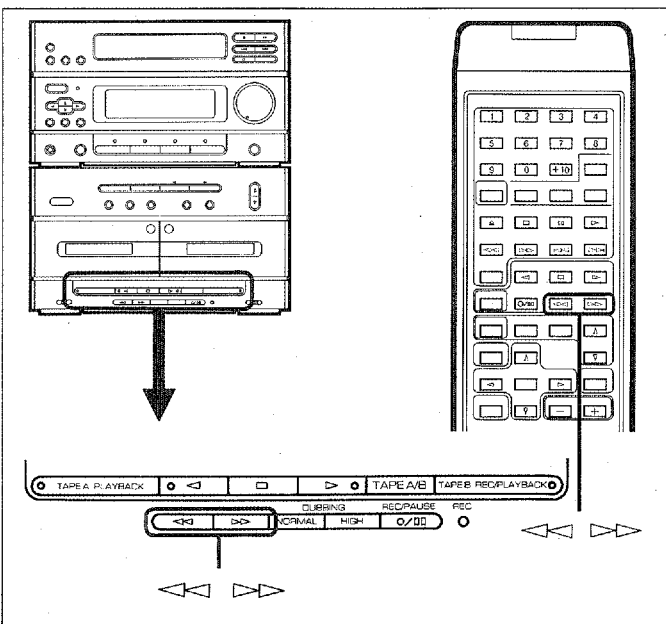
■ TAPE A/B button

When cassettes are in both decks, select the deck to be operated with this button. The corresponding indicator beside TAPE A PLAYBACK or TAPE B REC/PLAYBACK will illuminate.



■ Winding the tape

First press the \square button, then the TAPE A/B button to select the desired tape. Next press the \llcorner or \lrcorner button to wind the tape. Press the \square button to stop.



■ Section search

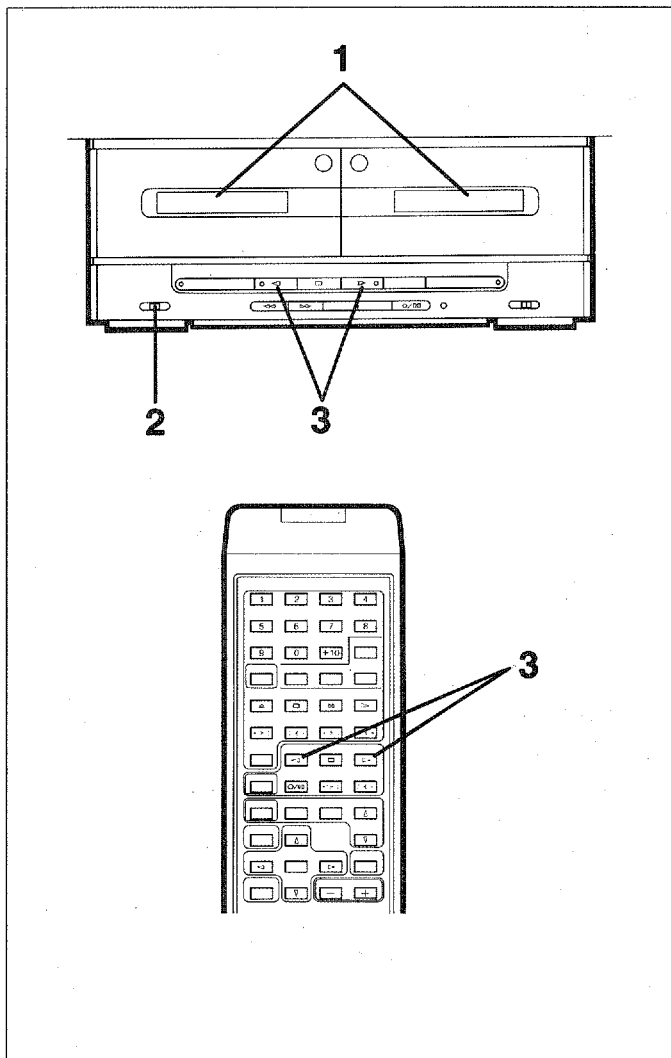
Carry out the following operation during playback to find a beginning of a desired section on the tape.

- 1 To listen to the same section, press the \llcorner or \lrcorner button in the direction opposite from that of current playback.
- 2 To listen to the next section, press the \llcorner or \lrcorner button in the same direction as that of current playback.

Notes:

This function may not work for tapes with

- Material with long pauses or quiet passages.
- Low recording levels or excessive noise.
- Pauses of less than 3 seconds between selections.



■ Continuous playback

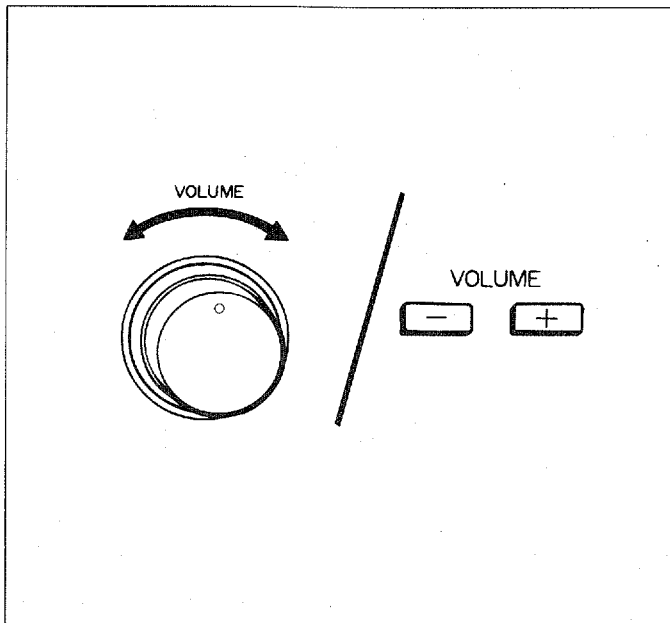
1 Load the cassettes into the TAPE A and TAPE B cassette compartments.

2 Set the REVERSE MODE switch as desired.

The REVERSE MODE switch can be operated before or during playback, and changes tape playback as follows:

	TAPE A Side A → B → TAPE B Side A → B	TAPE A Side A → B → TAPE B Side A → B Continuous play
	TAPE A Side B → TAPE B Side A → B	TAPE A Side B → TAPE B Side A → B → TAPE A Side A Continuous play

3 Press the PLAY button to listen to side A, or the PLAY button for side B.



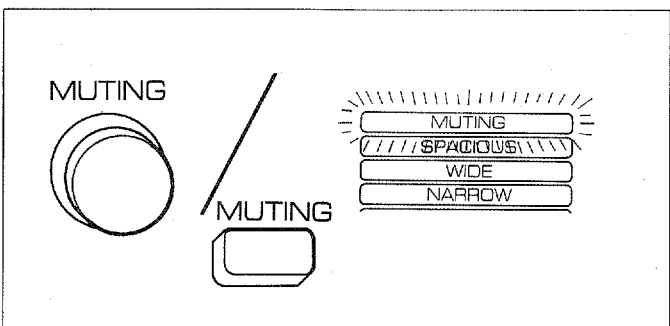
■ Volume

Main unit operation

Rotate the VOLUME control towards 10 to increase the volume, and towards 0 to decrease the volume.

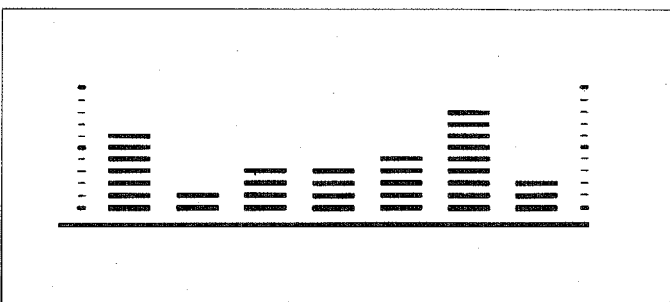
Remote control operation

Press the VOLUME + button to increase the volume and the VOLUME - button to decrease the volume.



■ Muting

Press the MUTING button to mute the sound immediately. The MUTING indicator will flash. Press the MUTING button again to switch the sound back to its previous volume level. The MUTING indicator will stop flashing.

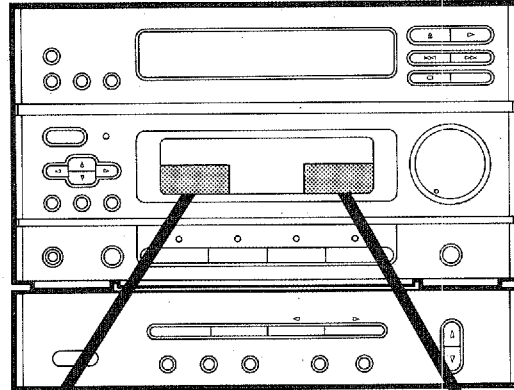


■ Spectrum analyzer

The spectrum analyzer indicates the frequency levels for each frequency band of the source being played. Adjustments made to the preprogrammed equalizer pattern or to the sound expander pattern will be reflected in the readings of the spectrum analyzer.

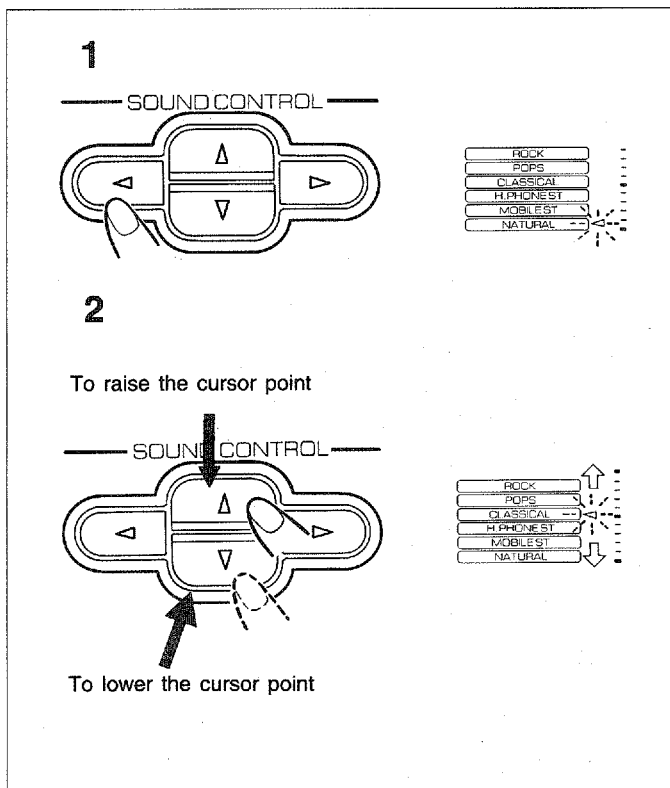
SOUND FIELD CONTROL

This unit stores 6 kinds of preprogrammed equalizer modes and 4 kinds of sound expander modes in memory to enable you to enjoy various sound field effects. You can combine these modes when you recall them from memory and enjoy various sound field effects.



Preprogrammed equalizer mode	
ROCK	Used for dynamic complex sounds and rock music.
POPS	Used for swing or pop music which emphasises vocals.
CLASSICAL	Used to listen to classical music.
H.PHONEST	Used to make stereo tapes balanced for playback through stereo headphones.
MOBILEST	Used to make stereo tapes balanced for playback through stereo car cassette players.
NATURAL	All the equalizer setting are centre positions.

Sound expander mode	
SPACIOUS	Sound is widened out considerably.
WIDE	Sound is widened out some.
NARROW	Sound is focused in the middle.
PASS	Normal stereo sound.



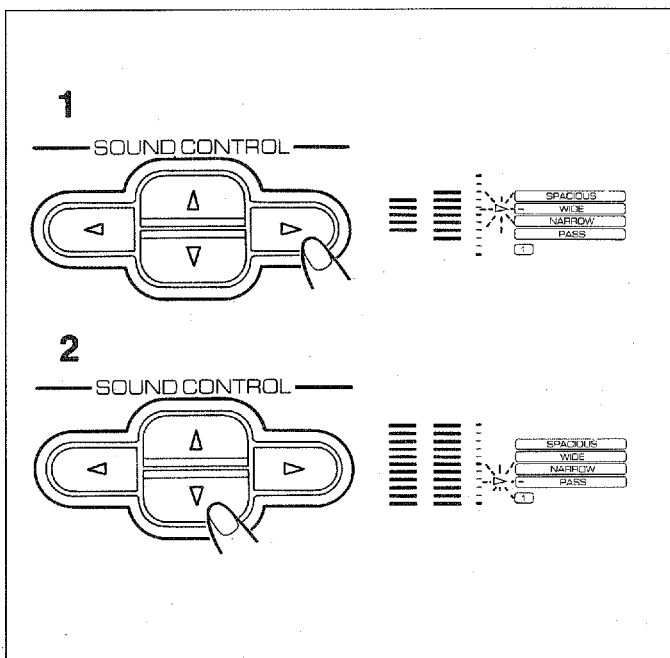
■ Recalling a preprogrammed equalizer mode

Example:
When switching from FLAT to CLASSICAL

- 1** Press the SOUND CONTROL “<” button.
 - 2** Press the “Δ” button within 5 seconds to select the CLASSICAL mode.
- After the preprogrammed equalizer pattern of the CLASSICAL is displayed for 5 seconds, the display will switch back to the spectrum analyzer pattern.

Select the desired pattern from the 6 preprogrammed equalizer patterns.

ROCK	H.PHONEST
POPS	MOBILEST
CLASSICAL	NATURAL



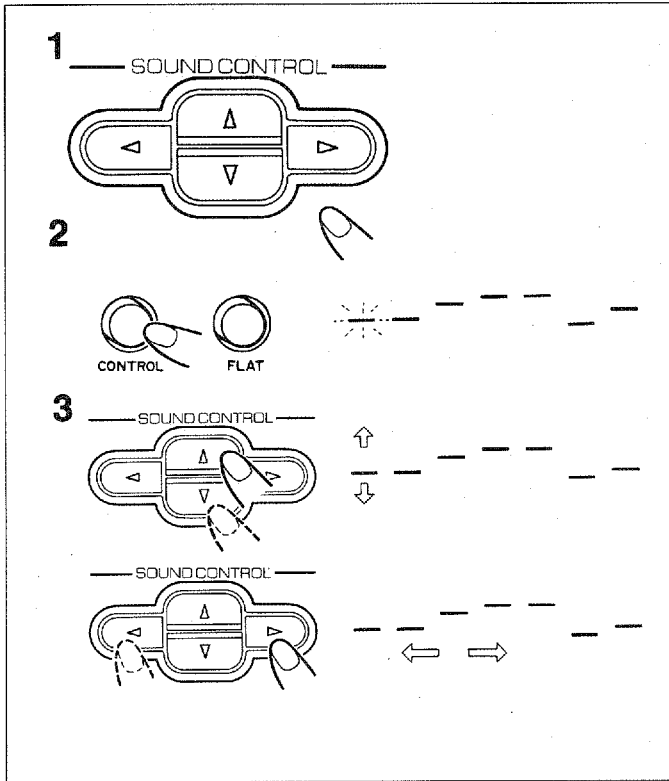
■ Recalling the sound expander mode

Example:
When switching from WIDE to PASS

- 1** Press the SOUND CONTROL “>” button.
 - 2** Press the “∇” button within 5 seconds to select the PASS mode.
- After the sound expander pattern of the PASS is displayed for 5 seconds, the display will switch back to the spectrum analyzer pattern.

Select the desired pattern from the 4 sound expander patterns.

SPACIOUS	NARROW
WIDE	PASS



■ Adjusting the graphic equalizer pattern

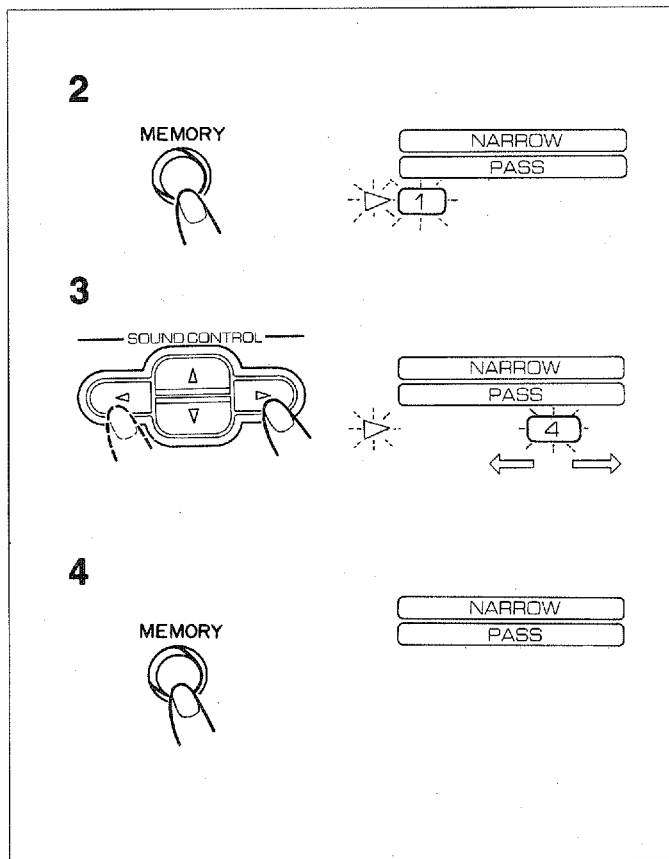
- The equalizer level of each frequency can be adjusted.
 - The sound expander levels cannot be adjusted.
- 1** Select a preprogrammed equalizer mode. (See page 25.)
 - 2** Press the "CONTROL" button.
 - The frequency display will flash.
 - 3** Adjust the equalizer levels as desired within 5 seconds by using the SOUND CONTROL button.
 - "Δ" or "∇" button; Used to raise or lower the sound level of the frequency which is flashing.
 - "◁" or "▷" button; Used to select each frequency to be adjusted.

Making new patterns:

- 1** Press the "CONTROL" button, then the FLAT button.
- 2** Perform step 3 mentioned above.

Notes:

- After adjustment, the cursor point in the selected equalizer mode will slowly flash.
- When the SOUND CONTROL button is pressed again to select another equalizer mode, the adjusted pattern will disappear and the pattern will be returned to the preset pattern.
- The changes in the sound, that are due to adjustments of the graphic equalizer, will be recorded just as you hear them. The sound expander mode selection has no effect on the sounds that are recorded.



■ Storing your own modes

- Your favorite pair of any equalizer mode and any sound expander mode can be stored. Up to 5 pairs can be stored as desired.

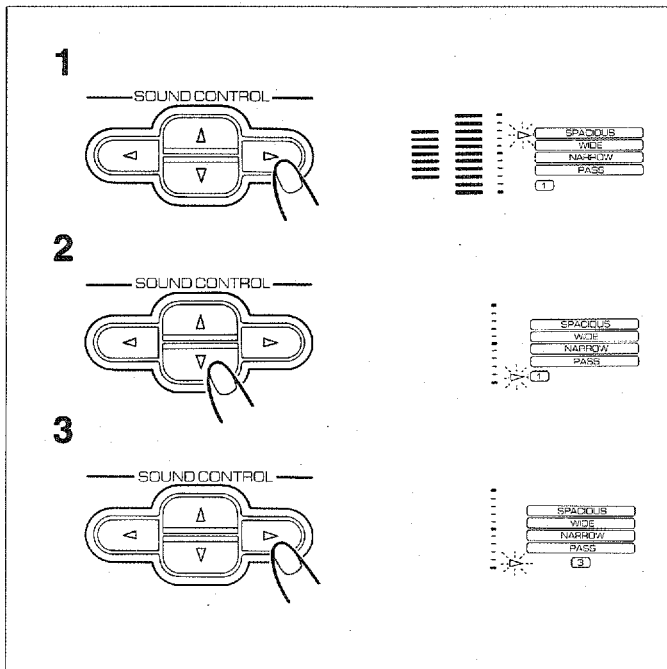
Example:

To store your modes in user memory [4]

- 1** Recall the desired preprogrammed equalizer mode and sound expander mode. (See page 25.)
(By adjusting the equalizer mode as you prefer, you can store your original equalizer mode.)
- 2** Press the MEMORY button.
- 3** When the "▷" indicator flashes, press the SOUND CONTROL ("◁" or "▷") button to select the pattern number to be stored.
- 4** When the "▷" indicator flashes, press the MEMORY button again.
 - After the preprogrammed equalizer pattern and sound expander pattern (which have been stored in user memory [4]) are displayed for 3 seconds each, the display will switch back to the spectrum analyzer.

Note:

- If the AC supply lead is disconnected or a power failure occurs, the patterns which are stored in the user memories ([1] - [5]) will disappear.

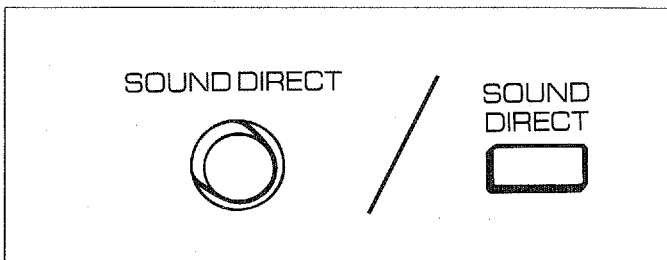


■ Recalling a user memory mode

Example:

To recall user memory [3] from the SPACIOUS pattern

- 1 Press the SOUND CONTROL "▷" button.
 - 2 Press the "▽" button within 5 seconds to select [1].
 - 3 Press the "▷" button within 5 seconds to select [3].
- After the preprogrammed equalizer pattern and sound expander pattern (which have been stored in user memory [3]) are displayed for 3 seconds each, the display will switch back to the spectrum analyzer.



■ Making the sound levels flat

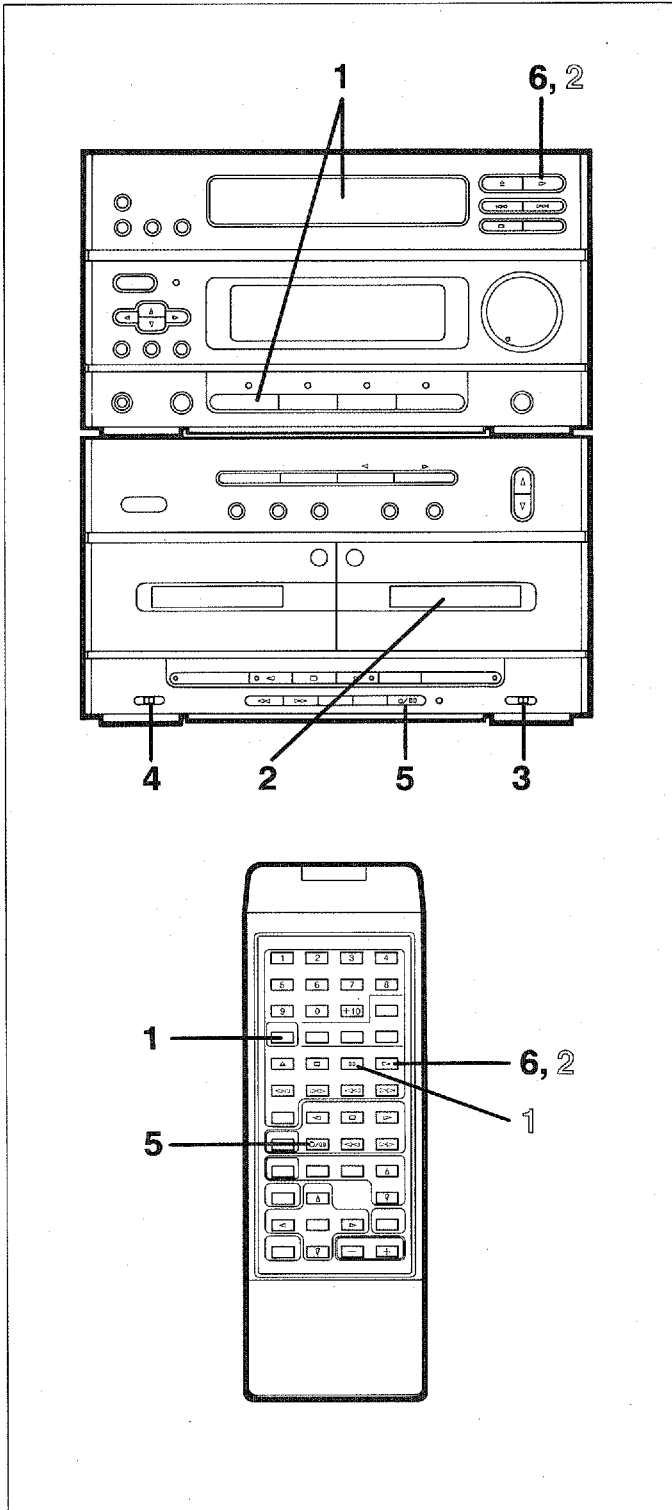
Main unit/remote control transmitter

Press the SOUND DIRECT button. Your settings for the preprogrammed equalizer pattern and sound expander pattern will be flat. Press the SOUND DIRECT button again to restore them to their previous states.

RECORDING

- When recording important selections, be sure to make a preliminary test to ensure that the desired material is being properly recorded.
- The automatic recording level control circuit automatically controls the level of the input signal used for recording.

- The VOLUME control and sound expander mode may be adjusted with no effect on the recorded signal. (Variable Sound Monitor)



■ Recording from the built-in CD player (CD Synchronized Recording System)

The changes in the sound, that are due to adjustments of the graphic equalizer, will be recorded just as you hear them. If you do not want the graphic equalizer adjustments to effect the sound that is recorded, press the SOUND DIRECT button to make the sound levels flat.

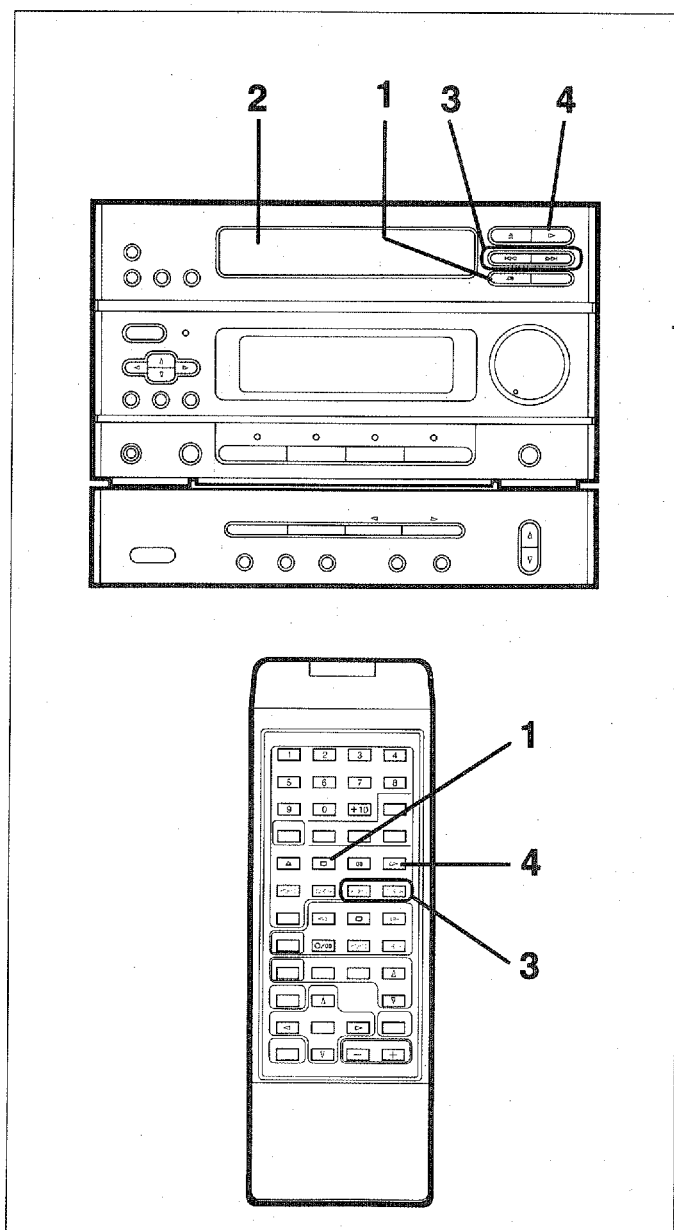
- 1** Press the CD button and load the CD to be recorded.
- 2** Load a cassette into the TAPE B cassette compartment.
 - Wind past the beginning part of the tape on which recording can not be performed.
- 3** When recording with the Dolby NR system, set the DOLBY NR switch to ON; if not, set it to OFF.
- 4** Set the REVERSE MODE switch to \Leftarrow to record on only one side, or to \Rightarrow for continuous recording on both sides.
- 5** Press the REC PAUSE (O/||) button.
 - The RECORD indicator lights up and the PLAY indicators flash.
- 6** Press the PLAY button on the CD.
 - Before CD playback begins, recording automatically begins on side A of the tape.

To interrupt recording:

- 1** Press the PAUSE button on the CD.
- 2** Press the PLAY button on the CD to resume recording.

To stop recording:

Press the \square button on the tape.
(At this time, CD playback does not stop.)



● To exchange a CD for another CD while recording

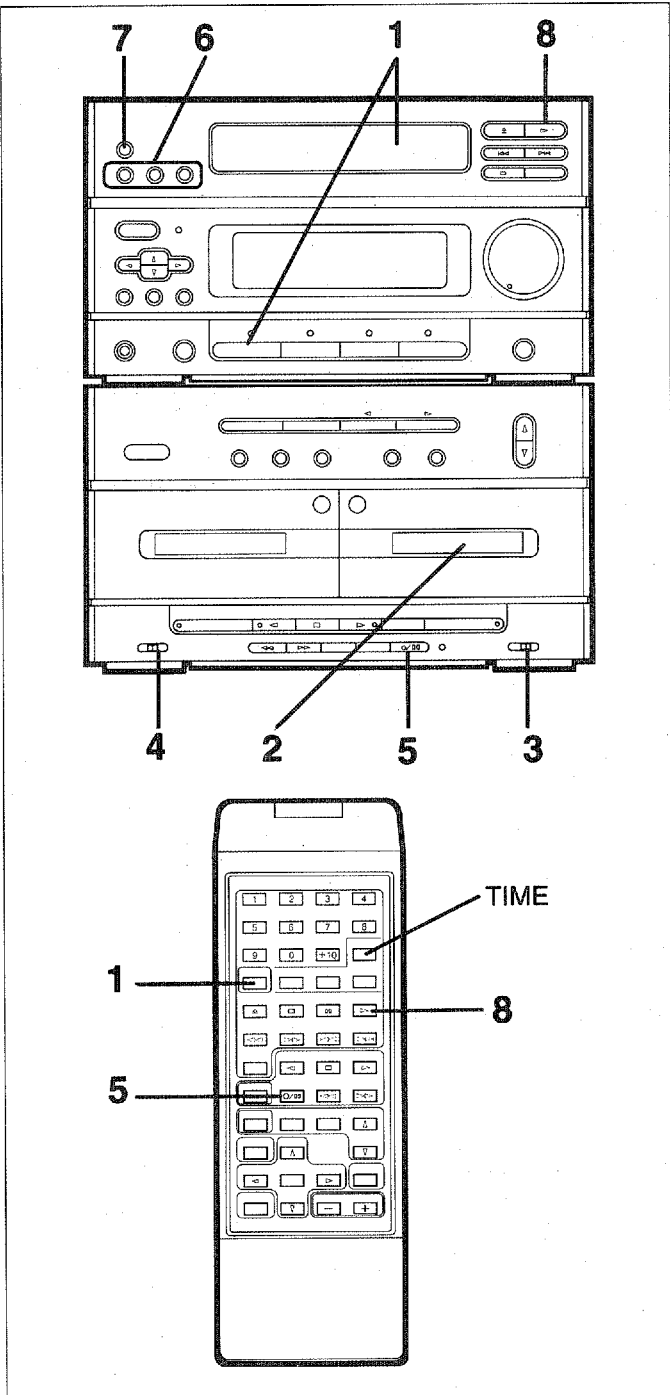
- 1 Press the STOP button on the CD during recording.
- The tape stops after about 2 seconds and enters recording stand-by mode.
- 2 Replace the CD.
- 3 Choose the music to record next by using the \gg or \ll button.
- 4 Press the PLAY button on the CD.
- Recording begins after about 2 seconds.

Note:

- The CD Synchronised Recording System will function even when the CD player is set to the program play or random play mode. When more than 2 seconds elapse between tracks, the tape will stop automatically and resume recording when the beginning of the next track is found.

When recording is continuously made on both sides of the tape:

Even if the last track of side A is not finished recording, side B will automatically start recording from the beginning of that track. (Auto restart function)
Also, recording will be made without cutting the beginning of the track on side B.



■ To edit tracks dividing them to side A and side B automatically (Auto editing function)

To use tapes effectively, tracks on a CD are automatically rearranged between side A and side B to best utilize the length of the tape. When the desired tracks are selected in programme selection, the tracks stored in memory are automatically divided between side A and side B.

- 1 Press the CD button and load the CD to be recorded.
- 2 Load a cassette into the TAPE B cassette compartment.
 - Rewind the tape onto the left-side reel.
- 3 When recording with the Dolby NR system, set the DOLBY NR switch to ON; if not, set it to OFF.
- 4 Set the REVERSE MODE switch to \rightarrow .
- 5 Press the REC PAUSE (⏸) button.
 - The RECORD indicator lights up and the PLAY indicators flash.
- 6 Press the AUTO TAPE EDIT button to select the tape length.

When using tapes other than C 46, C 60 or C 90

Press the \rightarrow or \leftarrow button to adjust the time (minute by minute).
 ● "C10" to "C99" can be set.
 It is also possible to use the track number input buttons on the remote control to set the tape length.
 ● For a tape length of C-30, press the "+10", "+10", "+10" and "0". (Press each button within 3 seconds after the previous one has been pressed.)

- 7 Press the EDIT button.
 - Tracks on the CD are automatically divided between side A and side B.
 - The number of tracks, total time and track numbers to be recorded on side A and side B are displayed for approximately 4 seconds. (When there are tracks which can not be recorded, the "TIME OVER" indicator will light up.)
- 8 Press the PLAY button on the CD.
 - CD playback and recording start approximately 9 seconds after the tape starts (after the part of the tape on which recording can not be performed is wound).

To cancel auto editing function:

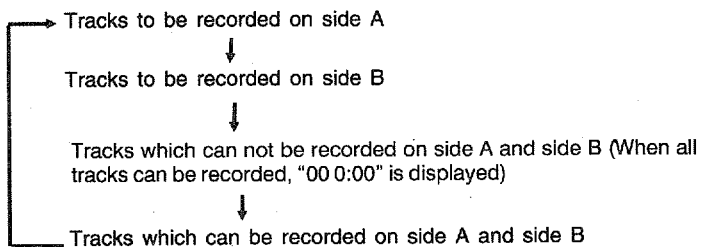
Before recording, press the STOP (⏹) button on the CD.

To stop recording:

Press the \square button on the tape.
 (At this time, CD playback automatically stops.)

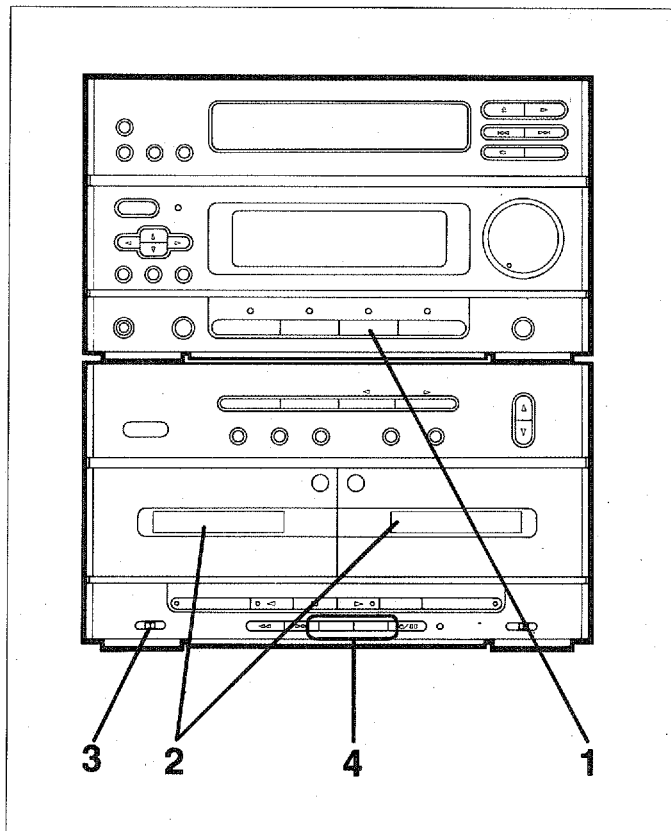
To confirm tracks to be recorded and tracks which can not be recorded:

Before recording, press the TIME button. The following information will appear on the display.



Note:

- Once CD playback starts, the display does not change.



■ Dubbing

- During dubbing, adjusting the volume or the graphic equalizer will have no effect on the recorded sound.
 - Try to use the same tape formula and length for the recording tape as for the master tape.
- 1 Press the TAPE button.
 - 2 Load a prerecorded cassette into the TAPE A cassette compartment. Insert a blank tape into the TAPE B cassette compartment.
 - 3 Set the REVERSE MODE switch to \rightleftharpoons to record on only one side, or to \rightrightarrows for continuous recording on both sides.
 - 4 Press the DUBBING button.
- Press "NORMAL" to dub at normal speed, and "HIGH" to dub at about twice the normal speed.
 - Dubbing will begin with side A.

To stop dubbing:

Press the \square button.

- TAPE A and TAPE B simultaneously stop.

After dubbing

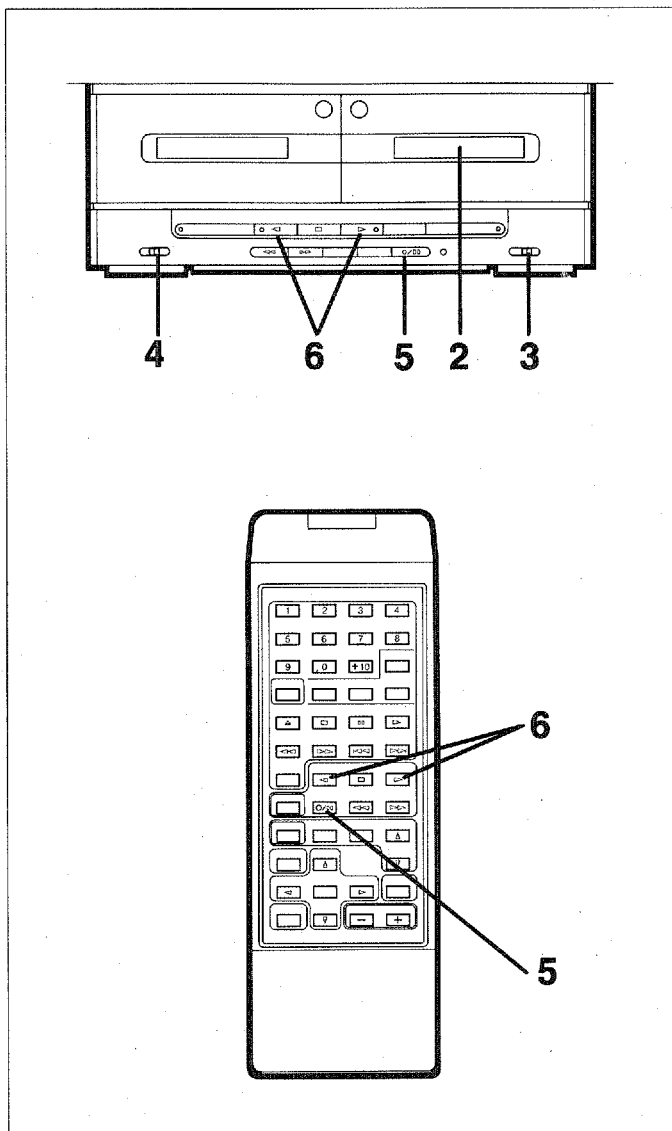
The indicator beside TAPE A PLAYBACK is automatically switched to the TAPE B REC/PLAYBACK side. After the tape is rewound and played back, the contents currently dubbed can be confirmed.

Note:

- Only tapes originally encoded with Dolby NR will be dubbed onto tapes with Dolby NR encoding.
The DOLBY NR switch will have no effect on the recording of TAPE B during dubbing.
However, the playback tonal quality of TAPE A will change according to the DOLBY NR switch position.

Synchro-reverse editing function

When tapes which are different in length are used for recording and editing continuously on both sides, as soon as one tape finishes, the other is automatically fast forwarded. Editing starts from the beginning of the other side.



■ Recording from the built-in radio

- 1 Tune to the desired station. (See pages 18 - 19.)
- 2 Load a cassette into the TAPE B cassette compartment
- 3 When recording with the Dolby NR system, set the DOLBY NR switch to ON; if not, set it to OFF.
- 4 Set the REVERSE MODE switch to \Leftarrow to record on only one side, or to \Rightarrow for continuous recording on both sides.
- 5 Press the REC PAUSE (O/□) button.
 - The RECORD indicator lights up and the PLAY indicators flash.
- 6 Press the PLAY \Rightarrow button to record side A, or the PLAY \Leftarrow button to record side B.
 - For continuous recording of both sides, begin on side A. Recording stops automatically at the end of side B.

■ Spacing

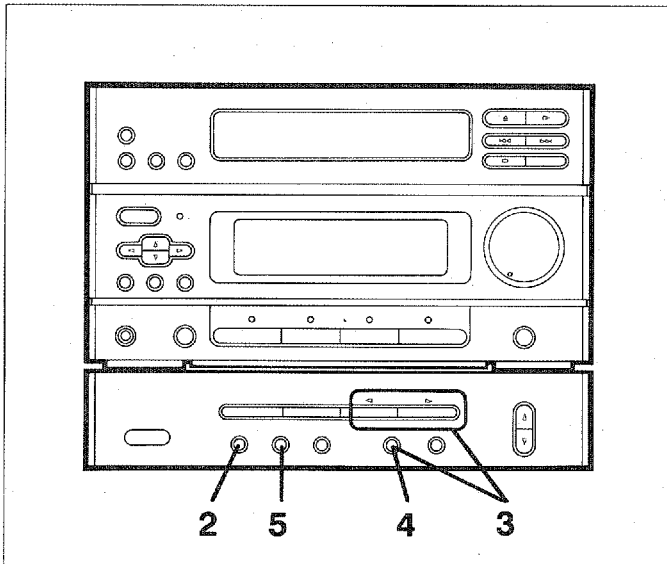
Blanks of 4-5 seconds are required between sections so that a beginning of a desired section can be found automatically. Make the blanks as follows:

- 1 Press the REC PAUSE (O/□) button when the selection being recorded ends.
- 2 Press the TAPE button.
- 3 Press the PLAY \Rightarrow or PLAY \Leftarrow button for which indicator is lit, let the tape run for 4 - 5 seconds, then press the REC PAUSE (O/□) button again.
- 4 Choose and start the next selection to be recorded.
- 5 Press the PLAY \Rightarrow or PLAY \Leftarrow button for which indicator is lit to start recording.

■ Erasing recorded tapes

- 1 Load the tape to be erased into the TAPE B cassette compartment.
- 2 Press the TAPE button.
- 3 Set the REVERSE MODE switch to \Leftarrow to erase only one side and to \Rightarrow to erase both sides.
- 4 Press the REC PAUSE (O/□) button, then press the PLAY \Rightarrow button to erase side A of tape, or the PLAY \Leftarrow button to erase side B.

HOW TO USE THE BUILT-IN TIMER



- Before setting the timer clock, make sure that the current time is correct.

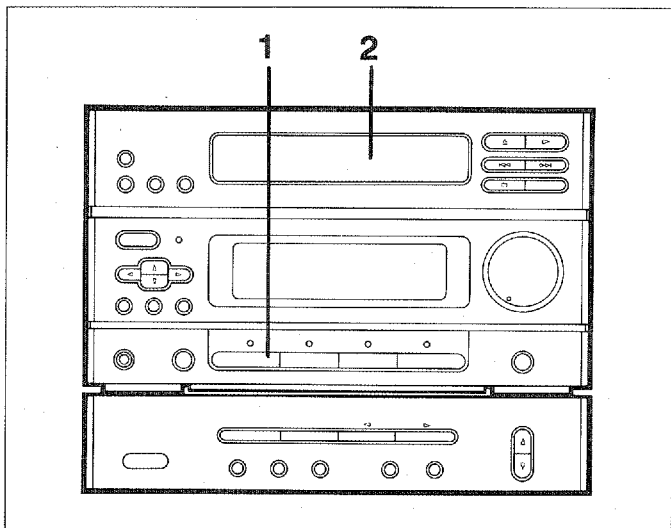
■ Timer operation

To listen to the radio:

- 1 Tune to the desired station. (See pages 18 - 19.)
- 2 Press the DISPLAY button.
- 3 While the "TIMER" indicator is flashing, and while pressing the TIME ADJUST button, press the HOUR and MINUTE buttons to set the desired time.
- 4 Release the TIME ADJUST button.
 - When the start time of the timer is set by mistake, press the CLEAR button and repeat step 3.
- 5 Press the TIMER button.
 - "TIMER" appears on the display. This sets the timer to the stand-by condition.
 - The radio turns on automatically at the desired time.
 - When the timer turns on the power, the sound volume will gradually increase to the level you set when programming the timer.

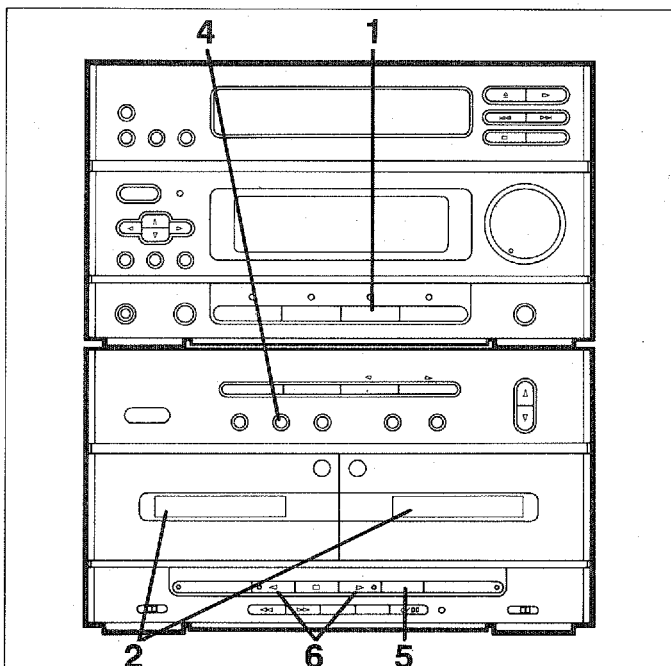
To listen to a compact disc:

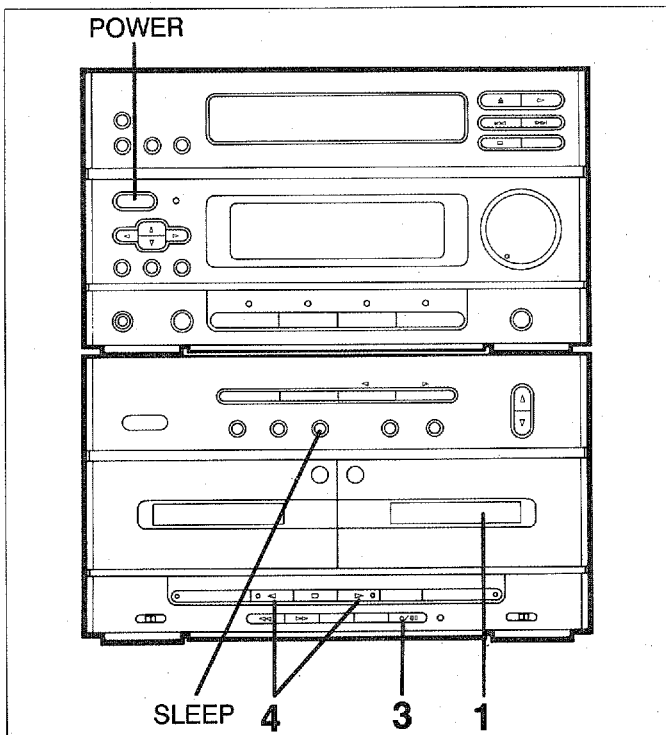
- 1 Press the CD button.
- 2 Load the disc.
- 3 Perform steps 2 - 5 of the "To listen to the radio" section.
 - CD playback starts automatically at the desired time.



To play back a cassette:

- 1 Press the TAPE button.
- 2 Load the recorded cassette tape into the TAPE A or TAPE B cassette compartment.
- 3 Perform steps 2 - 4 of the "To listen to the radio" section.
- 4 Press the TIMER button.
- 5 After 2 seconds, press the TAPE A/B button.
- 6 Press the PLAY > button to listen to side A, or the PLAY < button for side B.
 - Cassette playback starts automatically at the desired time.





To record radio programmes:

- 1** Load a blank cassette tape into the TAPE B cassette compartment.
 - 2** Perform steps 1 - 5 of the "To listen to the radio" section.
 - 3** Press the REC PAUSE (O/□) button.
 - 4** Press the PLAY button corresponding to the tape which you want to record.
- Recording starts automatically at the desired time.

Notes:

- The power will be automatically turned off 2 hours after the timer starts.
- To set the desired volume level, use the VOLUME control before setting the timer.

To confirm the timer time setting:

Press the DISPLAY button.

To cancel timer operation:

Press the POWER button.

- The "TIMER" indicator will go out.
- Unless the AC supply lead is unplugged or there is a power failure, the time set on the timer will be retained until it is reset.

■ Sleep operation

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

- 1** Play the desired sound source.
- 2** Press the SLEEP button.
 - The sleep time is automatically set to 60 minutes. (After approximately 5 seconds, the display will return to the original state.)

To change the sleep timer:

While the "SLEEP" indicator is on, press the SLEEP button. The display will change from 60 down to 15 minutes and then switch to "power off" each time the SLEEP button is pressed.

- 3** The unit turns off automatically after the preset sleep time.

To confirm the sleep time setting:

Press the SLEEP button.

To stop the sleep operation:

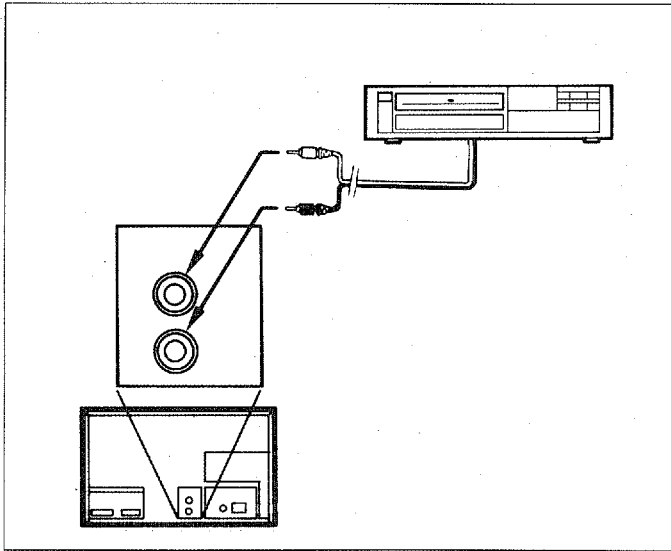
Press the POWER button.
(The "SLEEP" indicator will go out.)

■ Simultaneously sleep and timer operation

- 1** Prepare timer playback. (See page 33.)
- 2** Press the SLEEP button and set the sleep time.
 - When the sleep operation finishes, the timer function will take over for start-up the following day.

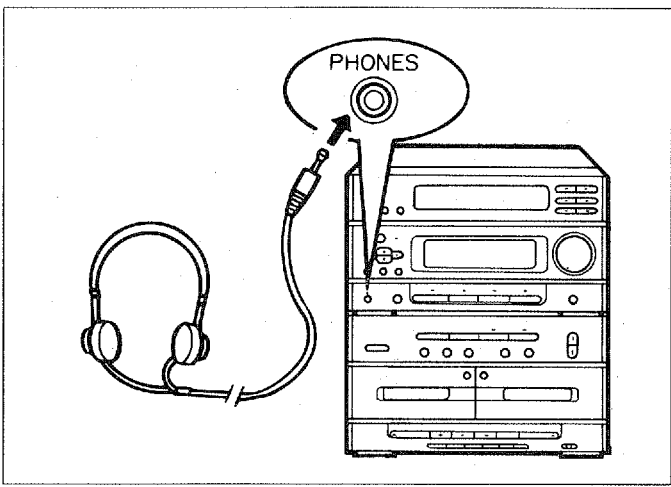
Notes:

- The source set in the sleep mode must be the same as that of the timer mode.
- Do not set the timer time so that the timer will start during sleep operation. (Since sleep operation has priority, the timer will not operate.)



■ Auxiliary

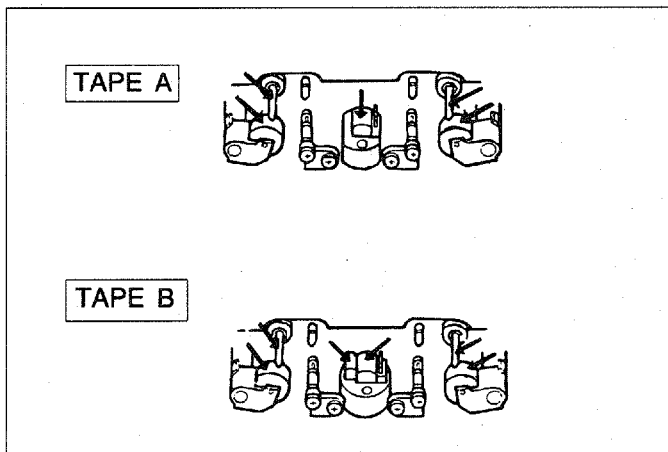
- 1 Connect the output lead of a video cassette player, video disc player, etc. to the AUX inputs of this unit. (red → right channel, white → left channel)
- 2 Press the AUX button.
- 3 Operate the unit connected to the AUX inputs.
- 4 Start recording with this unit, if so desired. (See page 32.)



■ Headphones

- Be sure that your headphones have a 3.5 mm (1/8") diameter plug and are between 16 ohms and 50 ohms impedance. Recommended impedance is 32 ohms.
- When headphones are connected, the speakers are defeated automatically. Adjust the VOLUME control for desired volume.

MAINTENANCE



Internal care

- Dirty heads, capstans and 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 magnetised, causing poor sound. Demagnetise these parts once every 30 hours of playing/recording time by using a commercial tape head demagnetiser. Read the demagnetiser's instructions carefully before use.

External care

- Periodically wipe the cabinet with a soft cloth and dilute soap solution, then wipe with a dry cloth.
- Do not use chemically treated cleaning cloths or other chemicals. (See "Precautions".)

SPECIFICATIONS

As a part of policy of continuous improvement, YAMAHA 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.

CD player/pre-amplifier section

Power source	DC supplies from deck/power amplifier unit
Input sensitivity and input impedance	AUX; 350 mV/47 kohms (OUTPUT; 16W)
Load impedance	Headphones; 16 - 50 ohms (recommended; 32 ohms)
Dimensions	Width; 270 mm (10-11/16") Height; 158 mm (6-1/4") Depth; 255 mm (10-11/16")
Weight	2.5 kg (5.5 lbs.)

(Tuner)

Frequency range	
FM	87.5 - 108.0 MHz
AM (MW/LW)	
[U.S.A. and Canada models]	AM; 530 - 1,720 kHz
[Australia and General models]	AM; 530 - 1,620 kHz
[U.K. and Europe models]	MW; 522 - 1,620 kHz LW; 153 - 281 kHz
Sensitivity	
FM	2.5 μ V
AM (MW/LW)	
[U.S.A., Canada, Australia and General models]	AM; 500 μ V/m
[U.K. and Europe models]	MW; 500 μ V/m LW; 560 μ V/m

(Compact disc player)

Type	Compact disc player
Signal readout	Non-contact, 3-beam semi-conductor laser pick-up
Rotation speed	200 - 500 rpm CLV, Approx.
Error correction	CIRC (Cross Interleave Reed-Solomon Code)
D/A converter	16-bit
Filter	4-time oversampling digital filter and active filter
Frequency response	20 - 20,000 Hz
Wow and flutter	Unmeasurable (less than 0.001% W. peak)

Deck/power amplifier section

Power Supply	
[U.S.A., and Canada models]	AC 120 V, 60 Hz
[Australia and U.K. models]	AC 240 V, 50 Hz
[Europe model]	AC 230 V, 50 Hz
[General model]	AC 110/120/220/240 V, 60/50 Hz
Power Consumption	
[U.S.A. model only]	72 W
[Canada model only]	100 W
[Australia, Europe, U.K. and General models]	180 W
Continuous power output	
	2 x 30 W, 1 kHz, 6 ohms, 10 % T.H.D.
	2 x 22 W, 1 kHz, 6 ohms, 0.1 % T.H.D.
Load impedance	Speakers; 6 ohms
Dimensions	Width; 270 mm (10-11/16") Height; 158 mm (6-1/4") Depth; 276 MM (10-7/8")
Weight	5.6 kg (12.3 lbs.)

(Tape Deck)

Tape	Compact cassette tape
Frequency response (Playback)	
	30 - 13,000 Hz (Normal tape)
	30 - 14,000 Hz (CrO ₂ tape)
	30 - 16,000 Hz (Metal tape)
Signal/noise ratio	64 dB (Dolby NR ON)
	Dolby NR effect; 10 dB (at over 5 kHz)

Speaker section

Type	Active Servo Processing type
Speakers	12 cm (4-3/4") woofer 5 cm (2") tweeter
Frequency range	40 - 20,000 Hz
Rated power	30 W
Maximum power handling capacity	50 W
Impedance	6 ohms
Dimensions	Width; 158 mm (6-1/4") Height; 316 mm (12-1/2") Depth; 206 mm (8-7/16")
Weight	2.7 kg (6.0 lbs./each)

TROUBLESHOOTING

If your unit fails to operate normally, check the following points to determine whether the fault can be corrected by the simple measures suggested. If it cannot, or if the fault is not listed in the SYMPTOM column, disconnect the power cord and contact your authorized YAMAHA dealer or service center for help.

	SYMPTOM	CAUSE	REMEDY
AMPLIFIER	No power even if the POWER switch is pressed.	AC cord not plugged in.	Plug in AC cord.
	No sound from one speaker	Loose speaker connections.	Connect properly.
TUNER	Excessive static in FM broadcasts.	Interference from starting motor of nearby car. Interference from thermostat of nearby electrical appliance.	Position the FM aerial as high and as far away from nearby roads as possible. Connect using a coaxial cable.
	Noise increases during stereo broadcasts.	Aerial input is too weak due to obstructions or excessive distance from broadcasting station.	Check aerial connections. Install a multi-element type FM aerial if possible.
	Stereo broadcasts are noisy and STEREO indicator blinks on and off.	Insufficient aerial input.	Install an aerial appropriate for the electric field strength of your area.
	Cannot select preset stations.	Preset memory has been erased.	Reprogram memory presets.
	Buzzing or static during AM (LW or MW) broadcasts.	Interference from source such as lightning, fluorescent lights, electric motors or thermostat of nearby electrical appliance. TV or microprocessor is being used nearby.	Problem is difficult to eliminate but can be lessened by grounding indoor MW/LW (AM) antenna. Move away from TV or microprocessor.
	AM (LW or MW) broadcast sensitivity is poor.	Radio signal is weak or aerial is not properly connected.	Properly connect MW/LW (AM) loop antenna. Change orientation of MW/LW (AM) loop antenna. Install an external MW/LW (AM) antenna.
	Can't set timer.	Current time not set.	Set current time.
	Timer doesn't function as expected.	Power turned off using POWER switch.	After setting timer, turn power off using TIMER button.
	Won't play even if disc is loaded.	Disc is upside down. Disc is dirty.	Load disc label side up. Clean disc.
	No sound.	Input selector setting is incorrect.	Press the CD position of the input selector.
TAPE DECK	Sound stops suddenly (always at same spot).	* Disc is dirty. * Volume set too high.	* Clean disc. * Lower volume.
	Tape won't move during playback or recording.	Slack tape wrapped around pinch roller.	Take up slack with a pencil before using.
	Can't record.	Erase prevention tab broken off. Head is dirty.	Replace cassette or cover erasure prevention hole with cellophane tape. Clean heads.
	Sound is distorted or fades out.	Head is dirty. Head has become magnetized.	Clean heads. Demagnetize heads with head eraser.
	Poor sound quality.	Tape is worn. DOLBY NR switch is set to wrong position	Replace cassette. Set to positions matching those used when tape was recorded.
	Stereo balance is poor.	Head is dirty.	Clean heads.
	Excessive noise.	Head is dirty. Head has become magnetized. Tape is worn.	Clean heads. Demagnetize heads with head eraser. Replace cassette.
	Tape travel stops in middle of playback or recording.	Slack tape coming out of cassette shell. Tape is creased or torn. Endless tape is being used.	Take up slack by turning reels with a pencil. Replace with new cassette. Don't use endless tapes.
	Can't find specific selections on tape.	Silent gaps between selections are too short. Excessively soft passages in middle of selections. Conversation etc. is recorded.	The music search function won't operate unless the silent gaps between selections are at least four seconds long.
	REMOTE CONTROL	Remote control doesn't work.	Batteries are dead. Remote control is too far away or is being used at incorrect angle. Direct sunlight or lighting (of an inverter type of fluorescent lamp etc.) is striking the remote control sensor of the main unit.
TV functions strangely when the remote control is used.		Remote control is being used near TV set with infrared photo sensor.	Move TV farther away or cover its infrared photo sensor.

YAMAHA

YAMAHA ELECTRONICS CORPORATION, USA 6722 ORANGETHORPE AVE., BUENA PARK, CALIF. 90620, U.S.A.
YAMAHA CANADA MUSIC LTD. 135 MILNER AVE., SCARBOROUGH, ONTARIO M1S 3R1, CANADA
YAMAHA ELECTRONIK EUROPA G.m.b.H. SIEMENSSTR. 22-34, D-2084 RELINGEN BEI HAMBURG, F.R. OF GERMANY
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YAMAHA ELECTRONICS (UK) LTD. YAMAHA HOUSE, 200 RICKMANSWORTH ROAD WATFORD, HERTS WD1 7JS, ENGLAND
YAMAHA SCANDINAVIA A.B. J A WETTERGRENS GATA 1, BOX 30053, 400 43 VÄSTRA FRÖLUNDA, SWEDEN
YAMAHA MUSIC AUSTRALIA PTY, LTD. 17-33 MARKET ST., SOUTH MELBOURNE, 3205 VIC., AUSTRALIA

YAMAHA CORPORATION
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