

KENWOOD

UD COMPONENT SYSTEM/COMPACT HI-FI SYSTEM

UD-50

INSTRUCTION MANUAL

KENWOOD CORPORATION



B60-0660-10 (JA) (K, E, T, M, X) (MC)
93/12 11 10 9 8 7

 Caution: Read this page carefully to ensure safe operation.

Introduction

Your choice of this product indicates that you are a devotee to excellence in sound reproduction.

We appreciate your patronage and take pride in the long tradition of quality components that our company represents. So that you can get the most out of your unit, we suggest that you take the time to read through this manual before you hook up and operate your system. This will acquaint you with operating features and system-connection considerations so that your listening pleasure will be enhanced right from the start. You will notice that in all aspects of planning, engineering, styling, operating convenience and adaptability we have sought to anticipate your needs and desires.

Keep this manual handy for future reference.

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model _____ Serial Number _____

Unpacking

Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

The marking of products using lasers (Except for some areas.)

**CLASS 1
LASER PRODUCT**

The label is attached to the rear panel and says that the component uses laser beams that have been classified as Class 1. It means that the unit is utilizing laser beams that are of a weaker class. There is no danger of hazardous radiation outside the unit.

WARNING NOTICE:

IN MOST CASES IT IS AN INFRINGEMENT OF COPYRIGHT TO MAKE COPIES OF TAPES OR DISCS WITHOUT THE PERMISSION OF THE COPYRIGHT OWNERS. ANYONE WISHING TO COPY COMMERCIALY AVAILABLE TAPES OR DISCS SHOULD CONTACT THE MECHANICAL COPYRIGHT PROTECTION SOCIETY LIMITED OR THE PERFORMING RIGHTS SOCIETY LIMITED.

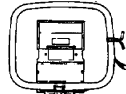
For the U.S.A.

Note to CATV system installer:

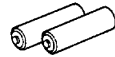
This reminder is provided to call the CATV system installer's attention to Article 820 - 40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as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

Accessories

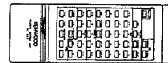
- AM loop antenna 1
- FM indoor antenna 1



- Batteries (R06/AA) 2
- Antenna adaptor (75 Ω /300 Ω) 1 (Except for some areas)



- AC plug adaptor 1 (Except for some areas)
- Remote control unit 1



- Speaker cords 2

For the unit with a European AC plug in areas other than Europe.



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⚠ Caution: Read this page carefully to ensure safe operation.

Before applying power

For the U.S.A. and Canada

Important!

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THE AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

For the United Kingdom

Important!

Units shipped to the U.K. are designed for operation on 240 volts AC only.

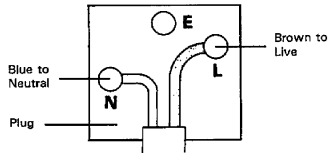
The mains plug must be removed from the wall socket prior to any internal examination.

The wires in this mains lead are coloured in accordance with the following code:

Blue Neutral
Brown Live

The wires in this mains lead must be connected to the terminals in the plug as follows:

Wire colour	Plug terminal marking
Blue	N or Black
Brown	L or Red



Notes:

1. If a 13-amp plug is used, this must be fitted with a 5-amp fuse.
2. If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

For Australia and Europe

Important!

Units shipped to Australia are designed for operation on 240 V AC only.

Units shipped to Europe are designed for operation on 230 V AC only.

For other countries

Important!

Units shipped to countries other than the above countries are equipped with an AC voltage selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

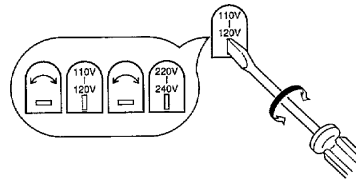
AC voltage selection

This unit operates on 110-120 or 220-240 volts AC. The AC voltage selector switch on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

Note:

Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.





AC voltage selector switch



Move switch lever to match your line voltage with a small screwdriver.

Safety precautions

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN		CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
	THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.		
	THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.		

IMPORTANT SAFEGUARDS

⚠ Caution : Read this page carefully to ensure safe operation.

Please read all of the safety and operating instructions before operating this unit. For best results, follow all warnings placed on the unit and adhere to the operating and use instructions. These safety and operating instructions should be retained for future reference.

1. 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 appliance.

2. 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, pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

Never pull or stretch the cord.

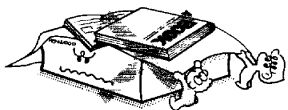


3. Grounding or polarization — The precautions should be taken so that the grounding or polarization means of this unit is not defeated.

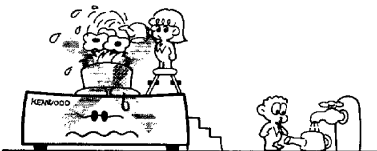
4. Ventilation — The unit should be situated so that its location or position does not interfere with its proper ventilation.

To maintain good ventilation, do not put records or a table-cloth on the unit. Place the unit at least 10 cm away from the walls.

Do not use the unit on a bed, sofa, rug or similar surface that may block the ventilation openings.

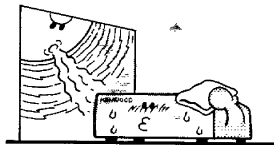


5. Water and moisture — The unit should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

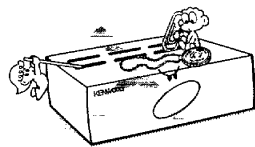


6. Temperature — The unit may not function properly if used at extremely low, or freezing temperatures. The ideal ambient temperature is above +5°C (41°F).

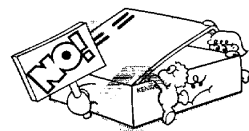
7. Heat — The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.



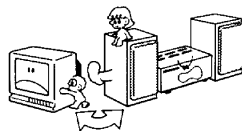
8. Electric shock — Care should be taken so that objects do not fall and liquid is not spilled into the enclosure through openings. If a metal object, such as a hair pin or a needle, comes into contact with the inside of this unit, a dangerous electric shock may result. For families with children, never permit children to put anything, especially metal, inside this unit.



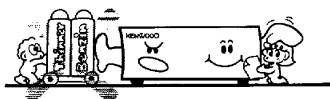
9. Enclosure removal — Never remove the enclosure. If the internal parts are touched accidentally, a serious electric shock might occur.



10. Magnetic fields — Keep the unit away from sources of magnetic fields such as TV sets, speaker systems, radios, motorized toys or magnetized objects.



11. Cleaning — Do not use volatile solvents such as alcohol, paint thinner, gasoline, or benzine, etc. to clean the cabinet. Use a clean dry cloth.



⚠ Caution : Read this page carefully to ensure safe operation.

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



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. Abnormal smell — If an abnormal smell or smoke is detected, immediately turn the power OFF and pull out the power cord. Contact your dealer or nearest service center.

POWER OFF!



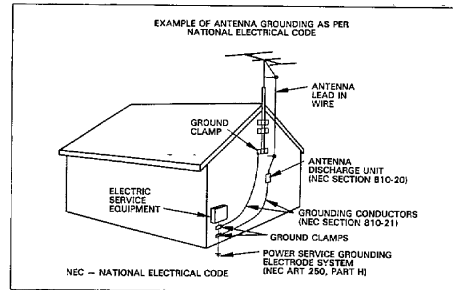
15. Damage requiring service — The unit should be serviced by qualified service personnel when:

- 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 enclosure damaged.

16. Servicing — The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

17. Outdoor antenna grounding — If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding con-

ductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.



18. Power lines — An outdoor antenna should be located away from power lines.

For the U.S.A.

CAUTION:

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

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD CORPORATION
SHIONOGI SHIBUYA BUILDING 17-5,
2-CHOME, SHIBUYA, SHIBUYA-KU,
TOKYO, JAPAN

KENWOOD CORP. CERTIFIES THIS EQUIPMENT
CONFORMS TO DHHS REGULATIONS NO. 21 CFR
1040.10, CHAPTER I, SUBCHAPTER J.

Location: Back Panel

Notes:

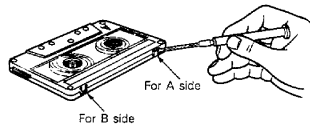
- 1. Item 3 is not required except for grounded or polarized equipment.
- 2. Item 17 and 18 are not required except for units provided with antenna terminals.
- 3. Item 17 complies with UL in the U.S.A.

Before operation

Notes on cassette tape

Safety tab (accidental erasure prevention tab)

After an important recording has been finished, break the safety tab, to prevent the recorded contents from being erased or recorded on accidentally.



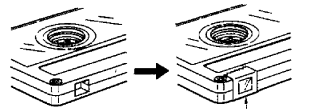
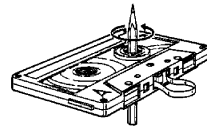
To store cassette tapes

Do not store the tapes in a place which is subject to direct sunlight, or near equipment that generates heat. Keep the cassette tapes away from any magnetic field.



When there is slack in the tape

In such a case, insert a pencil into the reel hole and wind the reel hub to remove the slack.



Note:

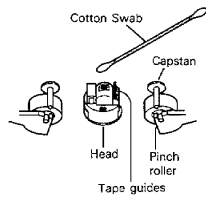
1. 120-minute cassette tape

Since a 120-minute cassette tape is very thin, the tape could adhere to the pinch roller or be easily cut. It is recommended that these tapes not be used with this unit to prevent possible damage.

2. Endless tapes

Do not use an endless tape, as this could damage the mechanism of the unit.

Cleaning the head section



Cleaning the heads and peripheral components

For maintaining the best condition of the deck and for longer service life, always keep the head (recording/playback/erase), capstan and pinch roller clean. To clean them, perform the following:

1. Open the cassette holder.
2. Using a cotton swab dipped in alcohol, clean the head (recording/playback/erase), capstan and pinch roller carefully.

Demagnetizing the head

When the recording/playback head is magnetized, the sound quality will be deteriorated. In such a case, demagnetize the head using a commercially available demagnetizer (head eraser).

Note:

There are precisely aligned parts around the heads, including the tape guides. When cleaning, pay special attention so as not to apply shock to them.

Beware of condensation

When water vapor comes into contact with the surface of cold material, water drops are produced.

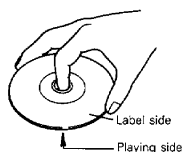
If condensation occurs, correct operation may not be possible, or the unit may not function correctly.

This is not a malfunction, however, and the unit should be dried. (To do this, turn the POWER switch ON and leave the unit as it is for several hours.)

Be specially careful in the following conditions:

- When the unit is brought from a cold place to a warm place, and there is a large temperature difference.
- When a heater starts operating.
- When the unit is brought from an air-conditioned place to a place of high temperature with high humidity.
- When there is a large difference between the internal temperature of the unit and ambient temperature, or in conditions where condensation occurs easily.

Disc handling precautions

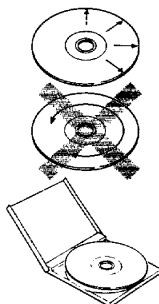


Handling

Hold compact discs so that you do not touch the playing surface.



Do not attach paper or tape to either the playing side of the label side of compact discs.



Cleaning

If fingerprints or foreign matter become attached to the disc, lightly wipe the disc with a soft cotton cloth (or similar) from the center of the disc outwards in a radial manner.

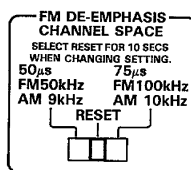
Storage

When a disc is not to be played for a long period of time, remove it from the CD player and store it in its case.

■ FM DE-EMPHASIS/CHANNEL SPACE switch (Except for some areas)

The FM DE-EMPHASIS/CHANNEL SPACE switch on the rear panel is set to the correct setting that prevails in the area to which the unit is shipped. However, if the FM DE-EMPHASIS/CHANNEL SPACE setting is not matched to the area where the unit is to be used; for instance, when you moved from area 1 to area 2 or vice versa, desired reception of AM/FM broadcasts is not expected. In this case, change the FM DE-EMPHASIS/CHANNEL SPACE setting in accordance with the area corresponding to the table. The FM DE-EMPHASIS is switched over at the same time.

	Area	CHANNEL SPACE freq.	FM DE-EMPHASIS
1.	U.S.A., Canada, Hawaii, South American countries	FM: 100kHz AM: 10kHz	75 μ s
2.	Other countries	FM: 50kHz AM: 9kHz	50 μ s



- When resetting the FM DE-EMPHASIS/CHANNEL SPACE switch, leave the switch at RESET position for about 10 seconds.

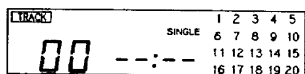
■ Memory backup function


Stored contents cleared immediately when power plug is unplugged from power outlet	Clock of amplifier Graphic equalizer (Stored patterns)
Stored contents cleared in at least 3 days after power plug is unplugged from power outlet	Preset stations of amplifier

Note related to transportation and movement

Before transporting or moving this unit, carry out the following operations.

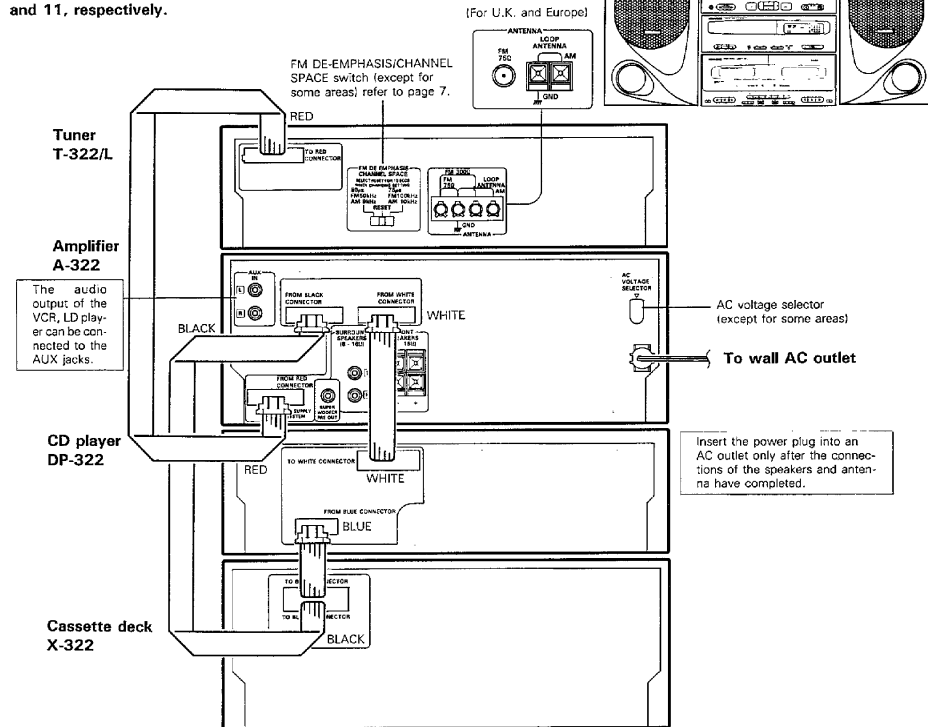
1. Turn the power ON but do not load a disc.
2. Wait a few seconds and verify that the display shown appears.
3. Turn the power OFF.



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

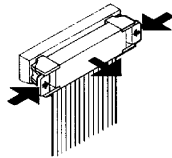
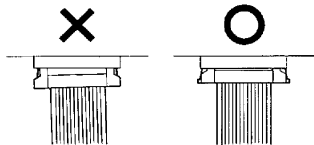
System connections

Make connection as shown below. When connecting the related system components, refer also to the instruction manuals of the related components. Do not plug in the power lead until all connections are completed. For details on antenna and speaker connections, see pages 9, 10 and 11, respectively.



■ Connection of parallel cord

- Hold the connector of the parallel cord in parallel with the socket on the rear panel, and insert securely until it clicks.
- Connect the parallel cord by matching the colors of the connector and socket.
- When unplugging the parallel cord, push and hold the two ends of the connector and pull the connector straight from the rear panel socket.

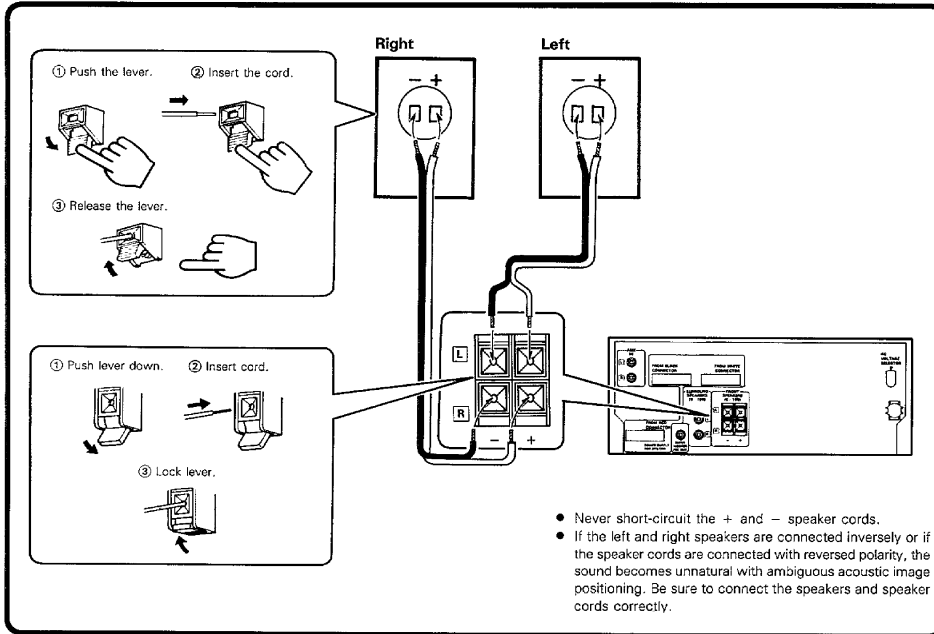


Notes:

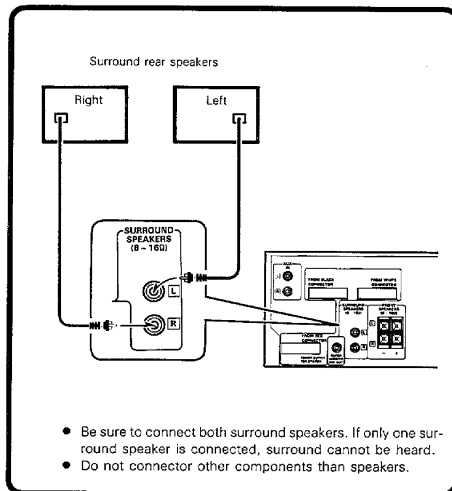
1. Connect all cords firmly. If connections are loose there could be loss of sound or noise produced.
2. When plugging and unplugging connection cords without removal of the power cord can cause malfunctions or damage to the unit.

Speakers connection

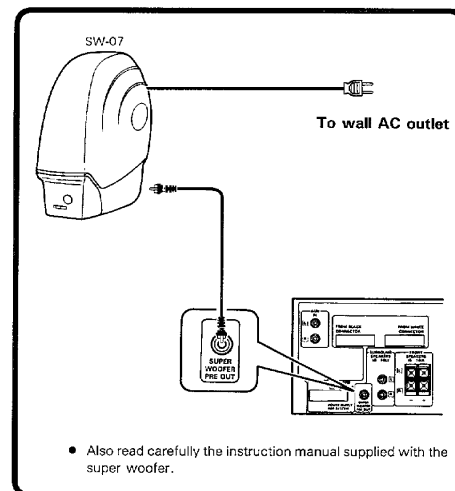
■ Connection of front speakers



■ Connection of surround rear speakers



■ Connection of super woofer

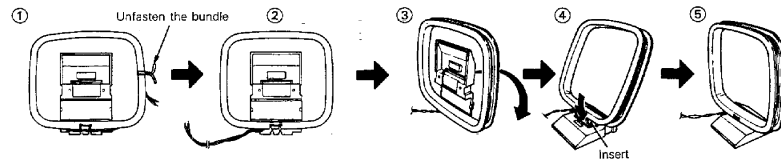


Antenna connections

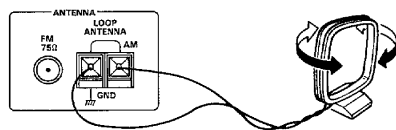
■ AM loop antenna connection

The supplied antenna is for indoor use. Place it as far as possible from the main system, TV set, speaker cords and power cord, and set it to a direction which provides the best reception.

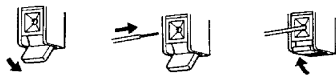
How to assemble



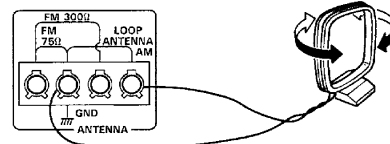
For UK and Europe



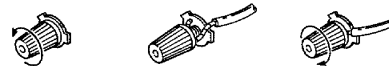
- 1 Push lever down.
- 2 Insert cord.
- 3 Lock lever.



For other countries

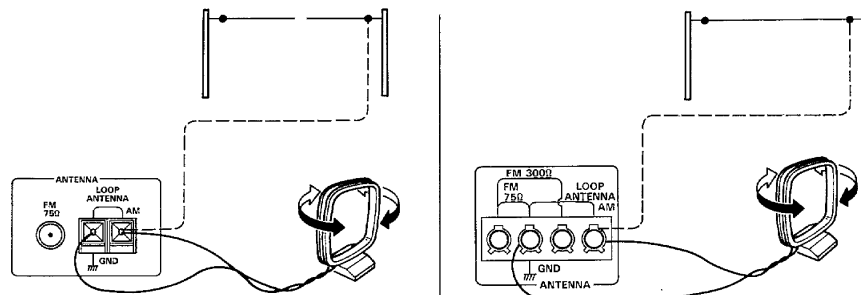


- 1 Loosen the screw.
- 2 Wrap the cord's conductor around.
- 3 Tighten the screw.



■ AM outdoor antenna connection

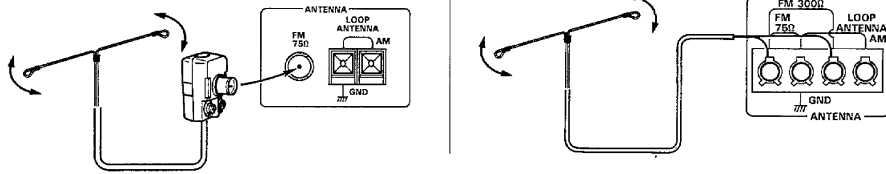
If the reception is poor when the AM loop antenna is used, distribute a vinyl-coated wire of more than 6 meters outdoors, without disconnecting the loop antenna.



■ FM indoor antenna connection

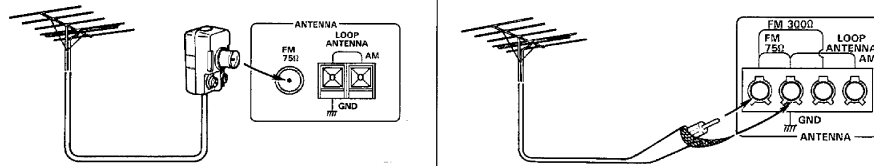
The supplied antenna is for indoor use. For stable reception, remove the indoor antenna after installing an outdoor antenna as soon as possible.

- ① Find the position that provides best reception.
- ② Fix two ends with thumbtacks or drawing pins.



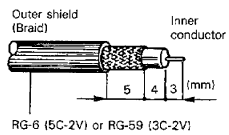
■ FM outdoor antenna connection

It is recommended to install an exclusive FM outdoor antenna to capture FM broadcasts with high sound quality. Use a coaxial cable for the connection between the outdoor antenna and FM ANTENNA terminal on the rear panel. For the connection between the coaxial cable and FM ANTENNA terminal, please refer to the illustration.

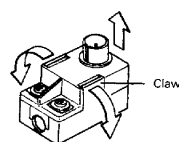


■ 75 Ω coaxial cable connection

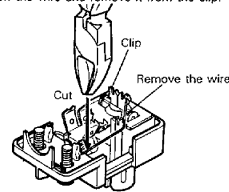
- ① Arrange the coaxial cable as illustrated.



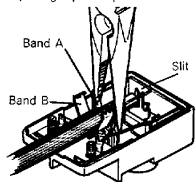
- ② Open the antenna adaptor.



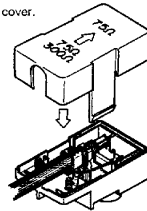
- ③ Cut off the wire and remove it from the clip.



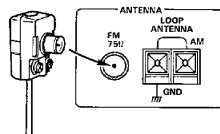
- ④ Insert into the slit on the clip. Fasten the bands A and B, using a pair of pliers.



- ⑤ Close the cover.



- ⑥ Connect the adaptor to the antenna terminal.

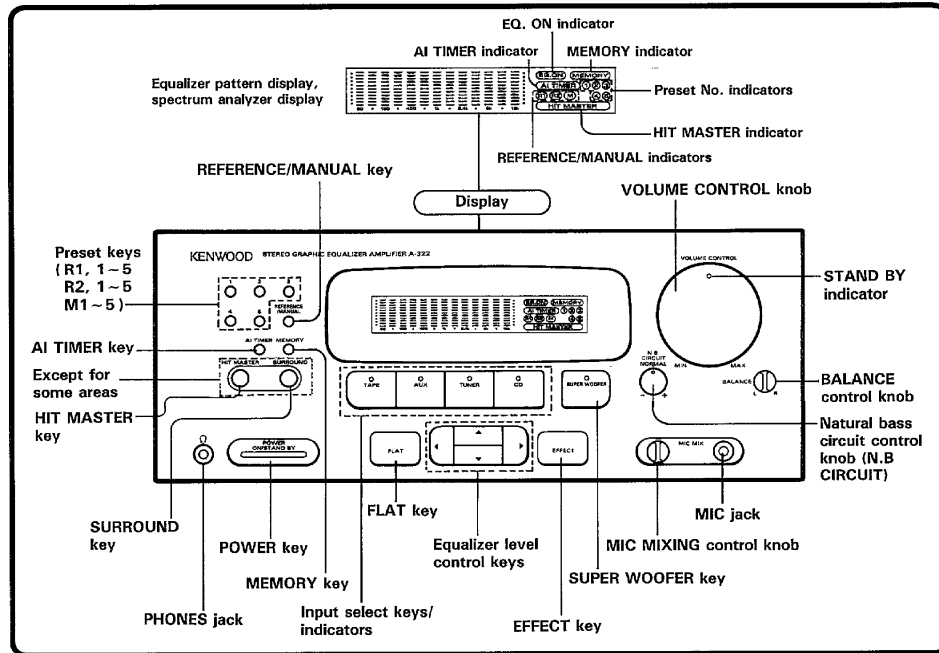


Note:

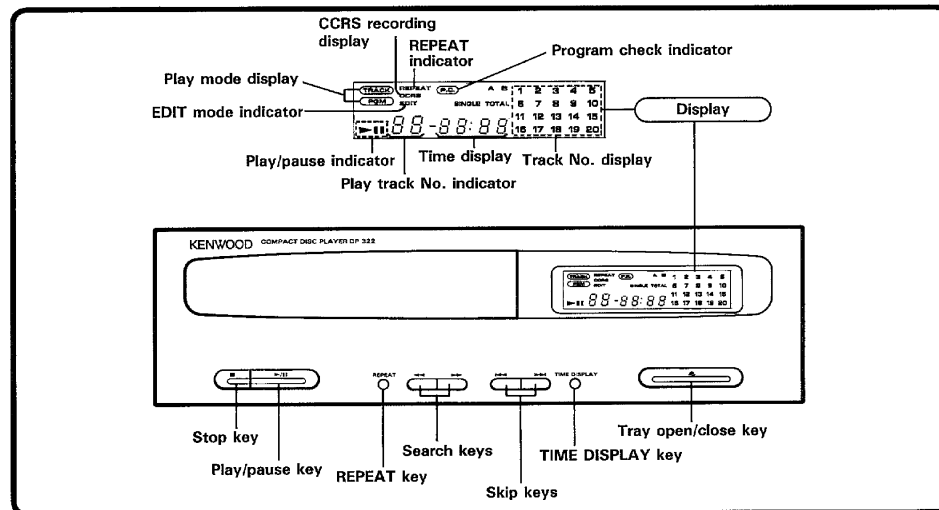
To connect the 300 Ω feeder, attach the ring shown in the illustration. If the ring is not attached, the sensitivity decreases.

Controls and indicators

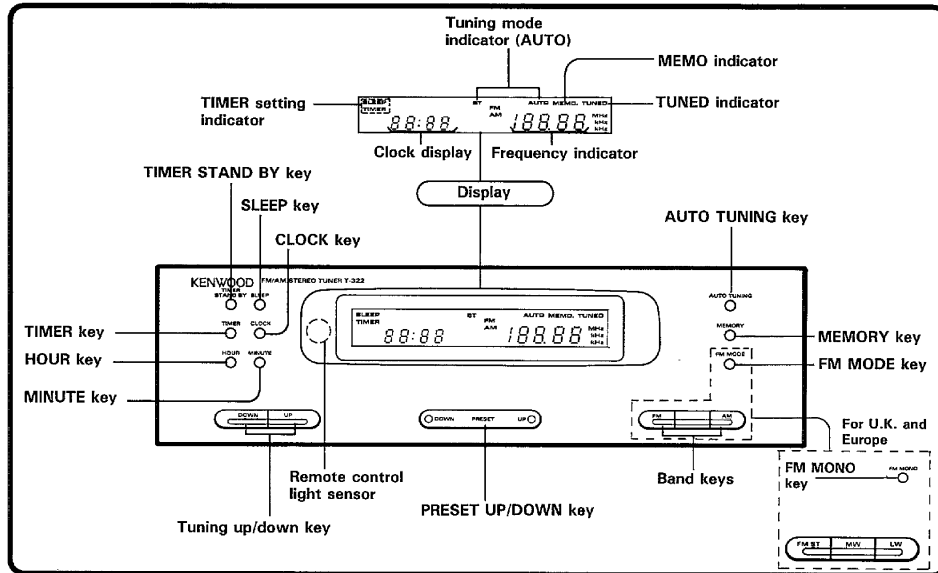
■ Amplifier



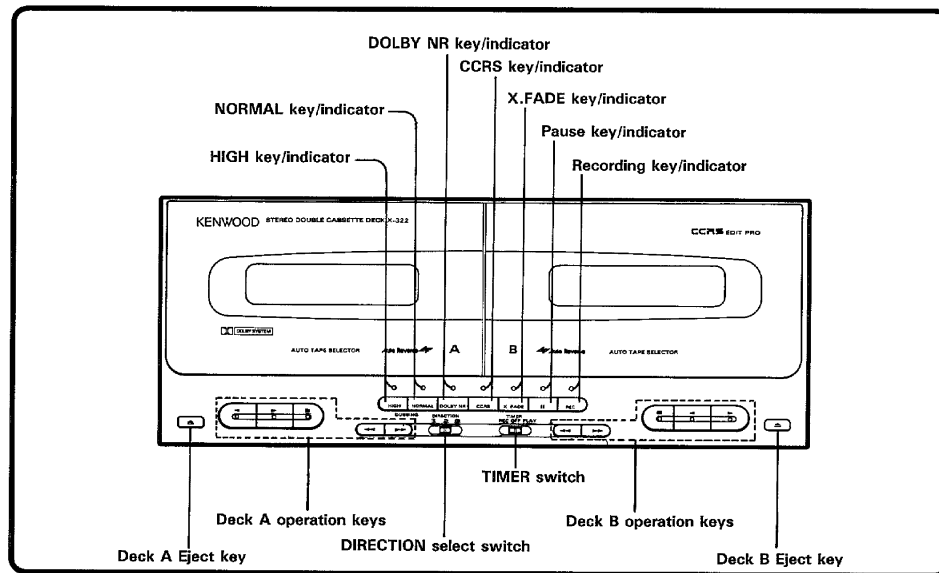
■ CD player



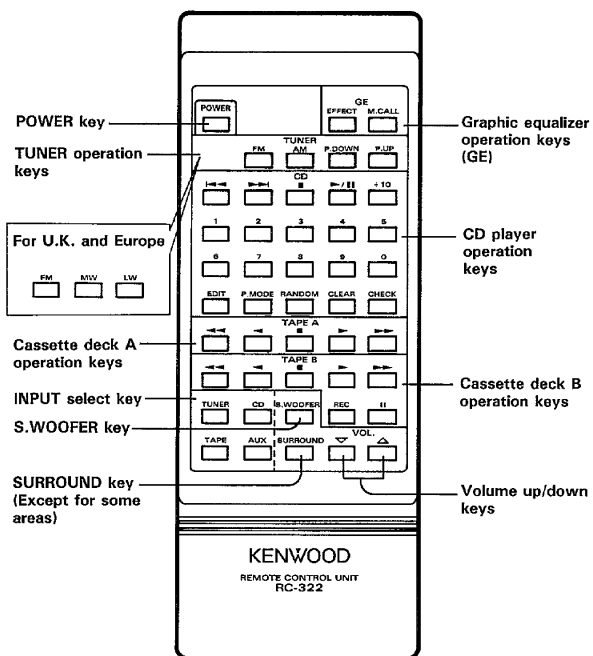
■ Tuner



■ Cassette deck

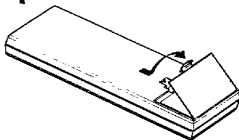


Operation of remote control unit

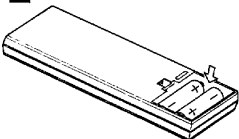


■ Loading batteries

1 Remove the cover.

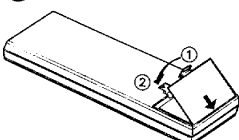


2 Insert batteries.



Insert two AA-size (R6/SUM-3) batteries as indicated by the polarity marking.

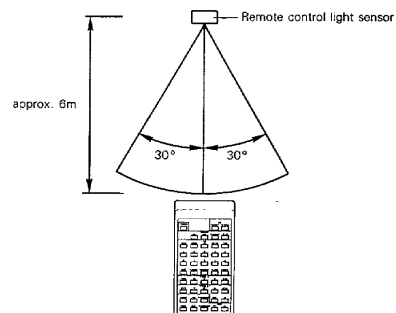
3 Close the cover.



■ Operation procedure

Plug the power cord of the system into an AC wall outlet, and press the **POWER** key on the remote control unit to turn the power on.

When the power is turned on, press the key of the source component to be operated.



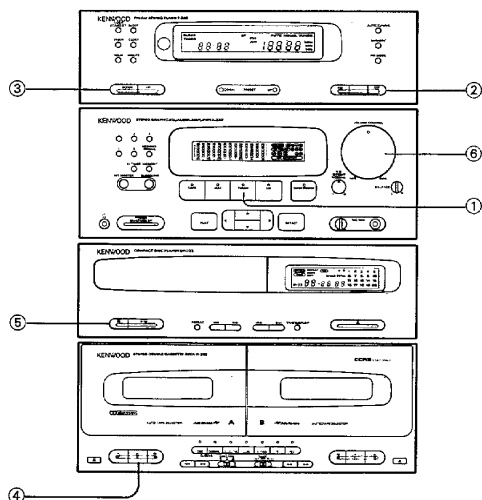
- When two operation keys on the remote control unit are pressed successively, press each key securely reserving an interval of more than 1 second for each press.

Notes:

1. The supplied batteries are intended for use in operation checks. Therefore, their lives may be shorter than ordinary batteries.
2. When the remote-controllable distance gets shorter than before, replace both batteries with new ones.
3. Malfunction may occur if direct sunlight or the light of a high-frequency lighting fluorescent lamp enters the remote control light sensor. In such a case, change the system installation position to prevent the malfunction.

Listening to sound

For details, also refer to the instruction manuals provided with the connected components.

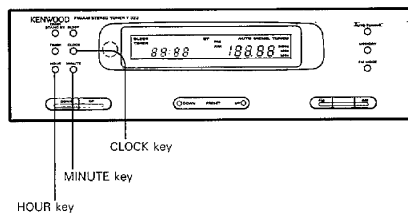


	To listen to a radio broadcast	To listen to a tape	To listen to a CD
1	<p>Select the TUNER input ①. Select the broadcasting band ②.</p> <p>() : For U.K. and Europe</p>	<p>Insert a tape in Deck A.</p> <p>Deck A</p>	<p>Place a CD on the tray.</p> <p>Label side</p>
2	<p>Select a station. Press the tuning up/down key ③.</p>	<p>Play the tape. Press the play key ④.</p>	<p>Play the CD. Press the play/pause key ⑤.</p>
3	<p>Adjust the volume.</p> <p>• Turn the VOLUME CONTROL ⑥ for an optimum volume.</p>		

Note:
If sound is not output, check the connections described from page 8 again.

Time adjustment

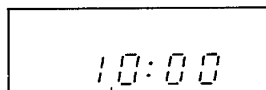
The tuner incorporates the clock function. Adjust the clock to the exact time, especially when the timer function is to be used.



1 Set the "hour".



Press the HOUR key while holding the CLOCK key depressed.

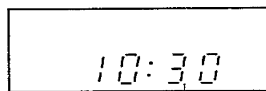


The "hour" increments every time the HOUR key is pressed. Holding the key depressed varies it successively.

2 Set the "minute".



Press the MINUTE key while holding the CLOCK key depressed.



The "minute" increments every time the MINUTE key is pressed. Holding the key depressed varies it successively.

Note:

The time display blinks after a power failure or when the power cord was unplugged from the power outlet. In this case, adjust the time again.

Status when the power is switched ON

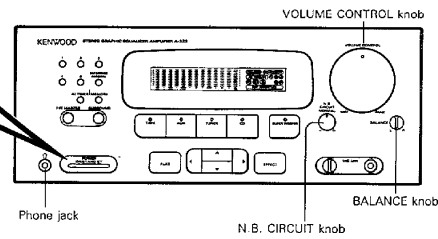
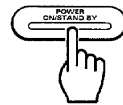
When the power is switched ON, the input selector of the system is set automatically in the order of priority as shown below.

- Priority 1.** If the timer has been set on the cassette deck, its operation is given the first priority.
- Priority 2.** If a disc has been placed in the CD player, the CD will be played back automatically.
- Priority 3.** If a disc has not been set in the CD player, the tuner reception will start.

Operation of amplifier

Press the POWER key of the amplifier.

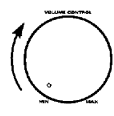
- The POWER key on the amplifier can switch on/off the powers of main system.



Adjusting the volume

The volumes of the front, Surround and Super Woofer speakers are controlled simultaneously.

Volume level



Amplifier main unit



Remote control unit

- When the volume is controlled from the remote control unit, the VOLUME CONTROL rotates accordingly.

Adjusting the left and right volume balance

Balance

To decrease right speaker sound

To decrease left speaker sound



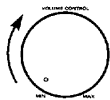
Listening through headphones

1 Insert the headphone plug into the headphones jack.



- Sound from all speakers is turned off.

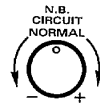
2 Adjust the volume.



- Be sure to minimize the volume before unplugging the headphone plug.

Compensation of bass sound

N.B. CIRCUIT: Natural Bass Circuit



- Usually set the switch to the center position.
- Adjust to obtain a more natural bass sound.

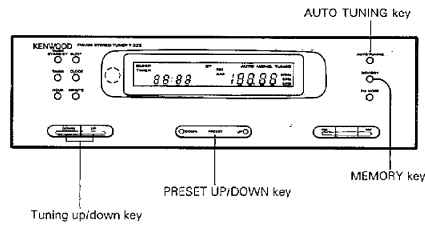
STAND BY mode of POWER switch

When the power cord of this system is plugged into an AC outlet, the STAND BY indicator lights up regardless of the ON/OFF setting of the POWER switch. This indicates that a small amount of current is being supplied to the unit to back up the memory contents. This mode is referred to as the Stand By mode. While the STAND BY indicator is lit, the power of the system can be switched ON/OFF from the remote control unit.

Automatic play operation function associated with input select keys of amplifier

The automatic play operation allows to start playing the selected input source by simply pressing the input select keys (TAPE, CD). It also allows to select a correct input select keys on the amplifier by simply starting playback on the desired input source component. The same operation is also possible with the input select keys on the remote control unit. The input source selected at the moment the power is switched ON is the last source (TAPE, CD, etc.) selected before switching the power OFF.

Reception of radio broadcast



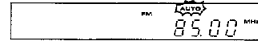
■ Receiving broadcast stations and storing them in memory (preset operation)

1 Select the broadcast band.



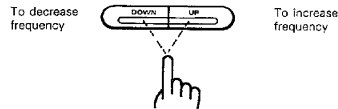
2 Select the tuning mode.

- Normally, select the auto mode (with AUTO lighted).



Press the key to select the auto (AUTO lighted) or manual (not lighted) mode.

3 Tune the desired station.



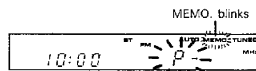
- The TUNED indicator lights up when a station is received.
- Use manual tuning mode when the radio wave is weak and noisy.
- At this time, the stereo FM broadcast is received in monaural mode.

Auto tuning mode	Manual tuning mode
Press once. (Tuning stops automatically when a station is received.)	Press repeatedly, or press and hold, until the desired station is received.

4 Store the station in preset memory.

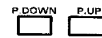
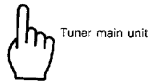
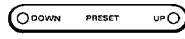
① Press the MEMORY key.

- Up to 20 FM stations and up to 10 AM stations (totally 10 stations of MW and LW stations) can be preset.
- To preset FM stations in stereo, press the FM ST key so that the ST indicator lights up.

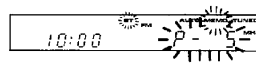


② Select the number to be used to preset a station.

- Holding the key depressed varies the preset numbers successively.



Remote control unit

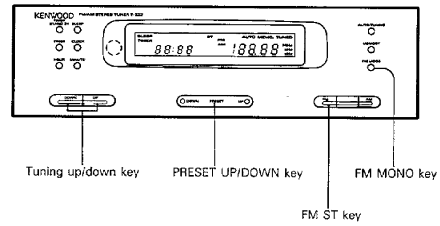


MEMO, goes off

③ Press the MEMORY key.

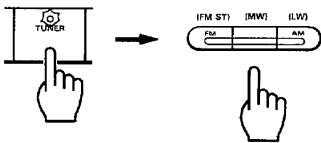
- When a station has previously been preset under the numeric key pressed, the newly preset station replaces the previous station.



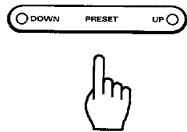


■ Receiving a preset station

1 Select the broadcasting band.



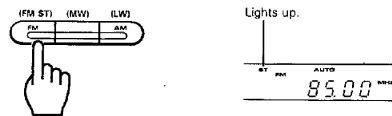
2 Select the desired station.



- The preset No. is displayed, then the frequency of the received station is displayed.

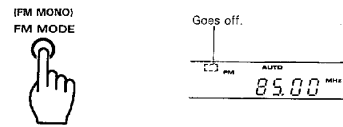
■ Listening to FM stereo broadcast

To receive FM in stereo



- Set to this condition in normal cases.
- If the broadcast changes to monaural, the tuner reception mode also changes automatically to mono, but the **ST** indicator on the display remains lighted.

To receive FM in monaural



(): For U.K. and Europe.

- In case noise is noticeable during reception of a stereo broadcast, press the **FM MONO** key so that the **ST** indicator is extinguished.
- When presetting FM stations, the reception mode of each station can be selected by pressing the **FM MONO** key for mono or the **FM ST** key for stereo.

Operation of graphic equalizer

The system incorporates 7-band graphic equalizer. It allows to select the desired equalizing pattern easily from user-preset equalizing patterns created by the user as well as the fifteen factory-preset patterns.

Contents of display

Spectrum analyzer display

Displays the frequency distribution of the source being played to allow understanding at a glance. The peak value of the varying level of each frequency range is held and displayed in near real time. (Peak hold level)

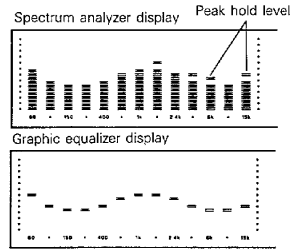
Graphic equalizer display

Shows how each frequency range is compensated. The graphic equalizer display also appears for about 5 seconds, even while the unit is in the spectrum analyzer display mode, when one of the following operations is performed.

1. Switching power ON.
2. An operation key associated with an equalizer operation is pressed.



When one of the equalizer level control keys is pressed, the graphic equalizer display appears.



Equalizer pattern list

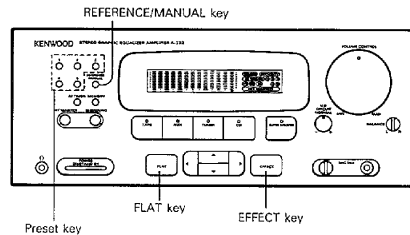
The preset patterns consist of 2 basic patterns and 5 genres. Select the desired pattern. Three modes can be selected with the REFERENCE/MANUAL key.

R1 [clear] : To emphasize the mid range, such as vocals.
R2 [scale] : The high and low ranges are emphasized to obtain a scale effect.

Preset \ R/M	R1	R2	MANUAL
①	Po 1	Po 2	M1 (Soft)
②	Rock 1	Rock2	M2 (Clear)
③	Jazz 1	Jazz 2	M3 (Heavy)
④	Fusion 1	Fusion 2	M4 (Scale ①)
⑤	Movie 1	Movie 2	M1 (Scale ②)

Five genres are available in each mode.
① [Po] : For popular music and fusion.
② [Rock] : For rock music to enhance bass and drum sound.
③ [Jazz] : For jazz music.
④ [Fusion] : For fusion music.
⑤ [Movie] : For movie sound from an LD player or VTR.

In this mode, the setting can be preset.
M1 : For listening to music with a soft sound to the ears, like background music.
M2 : For listening to brilliant sound with attenuated bass.
M3 : For listening to music like rock and fusion with a more powerful sound.
M4 : For listening to a more exciting sound.
M5 : For listening with even more exciting sound than M4.

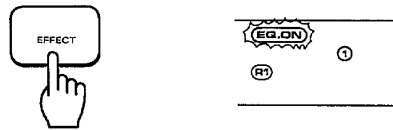


■ Operation of REFERENCE/MANUAL feature

This feature allows to recall one of 15 preset equalizer patterns in a simple manner.

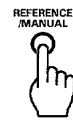
1 Play a music source.

2 Press the EFFECT key.



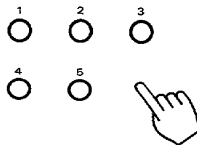
3 Select an equalizer pattern.

① Set to MANUAL or REFERENCE.

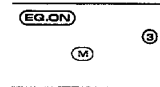


R1 → R2 → M
Each time changes the figures.

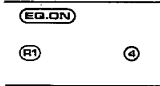
② Press the key for the desired pattern.
(Refer to the equalizer pattern list on page 20.)



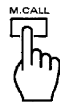
Example when "3" is selected in the MANUAL mode.



Example when "4" is selected in the REFERENCE mode.



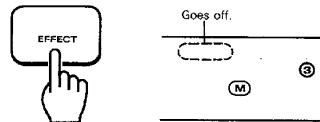
Remote-controlled selection is also possible.



→R1-1.....R1-5→R2 1.....R2 5
M5←M4←M3←M2←M1←

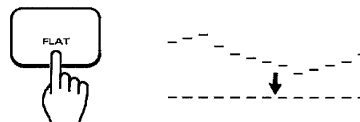
Patterns are switched every time the M.CALL key is pressed.

To cancel the equalizer effect



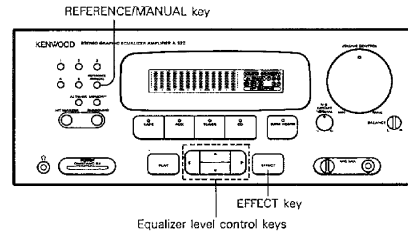
• The pattern being displayed remains the same.

How to use the FLAT key



• Pressing the FLAT key makes the displayed curve flat.

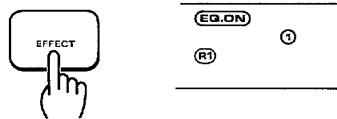
Operation of graphic equalizer



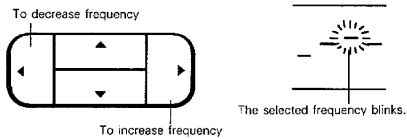
■ Fine adjustment of each frequency band

Adjust with the AI TIEMR set to OFF.

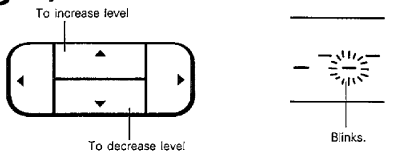
1 Press the EFFECT key.



2 Select the frequency band to be adjusted.



3 Adjust its level.



4 For each frequency band to be adjusted, repeat steps 2 and 3 above.

■ User-preset of user-created pattern (M1 ~ M5)

1 Create a desired equalizer pattern.

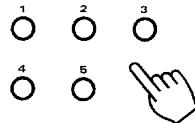
- Any equalizer pattern can be preset if it is being displayed.

2 Preset the equalizer pattern in the manual memory.

- ① Press the MEMORY key.

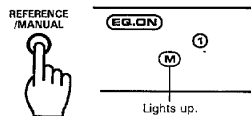


- ② Press one of the preset keys.

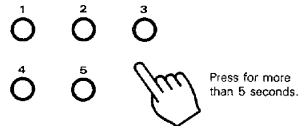


- Pattern is preset under the number of the numeric key pressed.
- Up to five patterns can be preset in the same manner.
- When a pattern has previously been preset under the numeric key pressed, the newly preset pattern replaces the previous pattern.

To return to the initial pattern (factory-preset patterns M1 to M5 on page 20) by clearing the user-preset pattern



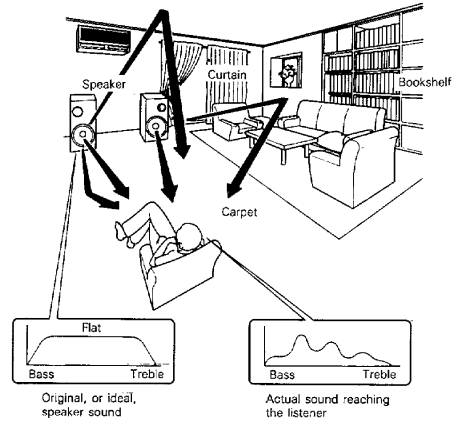
Lights up.



Press for more than 5 seconds.

After checking that the unit is set to MANUAL mode, press the preset key to be initialized for more than 5 seconds.

Functions of graphic equalizer



Compensation for the audio characteristics of listening room

The listening room may contain several objects. Some of them reflect sound and some absorb sound, thus the sound reaching your ears is considerably affected by these objects.

In such cases, the graphic equalizer can be used to adjust the frequency response of the room for a flat response from low to high frequencies.

- Low frequencies are absorbed by beds, chairs, etc.
- High frequencies are absorbed by curtains, screens, etc.
- The room structure can cause the low frequencies to be unclear, or the sound level to increase or decrease depending on the frequency.

Adjustment of sound to your individual taste

When the reproduced sound contains several musical instruments and voices, the graphic equalizer allows you to enhance or attenuate the sound of specific instruments or voices.

Sound equalization

Bass range (60 Hz ~ 150 Hz)

Usually, the listening room resonance frequency is in this range. To eliminate bass resonance, move this control down.

Mid-bass range (275 Hz ~ 400 Hz)

This range is the basis of music. Whether the sound is rich or not, depends on this range. When the playback sound is not so good, move this control up.

Mid range (700 Hz ~ 1 kHz)

When this control is moved up or down, the baritone or soprano voice is emphasized/de-emphasized. This range is related to the "presence" of music.

Mid-high range (1.7 kHz ~ 2.4 kHz)

This range is related to stimulus and metallic sound. When this range is well compensated, vivid sound can be obtained.

High range (4.2 kHz ~ 6 kHz)

This frequency range is related to the hardness of the sound. When this control is moved up, strings or brass instruments, such as flutes or piccolos, are emphasized. When the control is moved down, the sound will be more soothing.

Super high range (10.5 kHz ~ 15 kHz)

This frequency range is related to the details of the music. When this control is moved up, super high frequency instruments, such as triangles or cymbals, are emphasized, resulting in wide sound and echoes.

Operation of CD player

■ Playing a CD from the beginning (TRACK mode)

1 Select the CD source with the input selector of the amplifier.

2 Insert a CD.

① Open the disc tray. → ② Place a CD on the tray. → ③ Close the tray.

- Hold the disc taking care not to touch the side to be played.
- Be sure to place only one CD at a time.

The track Nos. recorded on the CD are displayed.

3 Start playback.

- In a few seconds, playback starts from track No. 1.

Track No. being played Elapsed time from the beginning of track being played

To pause CD play

- To resume playback, press the key again.

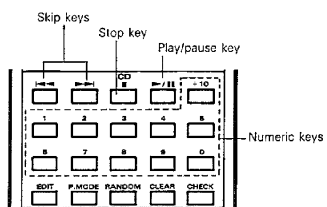
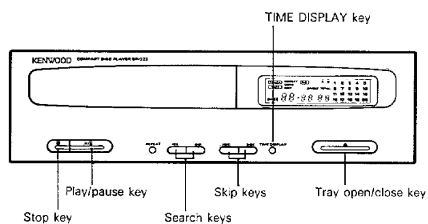
To stop CD play

TIME DISPLAY key

Press the **TIME DISPLAY** key when you want to check the elapsed time and remaining time of the track being played. Every time the **TIME DISPLAY** key is pressed, the displayed time is switched as shown below.

The time display shows "----" during play of 21st and higher selections.

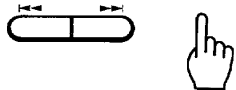
Time display example 1:23 -2:37 23:45 -36:15



■ Starting play from a desired track

Selection using the skip keys

Press one of the skip keys according to which direction to skip.



- Tracks are skipped in the direction of the pressed key, and playback resumes from the selected track.
- When the key is pressed once during play, the track starts again from the beginning.

Selection using the search keys

Press the forward or reverse search key according to the direction to move.



- The disc is fast-forwarded or fast-reversed while the corresponding side of the key is held pressed.
- Playback resumes from the position where the key is released.

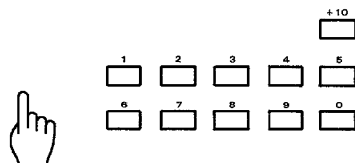
Selection using the numeric keys

Remote control only

1 Ensure that the CD player is in the TRACK mode.

If the **PGM** indicators is lighted, press the **P.MODE** key.

2 Select the desired track.



Examples of input

Track No. 10 : + 10 0

Track No. 23 : + 10 + 10 3

- The selected track and also the tracks located after it will be played back.

Notes:

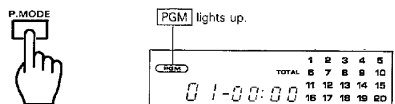
1. If a track No. which is not present on the CD is selected while the tray is open, the last track on the CD will be played.
2. Such a selection is not accepted after the tray has been closed or playback has started.
3. The music calendar is not displayed if a track No. above 20 is selected.

■ **Playing desired tracks in desired order (PGM mode)** Remote control only

Up to 20 tunes can be programmed and played back in the desired order.

1 Enter the PGM mode.

Press the **P.MODE** key.

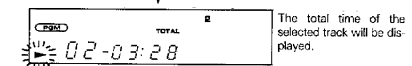
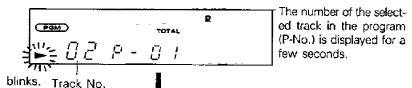


The SINGLE TIME (elapsed time) display changes to TOTAL TIME (remaining time) display.

2 Program desired tracks in desired order.

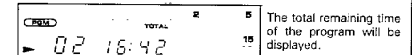
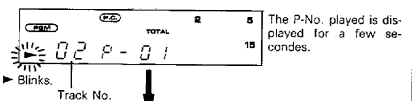
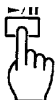
Example

To program track Nos. 2, 5 and 15: Press numeric keys **2**, **5**, **+10** and **5** in this order.

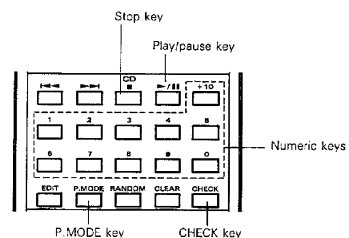


- Up to 20 tunes can be selected. When the 21 or more tunes are selected, "P..." is displayed.
- If you made a mistake, press the CLEAR key (Remote control only) and select the correct track.
- Tracks can also be programmed by reading the disc label while the disc tray is open.
- The playing time is not displayed if track No. 21 or more is selected.

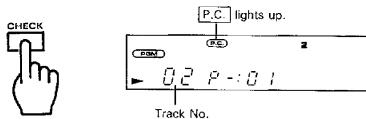
3 Start playback.



- Tracks are played in the order they are programmed (P.No.).
- Pressing one of the skip keys (**[▶▶]**, **[◀◀]**) during playback skips tracks in the corresponding direction.



To check the programmed order



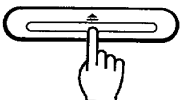
- Every time the key is pressed, the track No. and the order it was programmed (P.No.) are displayed in the order of programming.
- The previous display will resume in a few seconds.

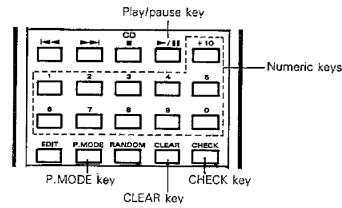
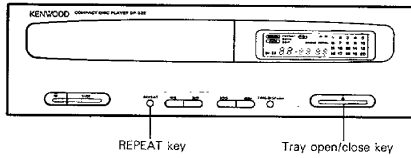
To quit the PGM mode



Press the stop key then the P.MODE key.

OR

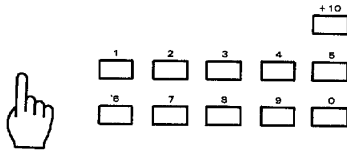




■ To add a track to the program

Remote control only

Press the key(s) for the track No. to be added.

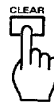


- This is not possible during playback.

■ To clear tracks from the program

Clearing from the last track

Remote control only

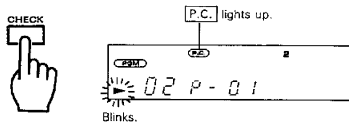


- Every time the key is pressed, tracks are cleared from the last track in order.
- This is not possible during playback.

■ To change a track in the program

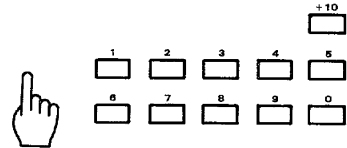
Remote control only

1 Press the CHECK key.



Press repeatedly until the program No. to be changed is displayed.

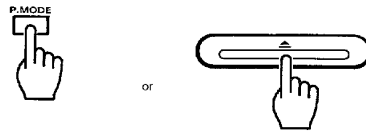
2 Press the key(s) to input the track No. to replace the previous one.



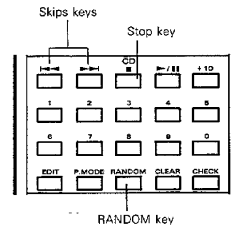
Press while the P.C. indicator is lighted.

- The track being played cannot be changed.

Clearing the whole of program



- This is not possible during playback.



■ Random play

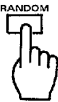
Remote control only

Random play is a function which plays tracks in a random order by selecting every track at random. It provides a play-back which does not tire the listener for hours.

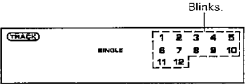
1 Check that the CD player is in the TRACK mode.

- If PGM is lighted, press the P.MODE key.

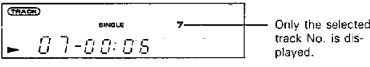
2 Press the RANDOM key.



During random track selection

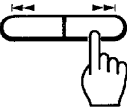



During random play
When track No. 7 is selected first



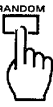
- Every time a track has been played, the next track is selected at random and played.

To select another track during random play



- Pressing  once returns to the beginning of the track being played.

To cancel random play in the middle



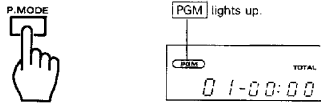
- Normal play starts from the track being played.

Note:
A track is never played successively, but it may be played again later.

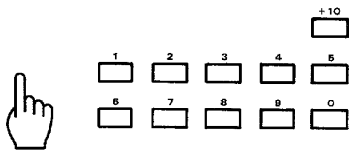
Repeat play

Repeating a program

1 Enter the PGM mode.

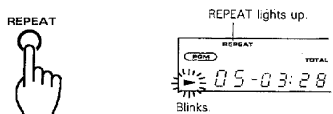


2 Select desired track(s).

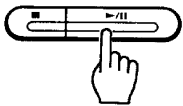


- The whole of the program made up of the selected tracks will be played repeatedly.
- If only one track is selected, that track will be played repeatedly.

3 Press the REPEAT key.

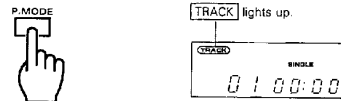


4 Start playback.

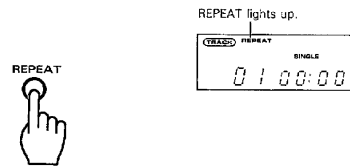


Repeating a disc

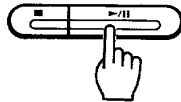
1 Enter the TRACK mode.



2 Press the REPEAT key.

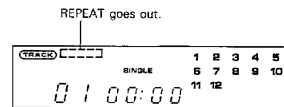


3 Start playback.



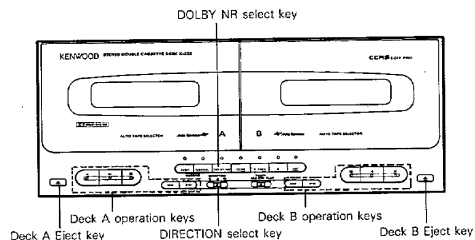
To resume normal playback

Press the **REPEAT** key again.



- The playback will be resumed under the CD player mode set before the repeat.

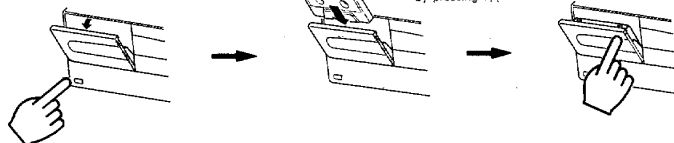
Playback operation of cassette decks



■ To playback a tape

1 Insert a cassette tape.

Press the Eject key.



Close securely by pressing upper inside.

- The type of tape, Normal, Chrome or Metal, is detected and set automatically.
- Be sure to remove tape slack before insertion.

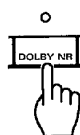
2 Determine the playback conditions.

① Select the playback mode.



- To play both sides endlessly.
- ◀ To stop after playing both sides of tape.
- ▶ To stop after playing one side of tape.

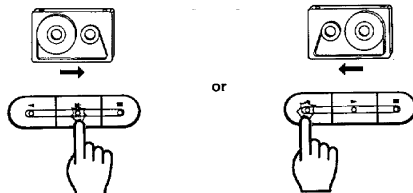
② Select the Dolby NR mode.



Select according to the tape to be played.

ON (Lighted)
↓
OFF (Extinguished)
Alternate every time the key is pressed.

3 Start playback.

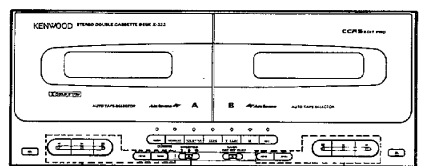


To stop playback, press the ■ key.

- Do not press the Eject key until the tape has stopped completely.

Dolby NR (Noise Reduction)

The Dolby NR system minimizes tape noise heard during tape playback by utilizing the characteristics of tape recording and playback. The tapes recorded with Dolby NR ON must be played back with Dolby NR ON.



Deck A operation keys Deck B operation keys
DIRECTION select switch

■ To wind the tape at high speed

1 Stop playback.

2 Press the <<< key or >>> key.

: Fast tape winding in the ← direction : Fast tape winding in the → direction

To stop fast tape winding

Tape transport direction indicators

The <<< indicators show the direction of tape transport in its playback or recording. The direction selected when the tape was stopped the last time is maintained even after the power is turned off. When the tape is started automatically by the automatic play operation, etc., the transport starts with the direction shown by the direction indicator. If you want to change the transport direction for the next time the power is turned on, press the play key of the opposite direction before turning power off.

Deck A direction indicators Deck B direction indicators

■ Relay playback

The relay playback allows to play two tapes in decks A and B alternately and repeatedly.

1 Insert tapes.

Deck A Deck B

- The tapes are played in the directions indicated by their respective indicators.

2 Select the playback mode.

... Relay playback of both sides of tapes in decks A and B is repeated.

... Relay playback of only one side of tapes in decks A and B is repeated.

- Relay playback cannot be performed if the DIRECTION select switch is set to "C".

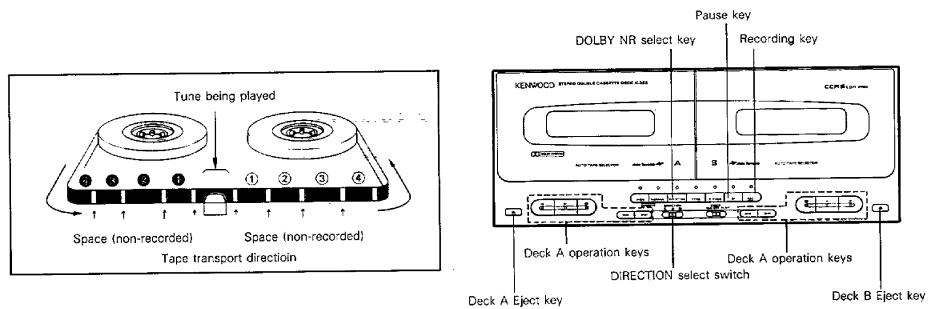
3 Start playback.

- The playback starts with the deck the play key of which is pressed.

DPSS operation

The DPSS stands for Direct Program Search System, which enables the following convenient operations (these operations are, however, not available on both decks simultaneously). The DPSS functions are based on the detection of non-recorded spaces of 4 seconds or more between tunes.

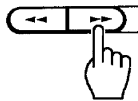
- Skip play:** By specifying a tune located several tunes beyond (or behind) the tune being played, skips tunes between the current tune and the desired tune and starts playback from the beginning of the selected tune. Up to 16 tunes can be skipped in Skip Search.



■ Skip play operation

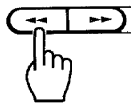
If the direction indicated by the tape direction indicator is ←, always press the keys for the opposite directions to those shown in the illustrations below.

To play the next tune



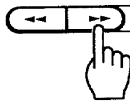
Press once during the playback.

To play the tune being played from the beginning again



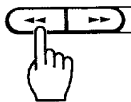
Press once during the playback.

To play the fourth tune located after the tune being played



Press 4 times during the playback.

To play the fourth tune located before the tune being played

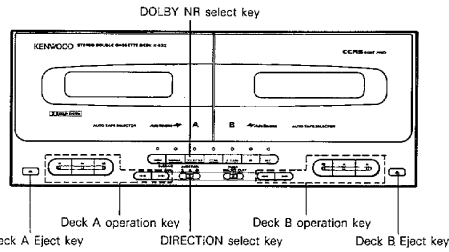


Press 5 times during the playback.

The DPSS will not function properly with the following types of tapes.

- Tapes containing spaces of 4 seconds or more, such as conversations and speeches.
- Tapes containing extremely low levels or non-recorded blanks in the middle of tunes, such as classical music.
- Tapes containing recording or large noise between tunes.
- Tapes containing spaces of less than 4 seconds between tunes.
- Tapes recorded with low recording level.
- Tapes recorded using Cross-fade recording.

Recording operation on cassette deck (Deck B only)



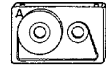
■ Ordinary recording

For recording, be sure to use the normal or chrome tape.
Recording is not possible with a metal tape.

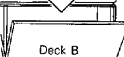
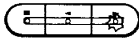
1 Set up the cassette deck.

- ① Insert a tape in deck B.

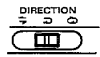
Tape to be recorded onto Deck B



- ② Set the tape transport direction.

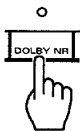


- ③ Select one-side or two-side recording.



⇄ : Two-side recording
⇆ : One-side recording

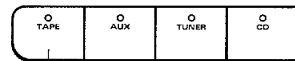
- ④ Select the Dolby NR mode.



ON (Lighted)
⇕
OFF (Extinguished)

Alternate every time the key is pressed.

2 Select the source to be recorded.



This cannot be a recording source.

3 Start recording.

- ① Initiate the record-pause mode.



Press once.

- The cassette deck re-enters the record-pause mode after leaving a non-recorded blank of 4 seconds.

- ② Play the music source from the beginning.

- ③ Press the REC key.



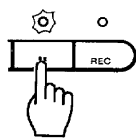
Press twice.

- The deck enters the stop mode automatically when the tape has been recorded till the end.

Note:

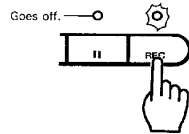
With some discs (with high recording disc), the recording sound is sometimes distorted. Use CCRS recording for these discs.

■ To pause recording temporarily



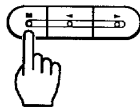
- The indicator lights up.

To resume recording



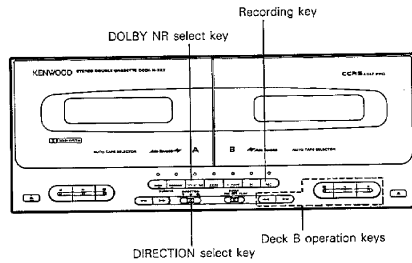
■ To stop recording

1



2 Stop playing the source component.

Recording operation on cassette deck (Deck B only)

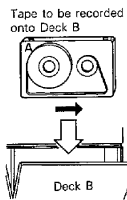


■ Synchro recording of CD playback

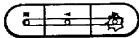
The cassette deck and the CD player can be started simultaneously.

1 Set up the cassette deck.

- ① Insert a tape in deck B.



- ② Set the tape transport direction.



- ③ Select one-side or two-side recording.



— : Two-side recording
— : One-side recording

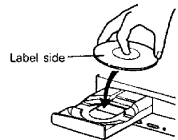
- ④ Select the Dolby NR mode.



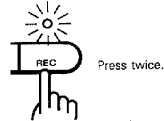
ON (Lighted)
OFF (Extinguished)

Alternate every time the key is pressed.

2 Place a CD.



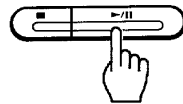
3 Initiate the record-pause mode.



- The cassette deck re-enters the record-pause mode after leaving a non-recorded blank of 4 seconds.

4 Start playing the CD.

- ① Select the desired tracks with the numeric key.
② Start playback.



- Tape recording starts at the same time.
- When the CD player has completed playback, the cassette deck also stops recording and enters the stop mode.

To pause

Press the key of the CD player.

To resume recording

Press the key of the CD player.

To stop recording

Press the key of the CD player.

- When the key on the cassette deck is pressed, the cassette deck enters the stop mode, but the playback of CD does not stop.

■ Creating a blank between tunes

A non-recorded blank of 4 seconds can be created between tunes. These blanks are useful for the DPSS function, etc.

In stop mode

Press successively twice.



In record mode

Press once.



- The cassette deck re-enters the record-pause mode after leaving a non-recorded blank of 4 seconds.

Recording of CD playback (CCRS)

- Recording of TRACK mode playback:** Recording starts at the first tune of the CD. When the tape reaches its end of the side, the tape is reversed and recording continues.
- Recording of PGM mode playback:** CCRS starts recording the programmed CD tracks in the programmed order. When the end of one tape side is reached during recording, the track which should end in the middle is erased, and the recording on the other side of tape is started from that track.
- EDIT recording:** When the recording time of the tape is specified first, the order of the CD tracks are edited so that no track is interrupted at the end of each side of tape. The maximum number of tracks that can be edited is 20.
- Cross-fade recording:** The beginning and end of each track is faded in/out to create a music tape without interruption between tunes.





CCRS (Computer-controlled CD Recording System)

When the CCRS key is pressed, the following operations occur automatically and recording of CD starts after them.

1. The CD is played and its peak level is sampled from the level used when the disc was recorded.
2. The optimum recording level for that disc is determined from the sampled peak level and the cassette deck is set accordingly.
3. The recording preparations detailed above are completed in about 90 seconds, after which actual recording starts.
4. When the recording is completed (when the CD player ends playback or when the tape has been recorded), both the cassette deck and CD player enter the stop mode.

Indications on the cassette decks during CCRS operation

Lighting ○ Blinking  OFF ●

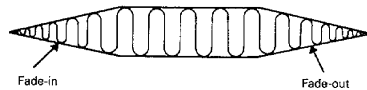
Indicator	CCRS	Pause	Recording
During creation of non-recorded blank		●	
During recording level setting		○	○
During recording		●	○
During record/pause	○	●	●

To cancel CCRS setting: Press the Tray open/close key of the CD player.

The time varies according to the number of the tunes to be recorded.

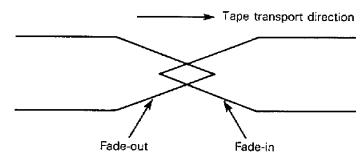
Fade-in and fade-out

Fade-in refers to a gradual increase of volume from the minimum to normal level when starting to play music. Inversely, fade-out refers to a gradual decrease of volume from the normal to minimum level at the end of music.

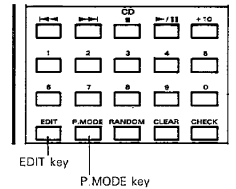
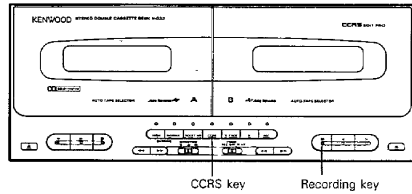


Cross-fade recording

In cross-fade recording, the fade-out of the previous tune and the fade-in of the next tune are performed simultaneously so that the two tunes can be recorded in continuance, without interruption between them. This function allows to create a tape library in which tunes change in smooth continuance like music played in a discotheque.



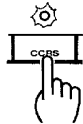
Recording of CD playback (CCRS)



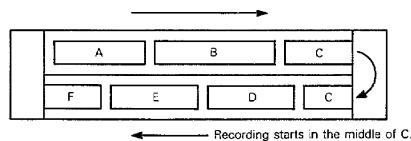
■ Recording of CD playback in TRACK mode

- 1 Select CD with the input selector, and place a CD on the tray.
- 2 Perform "Ordinary recording" until step 1.
 - Refer to page 33.
- 3 Check that the CD player is in the TRACK mode.
 - If the [PGM] indicator is lighted up, press the [P. MODE] key.

4 Start recording.



- The CCRS is activated so the recording will start in about 90 seconds.
- The tracks on the disc are recorded in the order of the track Nos.
- The operations as shown below occur at the end of tape where it is reversed.

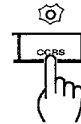


■ Recording of CD playback in PGM mode

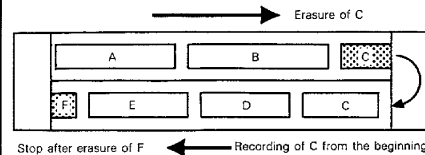
Tracks are recorded so that they do not end in the middle at the end of tape.

- 1 Select CD with the input selector, and place a CD on the tray.
- 2 Perform "Ordinary recording" until step 1.
 - Refer to page 33.
- 3 In the PGM mode, select the order of tracks to be played.
 - Refer to page 26.

4 Start recording.



- The CCRS is activated so the recording will start in about 90 seconds.
- The tracks on the disc are recorded in the programmed order.
- The operations as shown below occur at the end of tape where it is reversed.



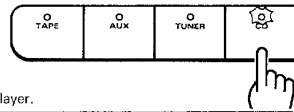
Notes:

1. When the CCRS key is pressed during CD playback, the playback is stopped and CCRS setting operation starts.
2. The CCRS searches the peak level on a CD in a limited period of about 90 seconds. Therefore, it could happen that the optimum level cannot be adjusted, though it is a very rare case.
3. The recording level set by the CCRS is canceled when the Tray open/close key of the CD player is pressed or the power is turned off.
4. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape.
5. If a tune beginning and ending with fade-in and fade-out is recorded by X.FADE recording, spaces between recorded tunes may become very long.
6. When the DIRECTION select switch of the cassette deck is " " the tape end processing occurs only on the A side of tape.
7. The CCRS function may not work properly near the end of tape.
8. During CCRS operation, operation keys are not effective except for the Stop and Eject keys of cassette decks and the Stop and Tray open/close key of CD player.

■ Recording of edited CD

1 Select CD with the input selector, and place a CD on the tray.

- If programming of tracks is required, complete it before proceeding to step 2.
- If the desired CD has already been placed, just press the Stop key of the CD player.

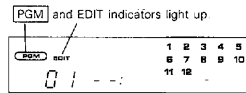
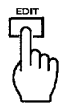


2 Perform "Ordinary recording" until step 1.

- Refer to page 33.

3 Start editing. Remote control only

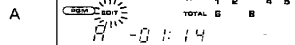
① Press the EDIT key.



② While the EDIT indicator is lighted, input the two-way recording time of the tape by using the numeric keys of the CD player.

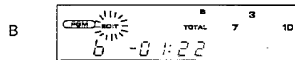
- Example: For a C-60 tape, press [+10] 6 times and [0] once.
- Example: For a C-46 tape, press [+10] 4 times and [6] once.

During editing



The CD contents can be edited as follows.

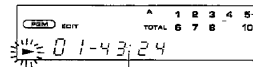
(1) The input tape recording time is divided by two, and tracks that can be accommodated in file A (which refers to tracks on tape side A) are selected in order of their track Nos.



(2) In a few seconds, the time left on tape side A after file A is displayed, then file B (tracks on tape side B) is edited in the same manner.

- If the Stop or Tray open/close key is pressed during editing, editing is interrupted and the deck enters the stop mode.

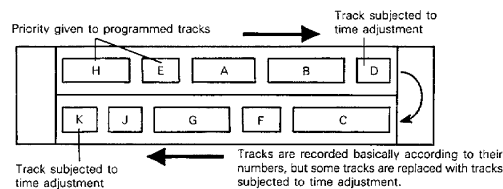
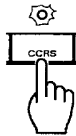
Completion of editing



Total time of selected tracks

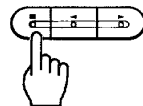
Track Nos. selected from disc

4 Start recording.



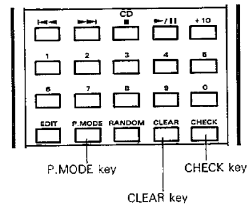
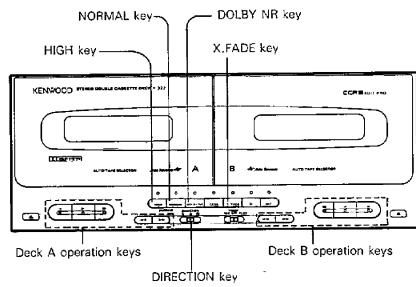
- The CCRS is activated so the recording will start in about 90 seconds.
- When the recording is completed, both the cassette deck and CD player enter the stop mode.

To stop recording



- The CD player and cassette deck enter the stop mode.

Recording of CD playback (CCRS)

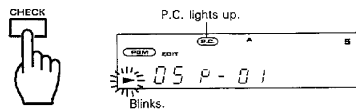


P.MODE key
CHECK key
CLEAR key

■ To check the edited contents

Remote control only

Press the CHECK key

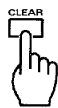


- Every time the key is pressed, the track Nos. are displayed in the edited order.

■ To clear the edited contents

Remote control only

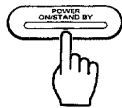
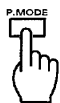
Clearing individual tracks from the last track



- Every time the key is pressed, the last track in the edited sequence of tracks is cleared.

Clearing all edited contents

Press either of the following keys of the CD player.

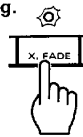


■ X.FADE recording of CD playback

1 Select CD with the input selector, and place a CD on the tray.

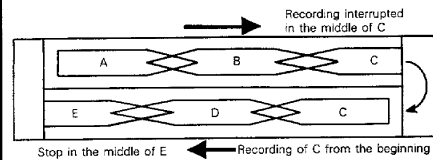
2 Perform "Ordinary recording" until step 1.
• Refer to page 33.

3 Start recording.

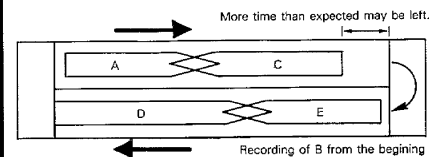


- The CCRS is activated so the recording will start in about 90 seconds.
- The recording operation according to the mode of the CD player starts.

In case of TRACK or PGM mode



In case editing (EDIT) is executed before recording

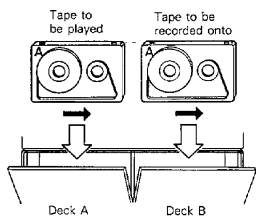


Tape dubbing

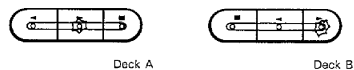
The dubbing refers to the copy of the recorded contents of a tape to another tape (tape in Deck A → tape in Deck B).

Normal-speed dubbing: Copy at normal tape speed.
High-speed dubbing: Copy at double the normal speed.

1 Insert tapes in the cassette decks.

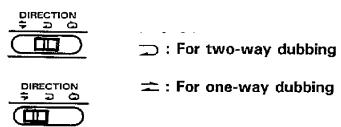


2 Set the same tape transport direction for both tapes.



• Refer to page 31.

3 Select one-way or two-way dubbing mode.

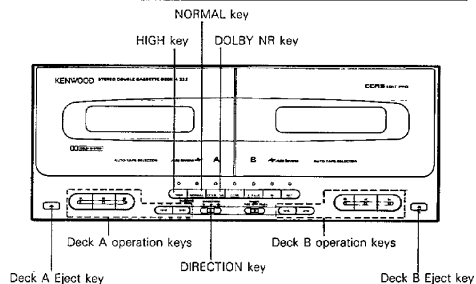
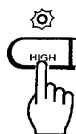


4 Start dubbing.

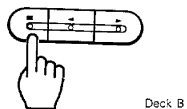
For normal-speed dubbing



For high-speed dubbing



To stop dubbing



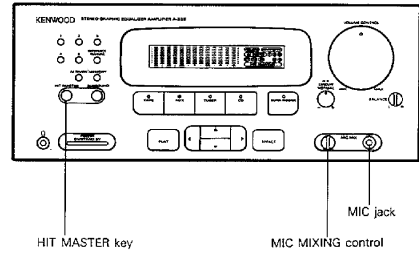
- Both Decks A and B enter the stop mode.

Notes:

- The DOLBY NR key does not function during dubbing.
 - * The tape recorded by dubbing features the same NR system as the original tape in Deck A.
- Noise from TV may interfere with dubbed sound if high-speed dubbing is executed near a TV set. To prevent this, install the system farther from the TV set.
- If the original tape was recorded at a high level, the sound quality may be degraded if high-speed dubbing is used. In such a case, use normal-speed dubbing.

Simple Karaoke singing entertainment (Except for some areas)

HIT MASTER: This key allows to reduce the vocal level of songs played on CD, etc., so that you can sing along with only the accompaniment just like in "Karaoke" singing. This feature is convenient when you want to master a latest song the "Karaoke" backing of which is not available.

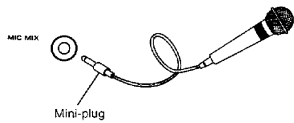


■ Singing "Karaoke"

- 1** Turn the MIC MIXING control fully counter-clockwise.



- 2** Insert the microphone plug into the MIC jack.



- 3** Play the music source.

- 4** Press the HIT MASTER key.



- Only the vocal part is muted from the music source. However, note that this effect cannot be obtained with certain types of sources.

- 5** Adjust the volume.



- 6** Sing along with the music.

Note:
When the microphone is not to be used, be sure to set the MIC MIXING control fully counterclockwise.

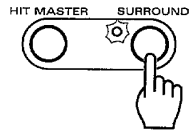
Surround and super woofer

■ Surround play

Except for some areas

Connect optionally available surround speakers and set the SURROUND key to ON to obtain surround effect.

Press the SURROUND key.

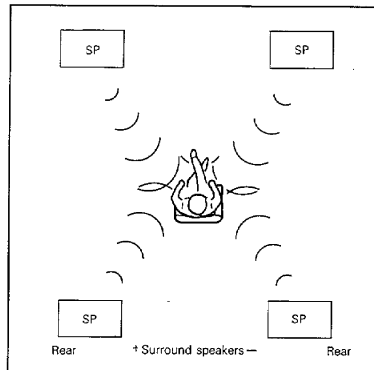


- Press again to return to normal sound.
- Note that the volume from the surround speakers may be small depending on the type of music source. The surround effect cannot be obtained from monaural sources.

Speaker arrangements

Rear speakers can be placed with various arrangements according to the listening room size and its reverberation characteristics.

The example shown below is a typical example among several arrangements which allow efficient enjoyment of surround effects. In addition to it, other arrangements are also possible. Please install speakers according to your individual taste as well as to the listening room.



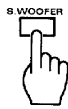
■ Improved bass with super woofer speaker

The lowest frequencies, or bass sound, will be made more lively and powerful by connecting an optional KENWOOD super woofer unit.

Press the SUPER WOOFER key.



Amplifier main unit

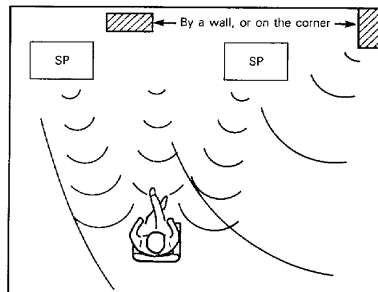


Remote control unit

- This effect will further be enhanced when surround speakers are connected as well.
- For more details, please read the instruction manual supplied with the optional super woofer unit.

Arrangement of super woofer

The reproduction frequency of the super woofer is set to be below 120 Hz. Since the direction is not a significant factor for such low frequencies, the super woofer can be installed anywhere in the listening room. However, ideally, the best installation position may be near a hard wall or on the corner from which bass sound can expand easily.



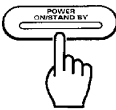
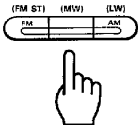
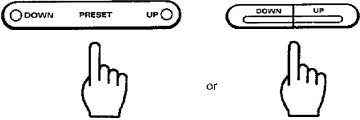


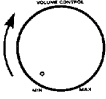

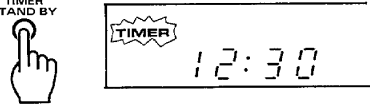
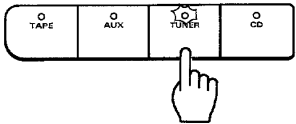
Operation of timer

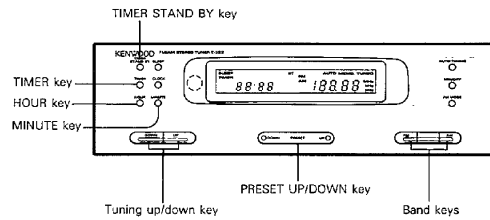
The timer of the system can be used for the following function.

Timer: When the ON time comes, the power is switched ON and radio broadcast is received/recorded or a tape or CD is played back. Be sure to remove the CD except when timer playback of CD is required. In 60 minutes, the power is switched OFF automatically. However, in timer recording, the recording continues even after 60 minutes and until the end of tape, and the power is switched OFF automatically after it.

Sleep timer: This function is useful when you feel like falling asleep while listening to music, for the power is switched OFF automatically after the set period has elapsed. The time period can be set up to 3 hours 45 minutes in 15-minute steps.

■ Timer reception of radio broadcast

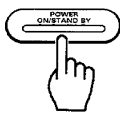
<p>1 Switch the power ON.</p> <p>Press the POWER key of the amplifier.</p> 	<p>5 Select the broadcast band to be received.</p> <p>①</p>  <p>②</p> 
<p>2 Enter the ON time.</p> <p>TIMER HOUR</p>  <p>Press the HOUR key while holding the TIMER key depressed.</p> <p>TIMER MINUTE</p>  <p>Press the MINUTE key while holding the TIMER key depressed.</p>	<p>6 Adjust the volume.</p> 
<p>3 Set the TIMER switch on the cassette deck to OFF.</p> 	<p>7 Activate the timer.</p>  <ul style="list-style-type: none"> The power is switched OFF at this moment. <p>To continue the reception of radio station which as been started to be received by timer ON:</p> <p>Press the TIMER STAND BY key before the OFF time comes.</p> <ul style="list-style-type: none"> When the program No. indicator goes off, it means that the program will be received continuously.
<p>4 Select the TUNER input.</p> 	



■ Timer recording of radio broadcast

1 Switch the power ON.

Press the POWER key of the amplifier.



2 Enter the ON time.



Press the HOUR key while holding the TIMER key depressed.



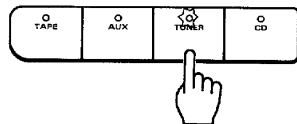
Press the MINUTE key while holding the TIMER key depressed.

3 Set up the cassette deck ready for recording.

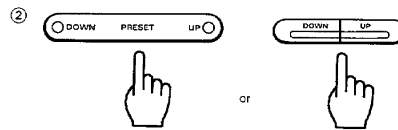
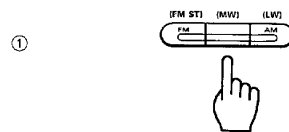
- ① Insert a tape in Deck B.
- ② Set the tape transport direction.
- ③ Select the side(s) to be recorded onto.
- ④ Select the Dolby NR mode.
- ⑤ Set the TIMER switch to REC.

• Be sure to set it to OFF after timer recording has completed.

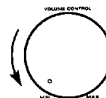
4 Select the TUNER input.



5 Select the broadcast band to be received.

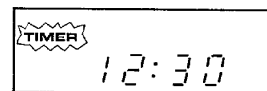


6 Adjust the volume.



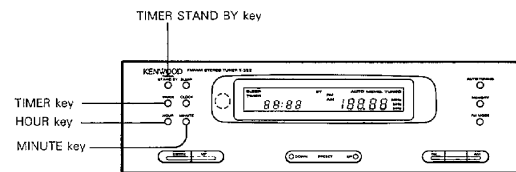
• Set to the minimum volume when recording while you are away or asleep.

7 Activate the timer.



• The power is switched OFF at this moment.

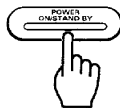
Operation of timer



■ Timer playback of tape

1 Switch the power ON.

Press the POWER key of the amplifier.



2 Enter the ON time.



Press the HOUR key while holding the TIMER key depressed.

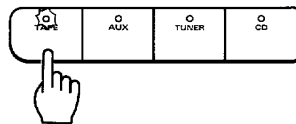


Press the MINUTE key while holding the TIMER key depressed.

3 Set the TIMER switch on the cassette deck to PLAY.

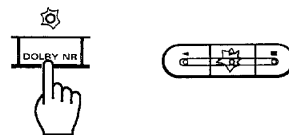


4 Select the TAPE input.



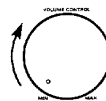
5 Insert a tape and determine the playback condition.

Select the side(s) to be played and the Dolby NR mode.

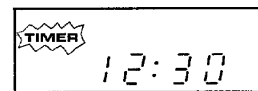


- Timer playback is possible with either Deck A or Deck B. However, if tapes are placed in decks, playback will begin from Deck B.

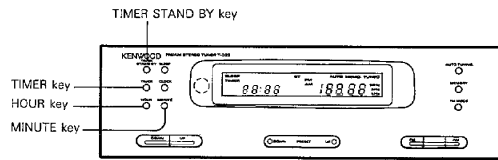
6 Adjust the volume.



7 Activate the timer.



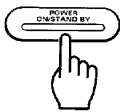
- The power is switched OFF at this moment.



■ Timer playback of CD

1 Switch the power ON.

Press the POWER key of the amplifier.



2 Enter the ON time.



Press the HOUR key while holding the TIMER key depressed.

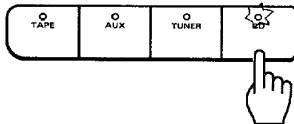


Press the MINUTE key while holding the TIMER key depressed.

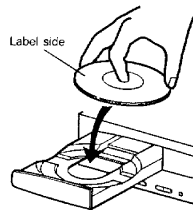
3 Set the TIMER switch on the cassette deck to OFF.



4 Select the CD input.

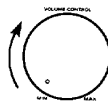


5 Place a disc in the CD player.

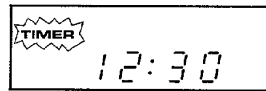


- It is not possible to preset a CD playback programs.

6 Adjust the volume.



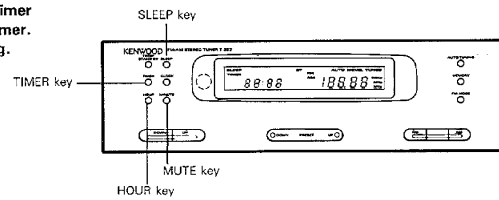
7 Activate the timer.



- The power is switched OFF at this moment.

Operation of timer

When the AI TIMER key is pressed after the timer ON timer has been set, the following function is added to the timer. This function is not added in case of timer recording.



■ Operation of AI TIMER

With this function, when the power is switched ON by the program timer, the volume increases in three steps.

1 Complete the program timer setting.

2 Press the AI TIMER key.

- The AI TIMER indicator lights up.



VOL 1 → VOL 2 → VOL 3 → OFF
(Small) (Medium) (Large) (Goes off)

- The maximum volume setting varies every time the key is pressed. When the key is released, the indicator goes out and the maximum volume setting set at that moment is stored in memory.

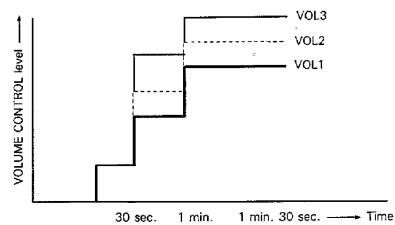
To cancel the execution of AI TIMER

Press the AI TIMER key to select OFF.

- The AI TIMER indicator goes off.



Reference for volume selection



- The VOLUME CONTROL rotates as the volume changes.
- The graphic equalizer curve also varies accordingly.

■ Operation of sleep timer

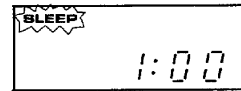
The power off time can be designated in the minutes unit. The sleep timer is applied in priority over other timer programs.

1 Switch the power ON.

2 Play the desired music source.

3 Press the SLEEP key.

One hour is set.



To set other time period



1 → 2 → 3 → 0
Each press changes the figures.



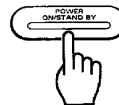
Press the HOUR key while holding the TIMER key depressed.
00 → 15 → 30 → 45
Each press changes the figures.

Press the MINUTE key while holding the TIMER key depressed.

To check the remaining time



To cancel



In case of difficulty

What appears to be a malfunction may not always be serious. If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.

Remote control unit

Symptom	Cause	Remedy
Remote control operation is not possible.	<ul style="list-style-type: none"> Batteries are exhausted. The parallel cord is not connected properly. The remote control unit is too far away from the main system, controlling angle is too large, or there is an obstacle in between. The source component to be operated does not contain the tape(s) or CD. An attempt is made to play a tape which is being recorded in the cassette deck. 	<ul style="list-style-type: none"> Replace with new batteries. Connect properly referring to "System connections". Operate the remote control unit within the controllable range. Place the tape(s) or CD in the source component to be played. Wait until the recording is completed.

Amplifier, speakers

Symptom	Cause	Remedy
Sound is not output.	<ul style="list-style-type: none"> The speaker cords are disconnected. The volume is set to the minimum position. The headphone plug is left inserted in the PHONES jack. 	<ul style="list-style-type: none"> Connect them properly referring to "System connections". Adjust the volume to a proper level. Remove the plug.
Sound is not output from one of the speakers.	<ul style="list-style-type: none"> The speaker cord is disconnected. The BALANCE control is set to an extreme position. 	<ul style="list-style-type: none"> Connect it properly referring to "System connections". Adjust the Left/Right balance.
Sound is not output from the Surround rear speaker.	<ul style="list-style-type: none"> The rear-speaker cords and/or center speaker cord are disconnected. Surround mode is set to OFF. 	<ul style="list-style-type: none"> Connect them properly referring to "System connections". Set the surround mode to ON.

Tuner

Symptom	Cause	Remedy
The clock display is blinking without changing from a certain time.	<ul style="list-style-type: none"> There was a power failure. The power cord was unplugged. 	<ul style="list-style-type: none"> Set the current time again. Set the current time again.
The timer does not work.	<ul style="list-style-type: none"> The current time is not set, or there was a power failure. The timer ON time has not been set. The timer execution has not been specified. 	<ul style="list-style-type: none"> Set the current time referring to "Time adjustment". Set the timer ON time. Specify execution by pressing the [TIMER STAND BY] key.
Radio stations cannot be received.	<ul style="list-style-type: none"> No antenna is connected. The broadcast band is not set properly. The frequency of the desired station is not tuned. 	<ul style="list-style-type: none"> Connect an antenna. Set the broadcast band properly. Tune the frequency of the desired station.
A station which was preset cannot be received by pressing the corresponding numeric key.	<ul style="list-style-type: none"> The preset station belongs to a frequency that cannot be received. The preset memory was cleared because the power cord had been unplugged for a long period of time. 	<ul style="list-style-type: none"> Preset a station with a receivable frequency. Preset the station again.
Interference.	<ul style="list-style-type: none"> Noise due to ignition noise of an automobile. Noise due to an influence from an electric appliance. Noise due to a nearby TV set. 	<ul style="list-style-type: none"> Install the outdoor antenna apart from the road. Turn off the power of the appliance. Install the system more apart from the TV set.

In case of difficulty

Cassette decks

Symptom	Cause	Remedy
Sounds is not produced when the Play key is pressed.	<ul style="list-style-type: none"> The parallel cord is not connected properly. The head is dirty. Tape is irregularly wound and hard to take up. A non-recorded tape is being played. 	<ul style="list-style-type: none"> Connect properly referring to "System connections". Clean the head referring to "Cleaning the head section". Replace the tape. Play a recorded tape.
The deck does not work when an operation key is pressed.	<ul style="list-style-type: none"> The cassette holder is not closed completely. The operation key was pressed immediately after closing the cassette holder. The operation key was pressed within less than 3 seconds after the power was turned on. Tape is not inserted. Tape is irregularly wound and hard to take up. Tape has been fully wound to reel. 	<ul style="list-style-type: none"> Close the cassette holder completely. Press the desired operation key in a few seconds after closing the cassette holder. Press the desired operation key in more than 3 seconds after turning the power on. Insert a tape. Replace the tape. Change the tape transport direction or insert the tape inversely.
DPSS malfunctions.	<ul style="list-style-type: none"> The tape is not suitable for DPSS operation, for example the spaces between tunes are too short. 	<ul style="list-style-type: none"> Read "DPSS operation".
CCRS does not work.	<ul style="list-style-type: none"> A recordable tape is not inserted in Deck B. A disc is not placed in the CD player. The disc is dirty. 	<ul style="list-style-type: none"> Insert a recordable tape in Deck B and press the CCRS key. Place a disc in the CD player and press the CCRS key. Clean the disc, place it in the CD player, and press the [CCRS] key.
The dubbing on Deck A and Deck B ends at different timing.	<ul style="list-style-type: none"> This is due to the difference in tape length or to the characteristics of the cassette deck mechanisms. 	<ul style="list-style-type: none"> A small time difference is not regarded as a failure.
The cassette holder does not open when the Eject key is pressed.	<ul style="list-style-type: none"> The key is pressed during recording or playback. 	<ul style="list-style-type: none"> Press in the Stop mode.
Sound is hoarse, or high frequencies are not audible.	<ul style="list-style-type: none"> The head is dirty. The tape is stretched or wrinkled. 	<ul style="list-style-type: none"> Clean the head referring to "Cleaning the head section". Replace the tape.
Sound is distorted.	<ul style="list-style-type: none"> A tape recorded with distorted sound is being played. 	<ul style="list-style-type: none"> Replace the tape.
Recording is not initiated when the Recording key is pressed.	<ul style="list-style-type: none"> The protection tab on the cassette has been broken. The cassette holder is not closed completely. The TAPE input selector is selected on the amplifier. Tape has been fully wound to a reel. 	<ul style="list-style-type: none"> Use a cassette with unbroken tab, or close the hole. Close the cassette holder completely. Press the input select key of the source to be recorded. Change the tape transport direction of Deck B or insert the tape inversely.
Noise level is high.	<ul style="list-style-type: none"> The head is magnetized. External noise is induced. A tape recorded with Dolby NR ON is being played with Dolby NR OFF. 	<ul style="list-style-type: none"> Demagnetize the head referring to "Cleaning the head section". Install the system apart from other electrical appliances and TV set. Press the [DOLBY NR] key to ON.
Sound is vibrating.	<ul style="list-style-type: none"> The capstans or pinch rollers are dirty. Tape is irregularly wound. 	<ul style="list-style-type: none"> Clean the head referring to "Cleaning the head section". Wind the tape regularly by fast forwarding, rewinding or playing it fully from one reel to another.

Graphic equalizer

Symptom	Cause	Remedy
Volume is too low.	<ul style="list-style-type: none">The equalizer levels are set too low at all frequency ranges.	<ul style="list-style-type: none">Increase the levels of the multi-control keys.
Sound is distorted.	<ul style="list-style-type: none">The equalizer levels are too high over all frequency bands.	<ul style="list-style-type: none">Decrease the levels using the equalizer level control keys.

CD player

Symptom	Cause	Remedy
Disc has been placed but it cannot be played.	<ul style="list-style-type: none">The disc is placed upside down.The disc is very dirty.The disc is scratched or damaged.Dew is condensed on the optics lenses.	<ul style="list-style-type: none">Place the disc properly, with the labeled side up.Clean the disc then play it again.Replace the disc.Remove condensed dew by referring to "Beware of condensation".
Sound is not produced.	<ul style="list-style-type: none">Disc is not placed.The CD player is not set in the play mode.The parallel cord is not connected properly.	<ul style="list-style-type: none">Place a disc and play it.Press the play/pause key.Connect properly referring to "System connections".
Sound skips.	<ul style="list-style-type: none">The disc is dirty.The disc is scratched or damaged.Vibrations are applied to the CD player.	<ul style="list-style-type: none">Clean the disc then play it again.Replace the disc.Install the system in a place which is not subject to vibrations.

Notes:

- With some tapes, a squeaky noise is produced when the tape is stopped automatically. This is due to the tape protection function, and not a malfunction.
- Do not use 120-minute tapes, for the tape is too thin and gets easily tangled.
- This system is microprocessor-controlled, so malfunction may occur due to external noise or interference noise. In such a case, unplug the power cord, plug it and turn power on again.
- Do not use contact cleaners because it could cause a malfunction. Be specially careful against contact cleaners containing oil, for they may deform the plastic components.

When your unit needs to be repaired, bring the entire set (Speakers excluded) to your dealer.

For the U.S.A. FCC WARNING

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

NOTE:

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

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

Strömbrytarens POWER beredskapsläge

Indikatorn STAND BY tänds efter nätkabelns anslutning till ett vägguttag, oavsett strömbrytarens POWER till/frånslag. Detta anger att en liten mängd ström leds till komponenten som stöd för minnesinnehållet.

Detta läge kallas för beredskapsläget. Strömbrytaren på fjärrkontrollen kan användas för att slå på och av strömmen så länge indikatorn STAND BY lyser.

Virtanäppäimen (POWER) valmiustila (STAND BY)

Kun laitteen verkkojohto on liitetty pistorasiaan, valmiustilan merkkivalo syttyy riippumatta virtanäppäimen (POWER) asennosta (ON/OFF). Merkkivalo osoittaa, että laitteessa on hieman virtaa muistin sisältöjen ylläpitoa varten. Tätä tilaa kutsutaan valmiustilaksi. Kun valmiustilan merkkivalo (STAND BY) palaa, laitteen virta voidaan kytkä ja katkaista kaukosäätimellä.

Afbrydertastens (POWER) STAND BY funktion

Når apparatets strømledning er tilsluttet en stikkontakt, lyser STAND BY indikatoren, uanset om der er tændt ved afbryderen på apparatet eller ej. Det angiver, at apparatet bliver forsynet med en ganske lille mængde strøm til opret-holdelse af hukommelsens indhold. Denne funktion kaldes STAND BY. Når STAND BY indikatoren er tændt, kan strømmen til apparatet slås til og fra med fjernstyringsenheden.

PÅ/AV-knappens Stand-by funksjon

Når strømledningen til dette anlegget er satt i en vekselstrømskontakt, vil STAND-BY indikatorlampen lyse enten PÅ/AV-knappen er på- eller avslått. Dette betyr at en viss mengde strøm tilføres anlegget slik at innholdet i minnet ikke går tapt.

Denne funksjonen kalles Stand-by. Når indikatorlampen for STAND-BY er tent, kan strømmen slås PÅ/AV fra fjernkontrollen.

Specifications

Amplifier (A-322)

Rated power output

22 watts per channel minimum RMS, both channels drive, at 6 Ω from 60 Hz to 15,000 Hz with no more than 0.9% total harmonic distortion (FTC)

(IEC/NF) From 63 to 12,500 Hz, 0.7% T.H.D.
at 6 Ω 20 W + 20 W
at 8 Ω 18 W + 18 W
(DIN) 1 kHz, at 6 Ω 24 W + 24 W
1 kHz, at 8 Ω 20 W + 20 W
(EIAJ) Maximum useful power output
at 6 Ω 30 W + 30 W
Input sensitivity/impedance
AUX 200 mV/50 kΩ
Output level/impedance
Super Woofer Pre-Out 1.3 V/600 Ω

Graphic equalizer 60 Hz, 150 Hz, 400 Hz, 1 kHz,
2.4 kHz, 6 kHz, 15 kHz

Power consumption

..... 90 W (For U.K., Europe and Australia)
..... 95 W (For U.S.A. and Canada)
..... 110 W (For other countries)

Dimensions W: 270 mm (10-5/8")
H: 110 mm (4-5/16")
D: 310 mm (12-3/16")
Weight (Net) 4.9 kg (10.8 lb)

CD player (DP-322)

Readout Non-contact optical readout
(semiconductor laser)
Frequency response 30 Hz ~ 20 kHz + 1 dB - 2 dB

Dimensions W: 270 mm (10-5/8")
H: 80 mm (3-1/8")
D: 250 mm (9-13/16")
Weight (Net) 1.8 kg (3.96 lb)

TUNER (T-322/L)

T-322 FM tuner section

Tuning frequency range 87.5 MHz ~ 108 MHz
Usable sensitivity (MONO at 75 Ω) 2.2 μV

T-322 AM tuner section

Tuning frequency range 531 kHz ~ 1,602 kHz
9 kHz step 530 kHz ~ 1,602 kHz
10 kHz step 530 kHz ~ 1,602 kHz
Usable sensitivity 500 μV (loop antenna)

T-322L FM tuner section

Tuning frequency range 87.5 MHz ~ 108 MHz
Usable sensitivity (MONO at 75 Ω) 1.8 μV

T-322L MW tuner section

Tuning frequency range 522 kHz ~ 1,620 kHz
Usable sensitivity 500 μV/m (loop antenna)

T-322L LW tuner section

Tuning frequency range 153 kHz ~ 281 kHz
Usable sensitivity 500 μV/m (loop antenna)

Dimensions W: 270 mm (10-5/8")
H: 80 mm (3-1/8")
D: 262 mm (10-5/16")
Weight (Net) 1.3 kg (2.86 lb)

Cassette deck (X-322)

Recording system AC bias (Frequency: 105 kHz)
Wow & flutter 0.8% (WRMS)

Dimensions W: 270 mm (10-5/8")
H: 110 mm (4-5/16")
D: 254 mm (10")
Weight (Net) 3.5 kg (7.7 lb)

LS-322 (Speakers)

Enclosure Bass-reflex type
Speaker configuration Two-way
Impedance 6 Ω
Maximum input level 60 W
Output sound pressure 88 dB
Frequency response 50 Hz ~ 20 kHz

Dimensions W: 190 mm (7-1/2")
H: 380 mm (14-15/16")
D: 252 mm (9-15/16")
Weight (Net) 5.0 kg (11.0 lb)

Note:

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

KENWOOD