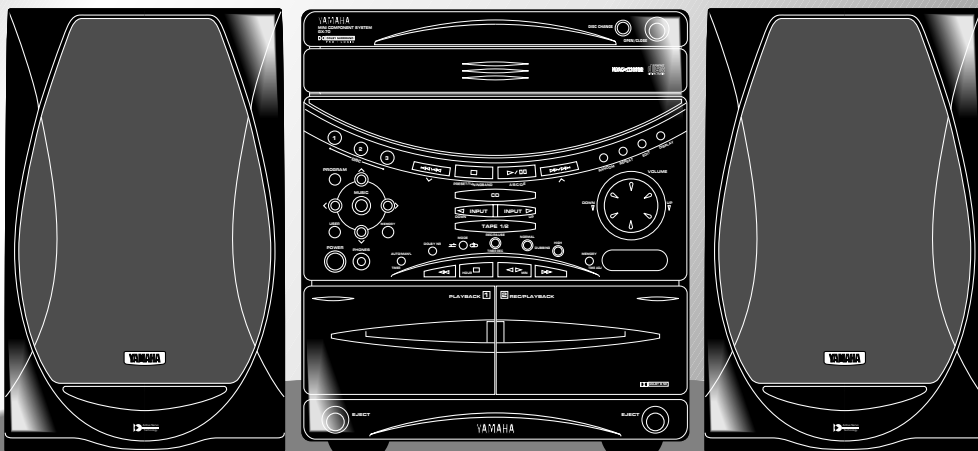


YAMAHA

Active Servo
Technology

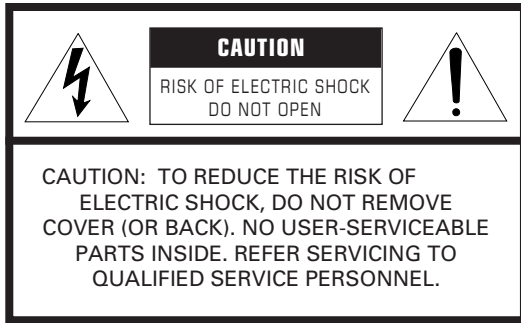
CX-70



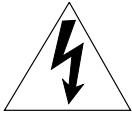
Natural Sound Mini Component System
Chaîne Mini de la série "Natural Sound"

OWNER'S MANUAL
MODE D'EMPLOI

SAFETY INSTRUCTIONS



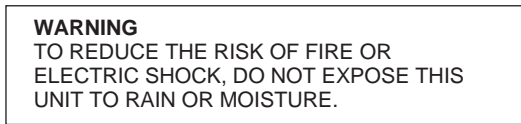
• Explanation of Graphical Symbols



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.



- 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 appliances 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 For US customers only:

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. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard 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.

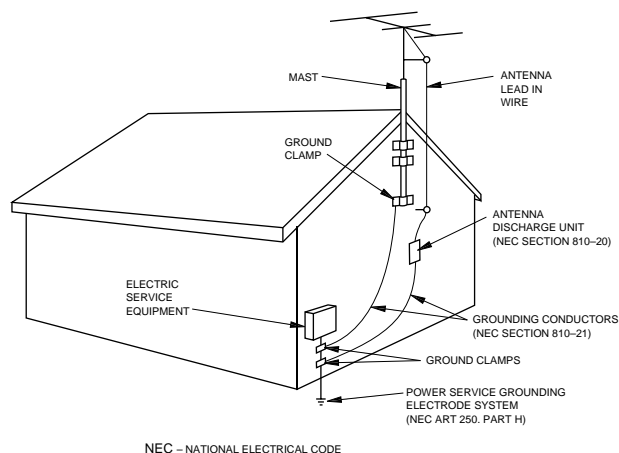
Note to CATV system installer:

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.

SPECIAL NOTES FOR FCC COMPOSITE DEVICE (for US customers only)

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

EXAMPLE OF ANTENNA GROUNDING



FCC INFORMATION (for US customers only)

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 coaxial 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. 6660 Orangethorpe Ave, Buena Park, CA 90620.

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

We Want You Listening For A Lifetime (for US customers only)

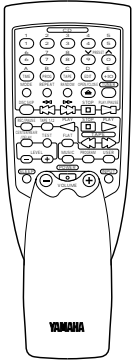
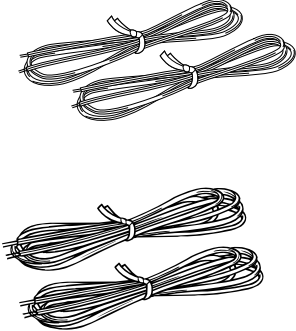
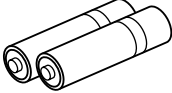
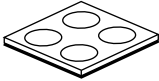
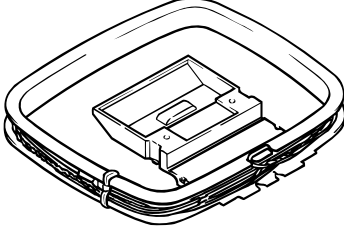

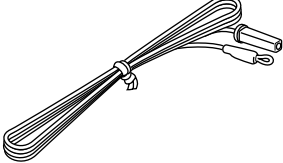
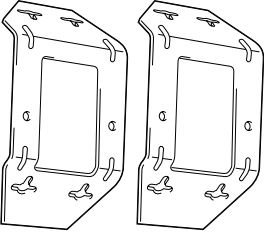
YAMAHA and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion – and, most importantly, without affecting your sensitive hearing.

Since hearing damage from loud sounds is often undetectable until it is too late, YAMAHA and the Electronic Industries Association's Consumer Electronics Group recommend you to avoid prolonged exposure from excessive volume levels.



SUPPLIED ACCESSORIES
ACCESSOIRES FOURNIS

- After unpacking, check that the following parts are contained.
- Après le déballage, vérifier que les pièces suivantes sont incluses.

<ul style="list-style-type: none"> • Remote control transmitter • Télécommande 	<ul style="list-style-type: none"> • Speaker cords • Câbles d'enceintes 
<ul style="list-style-type: none"> • Batteries (size AA, UM/SUM-3, R6, HP-7) • Piles (format AA, UM/SUM-3, R6, HP-7) 	<ul style="list-style-type: none"> • Pads • Patins 
<ul style="list-style-type: none"> • AM (MW/LW) loop antenna • Cadre-antenne AM (PO/GO) 	<ul style="list-style-type: none"> • Screws • Vis 
<ul style="list-style-type: none"> • Indoor FM antenna • Antenne intérieure FM 	<ul style="list-style-type: none"> • Mounting brackets • Supports de montage 

1

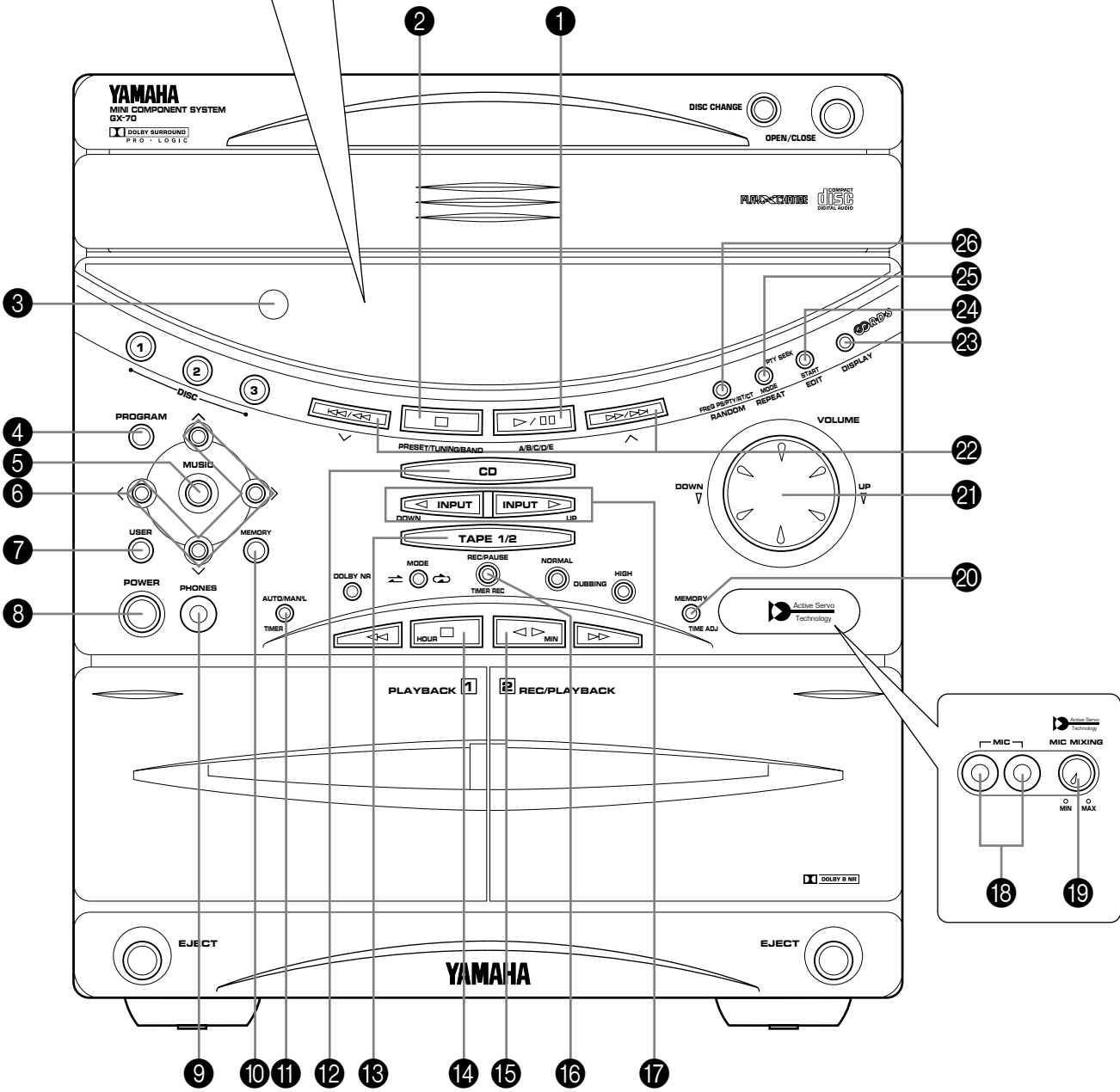
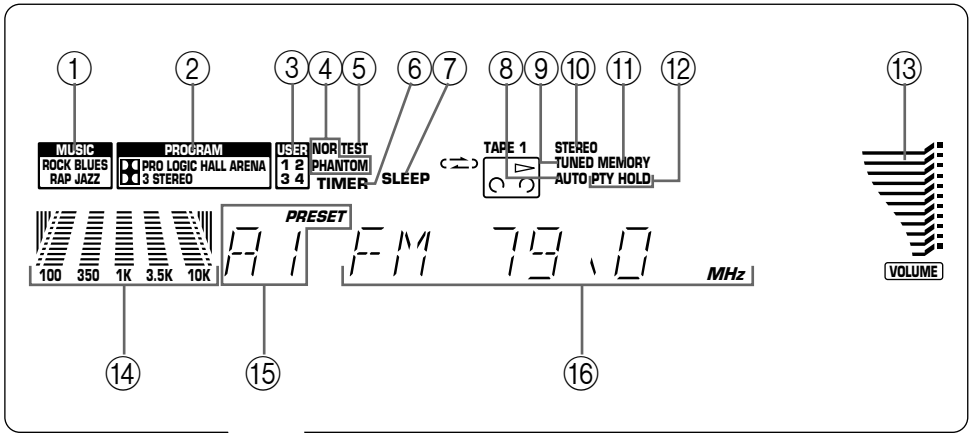


Illustration: Europe model
 Illustration: Modèle pour l'Europe

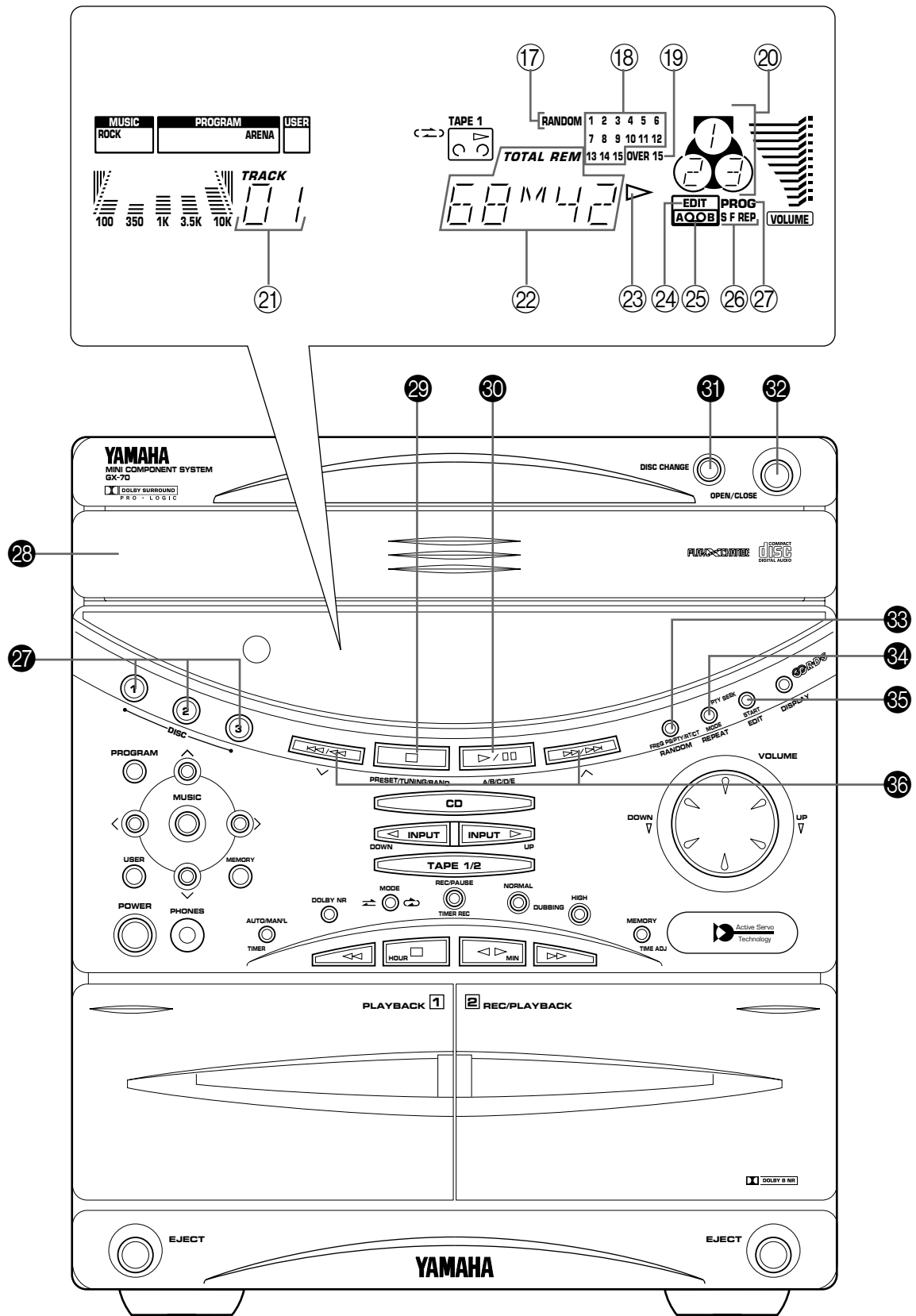


Illustration: Europe model
 Illustration: Modèle pour l'Europe

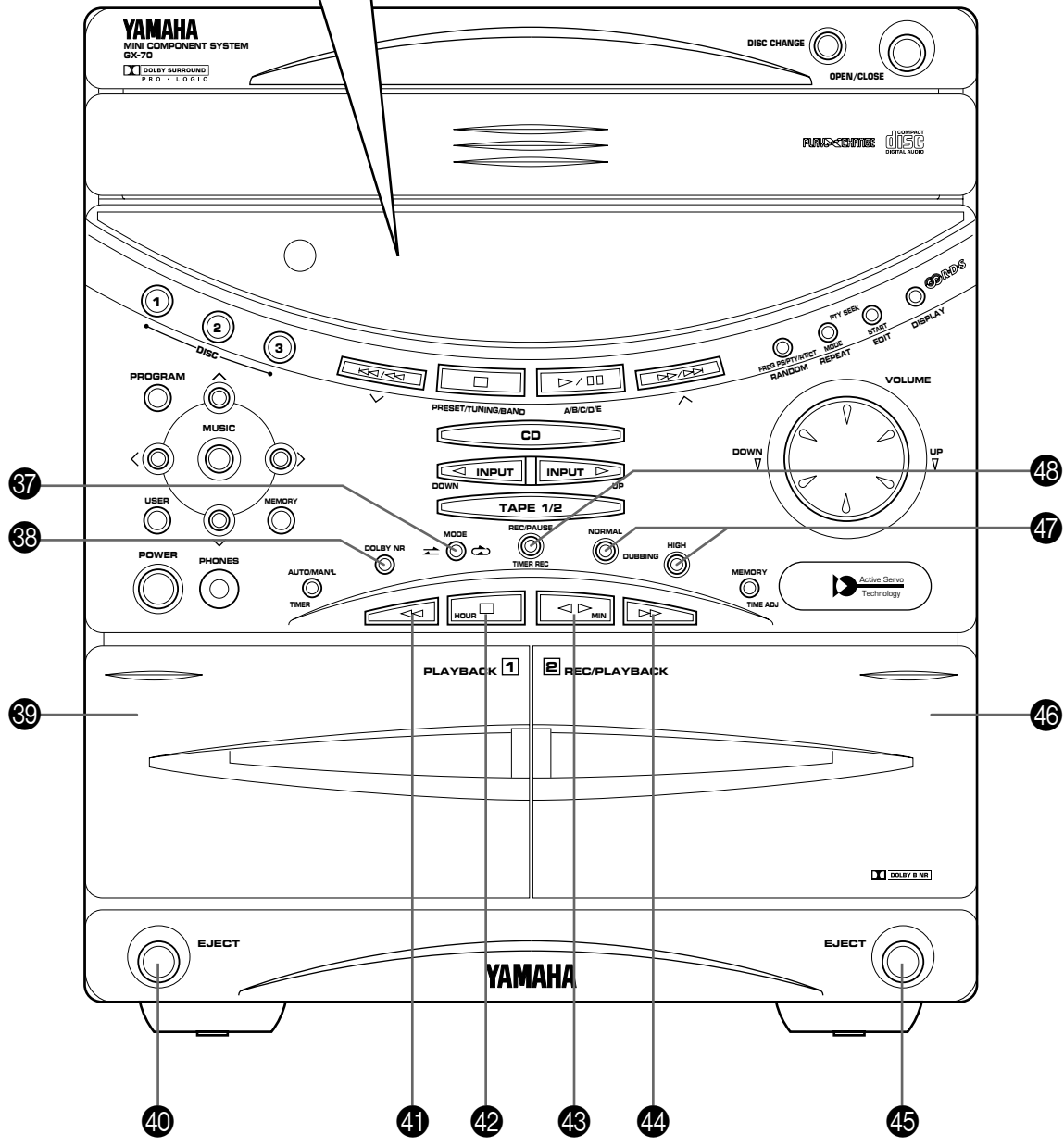
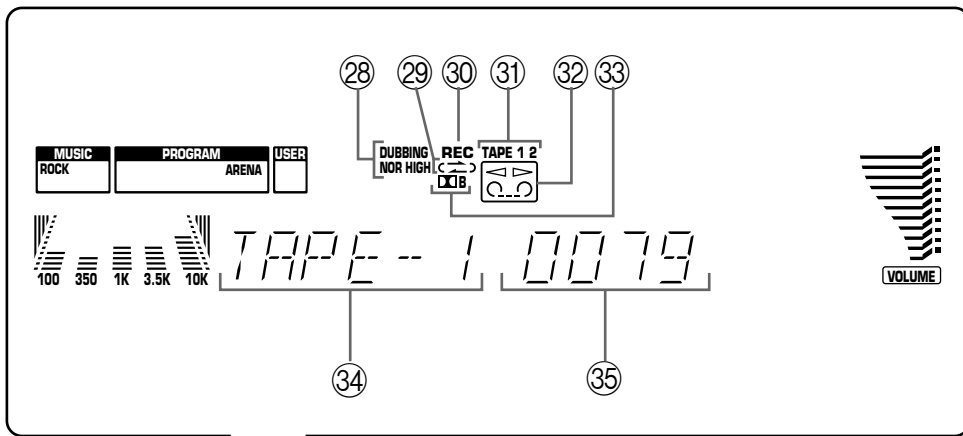
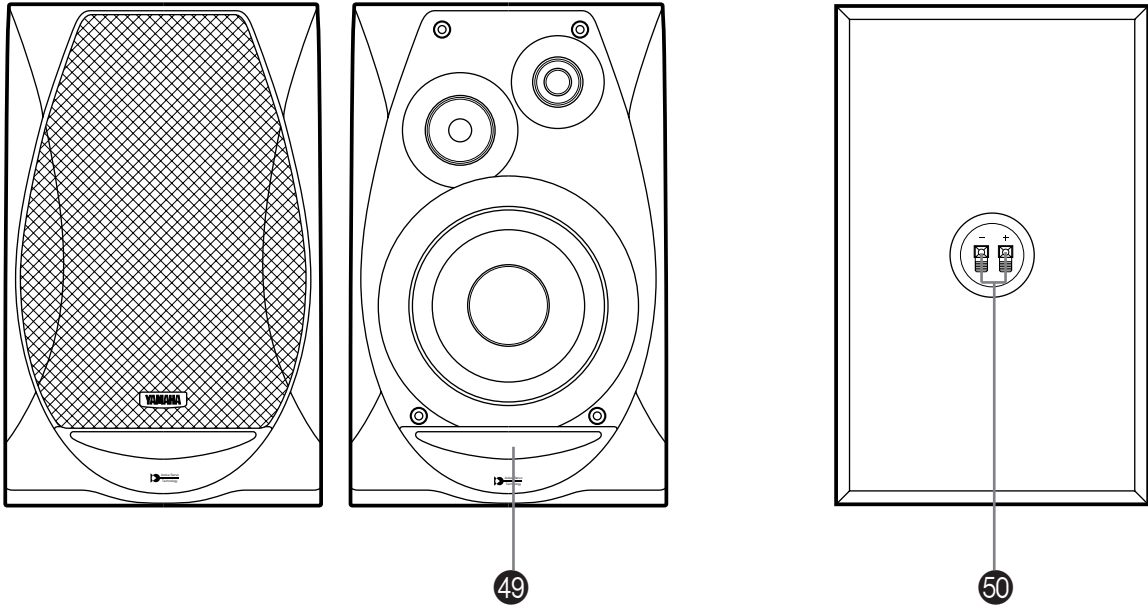


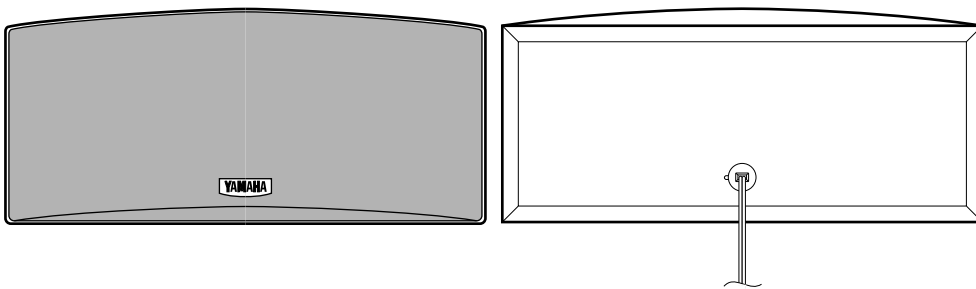
Illustration: Europe model
 Illustration: Modèle pour l'Europe

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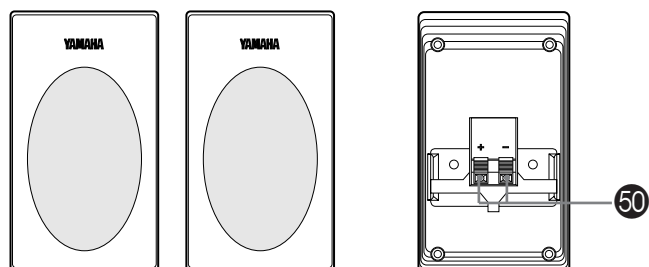
NX-GX70 Front speakers
Enceintes avant



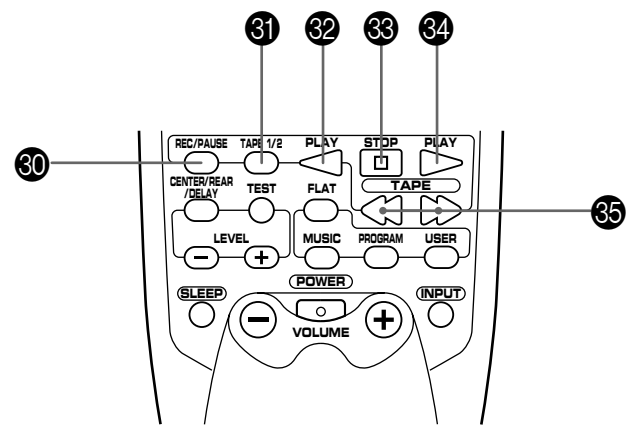
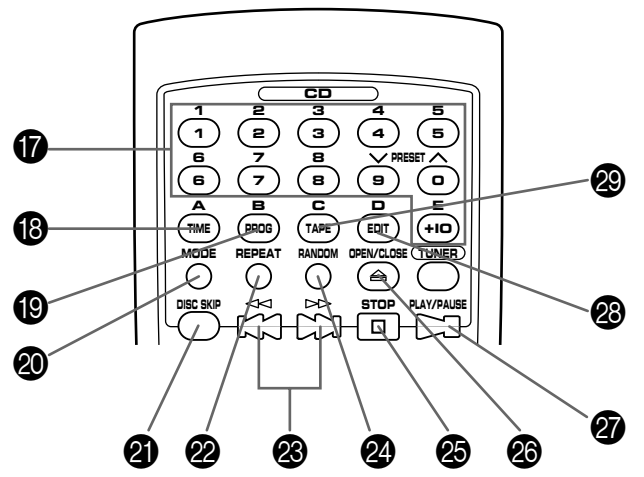
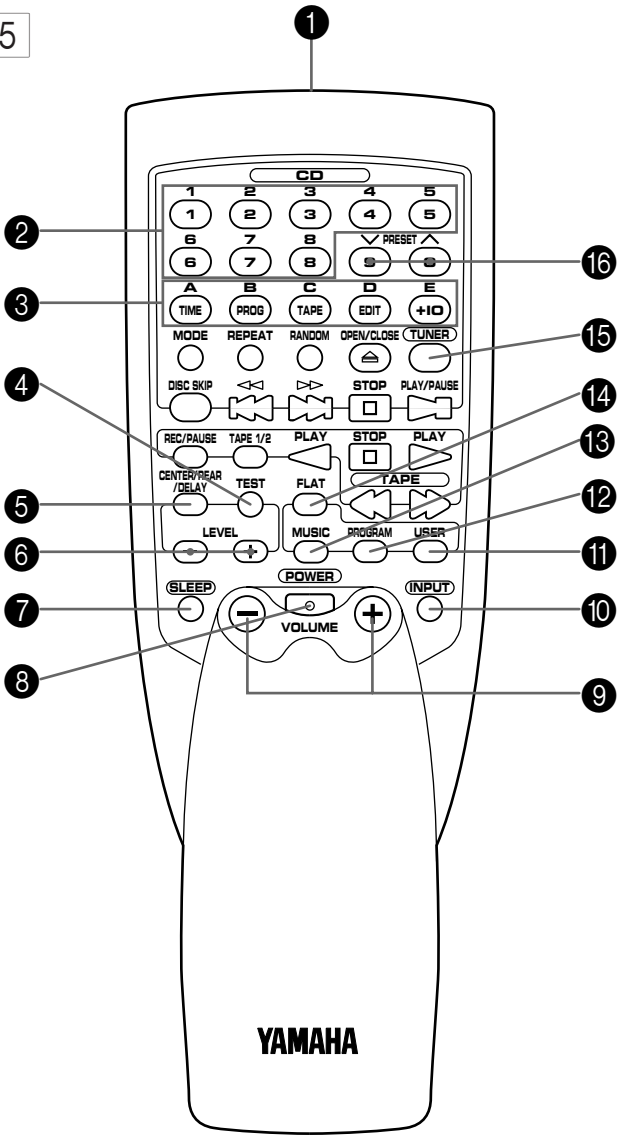
NX-C70 Center speaker
Enceinte centrale



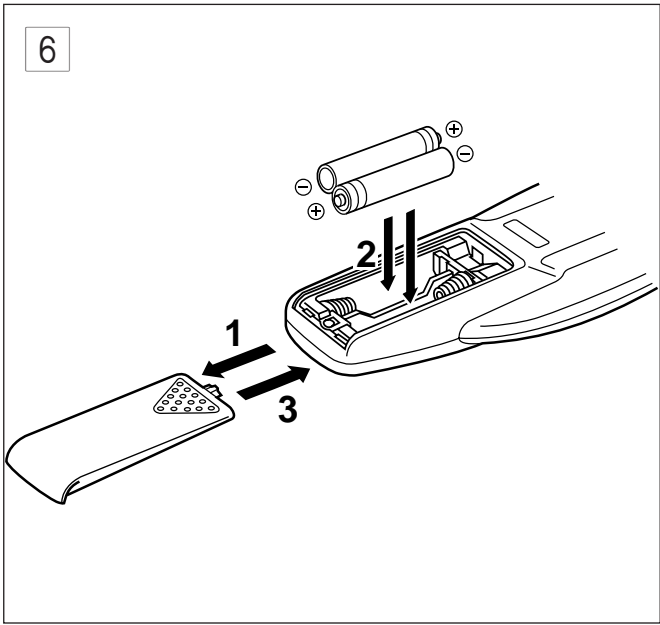
NX-E70 Rear speakers
Enceintes arrière



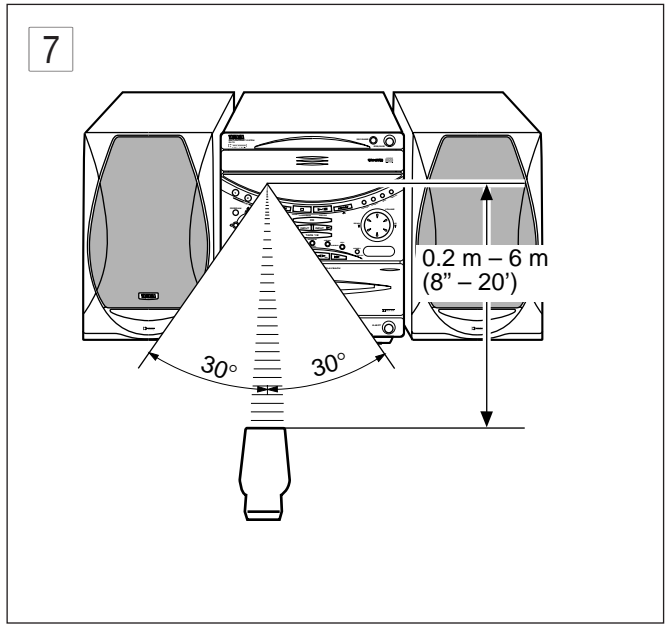
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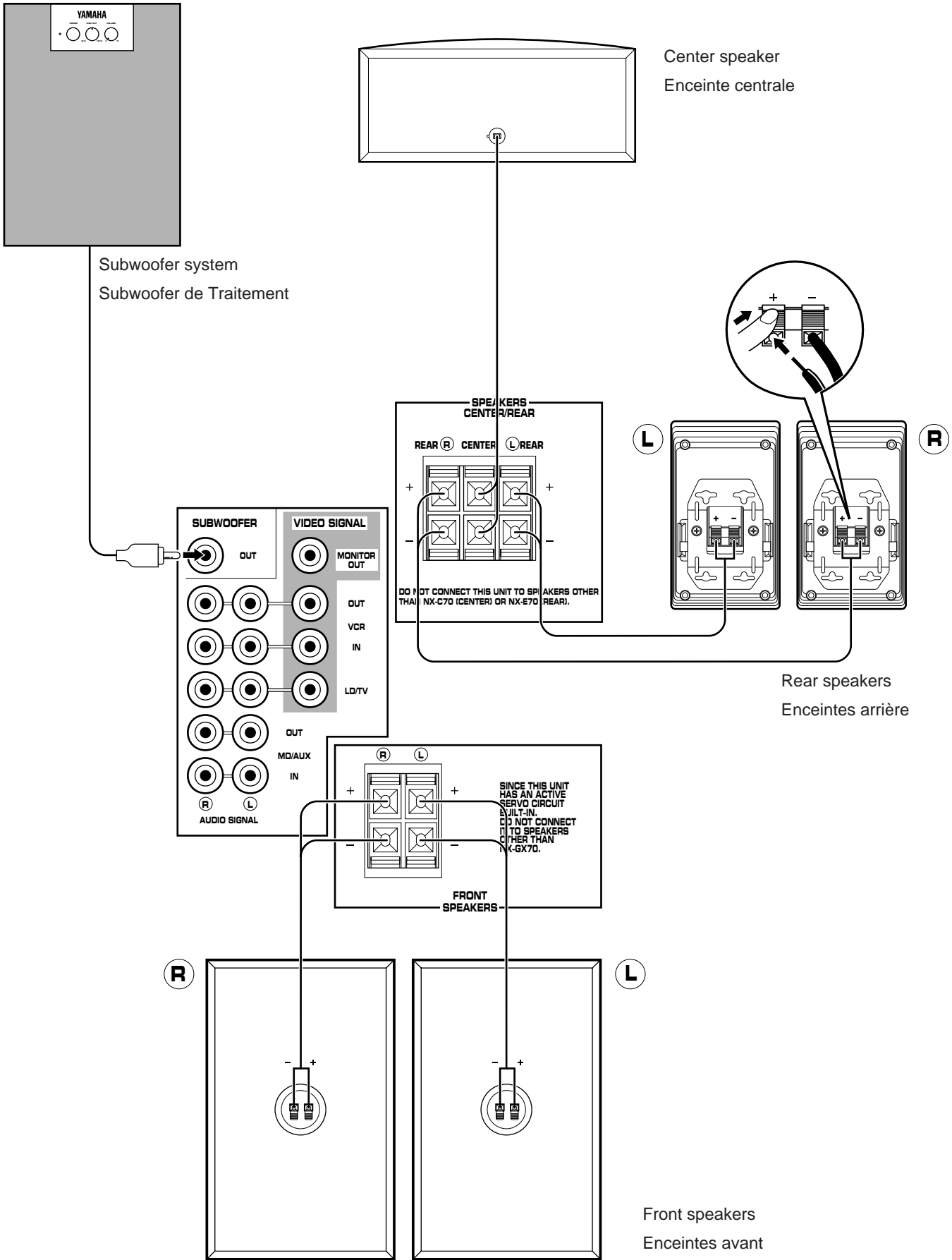


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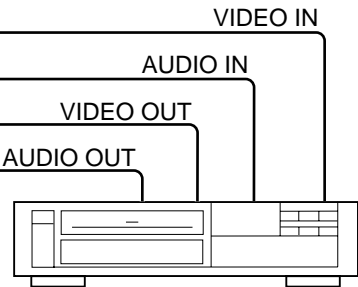
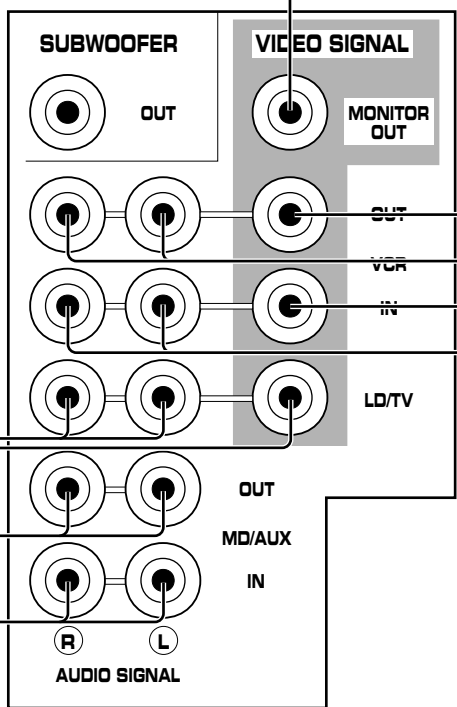
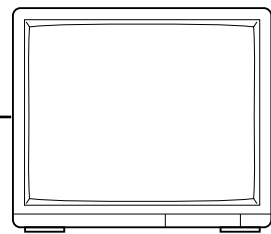
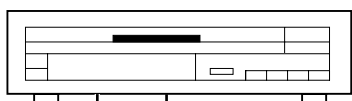
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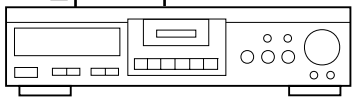


LD player etc.
Lecteur de disque laser, etc.

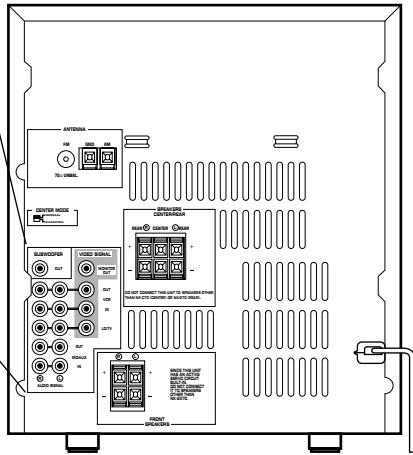
Monitor TV
Moniteur TV



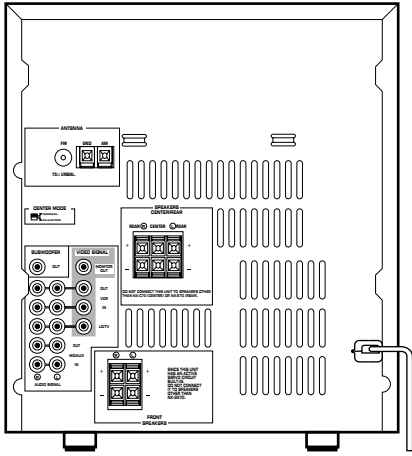
Video cassette recorder
Magnétoscope



DAT, MD recorder, etc.
Enregistreur de DAT, MD, etc

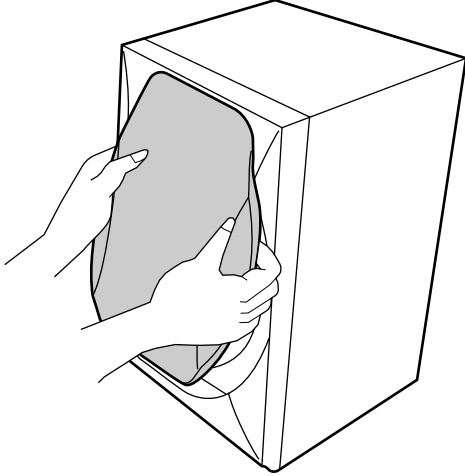


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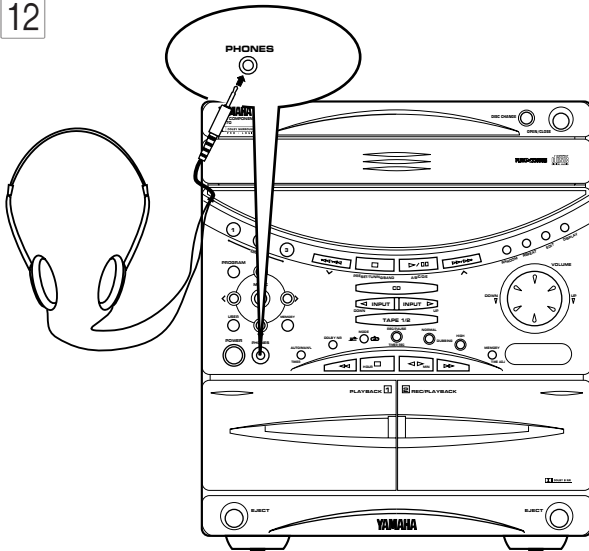


To AC outlet
Vers la prise c.a.

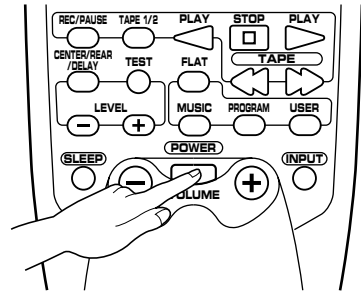
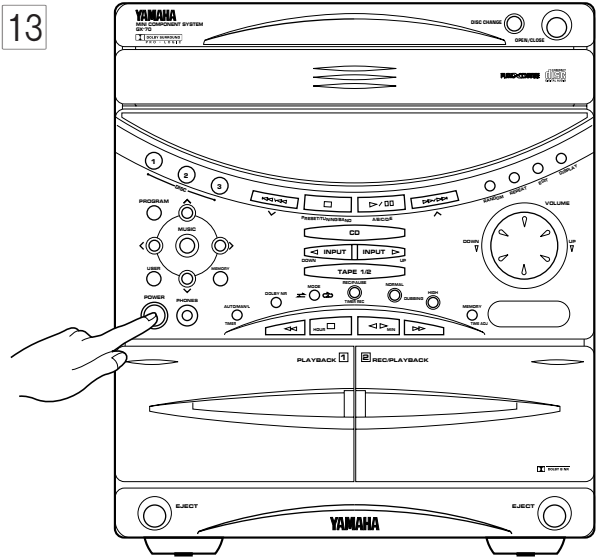
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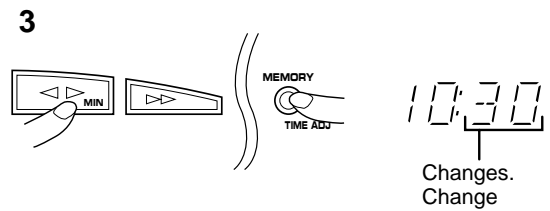
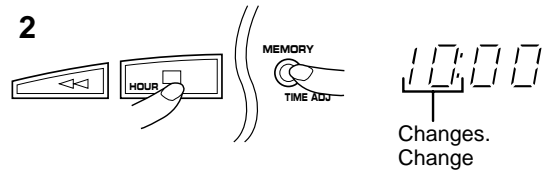
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13



14



INTRODUCTION

Thank you for purchasing this YAMAHA product. We hope it will give you many years of trouble-free enjoyment. For the best performance, read this manual carefully. It will guide you in operating your YAMAHA product.

CONTENTS

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CONNECTIONS	11-13	USING SOUND FIELD PROCESSOR	46-49
REMOVING THE FRONT GRILLES OF FRONT SPEAKERS	13	STORING YOUR OWN PROGRAMS	50
LISTENING WITH HEADPHONES	13	KARAOKE OPERATION (Australia, China, Singapore and General models only)	51
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ADJUSTING BRIGHTNESS OF THE DISPLAY	14	TROUBLESHOOTING	56-57
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SPEAKER BALANCE ADJUSTMENT	15-16		
COMPACT DISC PLAYER OPERATION	17-23		
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For basic source play, the following illustrations on top of pages will help you to look for the section you need.



.....CD playback



.....Tuning



.....Tape playback/recording

PRECAUTIONS: READ THIS BEFORE OPERATING YOUR UNIT

- This system is designed for using the provided Active Servo Processing Speaker System for front speakers. Therefore, **do not attempt to connect other conventional speakers to the FRONT SPEAKERS terminals of this system.**
- 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.
- Always set the VOLUME control to minimum before starting an audio source play: increase the volume gradually to an appropriate level after play has started.
- 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 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 the 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 unit 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.
- The sound level at a given volume setting depends on speaker location and 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.
- 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. 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 tape 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.

PRECAUTIONS: READ THIS BEFORE OPERATING YOUR UNIT**IMPORTANT**

Please record the serial number of this unit in the space below.

Serial No.:

The serial number is located on the rear of the unit. Retain 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 APPLIANCE TO RAIN OR MOISTURE.

CAUTION (FOR CANADA MODEL)

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT AND FULLY INSERT.

FOR CANADIAN CUSTOMER

THIS CLASS B DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

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.

The apparatus is not disconnected from the AC power source as long as it is connected to the wall outlet, even if the apparatus itself is turned off.

CAUTION FOR CARRYING THIS UNIT

Be sure not to carry or tip this unit with discs remaining in it.

CAUTION FOR MOVING THIS UNIT

Before moving this unit, first remove all discs from the disc table and close the table by pressing the OPEN/CLOSE button. After you confirm that "NO DISC" lights up on the display, switch off the power by pressing the POWER switch, and then disconnect the power plug from the AC outlet.

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 unit 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 cabinet. Refer servicing to qualified personnel only.

DANGER: The use of optical instrument with this product will increase eye hazard.

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.

FEATURES

The System

- 5 Speaker Multi-Channel Audio System Including Two Front Speakers, One Center Speaker and Two Rear Speakers
- Active Servo Processing Front Speaker System (NX-GX70)
- Free-Standing/Wall Mounting Type Rear Speaker System (NX-E70)
- Remote Control Capability

Amplifier

- Minimum RMS Output Power per Channel
 - Front L, R: 65W + 65W (6 Ω) RMS Output Power, 1% THD, 1 kHz
 - Center: 20W (6 Ω) RMS Output Power, 1% THD, 1 kHz
 - Rear: 20W (6 Ω) RMS Output Power, 1% THD, 1 kHz
- Adjustable Display Brightness
- 2 Microphone Jacks and Mic Mixing Level Control for Karaoke (Australia, China, Singapore and General Models Only)
- Multi-Use Timer/Sleep Timer
- Automatic Power-Off Function
- 4 External Audio/Video Component Connecting Capability
- SUBWOOFER Output Terminal Which Passes Low Frequencies Only

Compact Disc Player

- 3-Disc Carousel Type CD Changer
- CD Window to Make CD Playback Visible from Outside
- PLAYXCHANGE; Disc Changing Capability while Playing Back Another
- 20-Track Random Access Programmable CD Playback
- Single Track/Entire Disc/All Disc Repeat Play
- Random-sequence Play
- Automatic Synchronized Recording with CD Playback
- Automatic CD Editing Function for Recording to Tape

Tape Deck

- Double Cassette Tape Deck with Automatic Reversing Function
- 2-Speed Tape Dubbing
- Dolby B Type Noise Reduction System

Tuner

- 40 Station Random Access Preset Tuning
- 40 Station Automatic Preset Tuning
- Multi-Functions for RDS Broadcast Reception (Europe and U.K. models only)

FEATURES

Sound Field Processor Including Dolby Pro Logic Surround Decoder

- **2 Programs for Dolby Surround Decoding (DOLBY PRO LOGIC and DOLBY 3 STEREO)**
2 Programs for Sound Field Processing (HALL and ARENA)
[3-Karaoke Modes for Australia, China, Singapore and General Models Only]
- **Automatic Input Balance Control for Dolby Pro Logic Surround**
- **2 Center Channel Modes (NORMAL/PHANTOM)**
- **Test Tone Generator for Easier Speaker Balance Adjustment**

Graphic Equalizer

- **5-Band Adjustable Graphic Equalizer**
- **4 Preset Graphic Equalizer Modes Selectable According to the Music Source (ROCK, BLUES, RAP and JAZZ)**
- **4-Sound Field and 4-Equalizer Control Mode Storing Capability**

Dolby Pro Logic Surround

This unit employs a Dolby Pro Logic Surround decoder similar to professional Dolby Stereo decoders used in many movie theaters. By using the Dolby Pro Logic Surround decoder, you can experience the dramatic realism and impact of Dolby Surround movie theater sound in your own home. Dolby Pro Logic employs a four channel five speaker system. The Pro Logic Surround system divides the input signal into four levels: the left and right main channels, the center channel (used for dialog), and the rear surround sound channels (used for sound effects, background noise, and other ambient noises). The center channel allows listeners seated in even less-than-ideal positions to hear the dialog originating from the action on the screen while experiencing good stereo imaging.

Dolby Surround is encoded on the sound track of pre-recorded video tapes, laser discs, and some TV/cable broadcasts. When you play a source encoded with Dolby Surround on this unit, the Dolby Pro Logic Surround decoder decodes the signal and distributes the surround-sound effects.

In addition, this unit features a built-in automatic input balance control. This always assures you the best performance without manual adjustment.

Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby", the double-D symbol and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

NAMES OF CONTROLS AND INDICATORS

For amplifier/tuner

(See figure 1 on page 5 at the beginning part of this manual.)

- 1 **A/B/C/D/E** Button
- 2 **PRESET/TUNING/BAND** Selector Button
- 3 Remote Control Sensor
- 4 **PROGRAM** Selector Button
- 5 **MUSIC** Button
- 6 Equalizer Control Buttons
- *1 [7 **USER** Button
- 8 **POWER** Switch
- 9 **PHONES** Jack
- 10 User Program **MEMORY** Button
- 11 **AUTO/MAN'L (TIMER)** Button
- 12 **CD** Input Selector Button
- 13 **TAPE 1/2** Input Selector Button
- 14 **HOUR** Button
- 15 **MIN** Button
- 16 **TIMER REC** Button
- 17 **INPUT** Selector Buttons
- *1 [18 **MIC** (Microphone) Jacks
- 19 **MIC MIXING** (Microphone Mixing) Level Control
- 20 Tuner **MEMORY (TIME ADJUST)** Button
- 21 **VOLUME** Control

22 ∨ (Down)/ ^ (Up) Buttons

23 **DISPLAY** Button

*2 [24 **PTY SEEK START** Button

25 **PTY SEEK MODE** Button

26 **FREQ PS/PTY/RT/CT** Selector Button

Display

- 1 Preset Equalizer Mode Indicator (**MUSIC**)
- 2 Sound Field Program Indicator (**PROGRAM**)
- 3 User Program Number Indicator
- 4 Center Channel Mode (**NOR/PHANTOM**) Indicator
- 5 **TEST** Indicator
- 6 **TIMER** Set Indicator
- 7 **SLEEP** Indicator
- 8 **AUTO** Tuning Indicator
- 9 **TUNED** Indicator
- 10 **STEREO** Indicator
- 11 **MEMORY** Indicator
- *2 [12 **PTY HOLD** Indicator
- 13 Volume Level Meter
- 14 Graphic Equalizer Level Indicators
- 15 Preset Number Indicator
- 16 Multi Information Display
(Time, Station Frequency, Volume Level, etc.)

For CD player

(See figure 2 on page 6 at the beginning part of this manual.)

- 27 **DISC** Selector Buttons
- 28 Disc Table
- 29 Stop Button: □
- 30 Play/Pause Button: ▷/⏸
- 31 **DISC CHANGE** Button
- 32 **OPEN/CLOSE** Button: △
- 33 **RANDOM** Button
- 34 **REPEAT** Button
- 35 **EDIT** Button
- 36 Skip Buttons: ◀◀/▶▶
(Search Buttons: ◀◀/▶▶)

Display

- 17 **RANDOM** Play Indicator
- 18 Music Calendar Indicator
- 19 Music Calendar **OVER 15** Indicator
- 20 Disc Indicator
- 21 Track Number Indicator
- 22 Time Display
- 23 Play Indicator: ▷
- 24 **EDIT** Indicator
- 25 Tape Side Indicator
- 26 **(S, F) REPEAT** Indicator
- 27 Program (**PROG**) Play Indicator

*1: Provided for Australia, China, Singapore and General Models Only

*2: Provided for U.K. and Europe Models Only

NAMES OF CONTROLS AND INDICATORS

For Tape deck

(See figure 3 on page 7 at the beginning part of this manual.)

- 37 Reverse **MODE** Selector Button
- 38 **DOLBY NR** Button
- 39 Deck 1 Cassette Compartment
- 40 Deck 1 **EJECT** Button
- 41 Fast Wind Button: <<
- 42 Stop Button: □
- 43 Play Button: < ▷
- 44 Fast Wind Button: ▷▷
- 45 Deck 2 **EJECT** Button
- 46 Deck 2 Cassette Compartment
- 47 **DUBBING (NORMAL/HIGH)** Buttons
- 48 **REC/PAUSE** Button

Display

- 28 **DUBBING (NOR/HIGH)** Indicator
- 29 Reverse Mode Indicator
- 30 Recording (**REC**) Indicator
- 31 Tape Number Indicator
- 32 Play Direction Indicator
- 33 Dolby (**□**) **B NR** Indicator
- 34 Tape Number Indicator
- 35 Tape Counter

Speakers (Front/Center/Rear)

(See figure 4 on page 8 at the beginning part of this manual.)

- 49 YST Port
- 50 Speaker Terminals

REMOTE CONTROL TRANSMITTER

Names of control buttons

(See figure 5 on page 9 at the beginning part of this manual.)

■ Amplifier/tuner control buttons

- 1 Remote Control Transmitter Window
- 2 Preset Station Number Buttons
- 3 **A, B, C, D, E** Selector Buttons
- 4 **TEST** Button
- 5 **CENTER/REAR/DELAY** Selector Button
- 6 **LEVEL** Control Buttons
- 7 **SLEEP** Button
- 8 **POWER** Switch
- 9 **VOLUME** – (Down)/+ (Up) Buttons
- 10 **INPUT** Selector Button
- 11 **USER** Button
- 12 **PROGRAM** Button
- 13 **MUSIC** Button
- 14 **FLAT** Button
- 15 **TUNER** Input Selector Button
- 16 **PRESET** Number ∨ (Down)/ ^ (Up) Buttons

■ CD player control buttons

- 17 Track Number Input Buttons
- 18 **TIME** Button
- 19 **PROGRAM** Button
- 20 Disc Play **MODE** Selector Button
- 21 **DISC SKIP** Button
- 22 **REPEAT** Button
- 23 Skip Buttons: <</>>>
(Search Buttons: <</>>>)
- 24 **RANDOM** Button
- 25 **STOP** Button: □
- 26 **OPEN/CLOSE** Button: △
- 27 **PLAY/PAUSE** Button: ▷ ■■
- 28 **EDIT** Button
- 29 **TAPE** Button

■ Tape deck control buttons

- 30 **REC/PAUSE** Button
- 31 **TAPE 1/2** Button
- 32 Play Button: <
- 33 Stop Button: □
- 34 Play Button: ▷
- 35 Fast Wind Buttons: <</>>>

REMOTE CONTROL TRANSMITTER

Loading the batteries for the remote control transmitter

(See figure 6 on page 9.)

- 1 Remove the battery compartment cover.
(Slide the cover in the direction of the arrow.)
- 2 Insert 2 "AA" size batteries (UM/SUM-3, R6, HP-7 or equivalent) into the battery compartment.
* Installing the batteries improperly may cause failure.
- 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

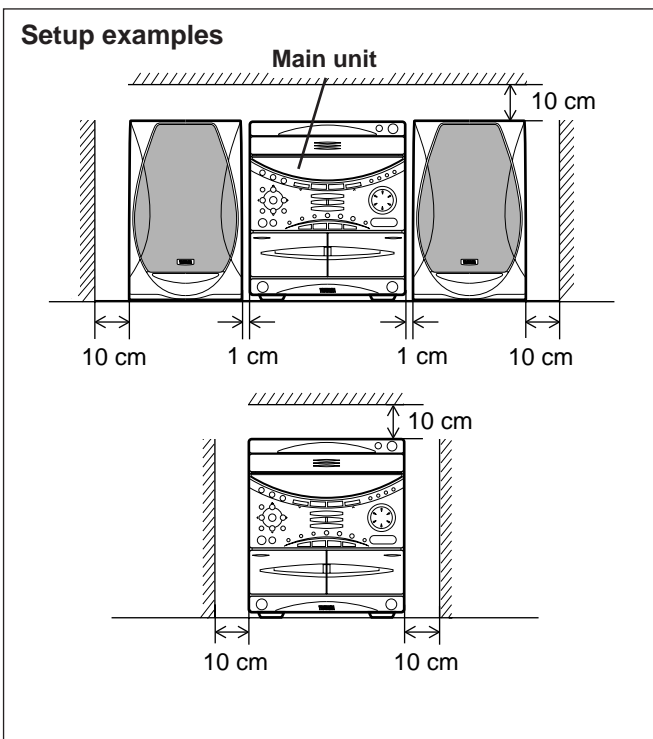
(See figure 7 on page 9.)

Aim (within the range of 60° 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 unstable.
- 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 (especially an inverter type of fluorescent lamp etc.) may interfere with operation. In this case, reposition the main unit to avoid direct lighting.
- Keep the remote control transmitter away from moisture, excessive heat, shock and vibrations.
- The remote control transmitter's usable range is within 0.2m (8") and 6m (20') away from the sensor.

SETTING UP THE MAIN UNIT



Place the main unit as illustrated on the left and allow spaces more than indicated around the main unit and more than 10 cm (3-15/16") behind the main unit to assure good ventilation. Be sure not to place another unit or any object on top of the main unit to prevent the ventilation holes on the top panel of the main unit from being obstructed. Otherwise, it may cause fire or damage to the main unit.

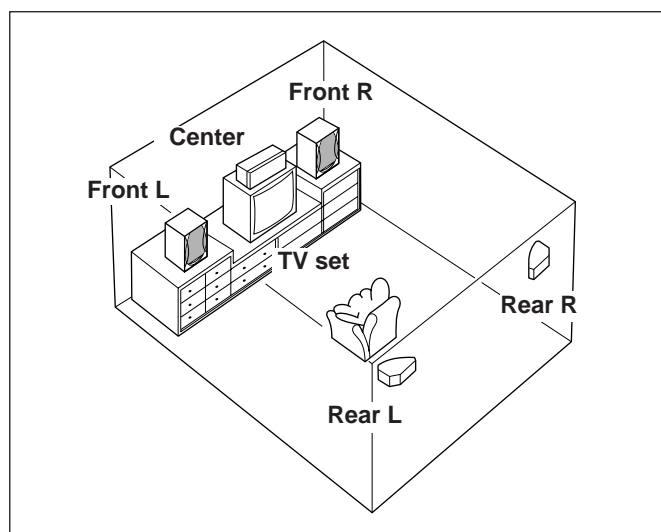
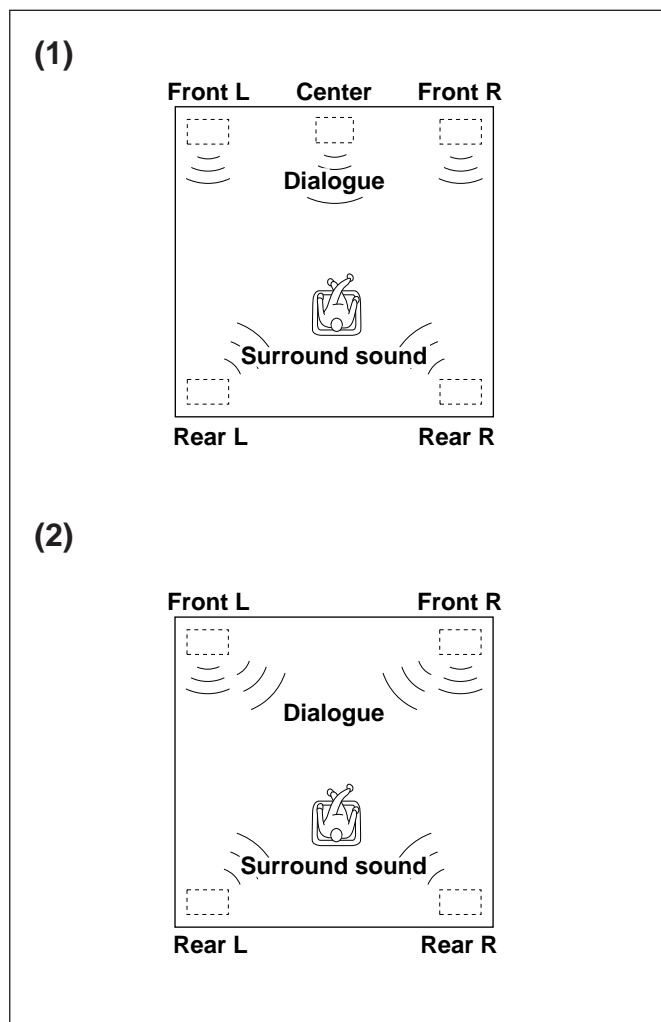
Notes

- When placing the front speakers apart from the main unit, allow a space of at least 10 cm (3-15/16") above, behind and on the both sides of the main unit.
- If the main unit is put in a rack, the front of it must be fully opened.
- Disconnect the AC supply lead from the AC outlet before connecting or disconnecting any component.

SETTING UP THE SPEAKERS

This system is designed to provide the best sound-field quality with a 5 speaker configuration: front speakers, rear speakers and a center speaker. You may omit the center speaker, if for some reason it is not practical to use a center speaker. (Refer to the “**4-Speaker Configuration**” shown below.)

The front speakers are used for the main source sound plus the effect sounds. The rear speakers are used for the effect and surround sounds, and the center speaker is for the center sounds (dialog etc.).



Speaker configuration

(1) 5-Speaker Configuration

This configuration is the most effective and recommended one. In this configuration, the center speaker is necessary as well as the rear speakers. If the sound field program **DOLBY PRO LOGIC** or **DOLBY 3 STEREO** is selected, conversations will be output from the center speaker and the ambience will be excellent.

- Set the center channel mode to the “**NORMAL**” position. (For details, refer to page 15.)

(2) 4-Speaker Configuration

The center speaker is not used in this configuration. If the sound field program **DOLBY PRO LOGIC** is selected, the center sound is output from the left and the right front speakers, although the program **DOLBY 3 STEREO** is useless in this configuration. However, the sound effect of other programs can be the same as that of the 5-speaker configuration.

- Be sure to set the center channel mode to the “**PHANTOM**” position. (For details, refer to page 15.)

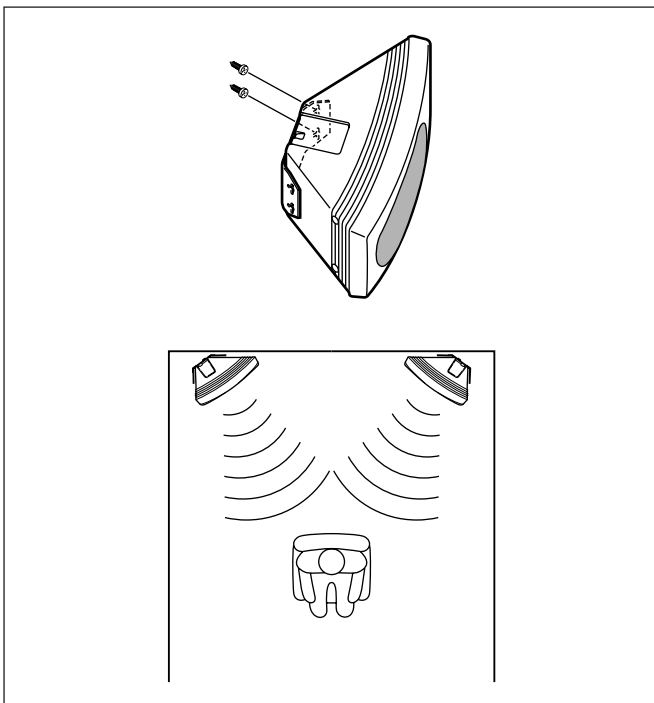
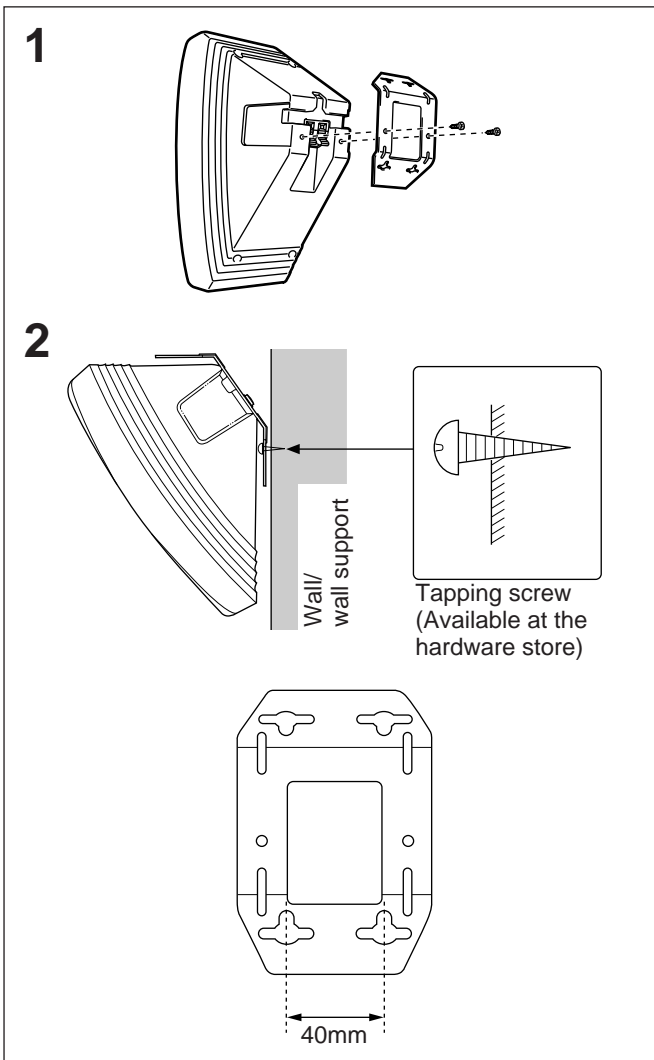
Note

Be sure to use two rear speakers. If you connect one rear speaker only, sound will not be output from the rear speaker.

Speaker placement

- Front speakers:** In normal position.
- Rear speakers:** Behind your listening position, facing slightly inward. Nearly six feet (approx. 1.8 m) up from the floor.
- Center speaker:** Precisely between the front speakers.

SETTING UP THE SPEAKERS



■ Mounting the rear speakers

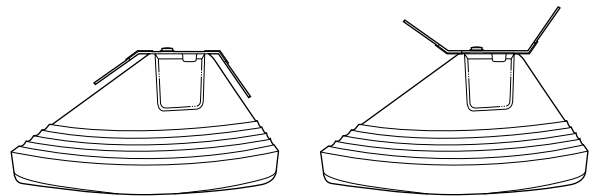
Mount the rear speakers on a shelf, rack or on the floor directly, or hang them on the wall.

To mount the rear speakers on a wall

- 1** Attach the provided mounting bracket to the rear of the speaker by using the provided screws.
- 2** Fasten screws into a firm wall or wall support as shown in the diagram, and hang the holes of the mounting bracket on the protruding screws.
 - * The holes are arranged so that the speakers can be mounted in a side long, upright or upside-down way.
 - * Make sure that the screws are caught by a narrow part of the holes securely.

Notes

- Never attach the bracket to the speaker conversely.



- Speaker cords should be connected to the speaker's terminals after the bracket has attached to the speaker to prevent the speaker cords pressed between the speaker and the bracket.

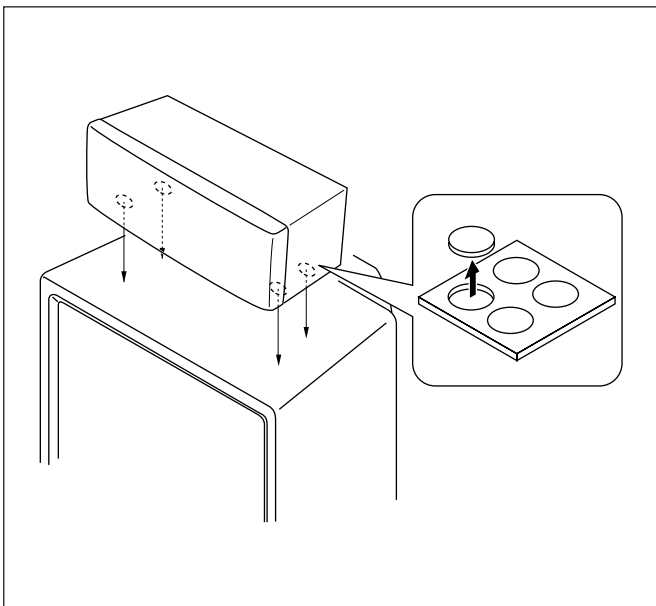
To hang in a side long way

Hang the speakers so that each of them faces inside as figured left.

WARNING:

- Each speaker weighs 0.8 kg (1 lbs. 12 oz.). Do not mount them on thin plywood or soft wall surface material, as the screws may come out of the flimsy surface, causing the speakers to fall down and be damaged, or result in personal injury.
- Do not fasten the speakers to wall with nails, adhesives, or other unsound hardware. Long-term use and vibrations may cause them to fall down.
- To avoid accidents resulting from tripping over loose speaker cables, fix them to the wall.

SETTING UP THE SPEAKERS



■ Mounting the center speaker

Place the speaker on top of the TV or on the floor under the TV or inside the TV rack so that it is stabilized.

When placing the speaker on top of the TV, to prevent the speaker from falling down, put the provided pads at four points on bottom of the speaker.

Notes

- Do not place the speaker on top of the TV whose area is smaller than the bottom area of the speaker. If placed, the speaker may drop out causing an injury to you.
- Though this speaker is a magnetic shielding type, there may be some influence on a TV picture depending on the type of TV or the placement of the speaker. In such a case, place the speaker apart from the TV so that there is no influence on TV picture.

CONNECTIONS

Never plug the AC supply lead of this system into the AC outlet until all connections are completed.

Connecting speakers

(See figure 8 on page 10.)

Connect the provided speakers to the SPEAKERS terminals on the rear of the main unit.

Connect the front speakers (NX-GX70) to the FRONT SPEAKERS terminals, the center speaker (NX-C70) to the CENTER SPEAKERS terminals and the rear speakers (NX-E70) to the REAR SPEAKERS terminals.

Do not connect speakers other than the designated to the respective SPEAKERS terminals.

- * Use the provided speaker cords for the connections. Normally, use the short cords to connect with the front speakers, and use the long ones to connect with the rear speakers.

Note on connecting a subwoofer (separate purchase)

You may wish to add a subwoofer to reinforce the bass frequencies.

Connect the SUBWOOFER OUT terminal of the main unit to the INPUT terminal of the subwoofer amplifier, and connect the speaker terminals of the subwoofer amplifier to the subwoofer.

With some subwoofers, including the Yamaha Active Servo Processing Subwoofer System, the amplifier and subwoofer are in the same unit.

- * The SUBWOOFER OUT terminal is for output to a monaural amplifier driving a subwoofer. Only frequencies below 200 Hz from the front and center channels are output.

How to Connect:

Connect the provided speaker cords to the SPEAKERS terminals properly as shown below. If the connections are faulty, no sound will be heard from the speakers. Make sure that the polarity of the speaker wires is correct, that is the + and – markings are observed. If these wires are reversed, the sound will be unnatural and lack bass.

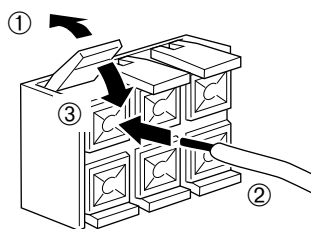
As a sure method, connect the wire with a silver line to the + terminals on both main unit and speaker, and connect the wire with no line to the – terminals on both of them.

Caution

Do not let the bare speaker wires touch each other as this could damage the amplifier and/or speakers.

Red: positive (+)

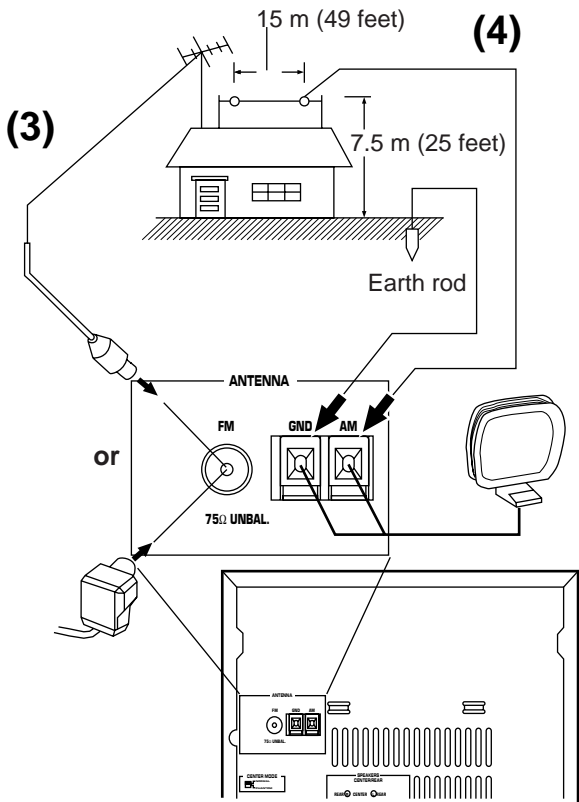
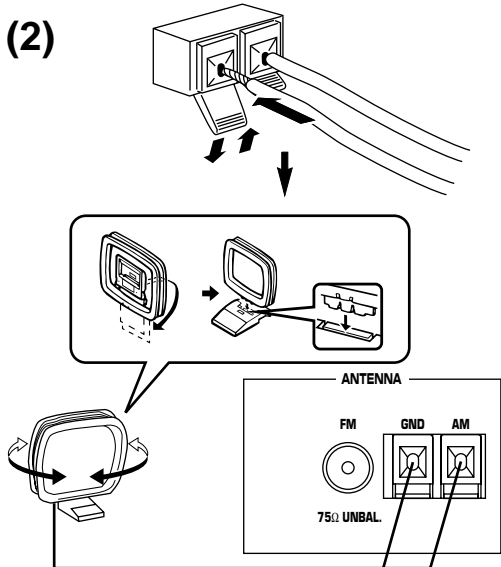
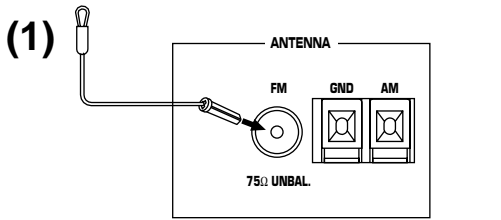
Black: negative (–)



- ① Press up the tab.
- ② Insert the bare wire. [Remove approx. 5mm (1/4") insulation from the speaker wires.]
- ③ Press down the tab and secure the wire.

Note

To connect the speaker wires from the center speaker (NX-C70) to the CENTER SPEAKERS terminals on the main unit, make sure to connect the wire with a silver line to the + terminal and the wire with no line to the – terminal.



Antenna connection

(1) Supplied FM antenna

Connect the FM antenna wire to the corresponding terminal and direct the FM antenna wire to the direction where the strongest signal can be received.

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

Connect the AM (MW/LW) loop antenna wires to the corresponding terminals. Position the AM (MW/LW) loop antenna for optimum reception. Place the AM (MW/LW) loop antenna 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 AM (MW/LW) loop antenna, try reversing the wire connections (right to left).
- Do not place the AM (MW/LW) loop antenna on the unit. It will result in noise generation, since the unit is equipped with digital electronics. Place the AM (MW/LW) loop antenna away from the unit.

(3) External FM antenna

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

(4) External AM (MW/LW) antenna

Use an external AM (MW/LW) antenna if you need better reception. Consult your dealer.

Note

When using an external AM (MW/LW) antenna, be sure to keep the wire of the AM (MW/LW) loop antenna connected.

FREQUENCY STEP switch (General model 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 supply lead of this unit from the AC outlet.

CONNECTIONS

Connecting external components

(See figure 9 on page 11.)

This system can be connected with external audio and video components. Make connections between this system and other components using RCA pin plug connector cables correctly, that is to say **L** (left) to **L** and **R** (right) to **R**. Also, refer to the owner's manual for each component to be connected to this system.

Connecting the AC supply lead

(See figure 10 on page 12.)

- After completing all connections, 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 long period of time.

REMOVING THE FRONT GRILLES OF FRONT SPEAKERS

(See figure 11 on page 12.)

The front grille is fastened to the enclosure at four points, and can be removed if desired. To remove the grille, first hold the bottom of the grille and unfasten the lower part of the grille by pulling it gently, and then hold both sides of the grille and slowly pull straight away from the speaker. To reattach, line up the four pegs on the inside surface of the grille with the four corresponding holes on the speaker and push gently.

Note

When the grille is removed, take care not to touch the speaker units with your hands or to exert excessive force with tools.

LISTENING WITH HEADPHONES

(See figure 12 on page 12.)

- 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 and you can listen to the sound to be output from the front speakers through headphones. Adjust the VOLUME control for desired volume.

TURNING THE POWER ON/OFF TO THIS SYSTEM

(See figure 13 on page 12.)

If the AC supply lead is connected to the AC outlet, this system can be turned ON and OFF (STANDBY mode) by pressing the POWER switch on the front panel of the main unit or the POWER switch on the remote control transmitter.

Automatic power-off function

The power of this system will be automatically turned off if there is no operation on the control parts of this system, no illumination on the graphic equalizer level indicators and no playback of CD or tape for about 30 minutes.

* This function is not available unless time setting is made on the built-in clock.

STANDBY mode

While the power is on, pressing the POWER switch (or the POWER switch on the remote control transmitter) switches the system to the STANDBY mode. (In this mode, the display shows only the time.) In this mode, main voltage is still present inside the system. If you want to switch off the system completely, disconnect the AC power plug from the AC outlet.

SETTING THE CLOCK

(See figure 14 on page 12.)

- 1 While the power is on, press the DISPLAY button to display the time. If the power is off, you can proceed to the next step.
- 2 While holding the TIME ADJ button pressed, press the HOUR button and set the hour.
 - * Press the HOUR button once to advance the time by 1 hour. Press and hold to advance continuously.
 - * To reverse the hour, press the \triangleleft button instead of the HOUR button.
- 3 While holding the TIME ADJ button pressed, press the MIN button and set the minute.
 - * Press the MIN button once to advance the time by 1 minute. Press and hold to advance continuously.
 - * The hour setting will not advance even if minute is advanced from "59" to "00".
 - * To reverse the minute, press the \triangleright button instead of the MIN button.

Europe, U.K., Australia, China and Singapore models use a 24-hour display. U.S.A. and Canada models use a 12-hour display shown by "AM (PM) 12:00". For General model, either the 24-hour display or the 12-hour display is selected depending on the setting of the FREQUENCY STEP switch on the rear panel, so you cannot select a desired type freely.

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

The time display will go out, however, the clock will function for about 5 minutes without power supply. So you do not have to reset the time if the AC power supply is resumed within about 5 minutes.

When the AC power supply is resumed after more than 5 minutes pass without power supply, the time display will flash on and off to indicate that the time must be reset.

ADJUSTING BRIGHTNESS OF THE DISPLAY

If desired, you can adjust brightness of the display.

- 1 Press and hold the DISPLAY button for more than 2 seconds so that "DIMMER±0" appears on the display.
- 2 Holding the DISPLAY button pressed, turn the VOLUME control clockwise to increase or counterclockwise to decrease brightness.

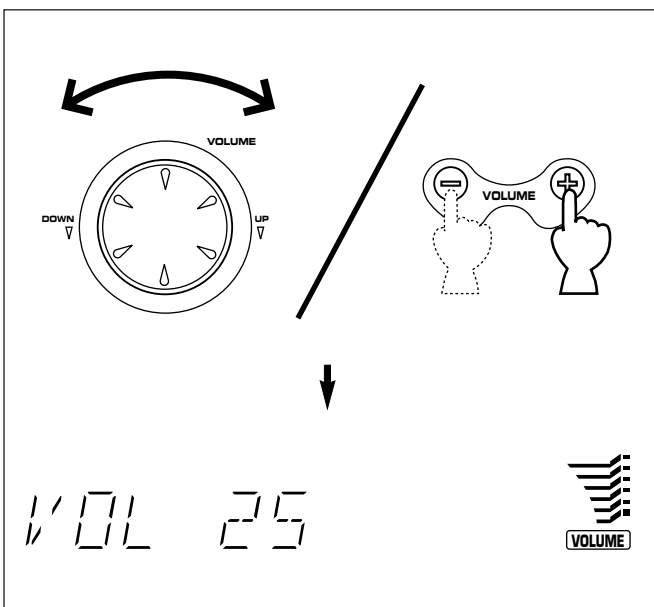
This adjustment can be made even though the power of this unit is off (in the standby mode).

Control range

When the power is on: ± 0 to -6 (Preset value: ± 0)

When the power is off: $+3$ to -3 (Preset value: ± 0)

VOLUME CONTROL



Front panel operation

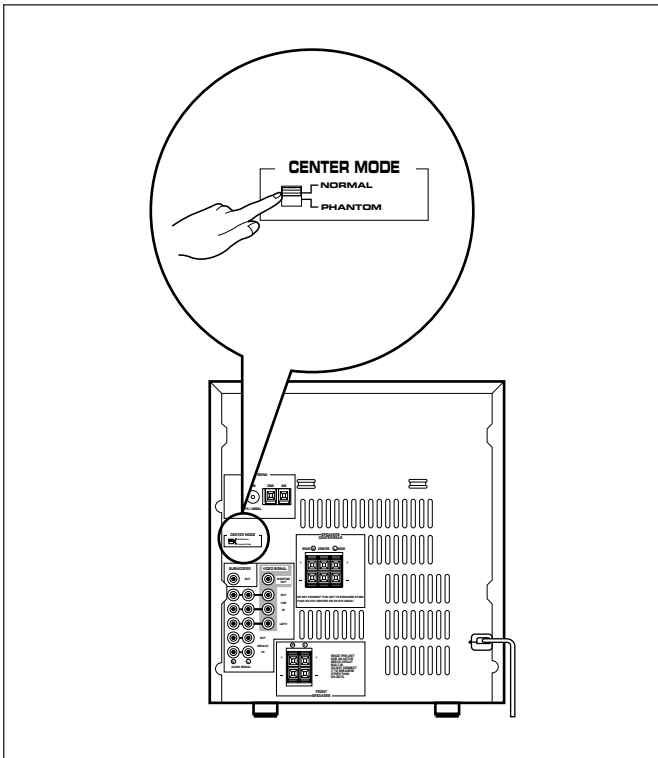
Rotate the VOLUME control to the "UP" direction to increase the volume, and to the "DOWN" direction to decrease the volume.

Remote control operation

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

* Adjusted volume level is shown by the volume level meter and in figures on the display.

SPEAKER BALANCE ADJUSTMENT



This procedure lets you adjust the sound output level balance between the front, center, and rear speakers using the built-in test tone generator. When this adjustment is performed, the sound output level heard at the listening position will be the same from each speaker. This is important for the best performance of the built-in Doiby Pro Logic surround decoder. **The adjustment of each speaker output level should be done at your listening position with the remote control transmitter. Otherwise, the result may not be satisfactory.**

Before operation

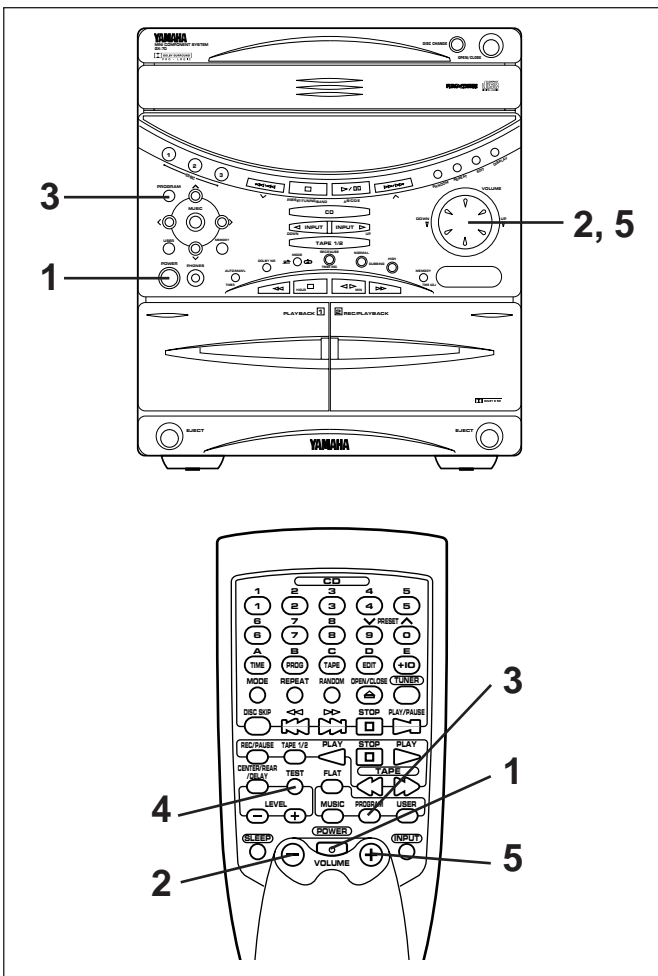
Set the CENTER MODE switch on the rear panel of the main unit to the position suitable for your speaker system configuration. (Refer to page 9 for details.)

NORMAL (For 5 speaker configuration):

Select this position when you use the center speaker.

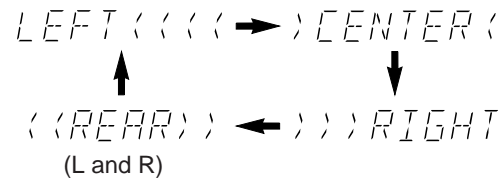
PHANTOM (For 4 speaker configuration):

Select this position when you do not use the center speaker. The center sound will be output from the left and right front speakers.



- 1 Press the POWER switch to turn the power on.
- 2 Turn the VOLUME control fully counterclockwise to decrease the volume to minimum.
- 3 Press the PROGRAM button once or more so that "PRO LOGIC" lights up on the sound field program indicator.
- 4 Press the TEST button.
* "TEST" flashes on and off on the display.
- 5 Press the VOLUME + (up) button to increase the volume.

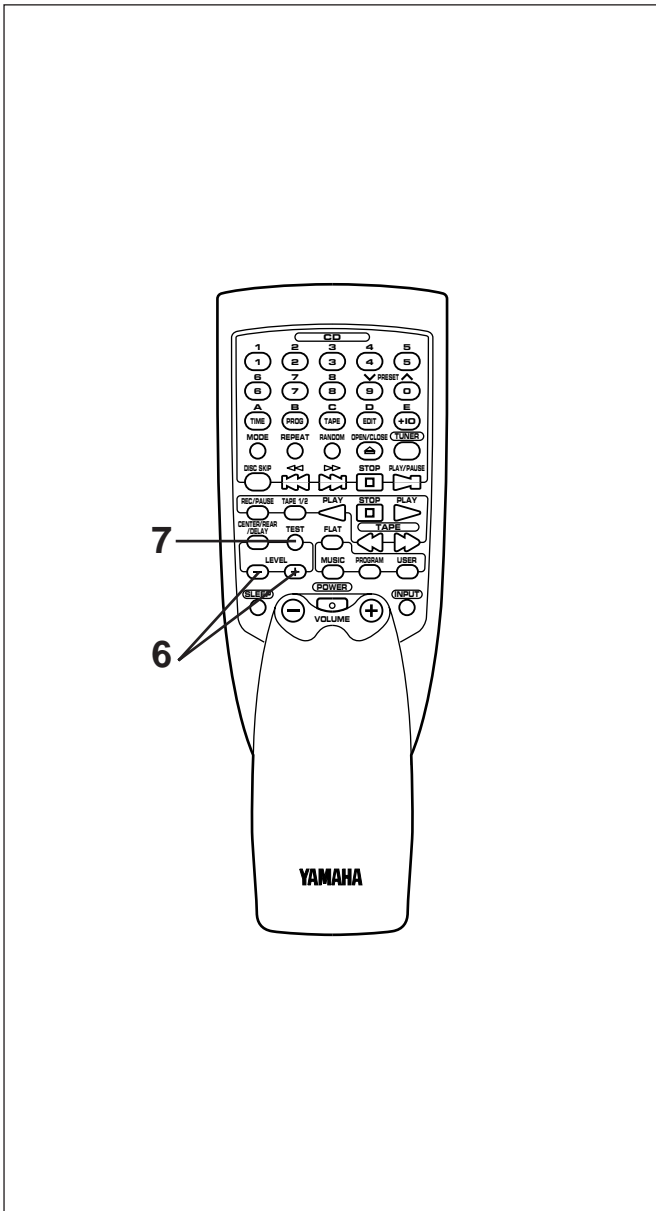
You will hear a test tone (like pink noise) from the left front speaker, then the center speaker, then the right front speaker, and then the rear speakers, for about two seconds each. The display changes as shown below.



* The test tone from the left rear speaker and the right rear speaker will be heard at the same time.

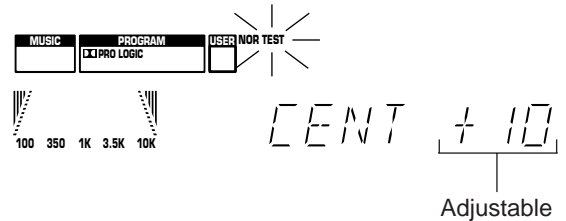
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SPEAKER BALANCE ADJUSTMENT

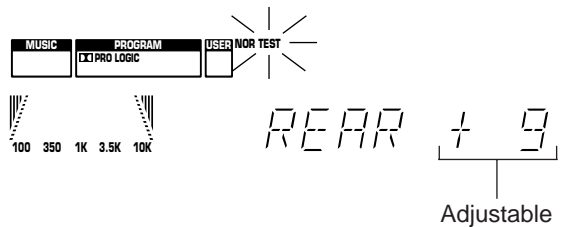


6 Adjust the sound output levels of the center speaker and the rear speakers by using the LEVEL control buttons so that they become almost as same as that of the front speakers.

- When the test tone is output from the center speaker, pressing the LEVEL control buttons change the output level of the center speaker.



- When the test tone is output from the rear speakers, pressing the LEVEL buttons change the output level of the rear speakers.



- * Pressing the + button raises and the – button lowers the level.

7 If the adjustments have finished, press the TEST button to cancel the test tone.

- * "TEST" disappears from the display.

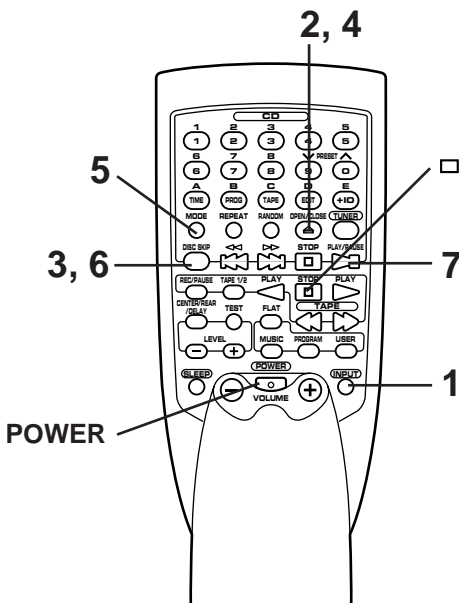
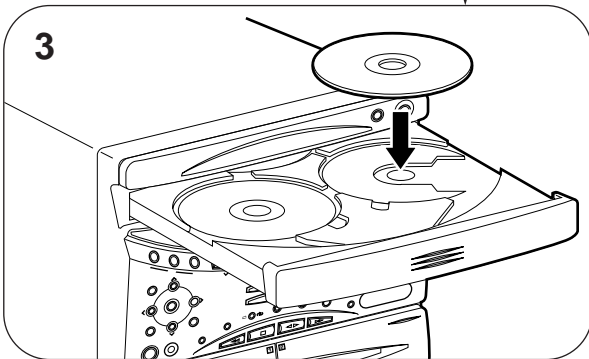
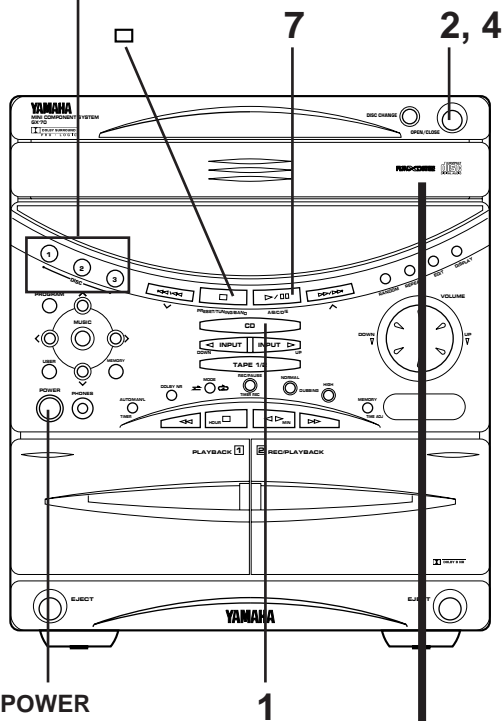
Notes

- Once you have completed these adjustments, you can adjust whole sound level on your audio system by using the VOLUME control (or the VOLUME keys on the remote control transmitter) only.
- In step 6, if the center channel mode is in the "PHANTOM" position, the sound output level of the center speaker cannot be adjusted. This is because in this mode, the center sound is automatically output from the left and right front speakers.



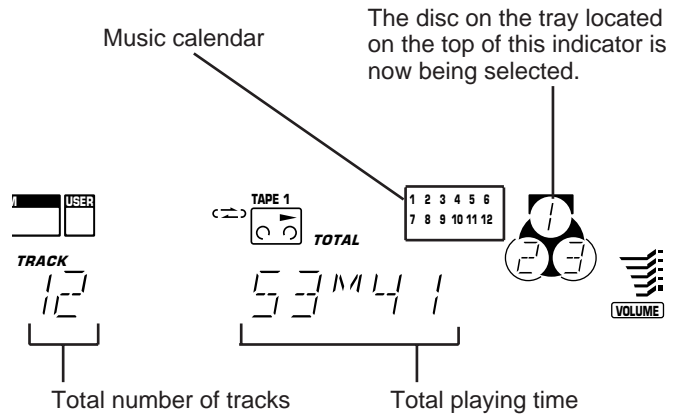
COMPACT DISC PLAYER OPERATION

DISC selector buttons



CD playback

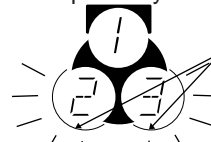
- 1 Press the CD input selector button.
- 2 Press the OPEN/CLOSE button to open the disc table.
- 3 Place discs on the trays, label side up.
 - * Up to three discs can be loaded on the trays.
 - To load the third disc, rotate the disc table by pressing the DISC SKIP button on the remote control transmitter.
 - * 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 of the disc being selected will be displayed for several seconds.
 - * The music calendar will be displayed only for the number of tracks on the disc being selected.
 - * If the compact disc contains more than 15 tracks, the "OVER 15" indicator will light up on the music calendar.



- 5 If necessary, change the disc play mode by pressing the disc play MODE selector button on the remote control transmitter watching the display.

Single disc play mode: Only a designated disc is played back.

All disc play mode: All discs on the disc table are played back sequentially.



Lights up only when the all disc play mode is selected.

- 6 If necessary, select another disc by pressing the DISC SKIP button on the remote control transmitter once or more (so that the corresponding disc tray number is located on the top of the disc indicator).
- 7 Press the play/pause button to start playback from track 1.
 - * The "▷" indicator will appear and playback will begin.
 - As the playback of each track on the music calendar is finished, that track number will go out.

For easier operation

Pressing the DISC selector button (1, 2 or 3) will select the disc directly, and playback will begin from track 1 automatically.



COMPACT DISC PLAYER OPERATION

To interrupt playback

- 1 Press the play/pause \triangleright/\square button.
* The “ \triangleright ” indicator will flash.
- 2 Press the play/pause \triangleright/\square button to resume playback from the same point.

To stop playback

Press the stop \square button.

To switch the unit off after use

Turn the unit off by pressing the POWER switch. (The indicators will go off except for the current time display.)

Direct operation

When the power is off (in the standby mode), pressing the CD input selector button or the DISC selector (1, 2 or 3) button will turn the power on and start CD playback automatically.

When the power is on, even if an input source other than CD player is selected, pressing a DISC selector button or closing the disc table by pushing the front edge of the disc table gently will start playback directly. In this case, if the tape deck is playing back a tape, it will be stopped automatically.

* These ways of playback can also be used to close the disc table. If the table is closed in these ways, playback will begin automatically, however, the display will not show the total number of tracks and the total playing time of the disc to be played back.

PLAYXCHANGE

During playback, you can open the disc table by pressing the DISC CHANGE button without interrupting playback. However, in this case, pressing the DISC SKIP button or a DISC selector button has no effect.

Precautions

- If TV or radio interference occurs during CD player operation, move the unit away from the TV or radio.
- Subjecting the unit to shock or vibration can cause mistracking.
- Playing back some compact discs at high volume can cause mistracking. In this case, listen at lower volume.
- Do not pull open the disc table forcibly with your hands.
- Do not push the disc table while it is moving.
- 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 back compact discs is recommended to be 5°C (41°F) – 35°C (95°F).

Direct-selection playback

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

Use the track number input buttons to select the desired track number. Playback will begin automatically.

A. For example, to choose selection 5

Press the “5” button.

B. For example, to choose selection 12

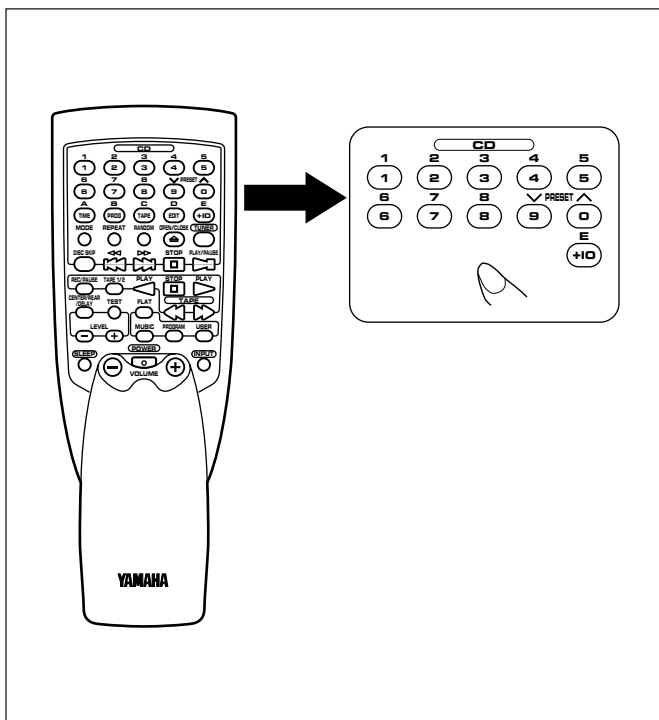
- (1) Press the “+10” button.
- (2) Within 3 seconds, press “2” button.

C. 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.

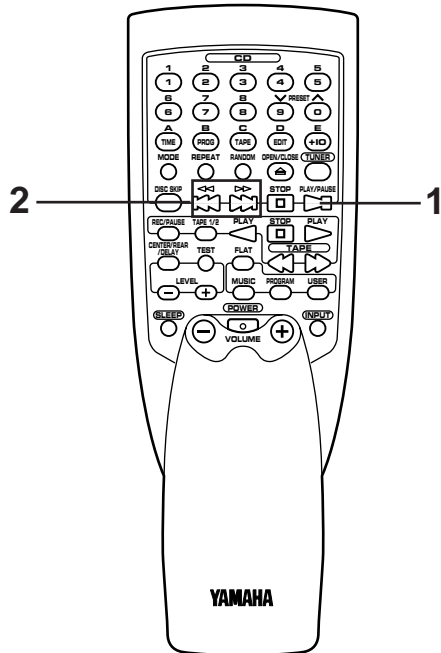
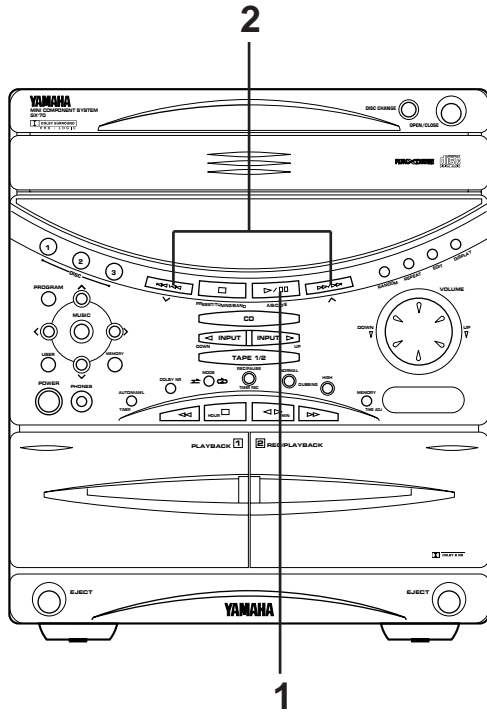
Note

If you select a track number higher than the number of tracks on the disc, playback will begin from the last track on the disc.





COMPACT DISC PLAYER OPERATION



“Skip search” and “Manual search” are performed using the same buttons.

Skip search

The beginning of any track can be found automatically.

- 1 Select a disc and begin playback.
- 2 Press the $\triangleright\triangleright$ button to advance or $\triangleleft\triangleleft$ button to reverse through the disc. Press once for each track to be advanced or reversed.
 - Press $\triangleright\triangleright$ once to advance to the track following the one now playing back.
 - Press $\triangleleft\triangleleft$ once to return to the start of the track now playing back.
 - Press $\triangleleft\triangleleft$ twice to return to the track before the track now playing back.

Notes

- This function can also be performed while the unit is stopped. Press the play/pause \triangleright/\square button when your desired track number appears on the track number display. Playback will begin from the beginning of the track.
- This function will be performed forward or backward from any point on the disc. However, it will not move forward during playback of the final track.

Manual search

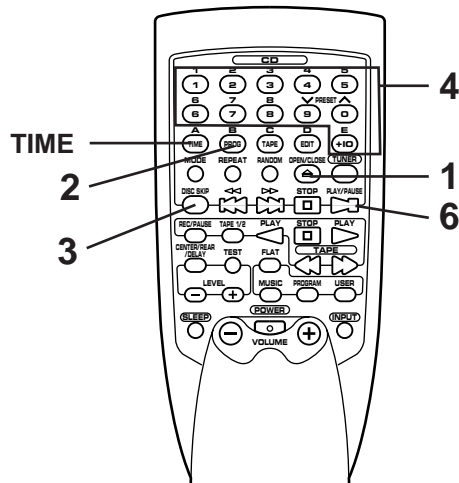
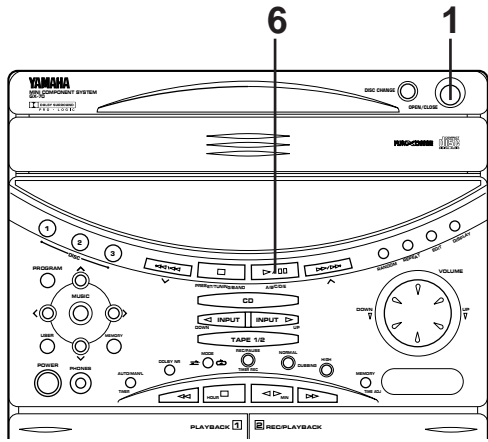
- 1 Begin playback.
- 2 Press and hold the $\triangleright\triangleright$ button to advance playback rapidly, and the $\triangleleft\triangleleft$ button to reverse playback rapidly.
 - * The sound can be heard (although slightly garbled) during manual search in either direction. This is convenient for reviewing the contents quickly.

Note

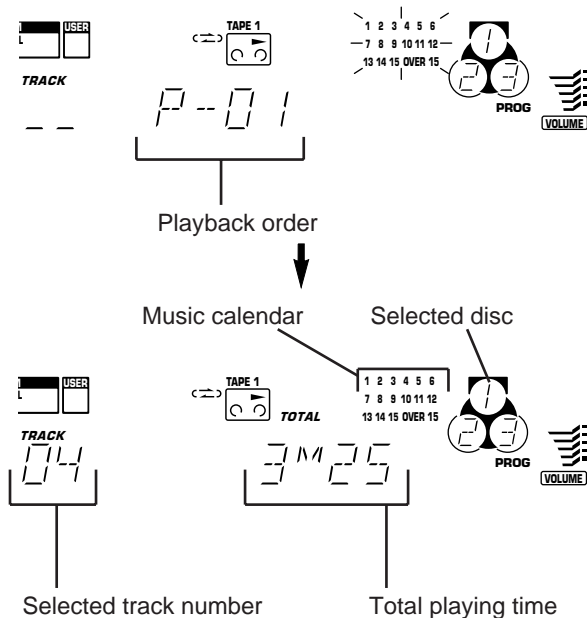
Manual search can also be performed while playback is paused, though no sound will be heard.



COMPACT DISC PLAYER OPERATION



Display information during programming



Program play

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

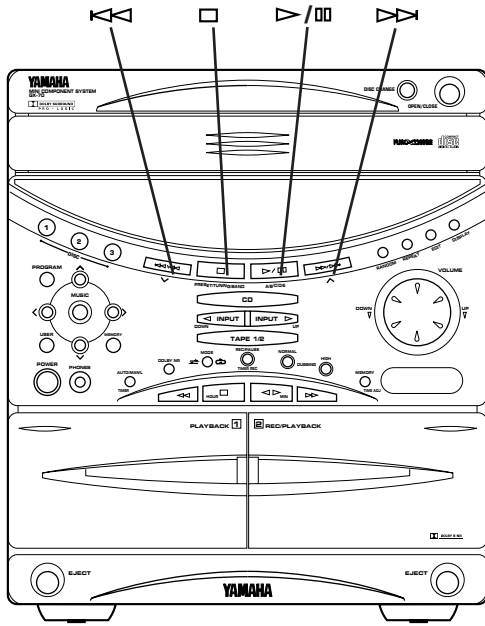
- 1 Load discs and close the disc table.
 - 2 When in the stop mode, press the PROG button to prepare for programming.
 - * "PROG" and "P-01" will light up on the display, and all track numbers on the selected disc begin flashing.
 - 3 If necessary, select a desired disc by pressing the DISC SKIP button.
 - 4 Use the track number input buttons to select the desired track number.
 - * The selected track number and the total play time of the programmed tracks will light up on the display, and soon it is replaced by the display of the next playback order. Programmed track numbers on the selected disc will stop flashing and light up on the music calendar.
 - * Pressing the TIME button displays the total play time of the programmed tracks for about 1 second, and then it is replaced by the display of the next playback order.
- * **For example, to choose selection 12**
- (1) Press the "+10" button.
 - (2) Within 3 seconds, press the "2" button.
- 5 Repeat steps 3 and 4 for any other track. Up to 20 tracks can be programmed.
 - 6 Press the play/pause button to start playback of programmed tracks.

Notes

- It is also possible to program a sequence of tracks while looking at the list of tracks on the surface of the disc before closing the disc table.
- During playback or pause, programming is not possible.
- If the total time of the programmed tracks becomes 100 minutes or more, the highest position of a figure will not be displayed.
- The total time of the programmed tracks will not be displayed, if track number 16 or higher is programmed.
- Skip search can be performed during playback, but only within the range of the programmed tracks.
- Manual search can be performed during playback to search all tracks, including unprogrammed tracks.
- If programs are made selecting tracks from more than one disc, pressing the DISC CHANGE button is useless during program play.



COMPACT DISC PLAYER OPERATION



To stop program play

- Press the stop button. The first programmed track number will be displayed.
- To resume playback, press the play/pause button. Playback will begin from the beginning of the program.

To cancel a programmed sequence

There are several methods as described below.

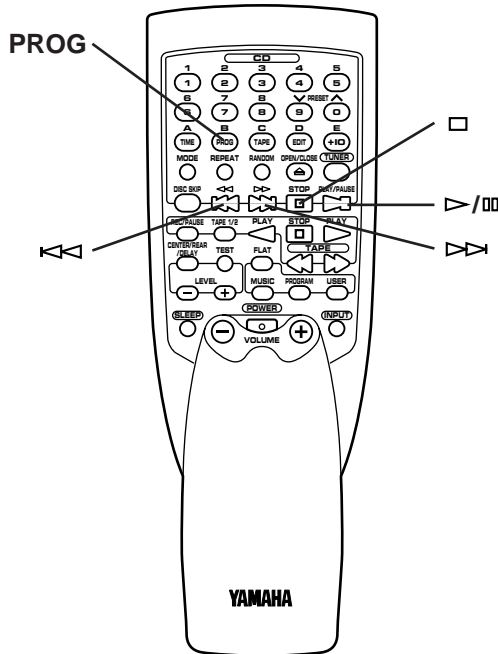
- Press the stop button while the unit is stopped.
- Open the disc table
- Switch off the power.

To check program data

1. If during playing back, press the stop button.
2. Press the PROG button.
3. Each time the button is pressed, the track numbers and sequential order of the programmed tracks can be checked one after another. The display of the track number can be returned (sequentially in reverse order) by pressing the button.

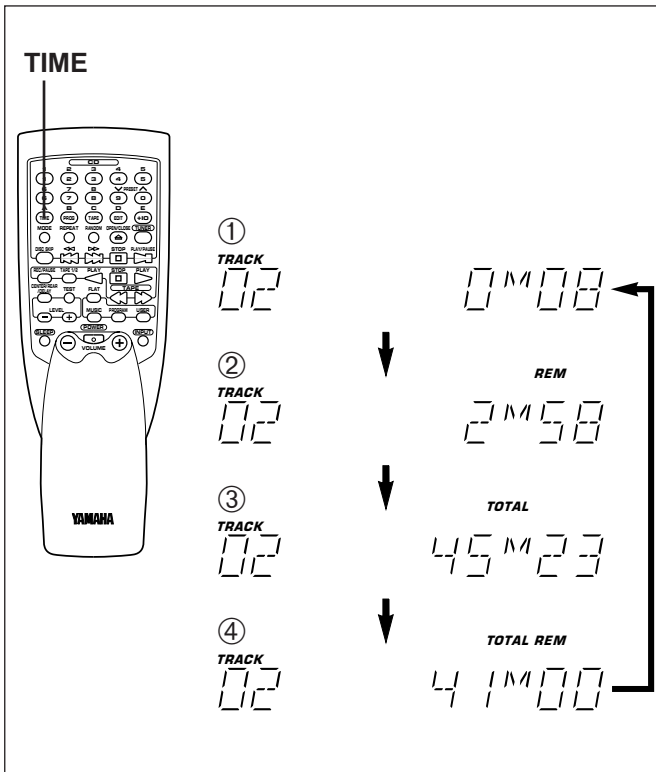
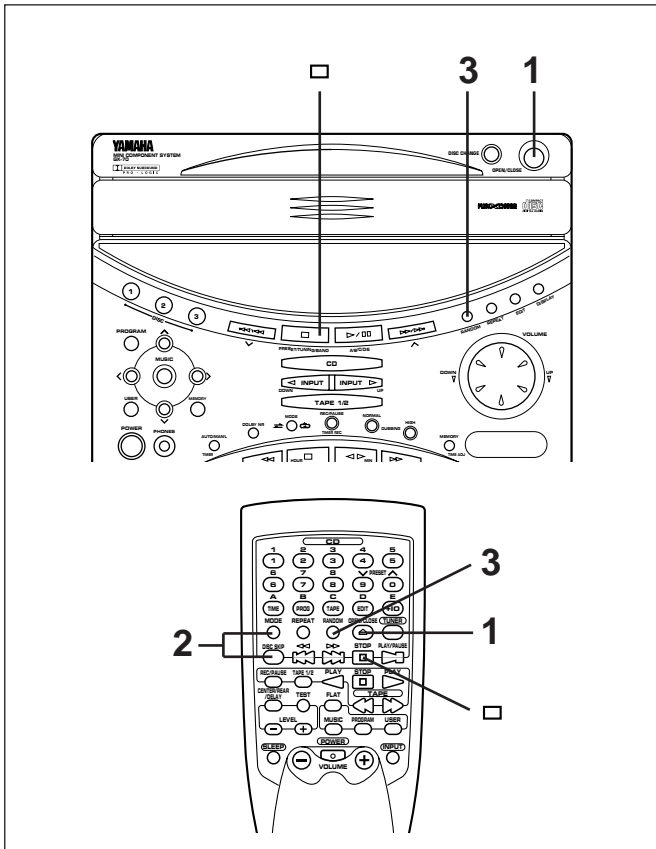
To correct program data

1. Follow the procedure described in "To check program data".
2. Display the track number to be corrected by pressing the or button.
3. Press a track number input button to select a track to replace the one displayed. The previously programmed track will be cleared from the memory and the new one will be programmed.
4. When the correction has finished, press the PROG button or play/pause button once again.





COMPACT DISC PLAYER OPERATION



Random play

Tracks on a selected disc or all discs on the disc table can be played back in a random order.

- 1 Load discs and close the disc table.
- 2 If necessary, switch the disc play mode by pressing the disc play MODE selector button.
 - * If the single disc play mode is selected, select a desired disc by pressing the DISC SKIP button.
- 3 Press the RANDOM button to begin random play.
 - * The "RANDOM" indicator will light up.

To cancel the random play

Press the stop button, or press the RANDOM button again. The "RANDOM" indicator will go out.

Note

This feature will not function during programming, or during program play.

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 (Refer to the illustration on the left.)

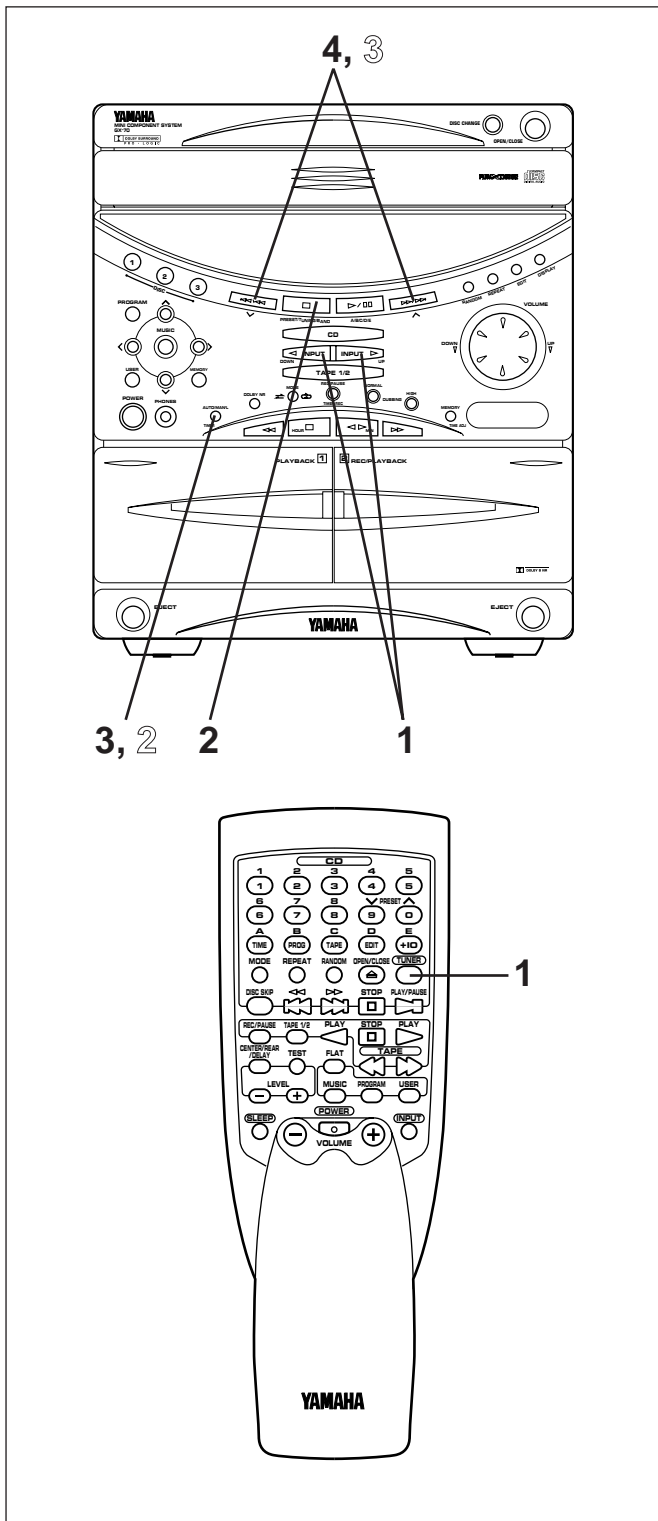
- ① The elapsed play time for the track now playing back will be displayed.
 - * 8 seconds have passed since the beginning of the second track.
- ② The remaining play time for the current track will be displayed.
 - * 2 minutes and 58 seconds remain till the end of the second track.
- ③ The total play time of the disc will be displayed. (If the unit is in the program play mode, the total play time of the programmed tracks will be displayed.)
- 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 total remaining play time on the disc will not be displayed.
- The remaining play time will not be displayed for track number 16 or higher.
- If track number 16 or higher is programmed, during the program play, the total play time and the total remaining play time will not be displayed.



TUNING OPERATION



Normally, if station signals are strong and there is no interference, quick automatic-search tuning (Automatic tuning) is possible. However, if signals of the station you want to select are weak, you must tune to it manually (Manual tuning).

Automatic tuning

- 1 Press the INPUT selector \triangleright or \triangleleft button once or more so that "TUNER" appears on the display.
- 2 Select the reception band [FM or AM (MW or LW)] by pressing the PRESET/TUNING/BAND button confirming it on the display.
 - * Do not select a preset tuning mode (in which "PRESET" lights up on the display.)
- 3 Press the AUTO/MAN'L button so that "AUTO" appears on the display. (In this mode, stations are received in stereo or monaural automatically.)
- 4 Press the \wedge button to tune to a higher frequency, or press the \vee button to tune to a lower frequency. (When tuned in to a station, "TUNED" will light up on the display.)
- 5 If the station where tuning search stopped is not the desired one, follow step 4 again.
 - * If the tuning search does not stop at the desired station, change to the Manual tuning method as described below.
 - * STEREO indicator will light up when an FM stereo broadcast with sufficient signal strength is received.

Manual tuning

- 1 Follow steps 1 and 2 of the Automatic tuning method.
- 2 Press the AUTO/MAN'L button so that "AUTO" disappears from the display. (In this mode, stations are received in monaural.)
- 3 Press and hold the \wedge button to tune to a higher frequency, or press and hold the \vee button to tune to a lower frequency. Release it just before reaching the desired frequency, and then press it repeatedly until the desired frequency appears. (When tuned in to a station, "TUNED" will light up on the display.)

Note

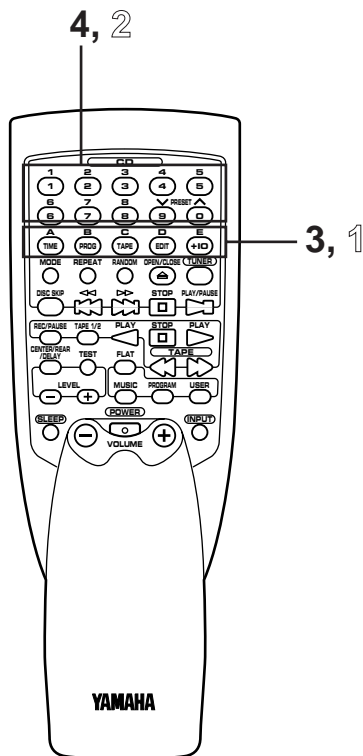
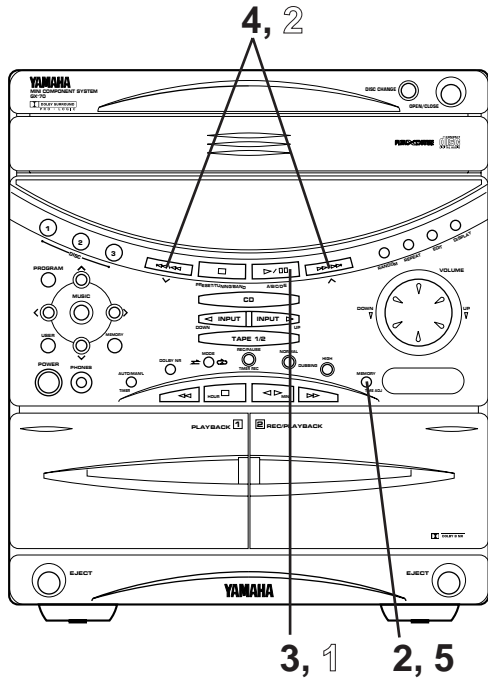
If you tune in to an FM station manually, it is received in monaural automatically to increase the signal quality.

"AM" is for U.S.A., Canada, Australia, China, Singapore and General models.
 "MW/LW" is for U.K. and Europe models.

Note

Pressing the TUNER input selector button on the remote control transmitter switches the tuner from a normal tuning mode to a preset tuning mode and vice versa.

TUNING OPERATION



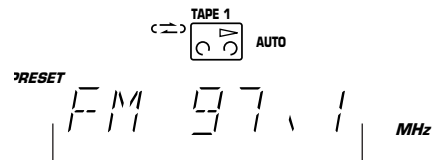
Preset tuning

This unit can store station frequencies selected by tuning operation. With this function, you can select any desired station by only calling the corresponding preset station number. Up to 40 stations (8 stations x 5 groups) can be stored.

To store stations

(Example: To store a station to A1)

- 1 Tune in to a desired station.
(Refer to the previous page for tuning procedure.)
- 2 Press the tuner MEMORY button.
* "MEMORY" and "PRESET" will flash on the display for about 5 seconds.
- 3 Select a desired group (A – E) of preset stations by pressing the A/B/C/D/E button confirming it on the display, before "MEMORY" goes out.
(In this case, select group A.)
- 4 Select a preset station number by pressing the \vee or \wedge button repeatedly before "MEMORY" goes out.
(In this case, select "1".)
- 5 Within about 5 seconds, press the tuner MEMORY button again.



The currently displayed station has been programmed to A1.

- * In the same way, program other stations to A2, A3 ... A8.
- * You can program more stations to the preset station numbers of other groups in the same way by selecting other groups in step 3.

To recall a preset station

- 1 Select a group of preset stations by pressing the A/B/C/D/E button.
- 2 Select the desired preset station number by pressing the \vee or \wedge button repeatedly.

Notes

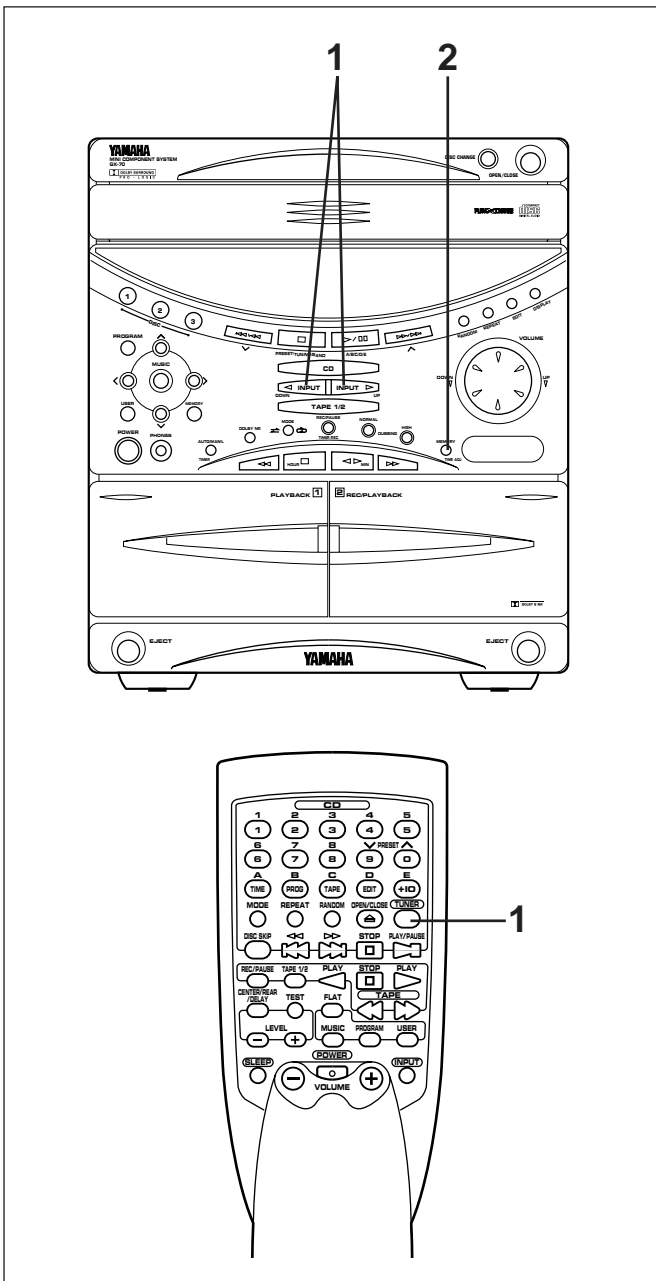
- A new setting can be programmed in place of the former one.
- For presets the setting of the AUTO/MAN'L button is stored along with the station frequency.

For easier operation

By using the preset station number buttons and the A,B,C,D,E selector buttons on the remote control transmitter, a preset station number and a group can be selected directly.



TUNING OPERATION



Automatic preset tuning

You can also make use of an automatic preset tuning function. By this function, this unit performs automatic tuning and stores stations with strong signals sequentially. Up to 40 stations are stored automatically in the same way as in the manual preset tuning method on the previous page.

- 1 Press the INPUT selector \triangleright or \triangleleft button once or more so that "TUNER" appears on the display.
- 2 Press and hold the tuner MEMORY button for about 2 seconds.
 - * The MEMORY and AUTO indicators will flash.

This unit performs automatic tuning and searches FM and AM (MW and LW for U.K. and Europe models only) stations in that order. Received stations are programmed to A1, A2 ... A8 sequentially.

When the automatic preset tuning is completed

The display shows the frequencies of the first preset station (stored to A1).

Check the contents and the number of preset stations by following the procedure of the section "To recall a preset station" on the previous page.

To recall a preset station

Simply follow the procedure of the section "To recall a preset station" on the previous page.

Notes

- The automatic preset tuning search will be performed through all frequencies until 40 stations are stored. If the number of received stations is less than 40, the search will stop after searching all frequencies.
 - * Since FM stations are searched for first, there may be a case that 40 preset stations are occupied by FM stations only.
- **<U.K. and Europe models only>**
The unit is originally set so that only RDS stations are searched instead of all FM stations by this operation. (FM stations that employ no RDS network service cannot be programmed.)
However, you can change the setting so that the unit can program not only RDS stations but also other FM stations. (Refer to page 30 for details.)
- With this function, only stations with sufficient signal strength are stored automatically. If the station you want to program is weak in signal strength, tune to it in monaural manually and program it by following the procedure of the section "To store stations" on the previous page.
- You can replace a preset station by another FM or AM (MW or LW) station manually by simply following the procedure of the section "To store stations" on the previous page.

Memory back-up

The memory back-up circuit prevents the programmed data from being lost even if the AC supply lead is disconnected from the AC outlet or the power is cut due to temporary power failure. If, however, the power is cut for more than one week, the memory may be erased. If so, it can be re-programmed by simply following the Preset tuning steps.

**RECEIVING RDS STATIONS <U.K. and Europe models only>**

RDS (Radio Data System) is a data transmission system gradually being introduced by FM stations in many countries. Stations using this system transmit an inaudible stream of data in addition to the normal radio signal.

RDS data contains various information, such as PI (Program Identification), PS (Program Service name), PTY (Program Type), RT (Radio Text), CT (Clock Time), etc.

RDS function is carried out among the network stations.
* This unit utilizes PS, PTY, RT and CT to receive RDS broadcast stations.

Displaying RDS data

This unit can be turned into the following four modes to display RDS data.

PS (Program Service name) mode:

Displays the name of the RDS station now being received instead of the frequency.

BBC R3**PTY (Program Type) mode:**

Displays the type of the program on the RDS station now being received. There are 15 program types to classify RDS stations as follows.

NEWS**News:**

Short accounts of facts, events and publicly expressed views, reportage and actuality.

AFFAIRS**Current affairs:**

Topical program expanding or enlarging upon the news, generally in different presentation style or concept, including documentary debate, or analysis

INFO**Information:**

Program whose purpose is to impart advice in the widest sense, including meteorological reports and forecasts, consumer affairs, medical help, etc.

SPORT**Sport:**

Program concerned with any aspect of sport.

EDUCATE**Education:**

Program intended primarily to educate, of which the formal element is fundamental.

DRAMA**Drama:**

All radio plays and serials.

CULTURE**Culture:**

Programs concerned with any aspect of national or regional culture, including religious affairs, philosophy, social science, language, theatre, etc.

SCIENCE**Science:**

Programs about the natural sciences and technology.

RT (Radio Text) mode:

Displays information about the program (such as title of the song, name of the singer, etc.) on the RDS station now being received.

CT (Clock Time) mode:

Displays current time. This signal comes from the RDS station now being received. Time of the built-in clock can be automatically corrected on the basis of this signal.

VARIED**Varied:**

Used for mainly speech-based programs usually of light-entertainment nature, not covered by above categories. Examples are: quizzes, panel games, personality interviews, comedy and satire.

POP M**Pop:**

Commercial music, which would generally be considered to be of current popular appeal, often featuring in current or recent record sales charts.

ROCK M**Rock:**

Contemporary modern music, usually written and performed by young musicians.

M.O.R. M**M.O.R.:**

(Middle of the Road Music). Common term to describe music considered to be "easy-listening", as opposed to Pop, Rock or Classical. Music in this category is often but not always, vocal, and usually of short duration (<5 min.)

LIGHT M**Light classics:**

Classical Musical for general, rather than specialist appreciation. Examples of music in this category are instrumental music, and vocal or choral works.

CLASSICS**Serious classics:**

Performances of major orchestral works, symphonies, chamber music etc., and including Grand Opera.

OTHER M**Other music:**

Musical styles not fitting into any of the above categories. Particularly used for specialist music, of which Jazz, Rhythm & Blues, Folk, Country, and Reggae are examples.

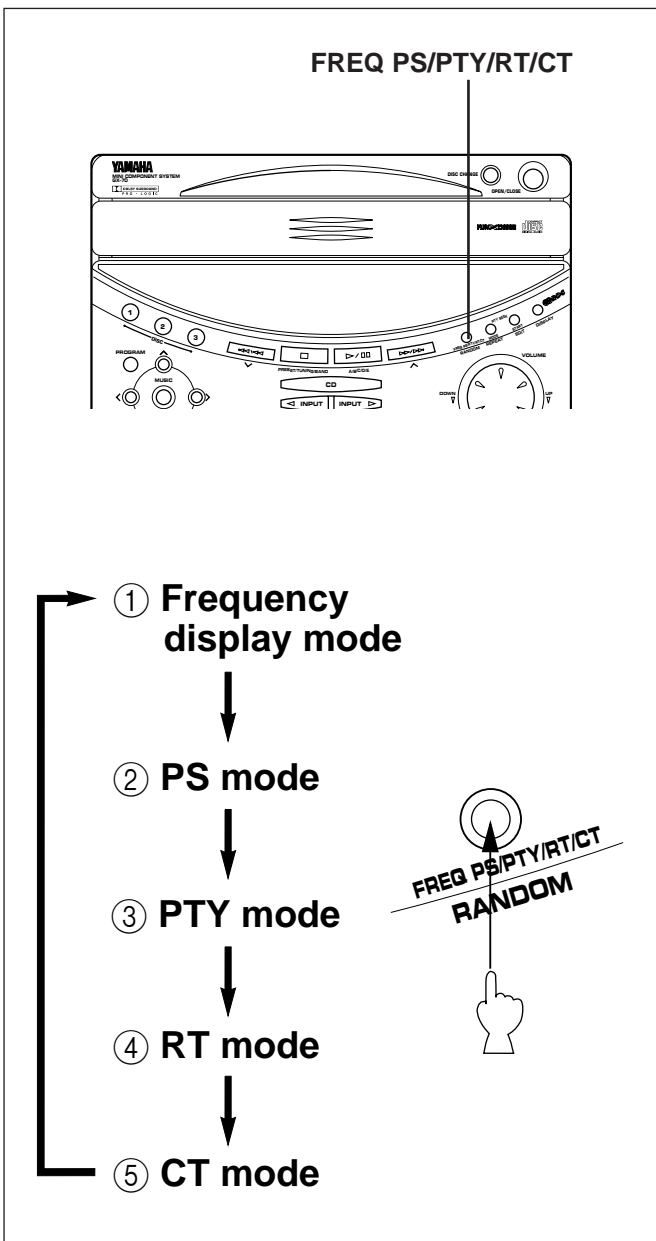


Changing the RDS modes

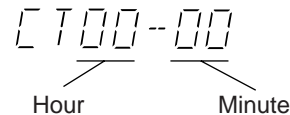
When an RDS station is received, by pressing the **FREQ PS/PTY/RT/CT** selector button once or more, you can change the display mode among the RDS modes employed by the received station in the order shown below. (The RDS mode not employed by the station cannot be selected.)

* If the station is not an RDS station, pressing the **FREQ PS/PTY/RT/CT** selector button displays "NO RDS" on the display, and then it returns to the frequency display mode.

* When an RDS station is received, the display is automatically turned into the PS mode. Do not press the **FREQ PS/PTY/RT/CT** selector button until the display is turned into the PS mode. If the button is pressed before the display mode is changed, it may occur that "NO PS" appears on the display. This is because the unit has not received all of the RDS data on the station yet.



- ① **Frequency display mode**
The frequency of the station being received is displayed.
- ② **PS (Program Service name) mode**
The name of the station being received is displayed using characters selected from among 64 Roman Alphabets including umlaut sign. If other characters are used on the PS data, they are displayed with underbars.
"PS WAIT" may flash while the unit is receiving the data.
If the station does not employ the PS data service, "NO PS" lights up on the display for about 2 seconds and then returns to frequency display mode.
- ③ **PTY (Program Type) mode**
The type of the program on the station being received is displayed. If the RDS station does not employ the PTY data service, "NO PTY" lights up on the display for about 2 seconds and then returns to frequency display mode.
If the station has PS data, after that, it turns into the PS mode.
In this mode, you can make this unit search for a station which is broadcasting a program of your desired program type. For details, refer to the next page.
- ④ **RT (Radio Text) mode**
Information about the program on the station being received is displayed. Information is displayed by a maximum of 64 Roman Alphabets including umlaut sign. If other characters are used on the RT data, they are displayed with underbars.
"RT WAIT" may flash while the unit is receiving the data.
If the RDS station does not employ the RT data service, "NO RT" lights up on the display for about 2 seconds and then returns to frequency display mode. If the station has PS data, after that, it turns into the PS mode.
- ⑤ **CT (Clock Time) mode**
Current time is displayed in the following form. The CT data from the station being received changes every minute.



This unit corrects time of the built-in clock by synchronizing it with the CT data. (This function can also be canceled, if so desired. Refer to page 30 for details.)
"CT WAIT" may flash while the unit is receiving the data. If the data is accidentally cut off, "CT WAIT" may flash and then turn into "NO CT".
If the RDS station does not employ the CT data service, "NO CT" lights up on the display for about 2 seconds and then returns to frequency display mode. If the station has PS data, after that, it turns into the PS mode.

RECEIVING RDS STATIONS <U.K. and Europe models only>

Notes

- RDS data service cannot be utilized by this unit if the received signal is not strong enough. Especially, the RT (Radio Text mode) needs much data to be received, so it may occur that RT mode cannot be displayed even if other RDS modes (PS, PTY, etc.) are displayed.

- There may be a case that RDS data reception is not possible due to poor reception conditions. If so, press the AUTO/MAN'L button so that "AUTO" goes off from the display. Though the reception mode is changed to monaural by this operation, when you change the display to an RDS mode, RDS data may be displayed.
- If the signal strength gets weakened by external interference during receiving an RDS station, the RDS data service may be cut off suddenly and turn into the frequency display mode.

Calling a program of your desired program type from among preset RDS stations (PTY SEEK)

By designating a program type, the unit automatically searches all preset FM stations for an RDS station which broadcasts a program of that program type.

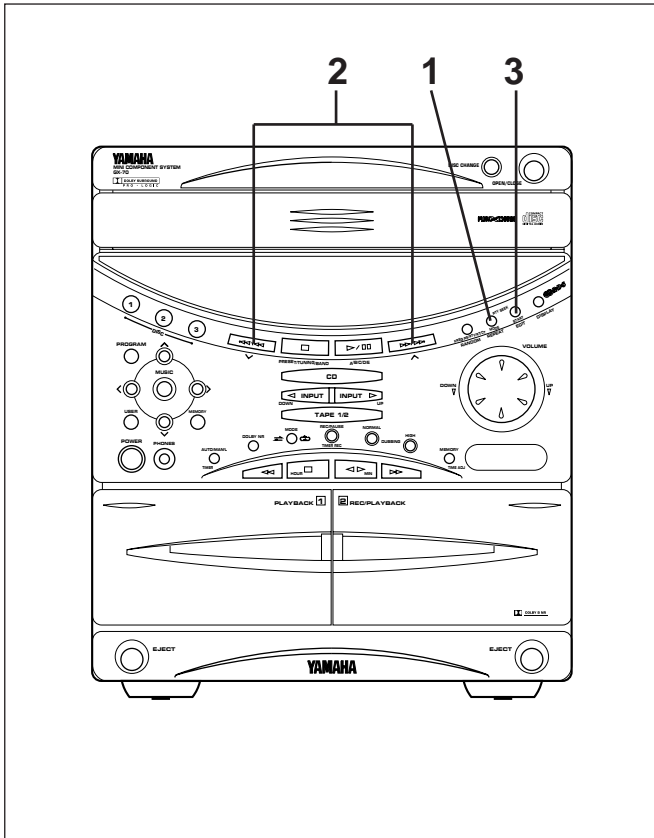
* There are 15 program types to classify RDS stations. For details, refer to page 27.

- 1 Turn the unit into the PTY SEEK mode by pressing the PTY SEEK MODE button.
 - * The name of the program type of the station now being received or "NEWS" flashes on the display.
- 2 Select the desired program type with the \vee or \wedge button.
 - * If there is no operation for about 20 seconds, this mode is canceled and turns into the frequency display. If the station has PS data, after that, it turns into the PS mode.
- 3 Press the PTY SEEK START button.
 - The unit begins searching all preset FM stations.
 - * "PTY HOLD" lights up on the display.
 - * The preset number indicator, the name of the program type and "AUTO" flash. The preset number changes rapidly in sequence.

- If a station which broadcasts a program of the program type is found, the unit stops at the station and turns into the frequency display. If the station has PS data, after that, it turns into the PS mode.
- If the called station is not the desired one, press the PTY SEEK START button once more before "PTY HOLD" goes out from the display. The unit begins searching for another station which broadcasts a program of the same program type.
- If no station is found, "NO PTY" appears and then returns to frequency display. If the station has PS data, after that, it turns into the PS mode.
 - * If the PTY SEEK START button is pressed once more during searching, this mode is canceled and turns into the frequency display. If the station has PS data, after that, it turns into the PS mode.

To cancel this function

If the PTY SEEK MODE button is pressed once more, the PTY SEEK mode is canceled and turns into the frequency display. If the station has PS data, after that, it turns into the PS mode.

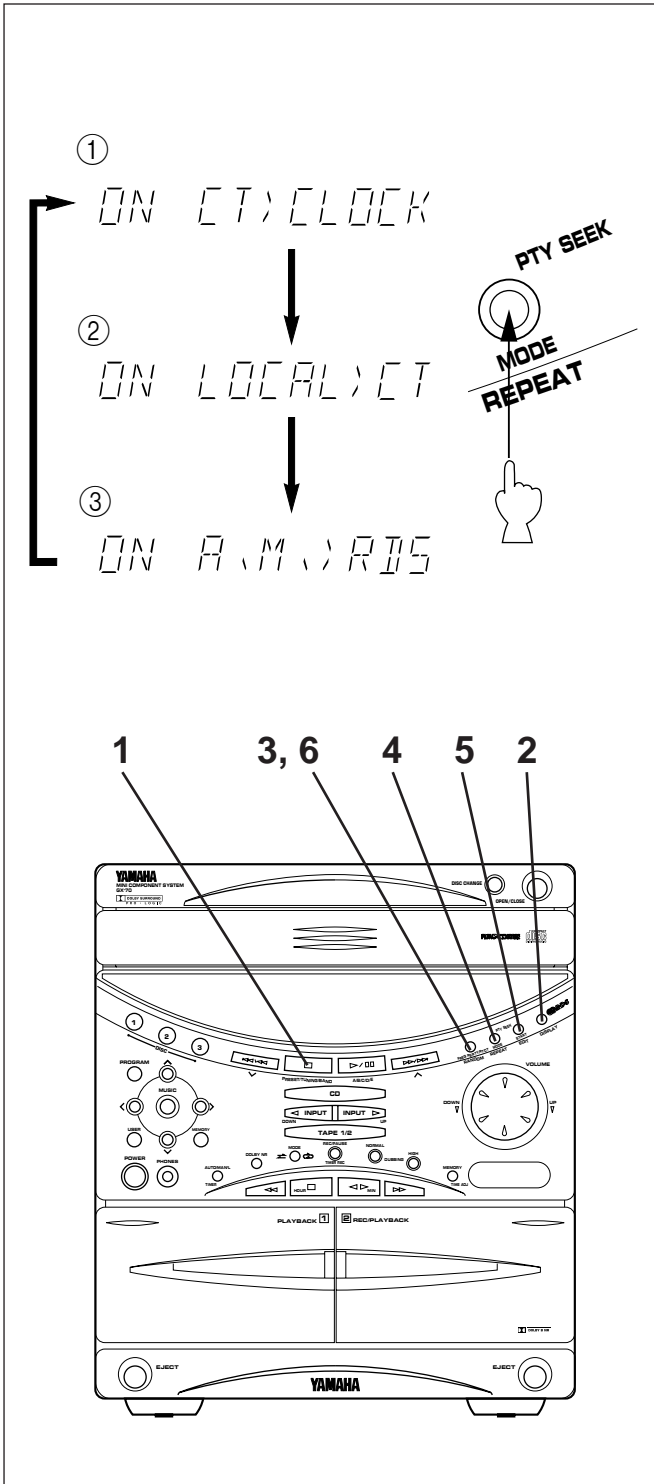




RECEIVING RDS STATIONS <U.K. and Europe models only>

Other functions which make use of RDS data service

This unit has the following functions which make use of RDS data service. These are originally in operation [ON]. However, you can cancel these functions [OFF], if so desired.



- ① **ON (OFF) CT > CLOCK**
This unit corrects the time of the built-in clock automatically by synchronizing it with the CT data on the RDS station being received.
* If you receive an RDS station of some other country, the built-in clock is synchronized with the time setting of the country.
* If the built-in clock is not yet set for current time or reset due to a power failure etc., it will be set for the time of the CT data automatically, whether this setting is ON or OFF.
- ② **ON (OFF) LOCAL > CT**
If the RDS station being received employs the local time (summer time etc.) data service, its time is displayed in the CT mode.
* If the setting of function ① is "ON", the built-in clock is synchronized with the local time data.
- ③ **ON (OFF) A.M. > RDS**
Only RDS stations are searched instead of all FM stations by the automatic preset tuning operation when the setting is ON.
(See page 26 for the operating procedure.)
If you switch this function OFF, not only RDS stations but also other FM stations are programmed along with MW and LW stations by the automatic preset tuning operation.

To switch these functions on and off

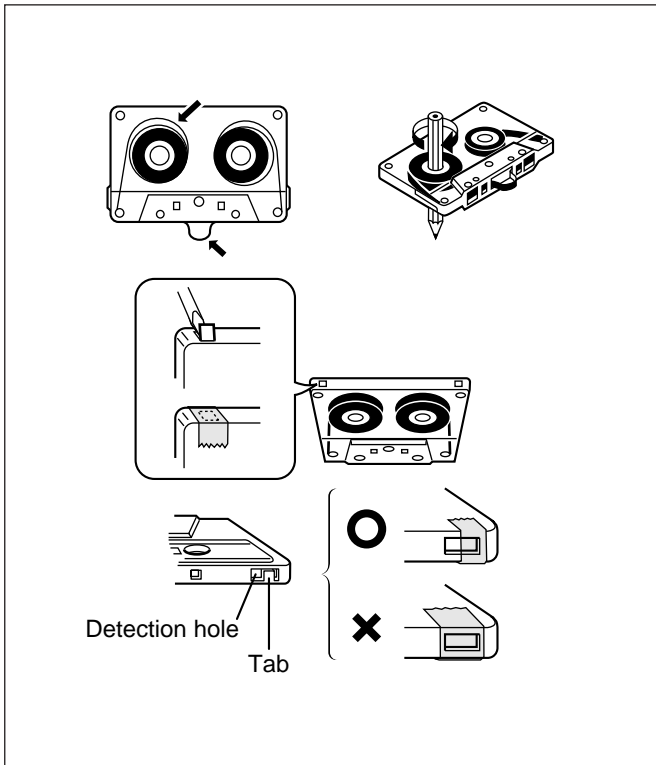
- 1 Select the FM band by pressing the PRESET/TUNING/BAND button, confirming it on the display.
- 2 Press the DISPLAY button to display the current time.
- 3 Press the FREQ PS/PTY/RT/CT selector button. The title of function ① "ON CT > CLOCK" is displayed.
- 4 Select the title of function whose setting you want to switch by pressing the PTY SEEK MODE button once or more.
- 5 Switch the function ON or OFF by pressing the PTY SEEK START button, confirming it on the display.
- 6 Press the FREQ PS/PTY/RT/CT selector button again to restore the frequency display mode.
* If the station has PS data, after that, it turns into the PS mode.

Notes

- Once the setting is changed, it will be stored until it is changed again by the above operation.
- During the operation, if there is no operation for about 20 seconds, this mode is canceled and turns into the frequency display.
If the station has PS data, after that, it turns into the PS mode.



TAPE DECK OPERATION



General information

- Do not use C-120 tapes or poor-quality tapes, since they can cause malfunctions.
- Before loading a tape into the cassette compartment, tighten the tape slack with a pen or pencil.
- Tapes 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.
- This deck is a Double Cassette Deck with Automatic Reverse Function.
Deck 1: Playback only.
Deck 2: Playback or recording.
- This deck features an auto tape selector. Just load the tape, and the tape formula being used will be sensed automatically.
- This unit can play back metal tapes as well as normal or chrome tapes, however recording cannot be done on metal tapes with good sound quality.
- When covering erasure prevention tab holes, do not cover the chrome and metal detection holes. Otherwise, the deck will treat tape as normal tape.
- Do not press the EJECT button during playback or recording.

Dolby B Type Noise Reduction

Dolby noise reduction is an extremely effective method of reducing undesirable background hiss on tapes. This unit incorporates Dolby B type noise reduction system that is the most popular one and almost of commercially available music tapes are recorded with the Dolby B NR. Dolby B NR has a noise reduction effect of about 10 dB in the high frequency range. Dolby noise reduction is a 2 part process that acts both on recording and playback; be sure that the same noise reduction is used on recording and playback.

Notes

- Tapes encoded with Dolby NR system should be decoded with the same Dolby NR system. Nevertheless, a Dolby encoded tape can be played back without decoding (and vice versa) with no harm to the recorded sound.
- Noise in the source material cannot be reduced with the Dolby NR system.

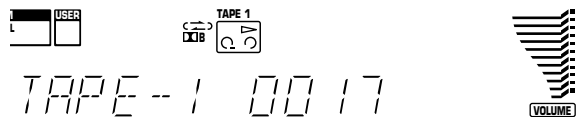
Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Automatic deck selecting function

If you load only one tape into the deck 1 or deck 2 cassette compartment, it is automatically selected and set ready for a playback.

About the tape counter

This unit is equipped with a tape counter that is useful for searching for and locating a desired point on tape. The tape counter for the tape 1 (or 2) currently selected is shown on the display. Pressing the stop button when the unit is stopped will reset the tape counter to "0000".





TAPE DECK OPERATION

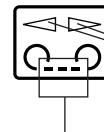
Tape 1 or tape 2 playback

- 1 Press the TAPE 1/2 input selector button.
- 2 Open the deck 1 or deck 2 cassette compartment by pressing the EJECT button.
- 3 Load a tape into the deck 1 or deck 2 cassette compartment, and close the lid panel completely by pressing the panel until it clicks.
 - * If you have loaded two tapes into both the cassette compartments, select either the tape 1 or tape 2 which you want to play back by pressing the TAPE 1/2 input selector button on the front panel or the TAPE 1/2 button on the remote control transmitter confirming it on the display.
- 4 Use the Dolby NR system by pressing the DOLBY NR button so that "NR" lights up on the display, if the tape has been recorded with Dolby noise reduction. If not so, set the DOLBY NR button so that "NR" does not light up.
 - * For details, refer to the "Dolby B Type Noise Reduction" on page 31.
- 5 If necessary, switch the reverse mode to the desired one by pressing the reverse MODE selector button so that the corresponding indicator lights up.

The reverse MODE selector button can be operated before or during playback, and changes tape playback as follows:

	→	↔
	Side A only	Side A → Side B (Repeats 8 times) Starts from side A.
	Side B only	Side A → Side B (Repeats 8 times) Starts from side B. (Side A is not played at the first time.)

- 6 Press the play ▷ button on the remote control transmitter to listen to side A, or the play ◁ button on side B.
 - * When using the play ◁ ▷ button on the front panel: Pressing the ◁ ▷ button once begins playback in the direction currently selected. Pressing the play button ◁ ▷ once more changes the tape running direction and begins playback.
 - * The play direction indicator on the display shows the currently selected tape direction.

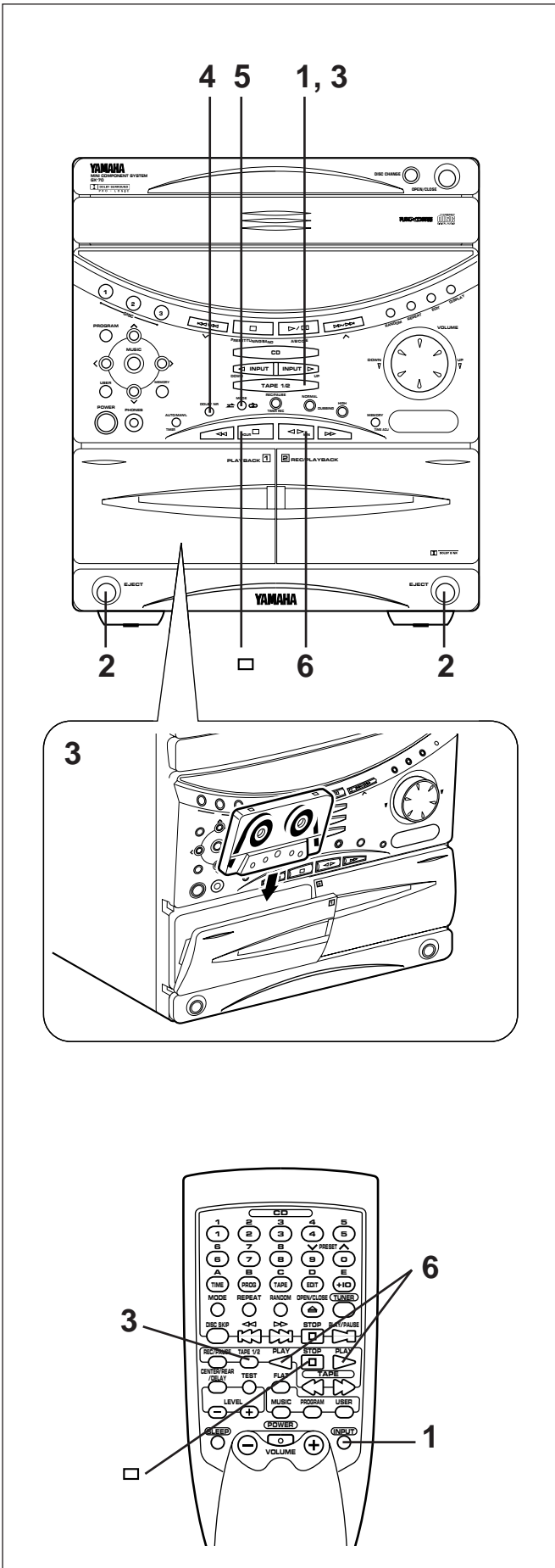


Play direction indicator

Moves slowly in the current tape running direction during playback.

To stop playback

Press the stop □ button.





TAPE DECK OPERATION

Direct operation

When the power is off (in the standby mode), pressing the TAPE 1/2 input selector button or the play button will turn the power on and start playback of the selected tape automatically.

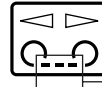
When the power is on, even if an input source other than tape deck is selected, pressing the play button (or the fast wind button) will start playback (or fast winding) directly.

Notes

- When removing the tape, press the stop □ button, and then open the cassette compartment.
- Even if you press the TAPE 1/2 input selector button on the front panel or the TAPE 1/2 button on the remote control transmitter during playback, the playback of currently selected tape cannot be changed to the other one though the tape number indicator on the display changes.

Winding the tape

- 1 If during playback, first press the stop □ button.
- 2 Next press the fast wind ◀◀ or fast wind ▶▶ button to wind the tape.



Moves rapidly in the direction of the current playback while searching.

- 3 Press the stop □ button to stop.

Note

When the tape is wound to the end, this unit will then function as described below, according to the setting of the reverse MODE selector button.

◀◀ : The tape stops at the end.

◀▶ : When the tape reaches the end, playback automatically starts from the reverse side.

Searching for the beginning of a desired selection

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

To listen to the same selection

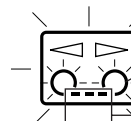
Press the ◀◀ button if the direction of the current playback is ▶.

Press the ▶▶ button if the direction of the current playback is ◀.

To listen to the next selection

Press the ▶▶ button if the direction of the current playback is ▶.

Press the ◀◀ button if the direction of the current playback is ◀.

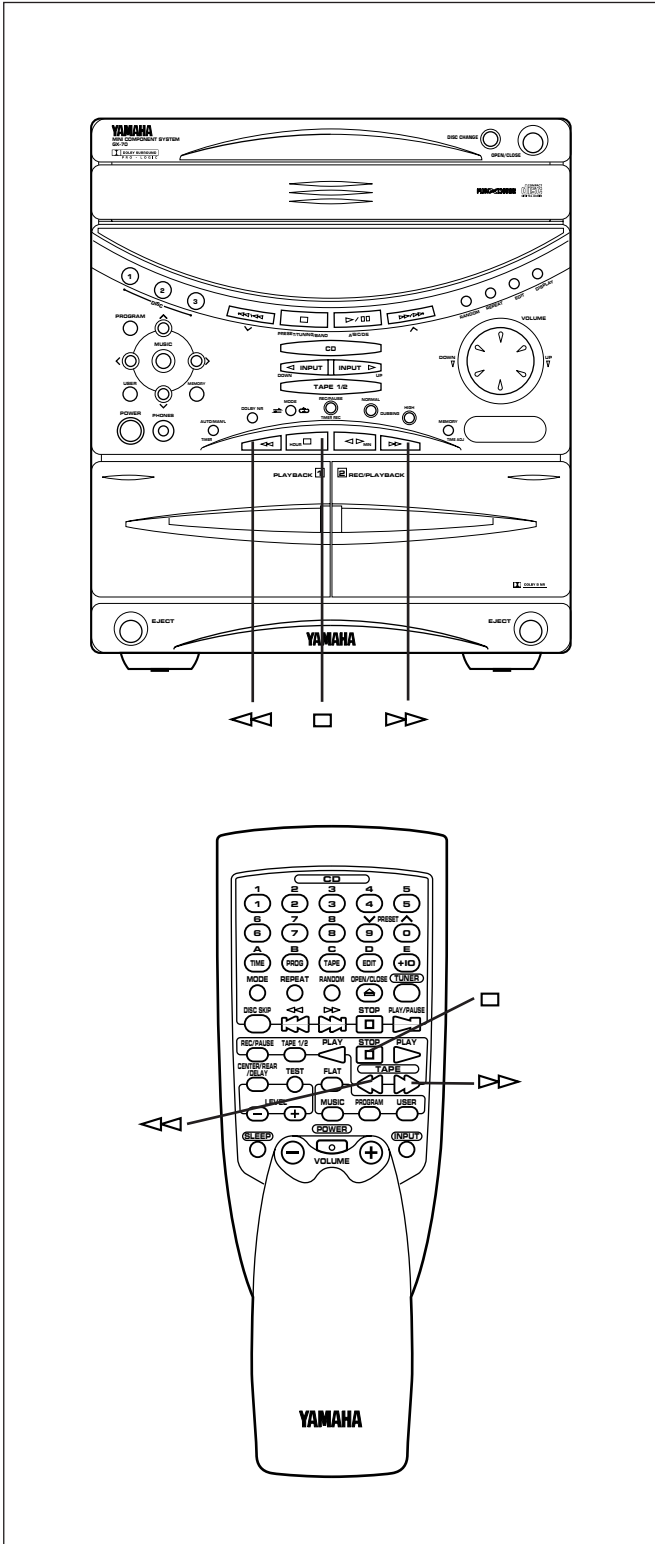


Flashes on and off.

Moves rapidly in the direction of the current playback while searching.

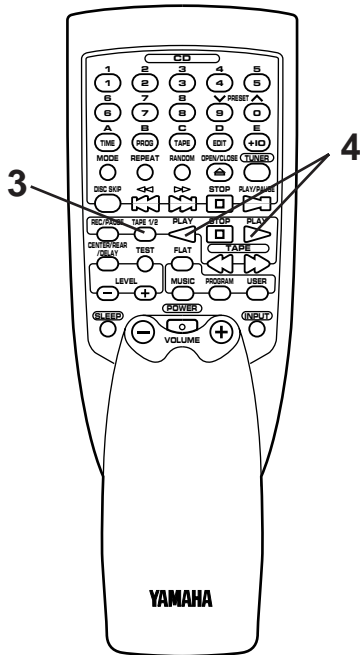
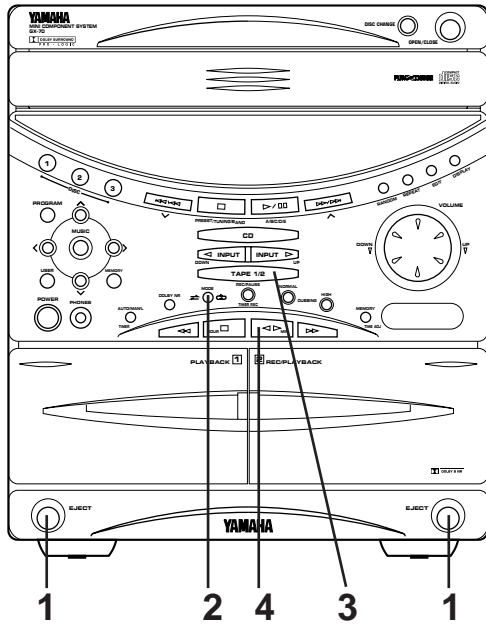
Notes

- 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 4 seconds between selections.
- If searching is carried out at the first or the last part of a selection, the desired selection may not be found.





TAPE DECK OPERATION



Continuous playback

- 1 Load the tapes into the deck 1 and deck 2 cassette compartments.
- 2 If the reverse mode "↔" is not selected, press the reverse MODE selector button to select it.

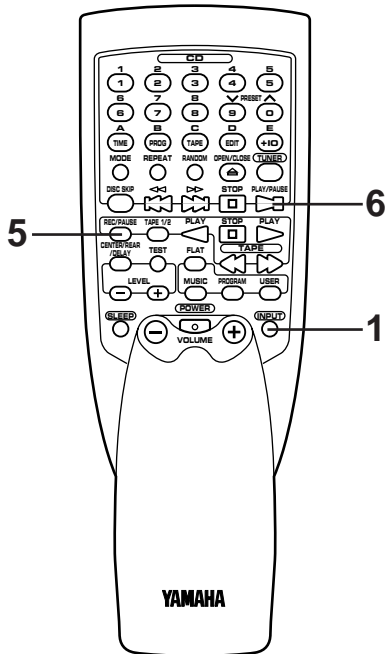
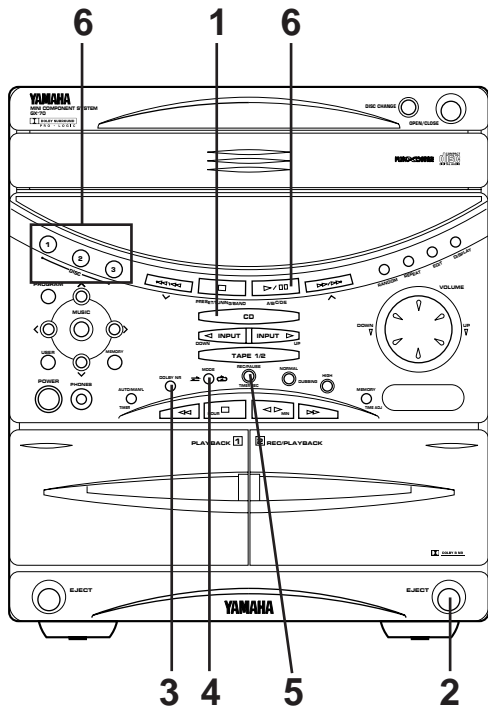
The reverse MODE selector button can be operated before or during playback, and changes tape playback as follows:

<Tape 1> 	Tape 1 Side A → B → Tape 2 Side A → B (Repeats 8 times) Starts from Tape 1 Side A.
<Tape 1> 	Tape 1 Side A → B → Tape 2 Side A → B (Repeats 8 times) Starts from Tape 1 Side B. (Tape 1 Side A is not played back at the first time.)

- 3 Select the tape to be played back first by pressing the TAPE 1/2 input selector button or the TAPE 1/2 button.
- 4 Press the play button on the remote control transmitter to listen to side A, or the play button for side B.
 - * When using the play button on the front panel: Pressing the play button once begins playback in the direction currently selected. Pressing the play button once more changes the tape direction and begins playback.



RECORDING COMPACT DISCS



General information

- When recording important selections, be sure to make a preliminary test to ensure that the desired source material is being properly recorded with good sound quality.
- The automatic recording level control circuit automatically controls the level of the input signal used for recording.
- Adjusting the VOLUME control has no effect on the recorded sound.
If, however, the built-in graphic equalizer and/or sound field processor is used, its effect is recorded along with the source.
* Music with an equalizer effect is suitable for listening to inside a car etc.
- For the tape deck, the deck which can be used for recording is deck 2 only. When recording, be sure to load a tape into the deck 2 cassette compartment.
- Recording cannot be done if the tape deck is selected as the playback source.

CD synchronized recording

- 1 Press the CD input selector button and load the disc to be recorded.
- 2 Load a tape into the deck 2 cassette compartment.
* Wind past the beginning part of the tape on which recording cannot be performed.
- 3 When recording with the Dolby NR system, press the DOLBY NR button so that "DOLBY NR" lights up on the display. If not, turn it off.
* For details, refer to the "Dolby B Type Noise Reduction" on page 31.
- 4 If desired, switch the reverse mode by pressing the reverse MODE selector button.

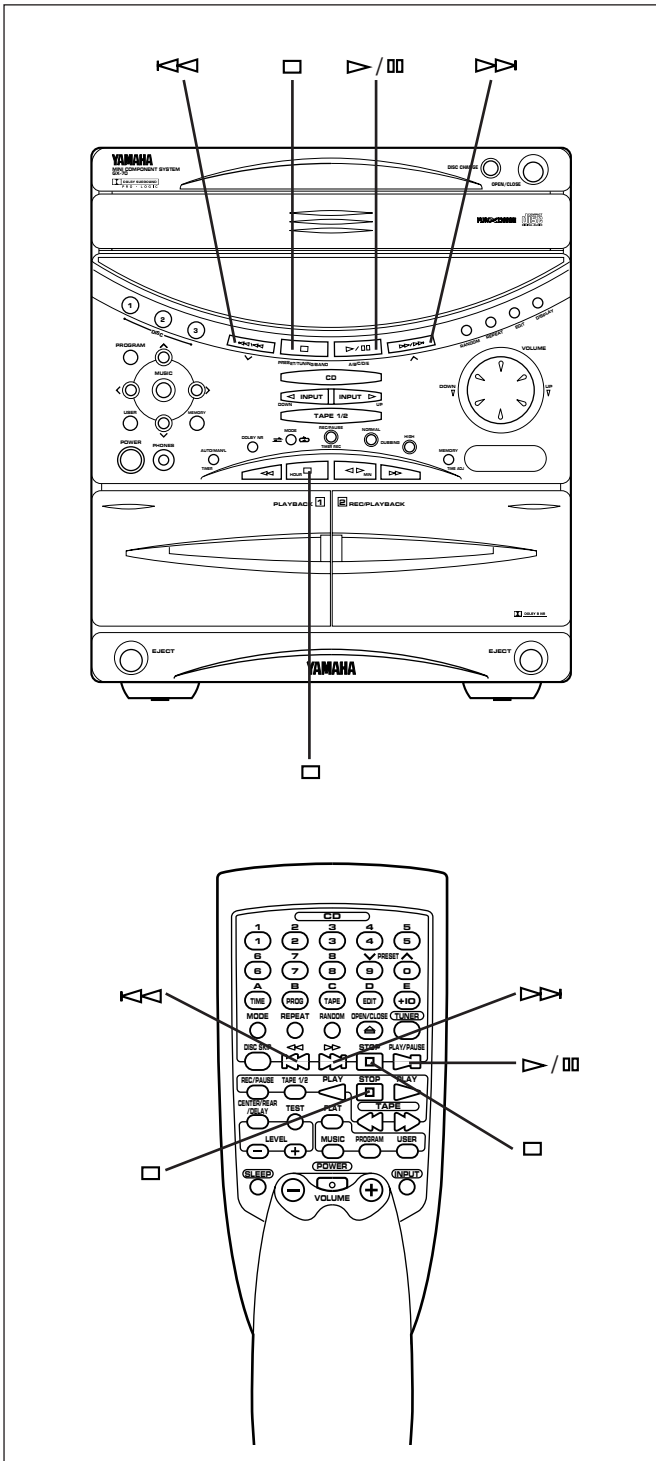
When the tape is set so that side A faces you, recording will be done as follows automatically according to the selected reverse mode.

	Side A only	Side A → Side B
	Side B only	Side B only

- 5 Press the REC/PAUSE button.
* "REC" lights up on the display.
- 6 Start CD playback by pressing the corresponding DISC selector button, or by pressing the play/pause button if the disc is already selected.
* Before CD playback begins, recording automatically begins on the side of the tape now selected.



RECORDING COMPACT DISCS



To stop recording temporarily

- 1 Press the stop button of the CD player.
- 2 Choose the selection to be recorded next by using the or button, and then press the play/pause button of the CD player to resume recording (or simply press the track number input button on the remote control transmitter).

To stop recording

Press the stop button of the tape deck.
(At this time, CD playback will not stop.)

Recording programmed tracks

Programmed tracks from one or more discs can also be recorded in the same way.

- 1 Program desired tracks from one or more discs. (Refer to page 20 for the programming procedure.)
- 2 Follow steps 2–5 on the previous page.
- 3 Press the play/pause button of the CD player.

Notes

- During CD Synchronized Recording, when more than 4 seconds elapse between tracks, the tape will stop automatically and resume recording when the beginning of the next track is found.
- The CD Synchronized Recording will function even when the CD player is turned into random play mode.

Returning the tape to the point where the recording started automatically (REC RETURN function)

During recording, by only pressing the or button, you can rewind the tape to the point where the recording started automatically.

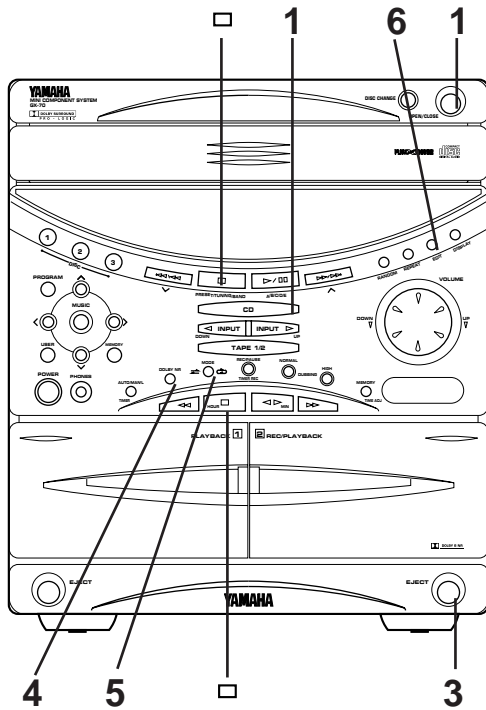
- Press the button when the play direction indicator is lit up.
- Press the button when the play direction indicator is lit up.

* This function is available to all recording methods.

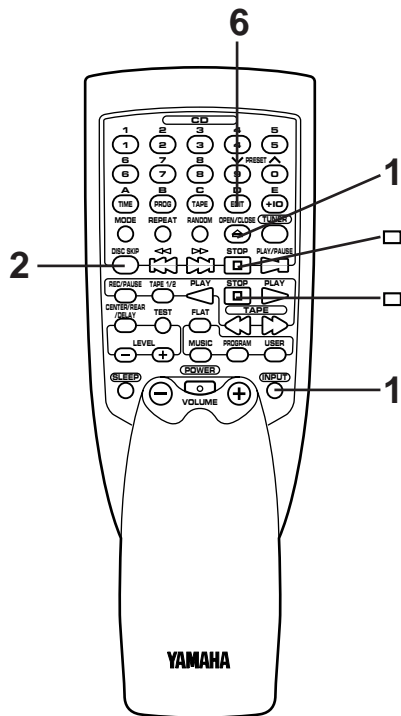


RECORDING COMPACT DISCS

Recording CD(s) on both sides of a tape automatically



- 1 Press the CD input selector button and load the disc to be recorded.
- 2 Select the disc by pressing the DISC SKIP button.
- 3 Load a tape into the deck 2 cassette compartment.
- 4 When recording with the Dolby NR system, press the DOLBY NR button so that "DOLBY NR" lights up on the display. If not, turn it off.
 - * For details, refer to the "Dolby B Type Noise Reduction" on page 31.
- 5 If the reverse mode "◀▶" is not selected, press the reverse MODE selector button to select it.
- 6 Press the EDIT button. ("EDIT" appears on the display.) CD playback and recording starts. Recording is carried out on side A and B of the tape continuously.
 - * If the tape has not rewound to the end, it is rewound to the end rapidly before recording starts. Recording starts from the first part of the tape on which recording can be done.
 - * "A ○ ○" (or "○ ○ B") on the display shows the side of the tape on which recording is being carried out.
 - * When the recording on side A finishes while a track is being played back, the sound is automatically faded out, and then the recording stops. The recording on side B starts from the beginning of the same track.



Notes

- When this CD player is in the all disc play mode, if the tape's total possible recording time is longer than the total playing time of the selected disc, tracks on another disc are recorded continuously. In this case, as many as three discs can be recorded automatically.
- During recording, the DISC CHANGE button on the CD player is disabled.
- The CD player's repeat play mode will be canceled during this recording mode.

Recording programmed tracks

Programmed tracks from one or more discs can also be recorded in the same way.

- 1 Program desired tracks from one or more discs. (Refer to page 20 for the programming procedure.)
- 2 Follow steps 3–6 described above.

To cancel this function

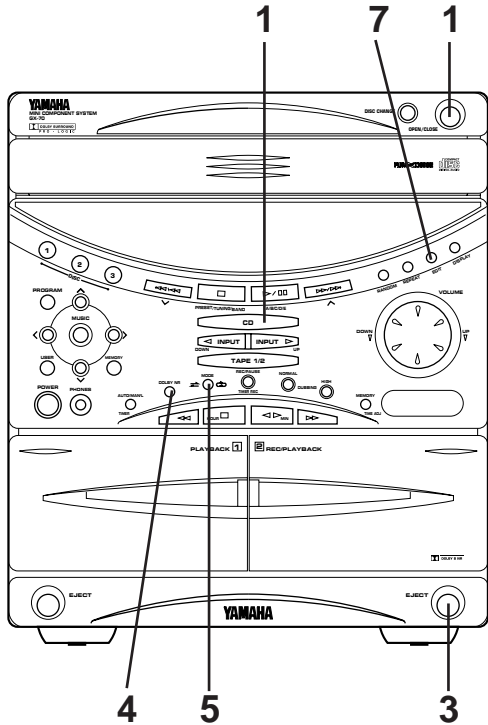
Before recording, press the stop □ button of the CD player or the tape deck.

To stop recording

Press the stop □ button of the tape deck. (At this time, CD playback automatically stops.)



RECORDING COMPACT DISCS

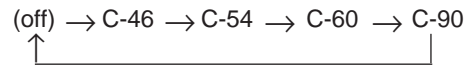


Automatic tape-editing

This convenient feature can be used to program tracks on a disc (or discs) for recording to tape. By only memorizing the tape's total possible recording time, the unit will automatically program tracks or help you to program tracks so they will fit onto the tape with the least amount of unrecorded space remaining at each end of the tape.

To record a disc with the order of tracks unchanged

- 1 Press the CD input selector button and load a disc to be recorded.
- 2 Select the disc by pressing the DISC SKIP button.
- 3 Load a tape into the deck 2 cassette compartment.
- 4 When recording with the Dolby NR system, press the DOLBY NR button so that "DOLBY NR" lights up on the display. If not, turn it off.
 - * For details, refer to the "Dolby B Type Noise Reduction" on page 31.
- 5 If the reverse mode "←→" is not selected, press the reverse MODE selector button to select it.
- 6 Press the TAPE button on the remote control transmitter to select the length of the tape to be used. Whenever pressed, C-46, C-54, C-60 and C-90 appear on the display in turn, and next it returns to the normal display mode.



When using tapes other than C-46, C-54, C-60 or C-90

When C-46, C-54, C-60 or C-90 is appearing on the display, input the tape length by using the track number input buttons on the remote control transmitter (Examples)

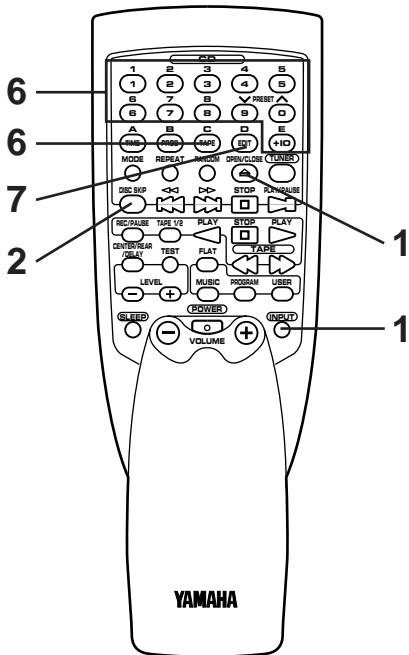
C-62: Press "6" and then "2".

C-30: Press "3" and then "0", or press "+10" three times and then "0".

- 7 Press the EDIT button. ("EDIT" appears on the display.) The following internal operations are carried out before recording is automatically started.

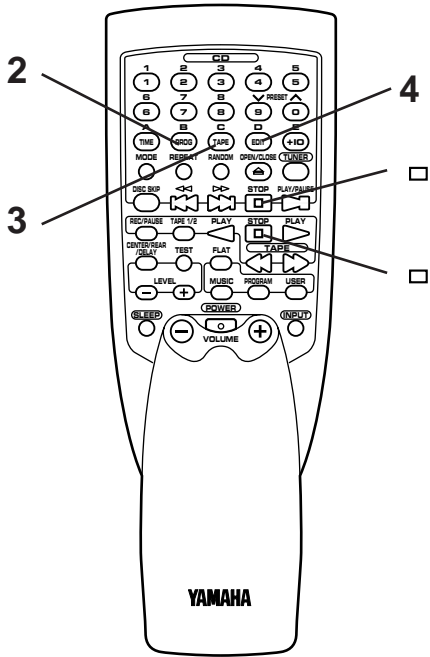
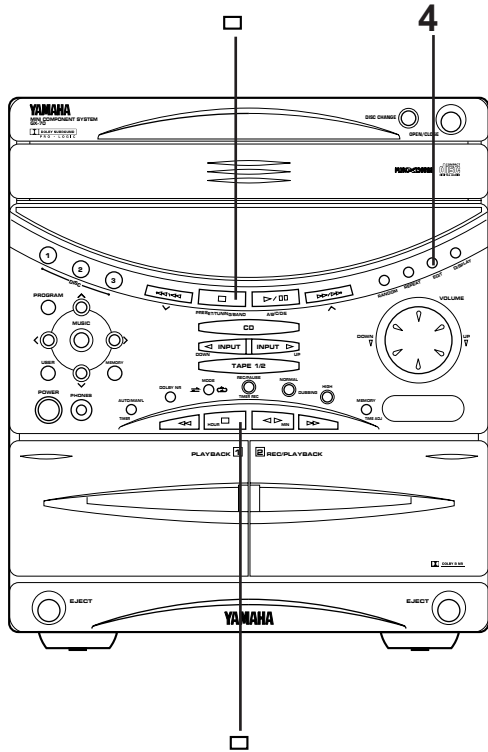
* If the tape has not rewound to the end, it is rewound to the end rapidly before recording starts.

- 1) Tracks on the disc are automatically divided between side A and side B. You can check the process by watching the display.
- 2) The end part of the tape on which recording cannot be done is wound.
- 3) CD playback and recording starts. Recording is carried out on both side A and B of the tape.





RECORDING COMPACT DISCS



Notes

- When this CD player is in the all disc play mode, if the tape's total possible recording time is longer than the total playing time of the selected disc, tracks on another disc are recorded continuously. In this case, as many as three discs can be recorded automatically.
- The CD player's repeat play mode will be canceled during this recording mode.

To cancel tape-editing function

Before recording, press the stop button of the CD player or the tape deck.

To stop recording

Press the stop button of the tape deck.
(At this time, CD playback automatically stops.)

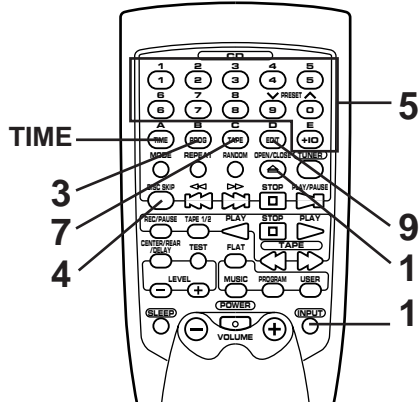
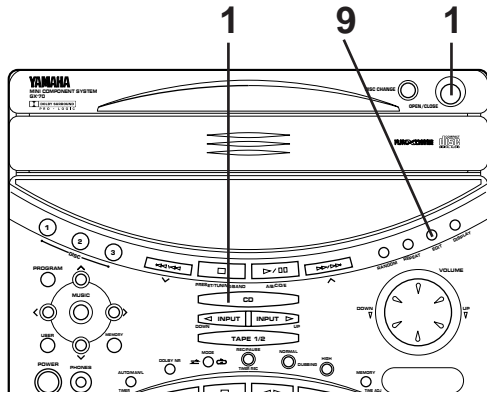
To make this unit program tracks on a disc automatically so that the least amount of unrecorded space remains on the tape

- 1 Follow steps 1–6 on the previous page.
- 2 Press the PROG button.
- 3 Press the TAPE button.
“AP- A> ” will light up during programming for side A, and “AP- B> ” will light up during programming for side B.

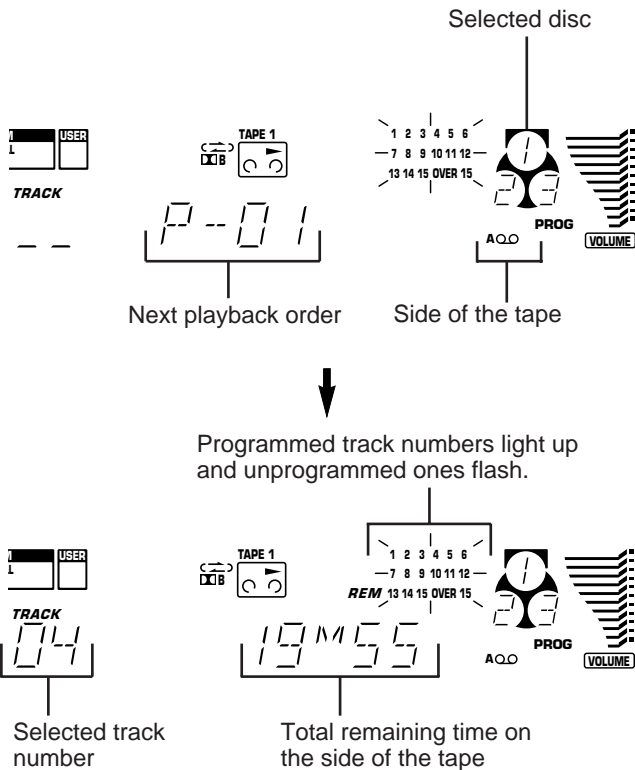
* After “AP- B> ” goes out from the display, you can check the programmed contents for side A and B respectively.
To check, cancel or correct program data, refer to page 21.
- 4 Press the EDIT button. (“EDIT” appears on the display.)
The recording is automatically started.



RECORDING COMPACT DISCS



Display information during programming



To record programmed tracks from one or more discs

- 1 Press the CD input selector button and load a disc (or discs) on the disc table.
- 2 Follow steps 3–6 on page 38.
- 3 Press the PROG button.
 - * “PROG” and “P-01” will light up on the display, and all track numbers on the selected disc will begin flashing.
- 4 If necessary, select a desired disc by pressing the DISC SKIP button.
- 5 Select the desired track number by pressing the track number input buttons.
- 6 Repeat steps 4 and 5 to program more selections for the side A of the tape. You can select the same track again.
 - * Pressing the TIME button displays the total remaining time on the side of the tape for about 1 second, and then it is replaced by the display of the next playback order.
 - * If “TM OVER” appears on the display, the track number just selected cannot be programmed because there is not enough time remaining on the side A of the tape. However, at this time, if any other track number is flashing continuously on the display, you can program it instead of the unprogrammable one.
- 7 After you finish the programming for the side A, press the TAPE button.
 - * “PU SET” appears on the display, then you can begin programming for side B.
 - * After this step is done, you can check the programmed contents for side A and side B alternately by pressing the TAPE button at any time before you press the EDIT button in step 9.
- 8 Repeat steps 4 and 5 to program selections for the side B of the tape. You can select the same track again.
 - * If “TM OVER” appears on the display, the track number just selected cannot be programmed because there is not enough time remaining on the side B of the tape. However, at this time, if any other track number is flashing continuously on the display, you can program it instead of the unprogrammable one.
- 9 Press the EDIT button. (“EDIT” appears on the display.) The recording is automatically started.

Notes on tape-editing

- If programs are made selecting tracks from more than one disc, during recording, the DISC CHANGE button on the CD player is disabled.
- To check, cancel or correct program data, refer to page 21.
- The maximum number of tracks that can be programmed is 20.
- This function can be used to program up to track number 15. If the disc has more than 15 tracks, track number 16 and thereafter will not be programmed.



OTHER RECORDINGS

General information

- When recording important selections, be sure to make a preliminary test to ensure that the desired source material is being properly recorded with good sound quality.
- The automatic recording level control circuit automatically controls the level of the input signal used for recording.
- Adjusting the VOLUME control has no effect on the recorded sound.
If, however, the built-in graphic equalizer and/or sound field processor is used, its effect is recorded along with the source.
* Music with an equalizer effect is suitable for listening to inside a car etc.
- For the tape deck, the deck which can be used for recording is deck 2 only. When recording, be sure to load a tape into the deck 2 cassette compartment.

Recording from the built-in tuner

- 1 Press the INPUT selector \triangleright or \triangleleft button once or more so that "TUNER" appears on the display.
- 2 Tune to the desired station. (Refer to the "TUNING OPERATION" on page 24 and 25.)
- 3 Load a tape into the deck 2 cassette compartment.
- 4 When recording with the Dolby NR system, press the DOLBY NR button so that " \square B" lights up on the display.
* For details, refer to the "Dolby B Type Noise Reduction" on page 31.
- 5 Select the reverse mode " \rightleftharpoons " to record on only one side, or " \rightleftarrows " for continuous recording on both sides by pressing the reverse MODE selector button.
- 6 Press the REC/PAUSE button.
* "REC" lights up on the display.
- 7 Press the play \triangleright button on the remote control transmitter to record on side A, or the play \triangleleft button to record on side B.
* For continuous recording on both sides, begin on side A. Recording stops automatically at the end of side B.

To stop recording temporarily

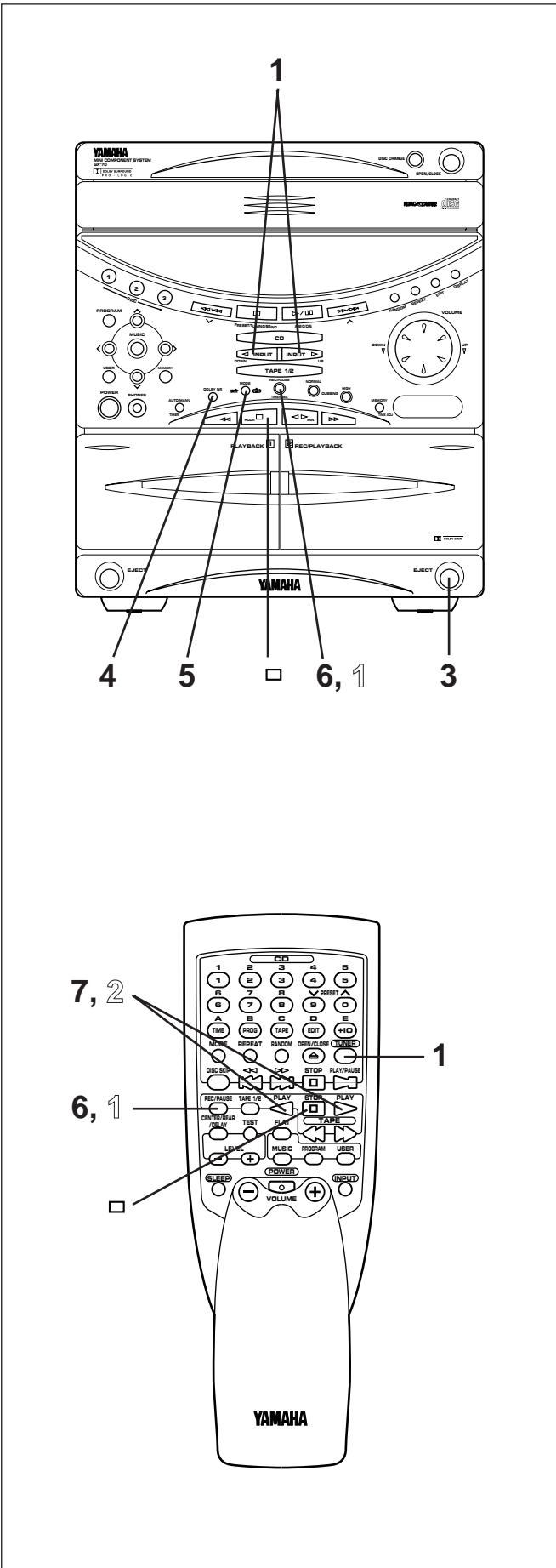
- 1 Press the REC/PAUSE button.
- 2 To resume recording, press the play button.

To stop recording

Press the stop \square button.

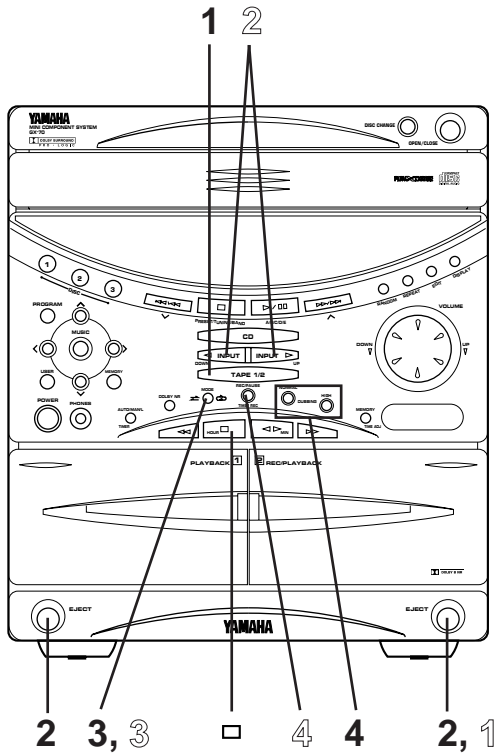
To reduce beats during recording

While recording an AM (long wave) broadcast, you may hear a bleep caused by beat frequencies. In such a case, pressing the TUNER input selector button on the remote control transmitter once or more will reduce or remove beats. (Whenever the TUNER input selector button is pressed, "B.C-1" and "B.C-2" appears on the display alternately. Select either of them in which you find that beats are more reduced.)





OTHER RECORDINGS



Dubbing

- During dubbing, adjusting the VOLUME control and using the built-in graphic equalizer and the sound field processor 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 1/2 input selector button.
- 2 Load a prerecorded tape into the deck 1 cassette compartment. Insert a blank tape into the deck 2 cassette compartment.
- 3 Select the reverse mode “ \rightleftharpoons ” to record on only one side, or “ $\leftarrow\rightarrow$ ” for continuous recording on both sides by pressing the reverse MODE selector button.
- 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 from side A regardless of the side now selected.

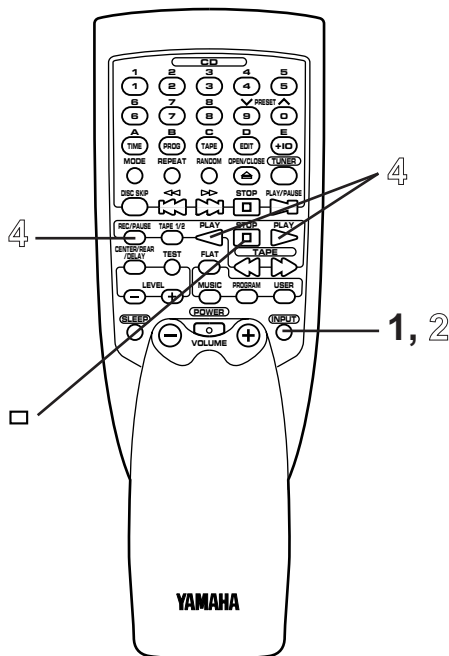
To stop dubbing

Press the stop \square button.

- * Tape 1 and tape 2 will stop at the same time.

Note

Only tapes originally encoded with Dolby NR will be dubbed onto tapes with Dolby NR encoding. Even if the Dolby NR is on, it will have no effect on the recording of tape 2 during dubbing. However, the playback tonal quality of tape 1 will change according to whether the Dolby NR button is on or off.

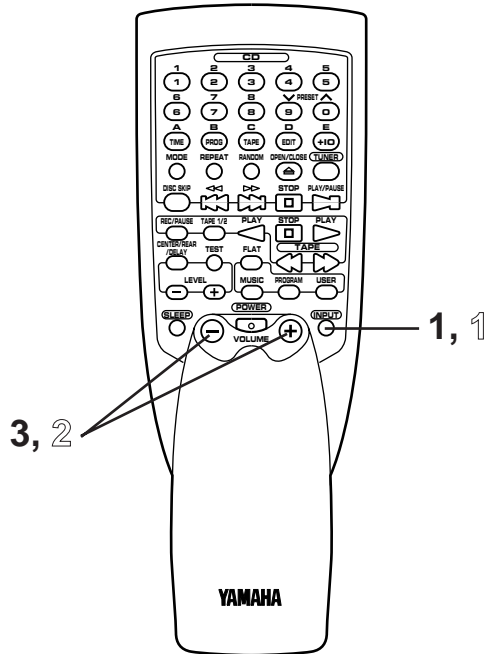
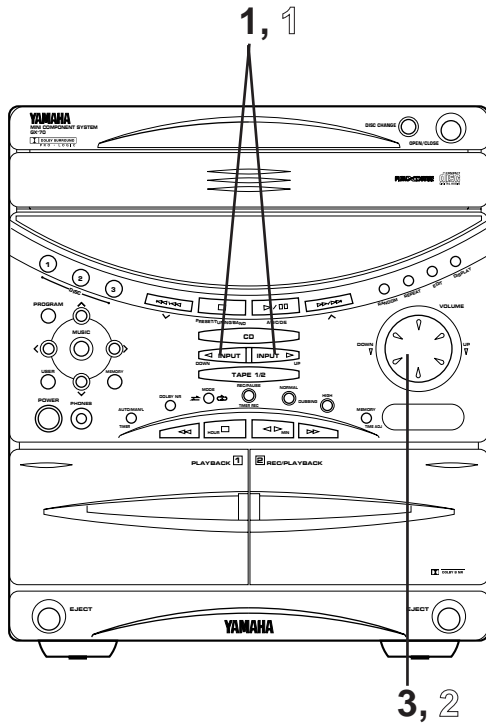


Erasing recorded tapes

- 1 Load the tape to be erased into the deck 2 cassette compartment.
- 2 Press the INPUT selector \triangleright or \triangleleft button once or more and select an input source position of external unit (MD/AUX, VCR or LD/TV).
 - * Make sure that there is no sound output from the selected external unit.
- 3 Select the reverse mode “ \rightleftharpoons ” to erase only one side or “ $\leftarrow\rightarrow$ ” to erase both sides by pressing the reverse MODE selector button.
- 4 Press the REC/PAUSE button, then press the play \triangleright button on the remote control transmitter to erase side A of the tape, or the play \triangleleft button to erase side B.

To listen to or watch a source on an external unit connected with this system

- 1 Press the INPUT selector \triangleright or \triangleleft button once or more and select the position of input source (MD/AUX, VCR or LD/TV) you will play back confirming it on the display.
 - * The names of input source positions correspond with the names of terminals to connect with external units on the rear of the main unit.
- 2 Play back the source.
(For a video source, turn the monitor TV on.)
- 3 Adjust the volume to a desired level by using the VOLUME control.
If you prefer, use the graphic equalizer and/or the sound field processor built into this system.



To record a source to tape

Not only a source played back on this system, but also a source played back on an external unit can be recorded by the built-in tape deck and/or a VCR, DAT, etc. connected with this system.

* If you make a recording on the built-in tape deck, read "General information" on page 41 before starting recording.

- 1 Select the source to be recorded by the INPUT selector \triangleright or \triangleleft button.
- 2 Play back the source and then turn the VOLUME control up to confirm the input source.
- 3 Begin recording on the built-in tape deck or a VCR etc. connected with this system.
 - * To make a recording on the built-in tape deck, follow steps 3-7 on page 41.
To stop recording or to stop recording temporarily, also refer to page 41.

Note

If the built-in graphic equalizer and/or sound field processor is used, its effect is recorded along with the source when you make recording on the following recording units.

- The built-in tape deck.
- The external recording unit connected to the MD/AUX terminals on the rear of the main unit.

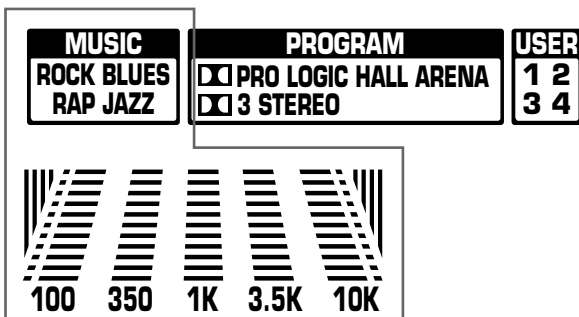
However, the effect of the graphic equalizer and/or sound field processor cannot be recorded when you make recording on the external recording unit connected to the VCR terminals on the rear of the main unit.

USING GRAPHIC EQUALIZER

The built-in graphic equalizer presents you with the pleasure of listening to music with various sound effects. This system provides 4 preset equalizer modes as listed right.

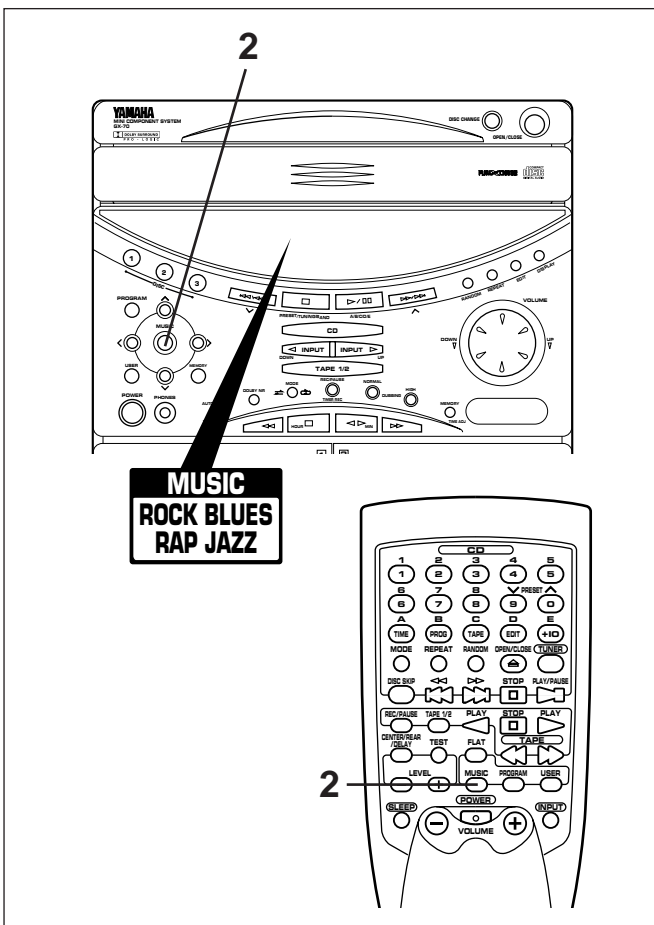
You can enjoy listening to music with a desired sound effect by selecting one of these modes.

In addition, the built-in 5 band graphic equalizer allows you to adjust the equalizer pattern to create an effect for your desired sound taste.



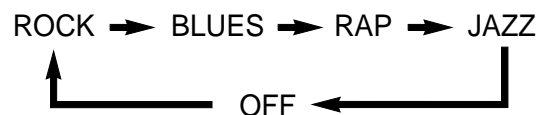
Preset graphic equalizer modes (MUSIC)

Mode	Feature
ROCK	High and low frequencies are emphasized. This mode is suitable for reproducing dynamic and powerful sounds of rock music etc.
BLUES	Low and medium frequencies are moderately emphasized. This mode is suitable for music with a blue feeling.
RAP	Low and mid-high frequencies are emphasized so that vocals become well-modulated. This mode is suitable for rap music etc.
JAZZ	Medium frequencies for vocals, piano, sax, etc. are emphasized. High and low frequencies are also emphasized moderately.



Listening to the music with a preset equalizer effect

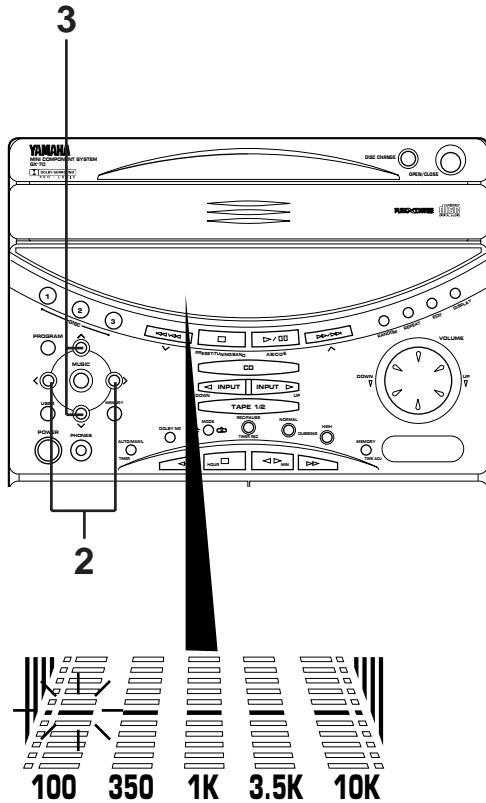
- 1 Play back a source. (For source playback, refer to the sections beginning on page 17.)
- 2 Press the MUSIC button once or more so that the name of a desired mode appears on the preset equalizer mode indicator.
 - * Whenever you press the MUSIC button, the preset mode changes and is displayed as follows.



* The equalizer pattern of the selected mode is shown on the graphic equalizer level indicators.

Note

An equalizer effect is also be recorded along with a source when recording on the built-in tape deck.



Adjusting the graphic equalizer for your desired sound taste

The 5 band graphic equalizer allows you to adjust the level for each frequency band.

* Make adjustment by monitoring the equalizer level indicators on the display.

- 1 Play back a source. (For source playback, refer to the sections beginning on page 17.)
- 2 Press the equalizer control < or > button once or more to select the frequency band to which you will adjust the level.
 - * The selected frequency band is shown on the display.
 - * The scale bar of the selected frequency band on the graphic equalizer level indicators will flash.
- 3 Press the equalizer control ^ or v button once or more to adjust the level.
- 4 In the same way, make adjustment for other frequency band.

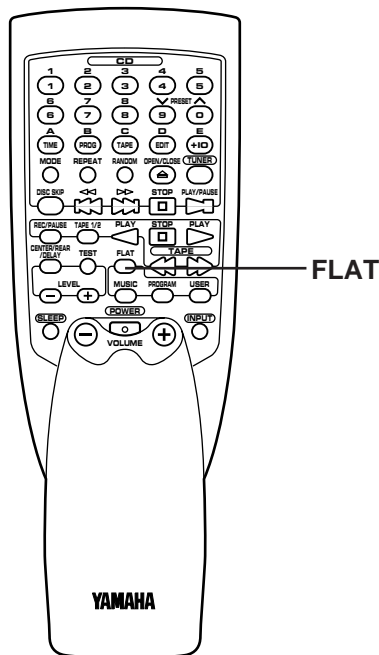
Note on Australia, China, Singapore and General models only

If the KARAOKE (including L and R ONLY) program is selected, cancel it or select another sound field program.

Turning the equalizer to “flat” (the state with no equalization applied)

By one of the following methods, the settings of preset graphic equalizer mode (MUSIC) and sound field program (PROGRAM) are turned off and the equalizer pattern is turned to “flat”.

- Press the FLAT button on the remote control transmitter.
 - * Pressing the FLAT button once more will restore the state before the equalizer was turned to “flat”.
- Press the MUSIC button and the PROGRAM button on the front panel at the same time.
 - * There is no way to restore the state before the equalizer was turned to “flat”.



USING SOUND FIELD PROCESSOR

The Sound Field Processor built into this system presents you with the ambience of an actual concert hall etc. by adding effects as sonic reflections or reverbations that create the sound environment of a hall etc. This system provides preset sound field programs shown below. You can enjoy an excellent audio sound field by selecting one of them, and adding desired adjustments.

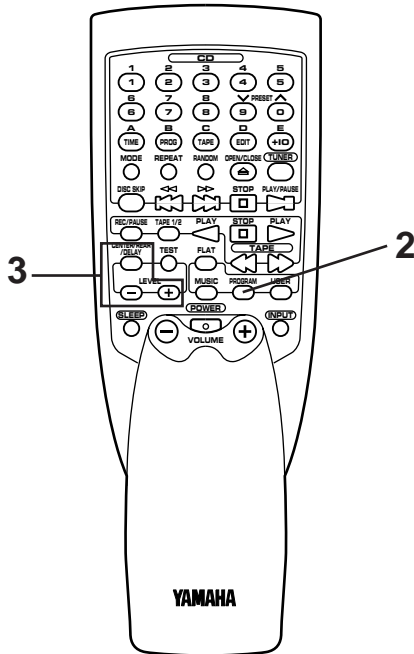
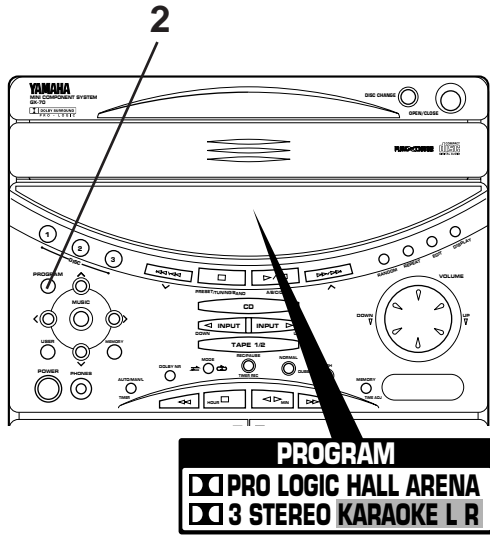
This system incorporates a Dolby Pro Logic Surround decoder for multi-channel sound reproduction of Dolby Surround encoded video sources. The operation of the Dolby Pro Logic Surround decoder can be controlled by selecting a corresponding sound field program.



Brief Overview of Sound Field Programs

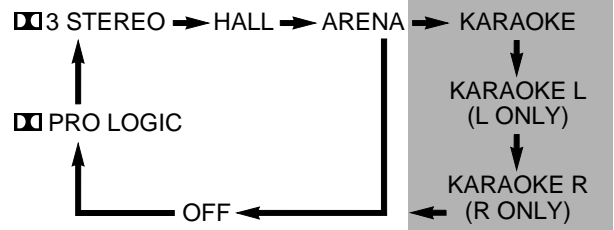
PROGRAM	FEATURE
<input checked="" type="checkbox"/> PRO LOGIC	This program is used for playback of sources encoded with Dolby Surround. Sounds are reproduced as movie creators designed by using five speakers. You can experience the dramatic realism and impact of a movie theater.
<input checked="" type="checkbox"/> 3 STEREO	This program is effective not only for playback of sources encoded with Dolby Surround, but also for sources not encoded with Dolby Surround or TV programs with 2-channel stereo sound. With this program, 2-channel stereo sound is converted into 3-channels (left front, center and right front), so the dialogs are emphasized on the center position by the use of the center speaker. As no sound is output from the rear speakers, this program is also effective in a simple Audio/Video system without rear speakers.
HALL	In this program, the center will appear to be deep behind the front speakers, creating an expansive large hall ambience. Orchestra and opera music are suited for this sound field.
ARENA	This program simulates the sound environment of a big hall with long reverberation time and many reflections of high frequencies.
KARAOKE (KARAOKE L) (KARAOKE R)	These programs are available on Australia, China, Singapore and General models only. (Refer to page 51 for karaoke operation.)

* Programs on the shaded area are available on Australia, China, Singapore and General models only.



Listening to the music with a sound field effect

- 1 Play back a source. (For source playback, refer to the sections beginning on page 17.)
- 2 Press the PROGRAM button once or more so that the name of a desired program appears on the sound field program indicator.
 * Whenever you press the PROGRAM button, the program changes and is displayed as follows.

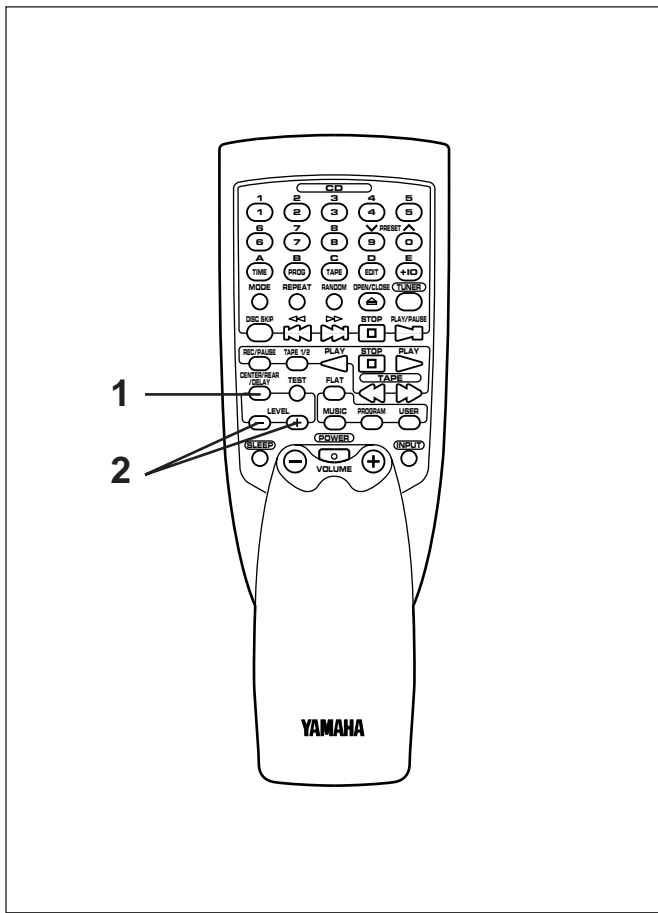


* Programs on the shaded areas are available on Australia, China, Singapore and General models only.

- 3 If desired, adjust the delay time and the output level of each speaker. (For details, refer to the corresponding descriptions on page 48–49.)

Notes

- When HALL or ARENA is selected, no sound is heard from the center speaker.
- When a monaural sound source is played with DOLBY PRO LOGIC or DOLBY 3 STEREO, no sound is heard from the front speakers and the rear speakers. Sound is heard only from the center speaker. For DOLBY PRO LOGIC only, however, if the center channel mode is in “PHANTOM”, the front speakers output the sound of the center channel.
- A sound field effect is also be recorded along with a source when recording on the built-in tape deck.



Adjusting CENTER LEVEL

If desired, you can adjust the sound output level of the center speaker even if the output level is already set in "SPEAKER BALANCE ADJUSTMENT" on page 15–16.

Control range : +10 to –21

- 1** Press the CENTER/REAR/DELAY selector button once or more so that "CENT" appears on the display.
- 2** By continuously pressing the LEVEL control + or – button, the level value changes continuously.

Notes

- This adjustment can be made only when the sound field program DOLBY PRO LOGIC or DOLBY 3 STEREO is selected.
- Once the output level is adjusted, the level value will be the same in the DOLBY PRO LOGIC and DOLBY 3 STEREO programs.

Adjusting REAR LEVEL

If desired, you can adjust the sound output level of the rear speakers even if the output level is already set in "SPEAKER BALANCE ADJUSTMENT" on page 15–16.

Control range : +10 to –21

- 1** Press the CENTER/REAR/DELAY selector button once or more so that "REAR" appears on the display.
- 2** By continuously pressing the LEVEL control + or – button, the level value changes continuously.

Notes

- This adjustment can be made when a sound field program except DOLBY 3 STEREO is selected.
- Adjustment can be made to DOLBY PRO LOGIC, HALL and ARENA individually.

Adjusting DELAY TIME

You can adjust the time difference between the beginning of the source sound and the beginning of the effect sound. This adjustment can be made to all programs (except DOLBY 3 STEREO) individually.

By applying more or less delay, sound effects, background noise, and ambient noise coming at you from the rear speakers can be enhanced or subdued for extra effect.

Control range

- PRO LOGIC : 15, 20, 25, 30 milliseconds
- HALL, ARENA : 15, 20, 25, 30, 40, 50 milliseconds

- 1 Press the CENTER/REAR/DELAY selector button once or more so that "DEL" appears on the display.

DEL 20ms

- 2 By continuously pressing the LEVEL control + or – button, the value changes continuously. The value stops changing momentarily at the preset point.

DEL 25ms
Adjustable

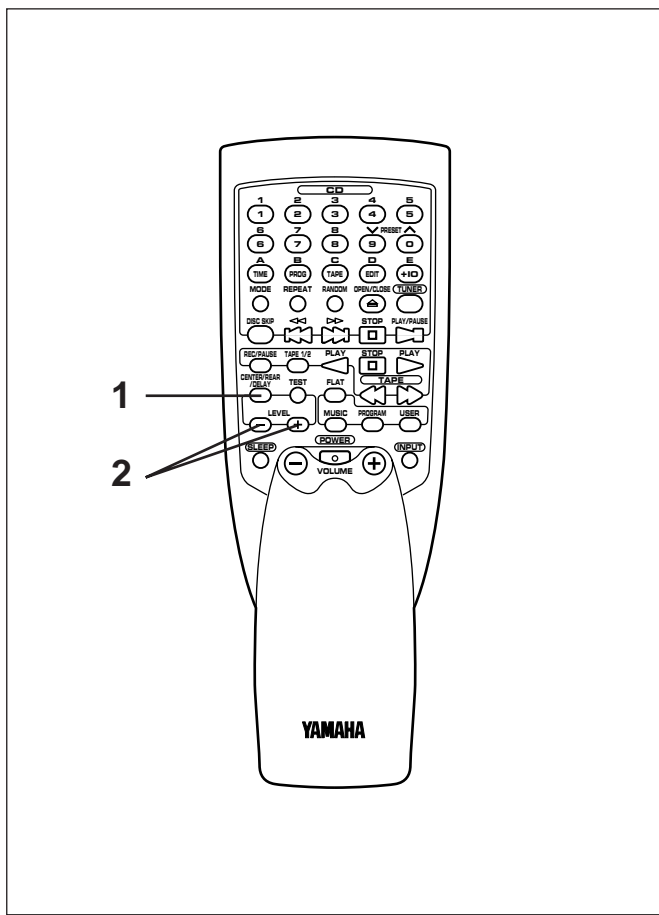
Notes

- When DOLBY 3 STEREO is selected, this adjustment cannot be made.
- Adding too much delay will cause an unnatural effect with some sources.
- When the LEVEL control button is pressed, sound is momentarily interrupted.

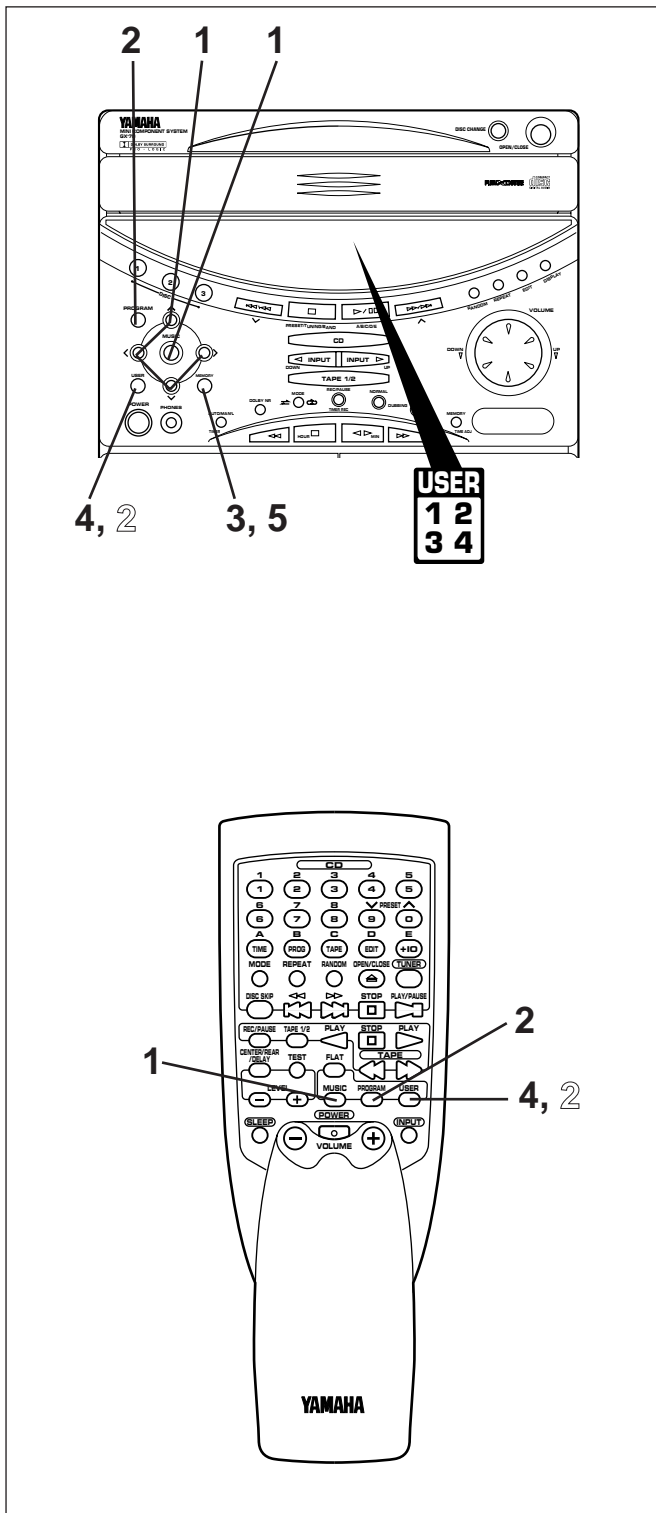
Note

The values of the delay time, center level and rear level you set the last time will remain memorized even when the power of this unit is off.

However, if the power cord is kept disconnected for more than one week, these values will be automatically changed back to the original factory settings.



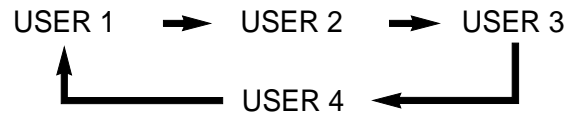
STORING YOUR OWN PROGRAMS



Your favorite pair of any equalizer mode (or an equalizer pattern of your own adjusting) and any sound field program can be stored as a user program. Up to 4 pairs can be stored as desired.

To store

- 1 Select a desired equalizer mode by pressing the MUSIC button.
* If desired, adjust the equalizer as you prefer by using the equalizer control buttons.
- 2 Select a desired sound field program by pressing the PROGRAM button.
- 3 Press the user program MEMORY button.
* "1" will flash on the user program number indicator and the MEMORY indicator will flash for about 5 seconds.
- 4 Select the user program number (1, 2, 3 or 4) to which you will store the selected modes by pressing the USER button once or more before "1" stops flashing.
* Whenever you press the USER button, the user program number changes and is displayed as follows.



- 5 Press the user program MEMORY button before the number selected in step 4 stops flashing.

* In the same way, store other pairs to other three user positions.

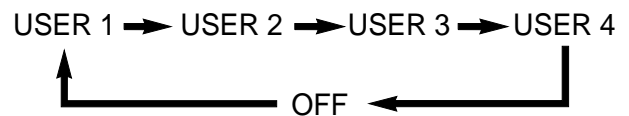
* It is also a good idea to store only an equalizer pattern of your own adjusting (without storing any sound field program).

Notes

- A new program can be stored in place of the former one.
- In step 4 or 5, if the user program number indicator stops flashing before operation, return to step 3.

To recall a user program

- 1 Play back a source. (For source playback, refer to the sections beginning on page 17.)
- 2 Press the USER button once or more so that the user program number you want to recall lights up.
* Whenever you press the USER button, the user program number changes and is displayed as follows.



Singing karaoke

This system allows you to enjoy singing karaoke by using not only a source for karaoke use but also any normal audio source.

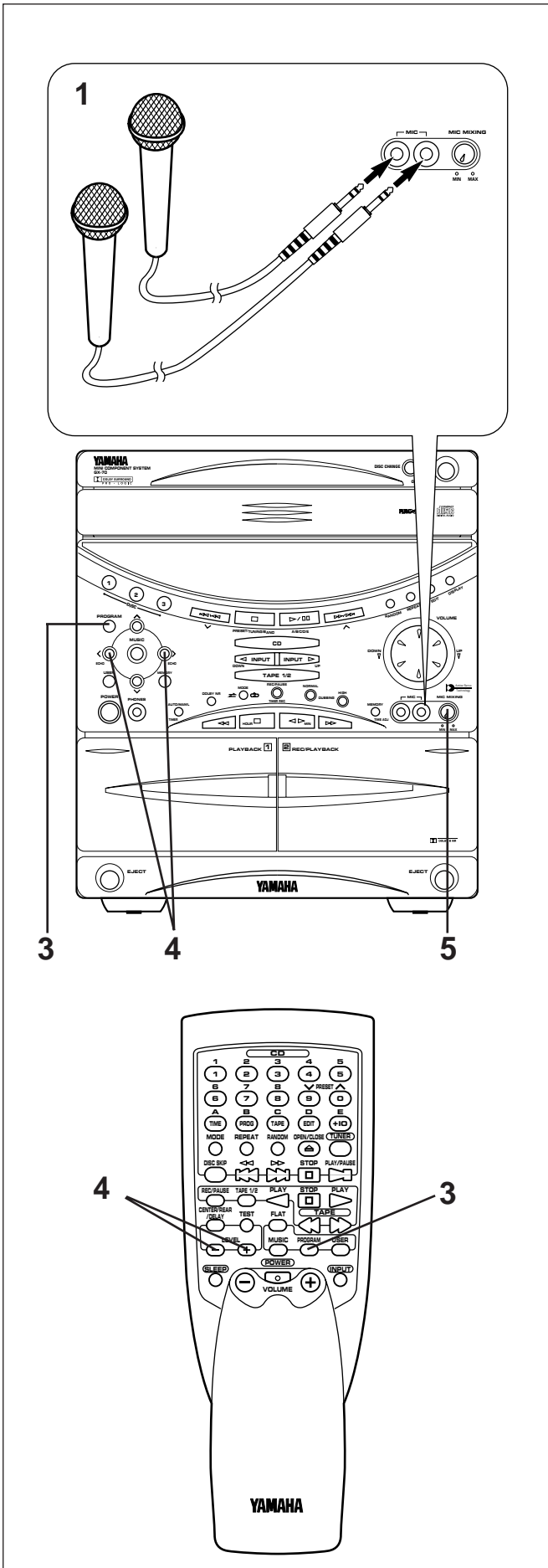
- 1 Connect one or two microphones to the MIC jack(s) on the front panel.
- 2 Play back a source. (For source playback, refer to the sections beginning on page 17.)
- 3 If necessary, select a karaoke mode (KARAOKE, KARAOKE L or KARAOKE R) by pressing the PROGRAM button once or more so that the corresponding name appears on the sound field program indicator.
For descriptions of the karaoke modes, see the list below.
- 4 Only when the KARAOKE (including L and R ONLY) mode is selected, echo effect is automatically applied. Adjust the echo effect level by pressing the ECHO < or > button. If you need no echo effect, adjust the level to minimum.
* On the remote control transmitter, pressing the LEVEL control buttons adjusts the echo effect level.
- 5 While singing, adjust the mixing level of singing voice by turning the MIC MIXING level control.

To cancel the karaoke mode

Press the PROGRAM button so that "KARAOKE", "KARAOKE L" or "KARAOKE R" disappears from the sound field program indicator.

Karaoke modes (PROGRAM)

Mode	Feature
KARAOKE	Medium frequencies of the source sound (vocals etc.) are attenuated. This mode is suitable for singing karaoke using a normal audio source with vocals. Note There may be a case that vocals cannot only be attenuated effectively according to a source.
(KARAOKE L)	Only signals on the left channel of the source are output from the left and right speakers. When using a karaoke source which contains both background music and original vocals on the right channel and background music only on the left channel, selecting this mode is suitable for singing karaoke.
(KARAOKE R)	Only signals on the right channel of the source are output from the left and right speakers. When using a karaoke source which contains both background music and original vocals on the left channel and background music only on the right channel, selecting this mode is suitable for singing karaoke.



HOW TO USE THE BUILT-IN TIMER

Timer play

By using the built-in timer, you can set the time when the unit turns on and a source begins playing automatically, and the time when the unit turns off automatically.

- 1 Prepare the source to be played.

For tuner:

Tune in to the station you will listen to.

For tape deck:

Load a tape into the cassette compartment.
(If tapes are loaded in both the compartments, tape 1 takes priority of tape 2, and is played back by the timer play.)

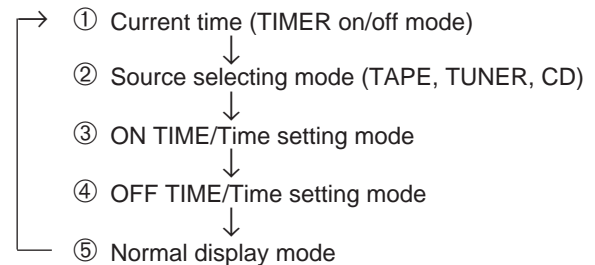
For CD player:

Load a disc on the disc table. If more than one disc are loaded on the disc table, select the disc by using the DISC selector buttons or the DISC SKIP button.

- 2 Press the DISPLAY button.

Whenever the DISPLAY button is pressed, the display mode changes as follows.

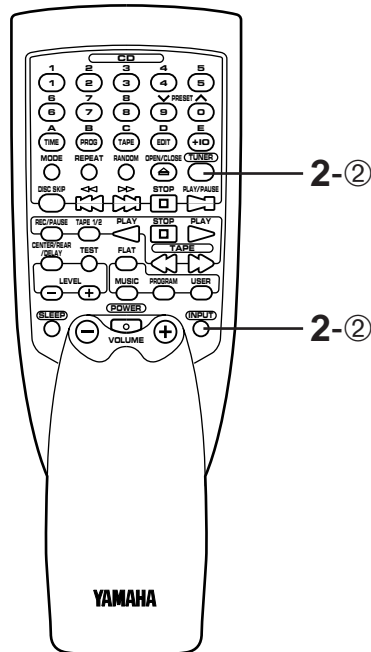
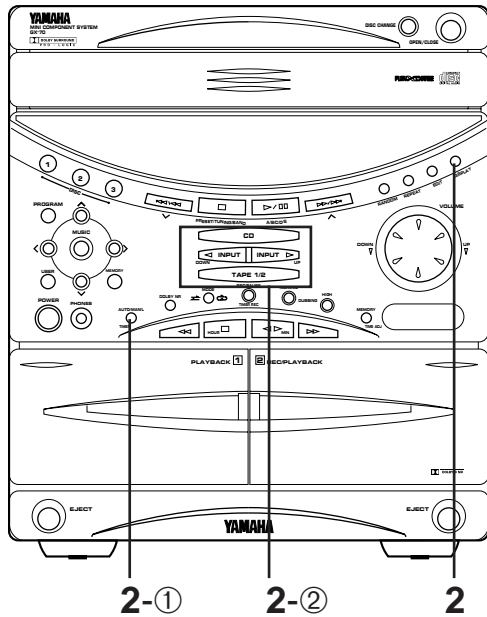
At each mode, make a setting for the timer play, referring to the setting procedure described below.



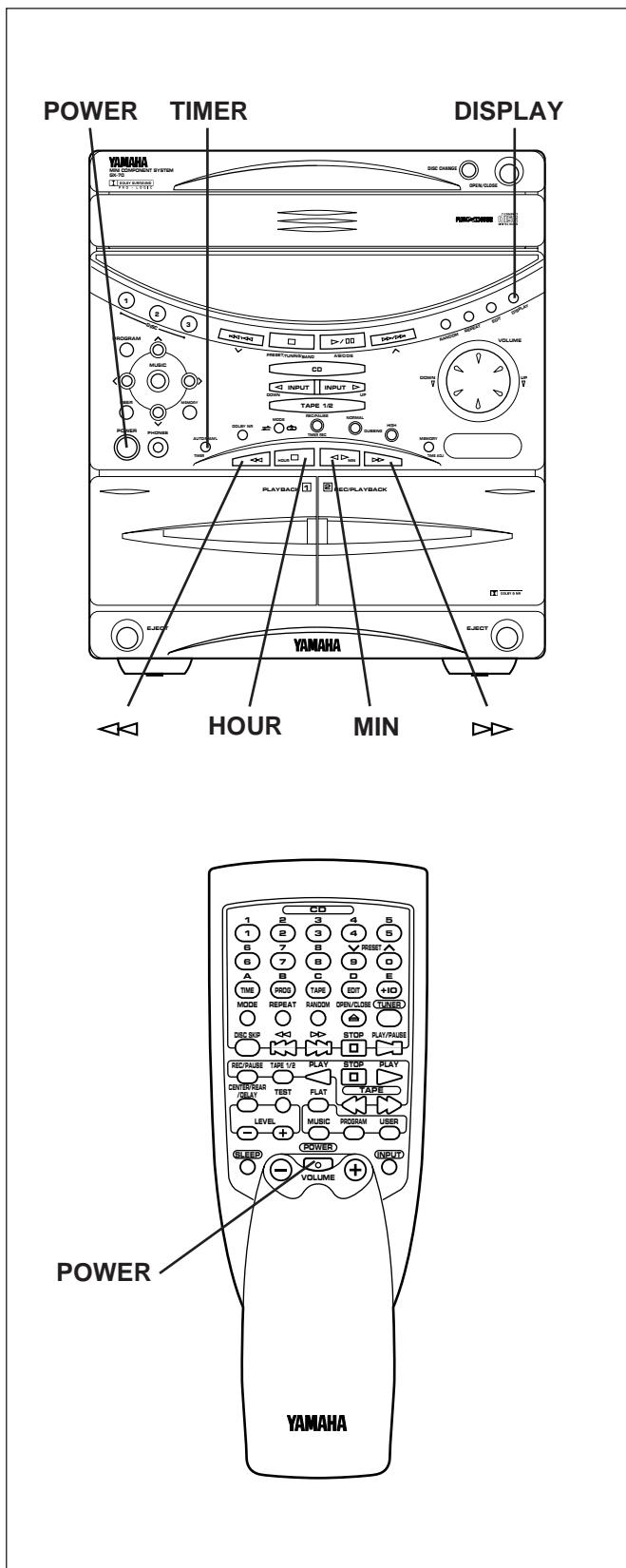
* The display mode will be changed to the next mode after about 8 seconds elapse automatically. If the mode is changed before the setting is completed, call the mode again by pressing the DISPLAY button once or more.

Setting procedure:

- ① **At the display of current time**
Check to be sure that the current time is correct, and press the TIMER button so that "TIMER" lights up on the display.
- ② **At source selecting mode**
Select the source (TAPE, TUNER or CD) to be played by pressing the corresponding input selector button.
* If "TUNER" is selected, soon it is changed to the frequency display mode. In this mode, you can select the station to listen to with the timer play by using the PRESET/TUNING/BAND selector button, A/B/C/D/E button and ^ / v buttons.



HOW TO USE THE BUILT-IN TIMER



③ **At ON TIME/time setting mode**
 ["ON TIME" appears on the display, and soon it is changed to a time setting mode.]
 Set to the time when you want to begin the timer play by using the HOUR button and the MIN button.

④ **At OFF TIME/time setting mode**
 ["OFF TIME" appears on the display, and soon it is changed to a time setting mode.]
 If necessary, set to the time when you want to finish the timer play (to turn this unit off) by using the HOUR button and the MIN button. Even if you do not set the time, it has already been set so that the timer play finishes after 1 hour.

* The TIMER button functions also in the time (ON TIME or OFF TIME) setting mode. (However, it also turns off the power.)

3 If you will not use this unit until the timer play begins, turn the power off by pressing the POWER switch or the TIMER button.

Note

If a timer play setting is made and the power is not turned off, the source set for the timer play will begin playing when the time comes in place of the source played at that time.

To cancel the timer play setting

After the timer play is finished, press the DISPLAY button to call the current time. While the current time is displayed, press the TIMER button so that "TIMER" goes out from the display.

If it is not canceled, the system will be turned on at the same time every day, so it can be used as an alarm. However, if you are planning to go out at that time, cancel the timer play setting.

* Unless the AC supply lead is unplugged or there is a power failure for more than 5 minutes, the time set on the timer will be retained until it is reset.

How to make time setting in the ON TIME or OFF TIME mode

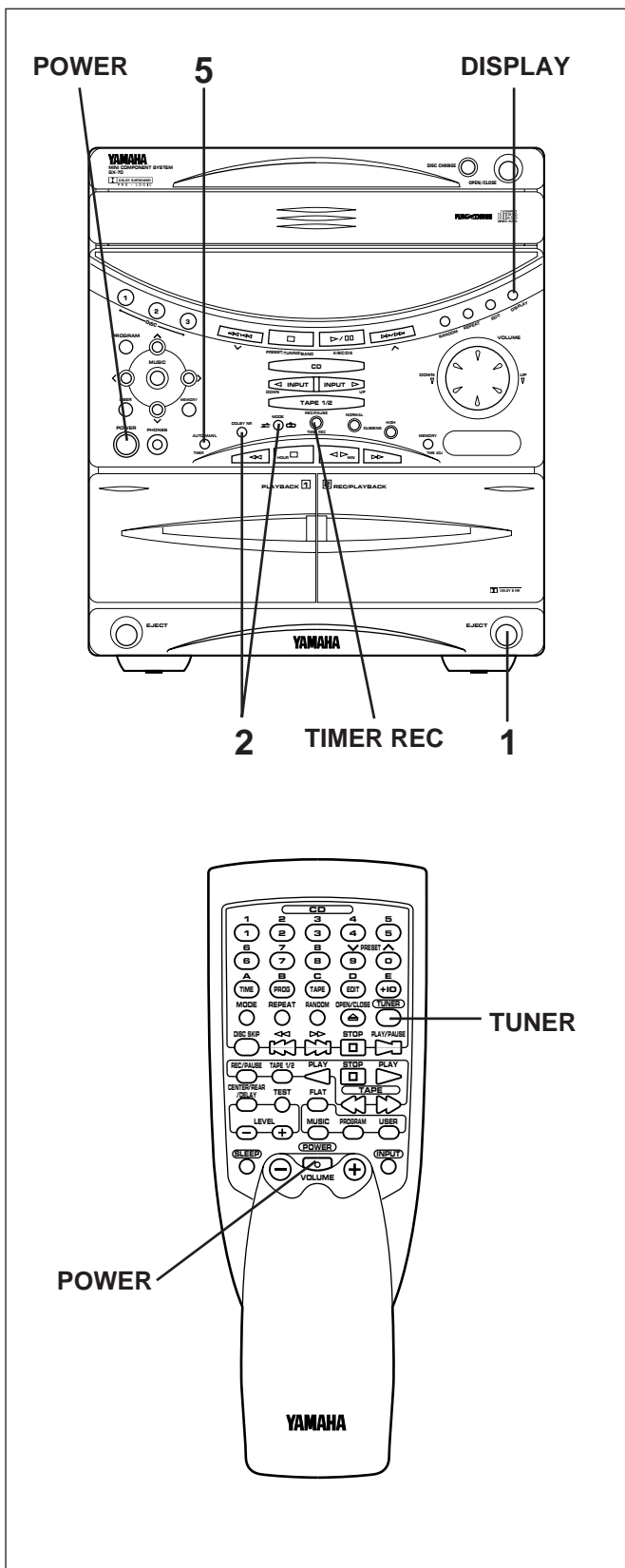
For the hour:

Press the HOUR button to change the hour to a higher value. Press and hold to change continuously. To change the hour to a lower value, press the ◀ button.

For the minute:

Use the MIN button and operate it in the same way as you did to change the hour. To change the minute to a lower value, press the ▶ button.

HOW TO USE THE BUILT-IN TIMER



Timer recording (To record a tuner program)

- 1 Load a blank tape into the deck 2 cassette compartment.
- 2 If desired, change the setting of the reverse mode and use the Dolby NR system.
- 3 Tune in to the station of which program you want to record.
- 4 Follow step 2 of the "Timer play" on page 52 and 53.
 - * In step ②, select "TUNER" position, and then press the TIMER REC button. ("REC" will flash on the display.)
 - * In step ③, set the time when you want to begin the timer recording.
 - * In step ④, set the time when you want to finish the timer recording.
- 5 Press the TIMER button.
(The power will be turned off automatically.)
 - * If a normal display mode (the state which had been selected before you began setting the timer recording) is restored before you press the TIMER button, select and follow either of the two methods below.
 - Press the DISPLAY button, and then press the TIMER button. (The power is still on.)
 - Press the POWER switch to turn the power off, and then press the TIMER button. (The power is turned off.)

To confirm the timer time setting

Press the DISPLAY button.

To cancel the setting of timer recording

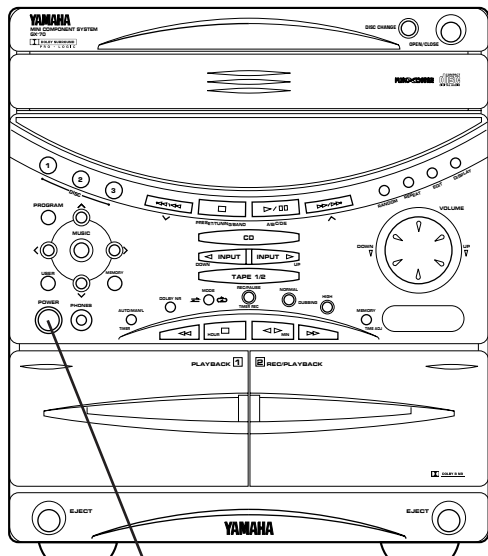
Press the DISPLAY button once or more so that "REC" flashes on the display. While "REC" is flashing, press the TIMER REC button.

- * Unless the AC supply lead is unplugged or there is a power failure for more than 5 minutes, the time set on the timer will be retained until it is reset.

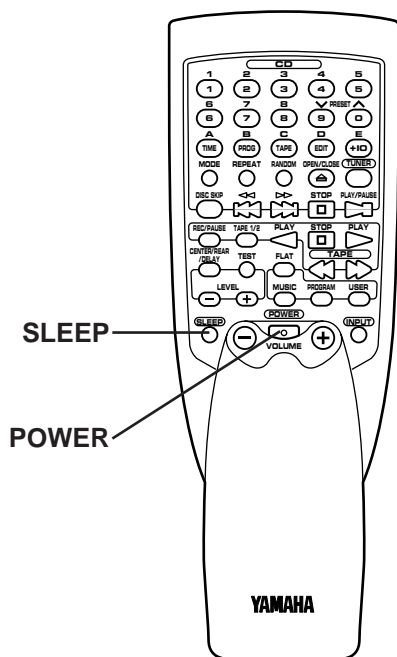
Note

When the timer recording is finished, the timer setting is automatically canceled to avoid repeating timer recording of the same setting.

HOW TO USE THE BUILT-IN TIMER



POWER



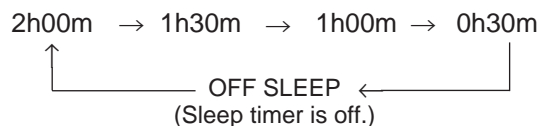
SLEEP

POWER

Sleep timer operation

This unit can be turned off automatically.

- 1 Play the desired sound source.
- 2 Press the SLEEP button. "SLEEP" appears on the display, and soon it is replaced by "2h00m".
- 3 Press the SLEEP button repeatedly until the desired sleep time appears on the display. The display will change as described below. [Time is displayed by the hour (h) and the minute (m).]



- * The original display mode will resume about 4 seconds after the selection is made.
 - * The SLEEP indicator will light up to indicate that the sleep timer is on.
- 4 The unit will turn off automatically when the selected sleep time passes.

To confirm the sleep time setting

Press the SLEEP button once. "SLEEP" appears on the display, and soon it is replaced by the remaining time of the selected sleep time.

To change the sleep time

While the SLEEP indicator is being illuminated, press the SLEEP button repeatedly until the desired time appears.

To stop the sleep timer operation

Press the POWER switch, or press the SLEEP button repeatedly until "OFF SLEEP" appears on the display. (The SLEEP indicator will go out.)

Using the timer and the sleep timer at the same time

- 1 Prepare timer play. (See page 52 and 53.)
 - * Do not turn the power of this unit off after the timer setting is finished.

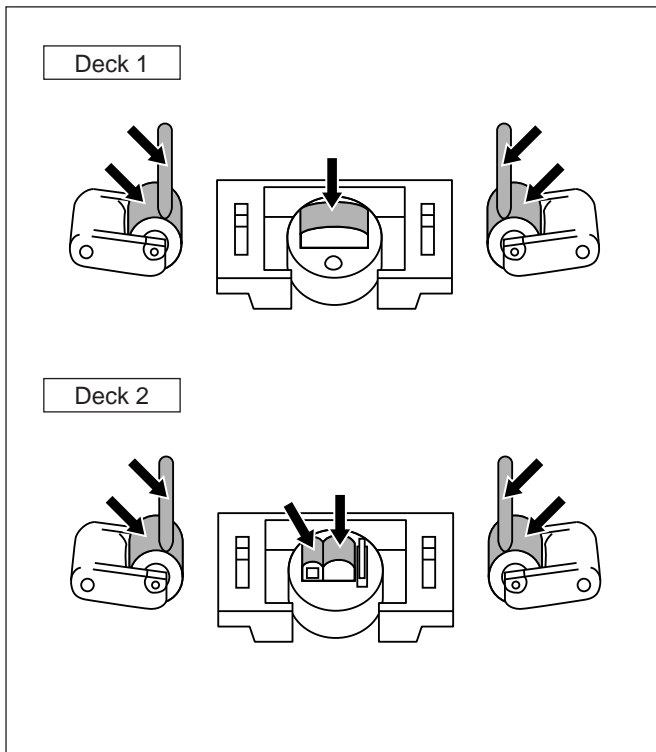
- 2 Press the SLEEP button and set the sleep time.

When the sleep timer operation finishes, the timer begins functioning to turn the source on at the preset time.

Note

Do not make the timer time setting so that the timer will start during sleep timer operation. (Since sleep timer operation has priority, the timer will not operate.)

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 commercially available head/pinch roller cleaner or isopropyl alcohol, or with a commercially available cleaning tape.
- 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 commercially available tape head demagnetizer. Read the demagnetizer's instructions carefully before use.

External care

- Periodically clean the surfaces of this system, especially the top panel of the main unit to prevent the ventilation holes from being blocked with dust etc.
- Do not use chemically treated cleaning cloths or other chemicals. (See "Precautions".)

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/TUNER	No power even if the POWER switch is pressed.	AC supply lead is not plugged in.	Plug in the AC supply lead.
	No sound from one speaker	Loose speaker connections.	Connect properly.
	No sound from speakers.	Internal protection circuit is functioning.	Unplug the AC supply lead from the wall AC outlet, and then plug in again.
	No sound from the rear speakers.	One rear speaker connection is loose or bad.	Connect it properly.
		The sound output level to the rear speakers is set to minimum.	Raise the sound output level to the rear speakers.
		No sound field program is selected.	Select the appropriate program.
	No sound from the center speaker.	The sound output level to the center speaker is set to minimum.	Raise the sound output level to the center speaker.
		The center channel mode is in PHANTOM mode.	Select NORMAL mode.
		Incorrect sound field program selection. No sound field program is selected.	Select the appropriate program.
	No sound (or no picture) from an external unit connected with this system.	Incorrect cord connections.	Connect the cords properly. If the problem persists, the cords may be defective.
Input source selection is not proper.		Make a proper input source selection.	

TROUBLESHOOTING

	SYMPTOM	CAUSE	REMEDY
AMPLIFIER/TUNER	Excessive static in FM broadcasts.	Interference from starting motor of nearby car.	Position the FM antenna as high and as far away from nearby roads as possible. Connect using a coaxial cable.
		Interference from thermostat of nearby electrical appliance.	
	Noise increases during stereo broadcasts.	Antenna input is too weak due to obstructions or excessive distance from broadcasting station.	Check antenna connections. Install a multi-element type FM antenna if possible.
	Stereo broadcasts are noisy and STEREO indicator blinks on and off.	Insufficient antenna input.	Install an antenna 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.	Problem is difficult to eliminate but can be lessened by grounding MW/LW (AM) loop antenna.
		TV or microprocessor is being used nearby.	Move away from TV or microprocessor.
	AM (LW or MW) broadcast sensitivity is poor.	Radio signal is weak or antenna 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 is not set.	Set current time.	
This unit will not operate properly.	The internal microcomputer has been frozen by an external electric shock (lightning, excessive static electricity, etc.) or power supply with low voltage.	Unplug the AC supply lead from the wall AC outlet, and then plug in again after about one minute.	
CD PLAYER	Playback will not begin even if disc is loaded.	Disc is upside down.	Load disc label side up.
		Disc is dirty.	Clean disc.
	No sound.	Input selector setting is incorrect.	Press the CD input selector button.
	Sound stops suddenly (always at same spot).	Disc is dirty.	Clean disc.
Volume is set too high.		Lower volume.	
TAPE DECK	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.	Erasure prevention tab is broken off.	Replace tape or cover erasure prevention hole with cellophane tape.
		Head is dirty.	Clean heads.
	Sound is distorted or fades out.	Head is dirty.	Clean heads.
		Head has become magnetized.	Demagnetize heads with head eraser.
		Tape is worn.	Replace tape.
	Poor sound quality.	Tape encoded with Dolby NR is played back with this unit's Dolby NR system off.	Press the Dolby NR button to turn it on.
	Stereo balance is poor.	Head is dirty.	Clean heads.
	Excessive noise.	Head is dirty.	Clean heads.
		Head has become magnetized.	Demagnetize heads with head eraser.
		Tape is worn.	Replace tape.
	Tape travel stops in middle of playback or recording.	Slack tape coming out of cassette shell.	Take up slack by turning reels with a pencil.
		Tape is creased or torn.	Replace with new tape.
Endless tape is being used.		Don't use endless tapes.	
Can't find the beginning of desired selections on tape.	Silent gaps between selections are too short.	The function of searching for the beginning of desired selections won't operate unless the silent gaps between selections are at least four seconds long.	
	Excessively soft passages in middle of selections.		
	Conversation etc. is recorded.		
REMOTE CONTROL	Remote control doesn't work.	Batteries are dead.	Replace batteries.
		Remote control is too far away or is being used at incorrect angle.	Use within 6 m and 60° radius.
		Direct sunlight or lighting (of an inverter type of fluorescent lamp etc.) is striking the remote control sensor of the main unit.	Change position of the main unit.
	TV functions strangely when the remote control is used.	Remote control is being used near TV set with a remote control sensor.	Relocate this unit away from the TV or cover TV's remote control sensor.

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.

■ Amplifier section

Minimum RMS Output Power per Channel		
Front L, R		
6 ohms, 1 kHz, 1% THD	65W+65W	
6 ohms, 1 kHz, 10% THD		
[U.S.A., Canada, China, Singapore and General models only]	75W+75W	
Center		
6 ohms, 1 kHz, 1% THD	20W	
Rear		
6 ohms, 1 kHz, 1% THD	20W	
DIN Standard Output Power per Channel [Europe model only]		
6 ohms, 1 kHz, 1% THD	65W	
IEC Power [Europe model only]		
6 ohms, 1 kHz, 0.1% THD	50W	
Input Sensitivity/Impedance		
MD/AUX	300 mV/23 k-ohms	
Mic Input Sensitivity/Impedance		
MIC	0.5 mV/4.7 k-ohms	
Headphone Output Impedance		68 ohms
Total Harmonic Distortion (1 kHz)		
MD/AUX to SP OUT (32.5W/6 ohms).....	0.08%	
Signal-to-Noise Ratio (IHF-A Network)		
MD/AUX (Input Shorted)		
[U.S.A., Canada, Europe and U.K. models]	85 dB	
[Australia, China, Singapore and General models]	75 dB	
Graphic Equalizer Characteristics		
(100 Hz, 350 Hz, 1 kHz, 3.5 kHz, 10 kHz)	±10 dB	

■ Video section

Video Signal Level	1 Vp-p/75 ohms
Maximum Input Level	1.5 Vp-p or more
Signal-to-Noise Ratio	50 dB or more
Monitor Out Frequency Response	5 Hz to 10 MHz, -3 dB

■ Tuner section

Tuning Range	
FM	
[U.S.A. and Canada models]	87.5 to 107.9 MHz
[U.K., Europe, Australia, China, Singapore and General models].....	87.5 to 108.0 MHz
AM (MW)	
[U.S.A., Canada and General models]	530 – 1,710 kHz
[U.K., Europe, Australia, China and Singapore models]	531 – 1,611 kHz
LW	
[U.K. and Europe models only]	153 – 288 kHz
Usable Sensitivity	
FM (75 ohms)	
(30 dB S/N Quieting, 1 kHz, 100% mod.)	
[U.S.A., Canada, China, Singapore and General models]	1.5 μV (14.8 dBf)
(DIN, Mono, S/N 26 dB)	
[U.K., Europe and Australia models]	1.8 μV
AM (MW)	280 μV/m
LW [U.K. and Europe models only]	560 μV/m

■ CD player section

Type	3 DISC Carousel Auto-changer
Signal Readout	
.....	Non-contact, 3-beam semi-conductor laser pick-up
D/A Converter	1-bit DAC
Filter	8-time oversampling digital filter
Wow and Flutter	Below measurable limits

■ Tape deck section

Type	Auto Reverse stereo double Cassette Deck
	Deck 1: Playback only
	Deck 2: Playback/Recording
Heads	PB, REC/PB : Hard Permalloy
	Erase : Double Gap Ferrite
Motors	DC servo motor x 2
Wow and Flutter	±0.19%, W.PEAK
	0.09%, W.RMS
Fast Winding Time (C-60 Tape)	About 110 seconds
Frequency Response (-20 dB)	
Type I (Normal).....	30 – 15,000 Hz ±3 dB
Type II (High)	30 – 16,000 Hz ±3 dB
Signal-to-Noise Ratio	58 dB (Dolby NR OFF)
	66 dB (Dolby B NR ON)
Harmonic Distortion	No more than 0.8%
Channel Separation (Input Shorted 1 kHz)	
.....	More than 40 dB
Crosstalk (Input Shorted 125 Hz)	More than 55 dB

SPECIFICATIONS

■ Speaker section

Type

Front	3-Way Active Servo Processing Speaker System (Magnetic-Shielding Type)
Center	Full Range Speaker System (Magnetic-Shielding Type)
Rear	Full Range Speaker System

Speakers

Front.....	13 cm (5-1/8") woofer 5 cm (1-15/16") tweeter 2 cm (13/16") super tweeter
Center.....	9 cm (3-9/16") full range speaker
Rear	8 cm (3-1/8") full range speaker

Frequency Range

Front.....	60 – 20,000 Hz
Center	100 – 20,000 Hz
Rear	110 – 20,000 Hz

Sound Pressure Level

Front.....	87.0 dB
Center	85.0 dB
Rear	85.0 dB

Maximum Power Handling Capacity

Front.....	90W
Center	27W
Rear	13.5W

Impedance

Front	6 ohms
Center	8 ohms
Rear	4 ohms

■ General

Power Supply

[U.S.A. and Canada models]	AC 120V, 60 Hz
[U.K., Europe and Singapore models]	AC 230V, 50 Hz
[Australia model]	AC 240V, 50 Hz
[China model]	AC 220V, 50 Hz
[General model]	AC 110/120/220/240V, 60/50 Hz

Power consumption 190W

Dimensions (W x H x D)

GX-70	280 x 320 x 360 mm (11" x 12-5/8" x 14-3/16")
NX-GX70	200 x 320 x 243 mm (7-7/8" x 12-5/8" x 9-9/16")
NX-C70	280 x 123 x 140 mm (11" x 4-13/16" x 5-1/2")
NX-E70	200 x 115 x 105 mm (7-7/8" x 4-1/2" x 4-1/8")

Weight

GX-70	10.8 kg (23 lbs. 12 oz.)
NX-GX70	3.5 kg (7 lbs. 11 oz.) x 2
NX-C70	1.5 kg (3 lbs. 5 oz.)
NX-E70	0.8 kg (1 lbs. 12 oz.) x 2

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Printed in Malaysia VV18180