# SHARP

PORTABLE STEREO COMPONENT SYSTEM
CHAÎNE PORTATIVE STÉRÉO
SISTEMA PORTATIL DE COMPONENTES ESTEREOFONICOS
便携型立體聲組合系統
휴대용 스테레오 콤퍼넌트 시스템

## GF-800Z



ENGLISH
FRANÇAIS
ESPAÑOL
中
文
한국어

SHARP CORPORATION

TINSZ0700AFZZ

OPERATION MANUAL
MODE D'EMPLOI
MANUAL DE MANEJO
使用説明書
사용설명서

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**Note for users in Australia:**
Copyright may.exist in material you wish to record. Copying or broadcasting such material without permission of the relevant licensee(s) or owner(s) of the copyright is prohibited by law. SHARP is not in a position to authorise the copying or broadcasting of copyright materials and nothing in this OPERATION MANUAL should be implied as giving that authority.

**For other countries:**
Audio-visual material may consist of copyrighted works which must not be recorded without the authority of the owner of the copyright. Please refer to relevant law in your country.

The last letter of the model name on the catalogue, packing case, etc. indicates the colour of the product.
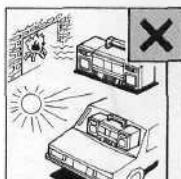Operations and specifications are the same for all units regardless of the cabinet colour.
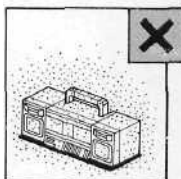• The photograph shows GF-800Z(D},a dark grey model.

# 1 PRECAUTIONS

Do not expose the unit to rain or moisture, as this will result in damage to internal circuitry.

Do not expose the unit to temperature higer than 60°C (140°F). This includes leaving the unit inside closed vehicles, placing it in direct sunlight or in the vicinity of heaters, etc.
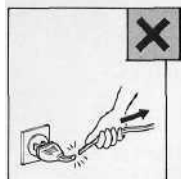
Do not locate or store the unit in humid or dusty places for a long time.
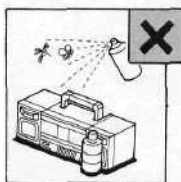
Do not apply petroleum, any organic solvents, or insecticides to the cabinet surface, as this may result in cracking or other surface damage.
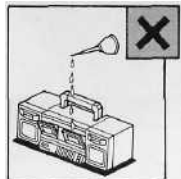
Do not apply oil to any part of the mechanical unit.

Be sure to hold the AC supply plug — NOT THE LEAD — when removing the plug from the AC outlet. Removing the plug by pulling the lead may result in damaged or broken connections.

Remove the AC supply lead before servicing or cleaning heads, pinch rollers, etc. Do not remove the unit's cover, as it may result in electric shock or malfunction. Refer all services and repairs to your local SHARP dealers.

Do not use this unit with AC voltages other than those specified, as it may result in damage, fire, etc. SHARP may NOT be held responsible for damage resulting from using the unit with the voltage not specified.

# NAMES OF CONTROLS

Tweeter

Woofer

## RADIO OPERATION

FM/SW1/SW2 Telescopic Rod Antenna

Band Selector: BAND

Fine Tuning Control: FINE TUNING

FM Stereo Indicator: FM STEREO

Tuning Control: TUNING

FM Mode Switch: FM MODE

Level Meter: LEVEL
METER

Power Indicator:

Function Selector
Buttons:
FUNCTION

• Do not press more
than two FUNC-
TION buttons at
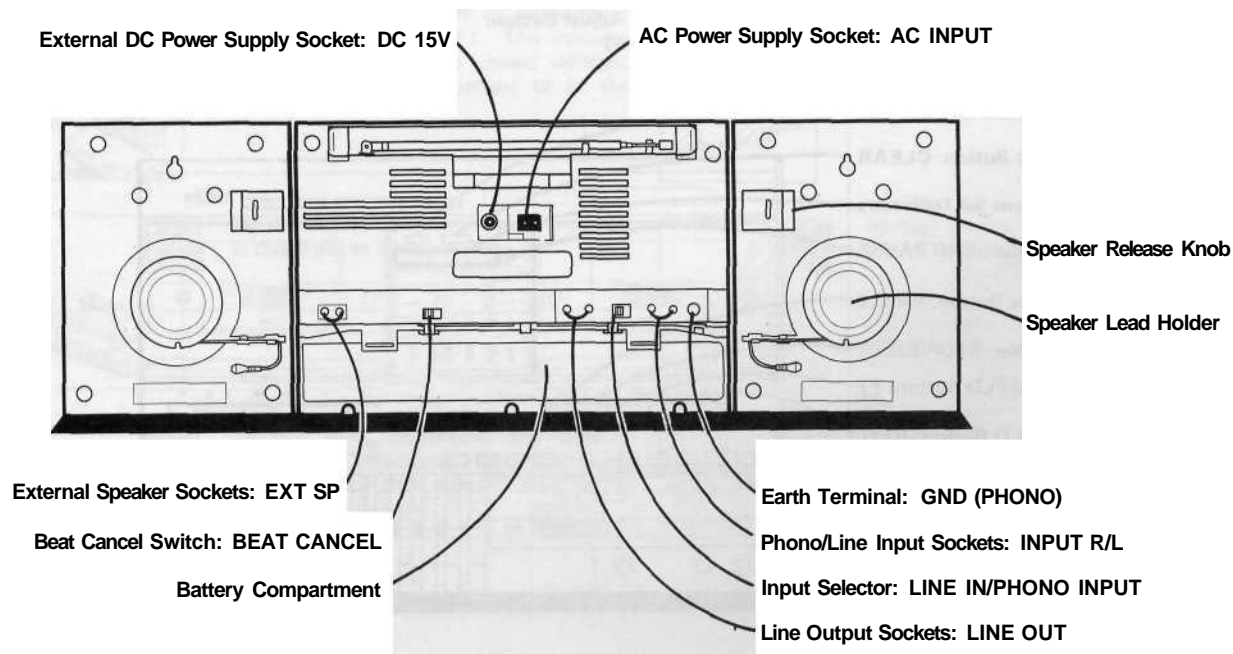once.

Clock/Timer Display

Hour Digit Button: HOUR'

Minute Digit Button:
MINUTE

Timer Mode Selector:
TIMER/CLOCK/SLEEP

Clock Adjust Button;
ADJUST

Automatic-off Timer Switch
(Sleep Timer): SLEEP ON/OFF

Automatic-on Timer Switch
(Wake up Timer): TIMER ON/OFF

Power Switch: POWER

Right Channel Volume Control:
RIGHT/VOLUME

Left Channel Volume Control:
LEFT/VOLUME

Graphic Equalizer Controls:
GRAPHIC EQUALIZER

APLD/APPS Set Button: SET

APLD/APPS Clear Button: CLEAR

APLD/APPS Programme Set Indicators

APPS End-Pause Indicator: END PAUSE

Pause Button: PAUSE

Stop/Eject Button: STOP/EJECT

Fast Forward/Forward APLD Button: FF

Rewind/Reverse APLD Button: REW

Play Button: PLAY

Tape Selector: TAPE 1

## DECK 2 OPERATION

Tape Counter and Reset Button

Record Indicator: RECORD

Fast Forward/Cue Button: FF

Stop/Eject Button: STOP/EJECT

Pause Button: PAUSE

Rewind/Review Button: REW

-Play Button: PLAY

-Record Button: RECORD

-Tape Selector: TAPE [2]

Dubbing Start Button: DUBBING START

Dubbing Speed Button: DUBBING SPEED

Playback Mode Selector: CONT PLAY

Headphones Socket: PHONES

Flight Microphone Socket: R/EXTMIC

Left Microphone Socket: L/EXT MIC

## REAR PANEL

External DC Power Supply Socket: DC 15V

AC Power Supply Socket: AC INPUT

Speaker Release Knob

Speaker Lead Holder

External Speaker Sockets: EXT SP

Beat Cancel Switch: BEAT CANCEL

Battery Compartment

Earth Terminal: GND (PHONO)

Phono/Line Input Sockets: INPUT R/L

Input Selector: LINE IN/PHONO INPUT

Line Output Sockets: LINE OUT

# 3 BUILT-IN CLOCK/TIMER

## TIMER BATTERY

- Set a timer battery before placing the main batteries.
- Replace the battery once a year.
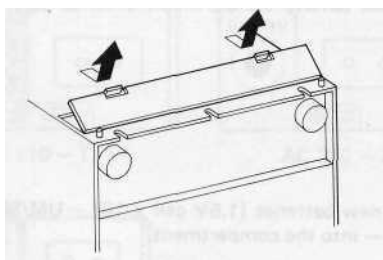
**1** Lay the unit face down on a soft cloth so as not to damage the unit. Then, remove the battery compart-
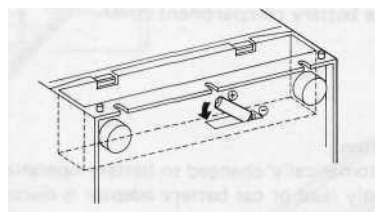
**2** Set a new battery — UM/SUM-3, R6 or equivalent — into the timer battery compartment.

- If the battery is placed with reversed polarity, the timer display may be damaged.

## CLOCK SETTING

**1** Set the TIMER/CLOCK/SLEEP Selector to the CLOCK position.

**2** While pressing the ADJUST button with a pencil or ball-point pen, at first, press the HOUR button to set hour digits for current time. Then press the MINUTE button to set minute digits.

HOUR button: Hour digits advance **one** at a time if the button is pressed. If the button is pressed for more than two seconds, hour digits advance continuously.
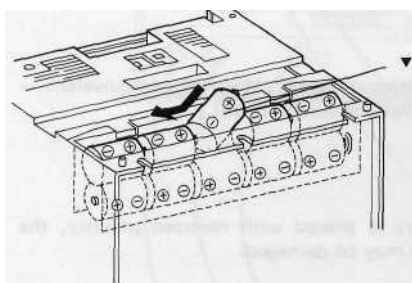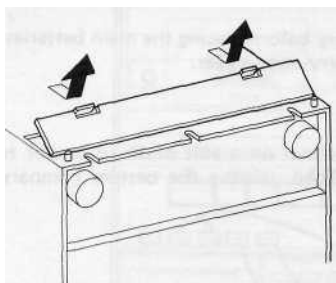
MINUTE button: Minute digits advance one at a time if the button is pressed. If the button is pressed for more than two seconds, minute digits advance continuously with five minutes increment.
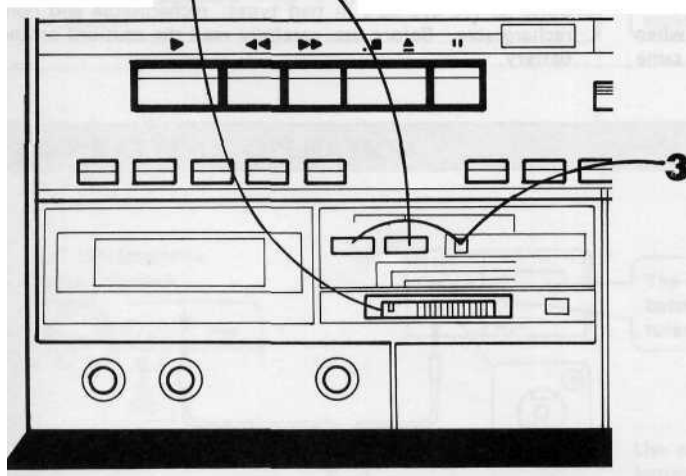
**3** Press the ADJUST button with a pencil or ball-point **pen at the moment another time piece shows the "00" second reading.**

4

# 4   POWER   SOURCE

## BATTERY   OPERATION



▼ Set this battery finally by pushing them toward the (—) terminal.

**Placing Batteries**
• Set the POWER switch to the OFF position.

**1** Remove the battery compartment cover as described on page 4.

**2** Place ten new batteries (1.5V cell x 10) - UM/SUM-1 or R20 type — into the compartment.

Replace the battery compartment cover.

**Battery Operation**
The unit is automatically changed to battery operation if the AC power supply lead or car battery adaptor is disconnected from the unit.

• When batteries become weak, recording sometimes becomes impossible, even though radio broadcasts may be audibly received. Batteries should be replaced at once.

• Be sure to keep battery contact parts clean. Dust accumulations between batteries and battery terminals may result in imperfect contacts, and may even prevent the unit from operating.

## • Precautions for Battery Use

Improper use of batteries may cause leakage or explosion. Therefore, observe the following precautions:

(1) Correctly insert batteries with their polarity as indicated on the unit.
(2) Avoid using new batteries and old ones together — when one battery needs to be replaced, change others at the same time.

(3) Do not use batteries of different kinds together. Batteries of the same size may differ in voltage.
(4) Remove all the batteries from the unit when they are weak or when not in use for extended period of time.
(5) Batteries are available in two types: rechargeable and non-rechargeable. Before use, carefully read the cautions on the battery.

5

# AC OPERATION



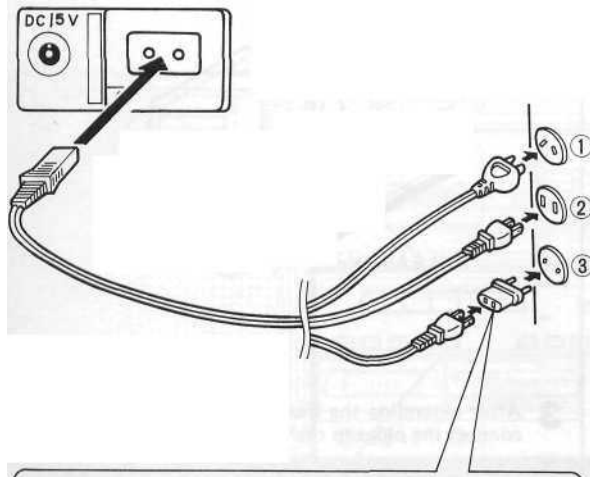AC 1 1 0 - 127V          AC 220 - 240V
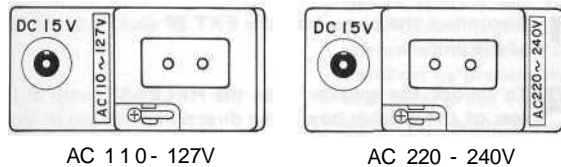


## AC SUPPLY VOLTAGE SELECTOR
Check the setting of the voltage selector before connecting the AC supply plug to an AC outlet. If necessary, change the setting as follows:

Loosen the screw of the supply voltage selector.

Slide the panel right or left, until the correct voltage reading is seen on either side. Secure the screw.

## CONNECTION TO THE AC OUTLET
Connect the AC supply lead to the AC supply socket of the unit. Then, connect the AC supply plug to an AC outlet. Supply is either 110V - 1 27V or 220V - 240V.

• Inserting the AC supply lead into the unit automatically disconnects the batteries.

• An AC power supply should be used whenever possible in order to conserve battery power.

• Remove the batteries when using the AC power for a long time.

### AC PLUG ADAPTOR
In areas (or countries) where an AC outlet as shown in illustration ③ is used, connect the unit using the AC plug adaptor supplied with the unit, as illustrated. The AC plug adaptor is not included in areas where the AC wall outlet and AC supply plug can be directly connected (See illustrations (1)and (2) ).
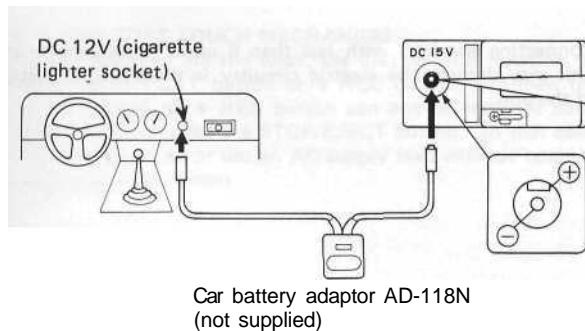
**Note for users in Australia:**
An AC plug adaptor is not included in units, for Australian Standard plug is attached to an AC cord supplied.

### WARNING
When this unit is not in use, also before attempting any internal examination, pull the mains plug out of the wall socket.

# CAR BATTERY OPERATION



Car battery adaptor AD-118N
(not supplied)

The center pin is a negative polarity. Use the specified car battery adaptor because polarity is different in manufacturers.

Use car battery adaptor AD-118N (not supplied), for 12V car battery. Connection of the adaptor to the DC 15V input on the rear panel of the unit and cigarette lighter socket of the car will cut out the internal batteries.
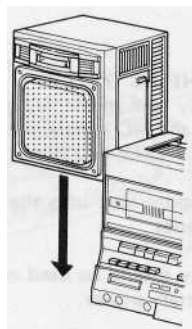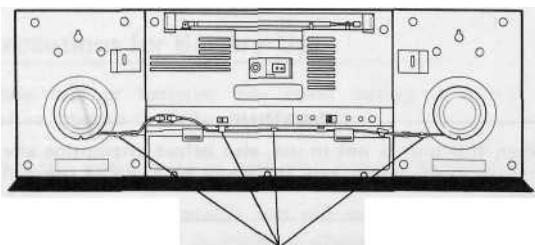
# 5 SPEAKER BOX

•**Set the POWER switch to the OFF position before connecting speakers.**

## HOW TO INSTALL SPEAKERS TO THE UNIT

**1** Align the grooves of the speaker box to the protruding portion of the main body.

**2** Lower the speaker box until it becomes the same height to the main body.



**3** Open out the two speaker leads in order to reach the EXT SP sockets. And connect the plugs to the EXT SP sockets. Put the speaker leads into the grooves in the speaker box and main unit as shown in illustration.
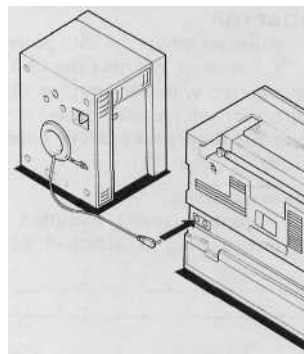


### CORRELATION BETWEEN SPEAKERS AND UNIT

· The speakers' maximum input power is 26W.

Do not connect the speakers to an amplifier with a maximum output power of more than 26W, as this may damage the speakers.

**Caution**
Do not short-circuit the EXT SP (External Speaker) outputs or leads, positive and negative polalities at both right and/or left speakers, since it may damage the audio output circuit of the amplifier.

## HOW TO USE SPEAKERS SEPARATELY

**1** Disconnect the plugs from the EXT SP sockets at the rear of the unit.

**2** To unlock the speaker, slide the RELEASE knob at the rear of the speaker box in the direction as shown in illustration, and then lift the box to remove it from the main body while holding the RELEASE knob.



RELEASE Knob
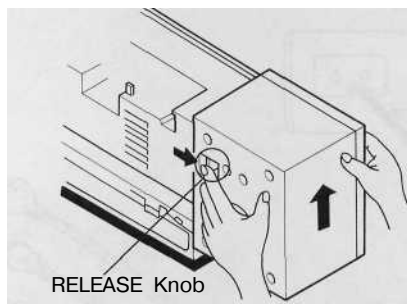
**3** After extending the desired length of the speaker leads, connect the plugs to the EXT SP sockets.



· Connecting speakers with less than 8 ohms impedance to the unit may damage the electric circuitry in the amplifier section of the unit.

•**POWER SWITCH**

Before starting any function such as decks and radio, set the POWER switch to the ON position. If the deck is in operation, turn the POWER switch off after stopping tape transport by pressing the "± STOP/EJECT button.
The deck is not turned off even after turning the POWER switch off while the sleep timer or automatic ON timer is in operation.
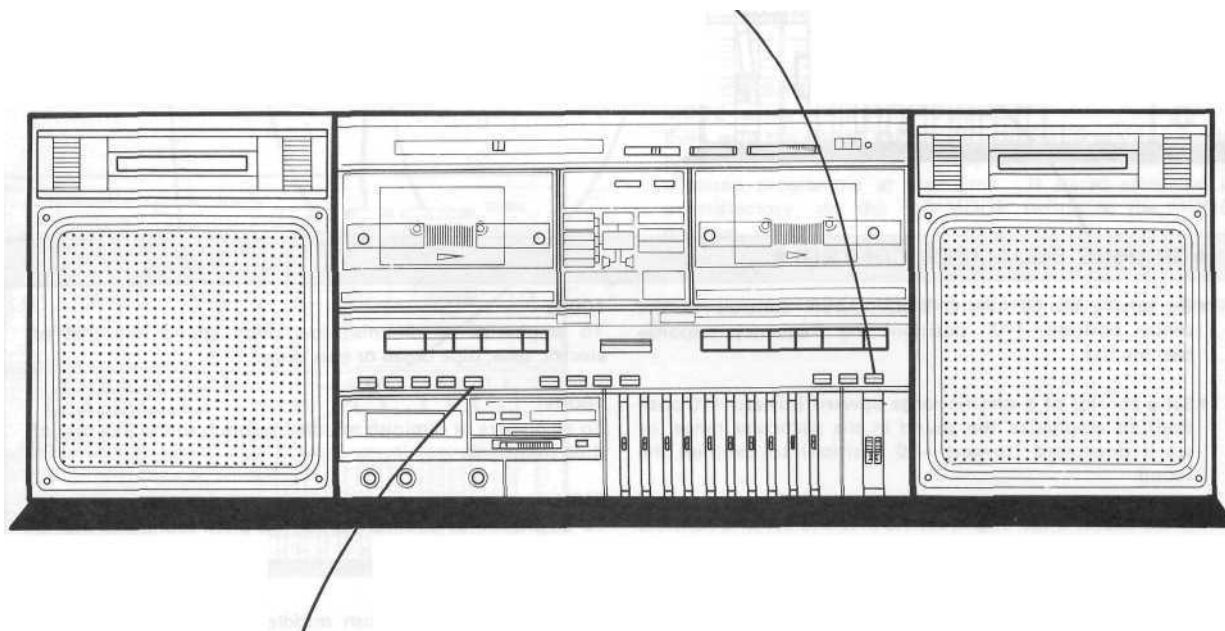


• **DUBBING SPEED SWITCH**

Set this switch to the NORMAL position, except when using the high speed dubbing function.
If you set it to the HIGH position when a tape is played back, the equalizer circuit for high speed operation will be actuated and the high range of the tape will be reduced.

## MECHANICAL NOTES

**NOTE FOR SOFT-TOUCH MECHANISM**
When the batteries are too weak, the unit will not function by pressing the ► PLAY button or • REC button, and then the • PLAY button or • REC button can not be returned completely by pressing the ■▲ STOP/EJECT button. In that case, change the batteries or use an AC supply lead without opening the cassette compartment.

**MODE SELECTION**
Before changing from one mode to another while the unit is in operation for recording, playback, fast forward or rewind mode, press the ■▲ STOP/EJECT button.
For the APLD operation, it is not necessary to press the ■▲ STOP/EJECT button in advance : to set it press the ►► FF or ◄◄ REW button.
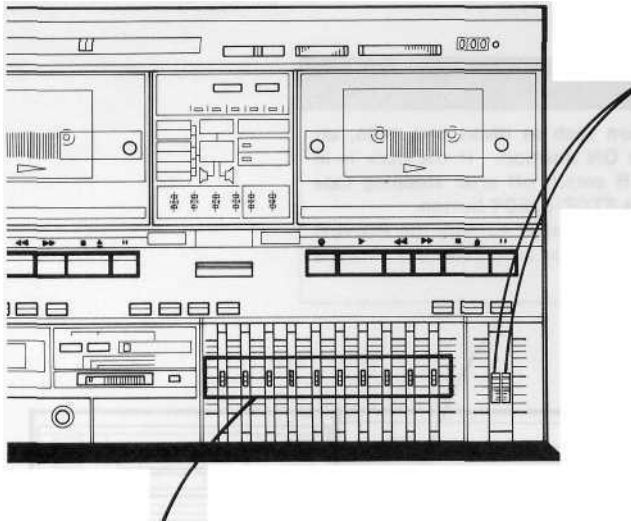
## •VOLUME  CONTROLS

To control output sound level, use the LEFT VOLUME control for left channel level and RIGHT VOLUME control for right channel level.

### LOUDNESS  CIRCUIT

When listening to the radio or a tape at low volume settings, the built-in loudness circuit is automatically activated to compensate for tone deficiencies.

## • GRAPHIC  EQUALIZER  CONTROLS

- By setting all GRAPHIC EQUALIZER controls to the center position, ("0" position) the frequency response become flat.

- Set a control of a specific range upward (toward +10 position) to emphasize the sound in the particular range, or set it downward (toward —10 position) to diminish the sound.

- If the sound is too bright, set 1.8 kHz and 3.1 kHz controls downward. Then, it become less bright and comfortable to listen to.

- To reduce tape hysteresis noise, set 10kHz and 16 kHz controls downward accordingly.

**100Hz**
To emphasize or diminish low pitch sound like that of electric base, pipe organ or bass drum.

**180Hz**
To emphasize or diminish middle low pitch sound like that of slide trombone.

**310Hz**
To emphasize or diminish upper low pitch sound like that of violoncello or bass voice.

**550Hz**
To emphasize or diminish middle pitch sound which expresses volume of the music and sound like that of male vocals.

1 **kHz**
To emphasize or diminish upper middle pitch sound like that of piano, brass instruments or female vocals.

1.8 **kHz**
To emphasize or diminish lower high pitch sound like that of percussion instruments or trumpets.

**3.1 kHz**
To emphasize or diminish middle high pitch sound like that of string instruments.

5.5 **kHz**
To emphasize or diminish high pitch sound like that of high range of string instruments.
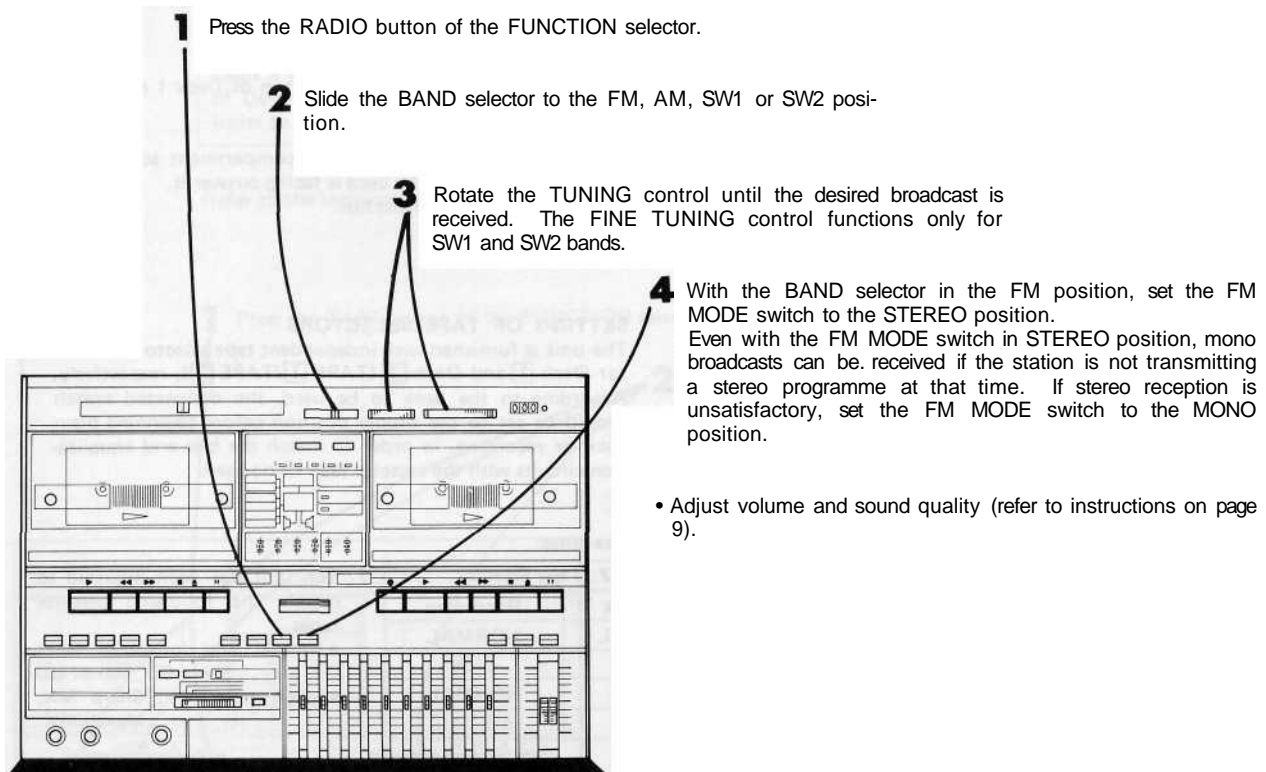
**10 kHz**
To emphasize or diminish upper high pitch sound like that of cymbals or triangles.

16 **kHz**
To emphasize or diminish highest pitch sound like that of highest part of pipe organ.

Refer to the instructions on page 8.

**1** Press the RADIO button of the FUNCTION selector.

**2** Slide the BAND selector to the FM, AM, SW1 or SW2 position.

**3** Rotate the TUNING control until the desired broadcast is received.  The FINE TUNING control functions only for SW1 and SW2 bands.

**4** With the BAND selector in the FM position, set the FM MODE switch to the STEREO position.
Even with the FM MODE switch in STEREO position, mono broadcasts can be. received if the station is not transmitting a stereo programme at that time.  If stereo reception is unsatisfactory, set the FM MODE switch to the MONO position.

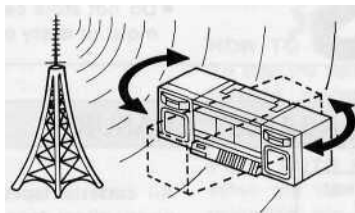• Adjust volume and sound quality (refer to instructions on page 9).



• ADJUSTING  THE  ANTENNA   Adjust the aerial appropriately to obtain the best reception on the band selected.
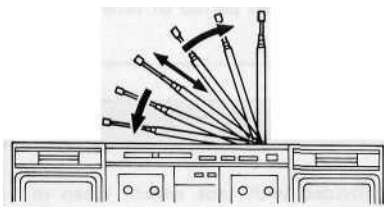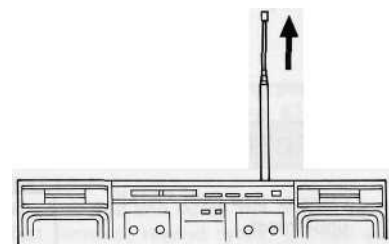


FM **BROADCASTS**
Raise and extend the telescopic rod aerial.  Adjust the position and length of the antenna until FM boradcast reception signal is at peak strength.
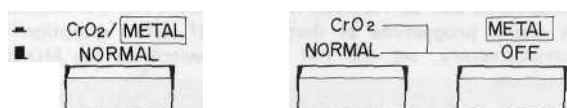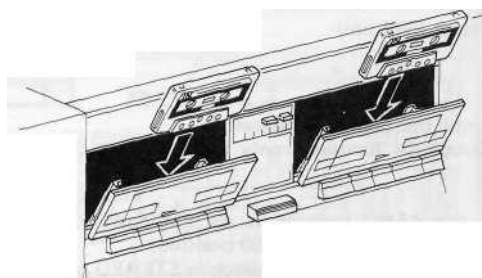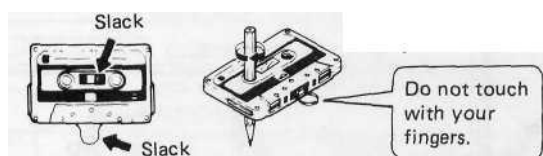
AM OR SW1 **BROADCASTS**
Turn or locate the unit to receive peak signal strength of the AM or SW1 broadcast.

**SW1 OR SW2 BROADCASTS**
Raise and extend the telescopic rod aerial vertically to its full length.

# 8 LOADING CASSETTE TAPES



**TAPE SLACK**
Tighten any loose tape with a pencil or ball-point pen before inserting the cassette into the unit, as shown at the left figure.

### LOADING

**1** Press the ■▲ STOP/EJECT button of Deck 1 or Deck 2 respectively.

2 Load a cassette tape into the compartment so that the title of the tape to be used is facing outwards.
Close the compartment lid.

### SETTING OF TAPE SELECTORS
The unit is furnished with independent tape selector switches for Deck [1] and Deck [2] (TAPE [1]/TAPE [2]), respectively. According to the deck to be used, the designated switch should be set to the proper position before beginning playback or recording, in order to match the bias and equalization circuits with the cassette tape being used.

• Refer to the following chart, and set the switch to the appropriate settings.

| Type of tape | Deck 1: Tape Selector | Deck 2: Tape Selector | |
|---|---|---|---|
| | | Playback | Recording |
| Normal (low noise) tape | NORMAL | NORMAL | NORMAL |
| Chrome tape | $CrO_2$/METAL | $CrO_2$ | $CrO_2$ |
| Ferri-Chrome tape | $CrO_2$/METAL | $CrO_2$ | NORMAL |
| Metal tape | $CrO_2$/METAL | METAL | METAL |

The unit has been adjusted to match the following cassette tapes.
• Normal and low-noise tapes .... Sharp SD, Maxell UD
• Metal tape .... Sharp MX, Maxell MX

### ▲ Cassette Tape Selection
• Use only well-known brands of tape.
• Use of C-120 (120 minutes) cassettes is not recommended. The extreme thinness of this tape may result in breakage or other problems.

• Stretched tapes will run at uneven speed and will distort anything recorded on them.

## NOTES FOR STORING CASSETTE TAPES
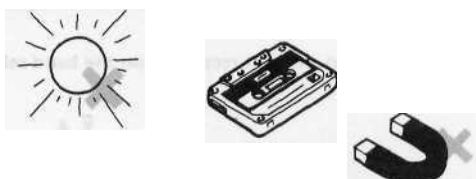


• Do not leave cassettes near the objects with strong magnetic field, such as radio, TV sets or loudspeakers. Strong magnetic field may reduce the tape sensitivity or even damage the recordings.
• Do not store cassettes for extended period of time in hot, moist or dusty places.

## PROTECTING CASSETTE TAPE AGAINST ERASURE
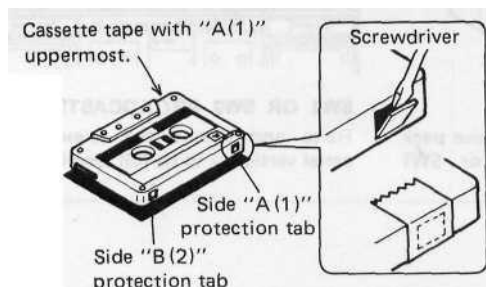


All cassette tapes are provided with tabs which, when in place, allow tape erasure. If the tab (A or B/1 or 2) is removed, the tape on that side cannot be recorded or erased. (The • RECORD button will not function.)

The tape can be re-recorded or erased by covering the tab holes with tape.

- Since treble is emphasised on tapes recorded with Dolby NR system, for playback of such tapes with this unit, lowering treble slightly with the GRAPHIC EQUALIZER controls makes for easier listening.

- When playing a tape with Deck 1, set the DUBBING SPEED selector switch to the NORMAL position. At the HIGH position, the equalizer circuit for high speed operation is activated and the high range will be lowered.

Load a pre-recorded cassette into the cassette compartment of Deck 1 and/or Deck 2 and set the tape selector switches (refer to instructions on page 11).

Refer to the instructions on page 8.
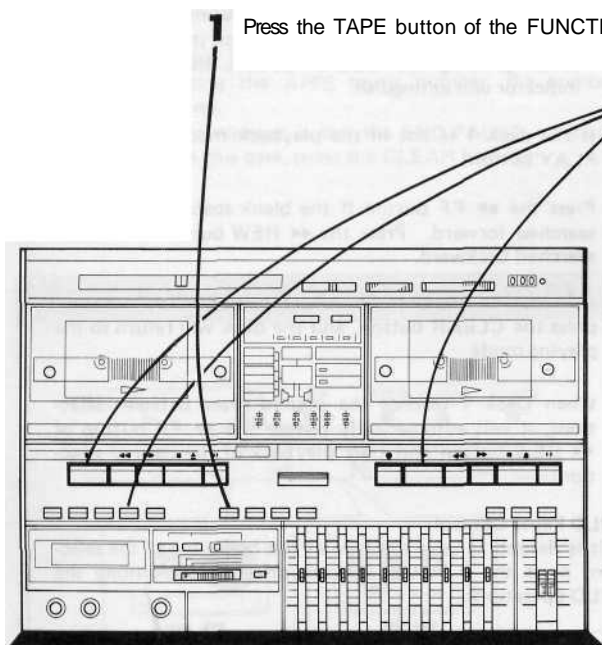
**1**   Press the TAPE button of the FUNCTION selector.

**2**

### INDIVIDUAL PLAYBACK |
Set the CONT PLAY switch to the ☐1 &/or ☐2 position.
Press the • PLAY button of Deck 1 or Deck 2 to begin playback.

### SEQUENTIAL PLAYBACK |
Sequential playback starts with Deck 1 first and then Deck 2, or vice versa can be performed.
Press the ▶ PLAY button of the Deck to be played first. Then, the first Deck will start.
Set the CONT PLAY switch to the ☐1 ⇌ ☐2 position.
Press the • PLAY button of the Deck to be played finally.
(Playback of the Cassette Deck to be played finally will begin when the Cassette Deck played first has ended)

### [SIMULTANEOUS PLAYBACK[
Set the CONT PLAY switch to the[1]&/or[2]position.
Press the • PLAY buttons of Deck 1 and Deck 2 simultaneously.
The stereo audio reproduction from both cassettes will be mixed and reproduced concurrently from the speakers.

- Adjust volume and sound quality (refer to instructions on page 9.)

### TO INTERRUPT PLAYBACK
Press the II PAUSE button to discontinue playback temporarily. The tape will stop at the point where this button is pressed. The playback will be resumed from this point when the II PAUSE button is pressed again.

### HOW TO STOP THE TAPE
To stop the tape when the unit is in the recording, playback, fast forward, rewind or APLD mode, press the ■▲ STOP/EJECT button.
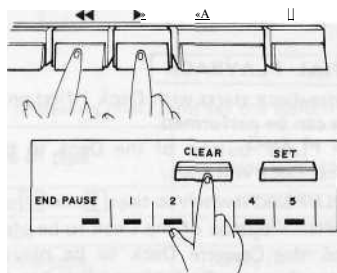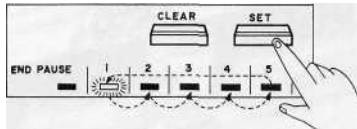
### FULL AUTO STOP SYSTEM
When the tape is reached to the end while the unit is in the recording, playback, fast forward, rewind mode, the full auto stop system is activated, and it automatically set the deck to the stop mode.

- The auto-stop system may not be functioned when the unit is battery powered and the batteries are weak.

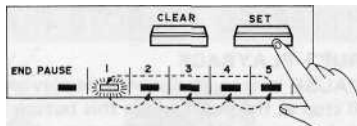# APLD (Auto Program Locate Device) and APPS (Auto Program Pause System)

SHARP has solved one of the main drawbacks of cassette play in comparison with record play: That of finding the beginning or end of a selection. To eliminate the need for trial, error and delay, APLD was developed to automatically scan a tape for the blank space between recording, and to either start playback from the beginning of the recording following the space.
By using the APPS, desired number of musics can be reproduced and then the unit is set to pause mode automatically.
APLD/APPS is available only on Deck 1.

## APLD OPERATION-

1 Count the number of blank spaces (musical gaps) on the tape between the current tape position and the desired selection.
Enter that number into memory by pressing the SET button the same number of times. The corresponding APLD/APPS indicator will illuminate.
  • It is necessary to enter the APLD number only when wishing to skip more than one space on the tape.
  • When pressing the CLEAR button, the APLD/APPS indicator will extinguish.

2 If the deck 1 is not in the playback mode, press the ▶ PLAY button.

3 Press the ▶ FF button if the blank space or spaces are searched forward. Press the ◀◀ REW button if they are searched backward.

4 In order to discontinue APLD operation in progress, press the CLEAR button, and the deck will return to the playing mode

5 When Deck 1 reaches the desired space between selections, it will automatically release the ▶▶ FF button or ◀◀ REW button and start playback of the desired selection.

**APLD Pause Control:**
If it is desired to stop the tape at the beginning of the selection, press the ll PAUSE button prior to performing the APLD operations.

• In order to change search direction of the APLD, press the ■ ▲ STOP/EJECT button first to stop tape transport and perform all steps for APLD operation again.

## APPS OPERATION

Press the • PLAY button of Deck 1 to start playback.

Count the number of selections to be played back, and enter that number into memory by pressing the SET button the same number of times.
  • As spaces are passed during playback, the indicator shows the number of selections remaining to be played.
  • Press the CLEAR button to release the APPS function, and start normal playback from the point.

When the last selection is reached to the end, the tape will stop automatically, and the END PAUSE indicator will illuminate. The ▶ PLAY button will not be released.

Release the END PAUSE function by pressing the CLEAR button. While the END PAUSE indicator illuminates, Deck 1 and Deck 2 will not function.

  • Other operation such as cassette tape ejection has to be done after the APPS is finished and the unit is in the pause mode, the ■ ▲ STOP/EJECT button for the Deck 1 and 2 have to be pressed before the operation.

• The APLD/APPS can only accommodate numbers up to 5. To locate selection separated by more than 5 spaces, have the APLD/APPS locate the fifth space, the reactivate for the additional number of spaces necessary to reach the desired selection.

• You can change the APLD/APPS numbers while APLD/APPS is functioning.

**For APLD**

・When the APLD is functioning (searching for a programmed item forward or reverse), the speakers may emit a light high-pitched sound. This is not due to any malfunction of the unit.

**For APPS**

・Do not allow the APPS function to remain engaged for extended period as it may damage the tape or pinch roller. When playback shall not be continued, press the ■▲ STOP/EJECT button, and also press the CLEAR button.

・At times of simultaneous playback, or dubbing from Deck 1 to Deck 2, if the APPS is activated, both decks will be stopped.

・When the music is gradually faded out, the APPS may be activated before the end of the music.

・When pressing the **II** PAUSE button or ■▲ STOP/EJECT button after setting the APPS music number, the number will decrease by one.
If only one music number is set, the END PAUSE indicator will illuminate. In this case, press the CLEAR button.

**For both APLD and APPS**

・If the APLD/APPS function is activated near the end of a selection, one programme may be skipped. Check by watching the APLD/APPS indicator as it is displayed.

・The APLD/APPS may not function perfectly at all times with tape containing the following characteristics:
a. The recorded signal on the tape is of an intermittent nature (speech, music with silent passages etc.).
b. The recorded signal on the tape contains soft classical music, solo performance, modern jazz, etc.
c The recorded signal on the tape is of low strength.
d. The recorded programme items are separated by less than a three-second spaces (during which there occurs no signal).
e. The recorded programme items are separated by spaces which are not free of noise or stray signals.

・Avoid leaving the unit in the vicinity of powerful magnetic fields, such as those generated by TV sets, dynamos or other electrical appliances.

## FAST FORWARD OR REWIND: DECK 1 AND DECK 2



Rewind    Fast forward
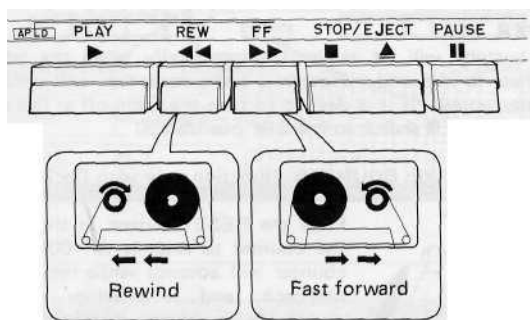
・Press the ■▲ STOP/EJECT button if the deck is in a mode other than neutral.

### Fast Forward
In order to rapidly advance the tape in the same direction as playback, press the ►► FF button.

### Rewind
To rewind the tape in the opposite direction to playback, press the ◄◄ REW button.
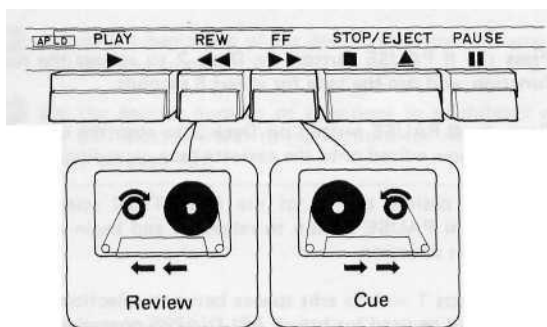
### Auto Stop
The unit automatically returns to the stop mode when the tape is reached to the end.

### How to Stop Tape
To stop the tape when the unit is in the fast forward or rewind mode, press the ■▲ STOP/EJECT button.

## CUE AND REVIEW (SKIPPING): Possible only for Deck 2



Review    Cue

・For fast forward winding or rewinding of short sections of the tape, the CUE and REVIEW functions may be used, accordingly

**CUE**

During playback on Deck 2, press the ►► FF button to, advance the tape in the same direction as playback.

**REVIEW**

During playback on Deck 2, press the ◄◄ REW button to rewind short sections of the tape.

・Fast Winding will continue as long as the ►► FF button is pressed and playback will be resumed from the point where the button is released.

## RECORDING FROM THE BUILT-IN RADIO

· When recording important selections, be sure to make a preliminary test to ensure that the desired material is being properly recorded.

· The ALC (Automatic Record Level Control) circuit automatically controls the level of input signal strength used for recording.

Load a cassette into the Deck 2 cassette compartment (refer to instructions on page 11). Make sure that the protection tabs are intact (refer to page 11).
Set the tape selector switches of Deck 2 to their proper position.

**1** Tune in to the desired station (refer to instructions on page 10.)

**2** Press the **II** PAUSE button of Deck 2.

**3** Press the ● RECORD button. This will also engage the ▶ PLAY button.

**4** Press the II PAUSE button again to release it and begin recording.
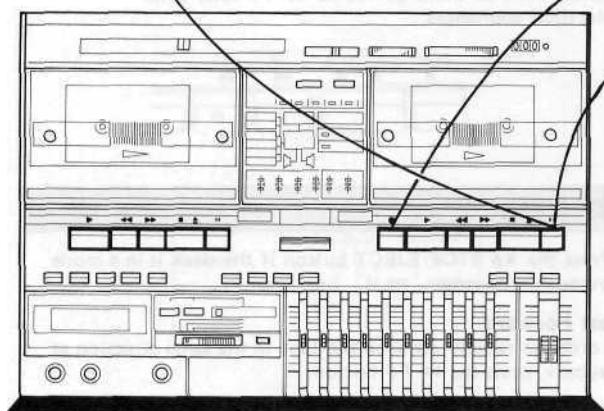


· The VOLUME and GRAPHIC EQUALIZER controls may be adjusted without effecting the recording level of the input signal.
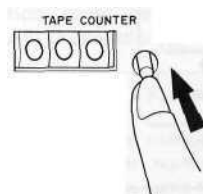
### TO PAUSE RECORDING
Press the **II** PAUSE button.
The tape will stop at this point. To resume recording from the same point, release the II PAUSE button by pressing it again.

### AFTER USE
All buttons will be released automatically when the tape is reached to the end. However, radio reception will continue, uninterrupted. If it is desired to turn the radio off at this time, set the POWER switch to the OFF position.

**BEAT CANCEL SWITCH** (on rear panel)
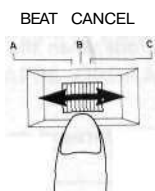


When AM, SW1 or SW2 radio reception is hampered by interference, set the BEAT CANCEL switch on the back of the unit to one of the following positions: A, B or C by which the interference will be reduced apparently.

**DIGITAL TAPE COUNTER** (function only with Deck 2)



Press the RESET button at the side of the counter to reset it to "000". The counter will advance while recording or playback, and it provides a useful eference during these operations.

**MAKING BLANK SPACES FOR APLD AND APPS**
To operate the APLD/APPS correctly, there must be a space of at least 4-second duration between each item on the tape. In order to edit blank (non-signal space) on the tape, follow the instructions below.
· Check to ensure that Deck 1 is out of operation.

**1** Press the II PAUSE button on Deck 2 at the end of recording.

**2** Press the TAPE button of the FUNCTION selector.
Remove the microphones from the EXT MIC sockets when connected.

**3** Press the II PAUSE button on Deck 2 to release the pause function, and run the tape for about 5 seconds.

**4** Press the II PAUSE button on Deck 2 to stop the tape. The Space is now edited onto the cassette tape recording.

**5** Press the desired button of the FUNCTION selector, and press the II PAUSE button to release it and begin recording of the next selection.

· Perform steps 1 — 4 to edit spaces between selections so that the tape may be used for future APLD/APPS operation.

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## ERASING RECORDED TAPES

Previously recorded materials will be erased automatically whenever new materials are re-recorded onto the tape. If it is desired to erase a previously recorded tape without recording over it, follow the instructions below.

• Check to ensure that Deck 1 is out of operation.
• Do not connect any microphones to the EXT MIC sockets.

## DUBBING FROM DECK 1 TO DECK 2

Load a pre-recorded cassette tape into the cassette compartment of Deck 1, and a cassette tape to be recorded into the cassette compartment of Deck 2.
Set the TAPE selectors of Deck 1 and Deck 2 to their proper positions (refer to instructions on page 11).



1 Load a tape to be erased into the cassette compartment of Deck 2.

2 Press the TAPE button of the FUNCTION selector.

3 Press the ● RECORD button. This will automatically engage the ► PLAY button and begin erasing the tape.

• Normal speed dubbing as well as high-speed dubbing may be performed with this unit.

• Do not connect any microphones to the EXT MIC sockets.
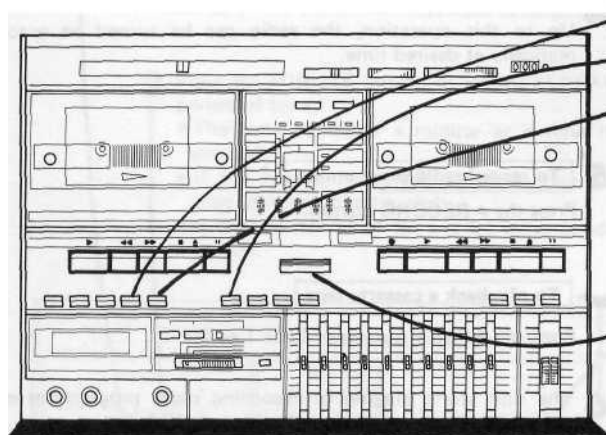
1 Set the **CONT PLAY** switch to the [1] &/or [2]position.

2 Press the TAPE button of the FUNCTION selector.

3 Set the DUBBING SPEED selector to either the NORMAL or HIGH speed position.
The NORMAL position permits to dub at the normal speed.
The HIGH position permits to dub at twice the normal speed.
• Do not change the setting of the DUBBING SPEED selector during dubbing.

4 Press the DUBBING START button. The ► PLAY button of Deck 1, ● RECORD button and ► PLAY button of Deck 2 are automatically pressed.

For rest of the operations, refer to the recording section on the previous page.

## DUBBING WITH APLD AND APPS FUNCTIONS

Certain selected materials can be dubbed by using the APLD or APPS function to locate each desired selection.

1 Perform steps 1 - 3 of DUBBING FROM DECK 1 TO DECK 2 to prepare the unit for dubbing.

2 Locate the beginning of the desired selection by using the APLD (refer to page 13).

3 Set the desired number of selections to be dubbed with the SET button (refer to instructions for APPS OPERATION on page 13).
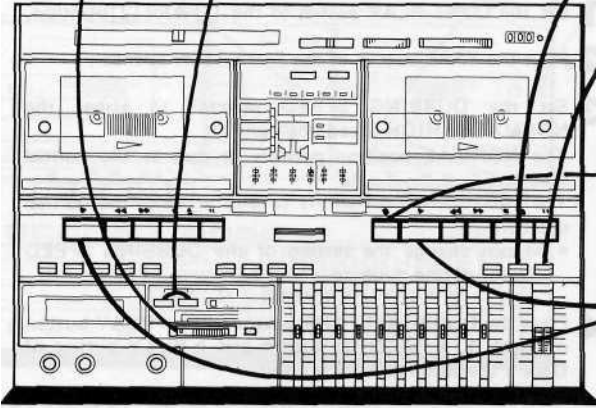
4 Press the DUBBING START button.

5 Upon conclusion of dubbing of the preset selections, the tapes on Deck 1 and Deck 2 will simultaneously stop and the END PAUSE indicator illuminates.

6 Press the ■ ▲ STOP/EJECT button of Deck 1 and 2.

7 To perform dubbing of subsequent selections, repeat Steps 1 - 6.

# 11 HOW TO USE BUILT-IN TIMER

**To listen to the built-in radio by turning it on, to record radio programmes or to playback a cassette tape at desiredtime.**

In order to record or playback a tape, load the tape into the compartment. And in order to listen to the radio, set the POWER switch to the ON position and tune in to the desired radio station.

**1** Set the TIMER/CLOCK/SLEEP selector to the TIMER position. Lower dot of the colon between hour and minute digits goes out.

**2** Set the timer to desired time which appears on the display panel by pressing the HOUR button and MINUTE button.

**3** Set the TIMER switch to the ON position. Then ⏱ mark appears on the display panel.

**4** Set the POWER switch to the OFF position. Up to this operation, the radio can be turned on automatically at desired time.

**5** **To record radio** programmes |

Press the • RECORD button.

**To playback** a **cassette tape**

Press the ▶PLAY button of Deck 1 or 2.

6 The unit starts playing or recording radio programmes or reproducing the tape automatically at desired time.
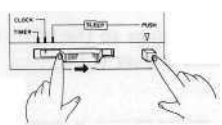
7 The unit is turned off automatically at 64 minutes after desired time.

• If the unit has to be turned off within 64 minutes, set the **TIMER** switch to the **OFF** position. **(Once** the **TIMER** switch is turned off, the timer will not be activated again even if the **TIMER** switch will be turned on again.) if the cassette deck is in operation for playback or recording, press the ■≜STOP/ **EJECT** button first and then turn the TIMER switch **off.**

• The unit may not be turned off if the TIMER switch is turned off once and turned on again for setting wake-up timer for the next day. This is because the sleep timer is not cleared to "00" time.

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## To turn the unit off at desired time within 64 minutes

- The radio can be turned off automatically, or cassette deck can be stopped and then the unit can be turned off automatically after recording or reproducing.
- The timer can be set either the unit is in operation or it is out of operation.

**1** Set the TIMER/CLOCK/SLEEP selector to the SLEEP position. Upper dot of the colon between hour and minute digits goes out.
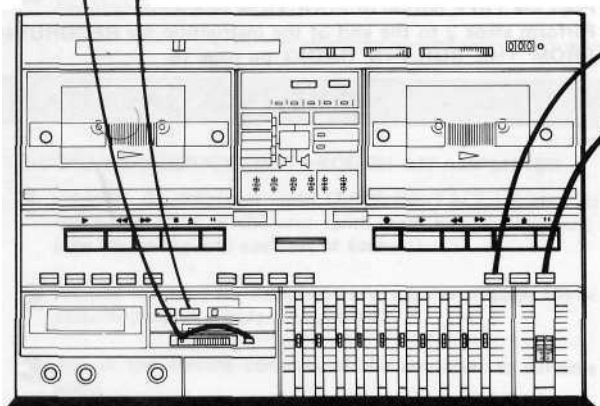
- To set the Selector to the SLEEP position, slide the selector knob toward the right while pressing the button on the right side of the Selector.

  When the Selector is set to the CLOCK or TIMER position again, the button on the right side of the Selector does not have to be pressed.

**2** Press the MINUTE button to set the SLEEP timer to desired period of time.
- The time decreases a minute at a time if the button is pressed.
- If the button is pressed for more than two seconds, the time decreases continuously.
- If desired period of time is 64 minutes, do not press the button.

Do not set the period of time shorter than cassette recording time. Be sure to set the time which is long enough to stop the tape by auto-stop, and then turn the unit off by the timer.

**3** Set the SLEEP switch to the ON position. Then the timer starts counting down.

**4** Set the POWER switch to the OFF position.

**5** The unit will be turned off after the period set is lapsed.

The SLEEP timer can be set again to 64 minutes after turning the unit off automatically by setting the TIMER/CLOCK/SLEEP selector to the CLOCK or the TIMER position once and then back to the SLEEP position.

- During SLEEP timer operation, current time or TIMER set time can be displayed by changing the TIMER/CLOCK/SLEEP selector to either the CLOCK or TIMER position. The SLEEP operation is still active while displaying those and it can be restored by selecting back to the SLEEP mode.

## To turn the radio off automatically by the SLEEP timer and then turn it on automatically again by the AutomaticONTIMER.

**1** Set the Automatic ON TIMER as described in steps 1 to 4 on the previous page.

**2** Set the SLEEP timer as described in steps 1 to 3 on this page for automatic turn off time.

• Microphones have to be 400 ohms to 3 kilo ohms impedance and equipped with a 6.3 mm diameter plug.

• Howl may occur when increasing the volume too much. In such a case, decrease the volume or place the microphones as far as possible from the speakers.
  If howl occurs, the ALC circuit operates and the sound of a microphone becomes small for a while.

• Set the DUBBING SPEED switch to the NORMAL position before using the microphone. When setting the switch to the HIGH position, no sound can be introduced from the microphone.

## RECORDING FROM MICROPHONES
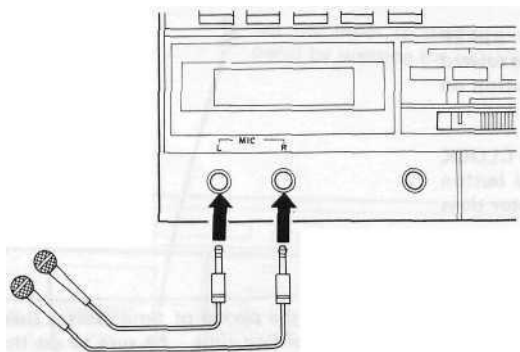
• Check to ensure that Deck 1 is in the stop mode.

**1** Connect two microphone plugs to the MIC right-hand socket (R) and the MIC left-hand socket (L).

  • In the event that a microphone is connected only to the right or left socket, sound from the microphone will be recorded from that channel alone.

**2** Press the TAPE button of the FUNCTION selector.

**3** Perform steps 2 to the end of the instruction for RECORDING FROM THE BUILT-IN RADIO on page 15.

## MIXING OF MICROCHONES WITH RADIO, TAPE OR EXTERNAL UNITS

**1** Connect the microphones (one or two) to the EXT MIC sockets.

**2** Adjust volume and sound quality (refer to instructions on page 9).

**3** Let's sing a song to the accompaniment of the external units: tapes, or radio broadcasts.

**TO RECORD**
Press the TAPE button of FUNCTION selector.
Perform steps 2 to the end of the instruction for RECORDING FROM THE BUILT-IN RADIO on page 15.

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# 13 USE WITH EXTERNAL UNITS

• Before connecting any lead or operating the selector switch, turn off the power of all units.
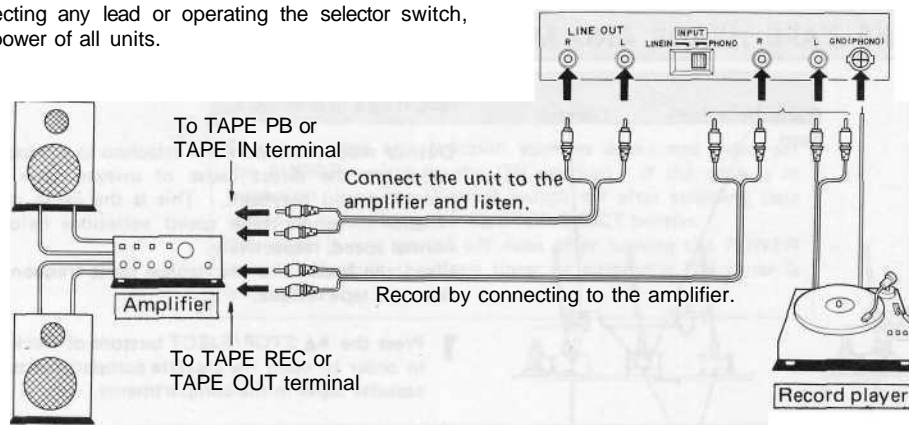


## RECORD PLAYER

**1** Connect the output leads of the record player using magnetic cartridge (optional) to the PHONO/LINE INPUT of the unit. Players with ceramic or crystal cartridges are not suitable for use with the unit. If the record player is equipped with an earth lead (or terminal), connect it to the GND terminal of the unit.

**2** Set the INPUT selector switch on the rear panel to the PHONO position.

**3** Press the PHONO/LINE button of the FUNCTION selector.

**4** Set the record player in play mode.

**TO RECORD**
Follow the instructions for RECORDING FROM THE BUILT-IN RADIO on page 15.

## EXTERNAL AMPLIFIER

### AUDIO REPRODUCTION THROUGH AN AMPLIFIER

**1** Connect the amplifier input (TAPE PB, TAPE IN, etc.) to the LINE OUT of the unit (with leads having plugs suitable for fitting into each set of sockets).

**2** Prepare the unit for radio operation (refer to page 10) or cassette playback (refer to page 1 2).

**3** Adjust the volume controls of the amplifier to suitable levels.

### RECORDING FROM AMPLIFIER

**1** Connect the amplifier output (TAPE REC, TAPE OUT, etc.) to the PHONO/LINE INPUT of the unit (with leads that have plugs suitable for fitting into each set of sockets).

**2** Set the INPUT selector switch on the rear panel to the LINE IN position.

**3** Press the PHONO/LINE button of the FUNCTION selector.

**4** Begin recording (refer to the instructions for RECORDING FROM THE BUILT-IN RADIO on page 15).
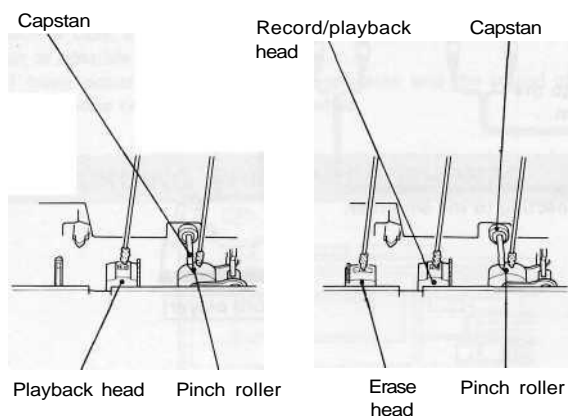
## HEADPHONES
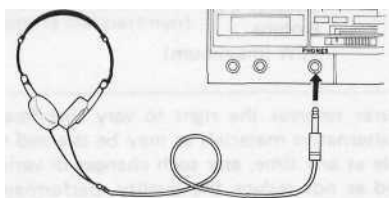


Headphones have to be 8 ohms to 32 ohms impedance and be equipped with a 6.3 mm diameter stereo plug.

Connect the headphones plug to the PHONES socket. Then speaker output will be automatically disconnected. The volume level can be adjusted with the VOLUME controls.

# 14 MAINTENANCE

## CLEANING THE TAPE HEADS AND MECHANICAL PARTS



Capstan    Record/playback head    Capstan

Playback head    Pinch roller    Erase head    Pinch roller

Dirt on the heads will impair the sound qualify of both recording and play back.

Dust or magnetised particles attached to the capstan or pinch roller are the direct cause of uneven tape speed during recording and playback. This is the cause of "wow" and "flutter", namely tape speed variations below and above normal speed, respectively.

Clean the heads and mechanical parts frequently to remove dust and tape residue.

**1** Press the ■▲ STOP/EJECT buttons of Deck 1 and Deck 2 in order to open the cassette compartments. Remove the cassette tapes in the compartments.

**2** Press the ▶PLAY buttons of Deck 1 and Deck 2.

**3** Wipe the parts with a soft lint-free cloth or cotton swab that has been partially soaked in alcohol methylated spirit), until the heads are free of all dirt and residue deposits.

## DEMAGNETISING THE HEADS

When the head is used for a long time, it is sometimes magnetised to a certain degree. Furthermore, it is also magnetised when magnetised metals, such as screwdrivers, etc. are brought near the head. As a result, treble deteriorates, a static noise is recorded and noise is introduced into important music tapes.

Sometimes use a head demagnetiser sold on the market and demagnetise the head according to the instructions supplied with head demagnetiser.

**CLEANING THE CABINET**    (Use only a damp cloth for cleaning the cabinet.)

# 15 SPECIFICATIONS

| | |
|---|---|
| Power source: | AC 110V - 127V and 220 - 240V, 50/60Hz |
| | DC 15V (UM/SUM-1 or R20 type x 10, or external 15V DC) |
| Output power: | PMPO; 52W (26W + 26W) (AC operation) |
| | MPO; 40W (20W + 20W) (AC operation) |
| | RMS; 26W(13W + 13W) (DC operation, 10% distortion) |
| Dimensions: | Width; 681 mm (26-13/16") |
| | Height; 225 mm (8-7/8") |
| | Depth; 210 mm (8-1/4") |
| Weight: | 8.8kg(19.4lbs.) without batteries |

**TAPE RECORDER**

| | |
|---|---|
| Tape: | Compact cassette tape |
| Frequency response: | 30Hz — 14,000Hz (normal tape) |
| | 30Hz - 16,000Hz ($CrO_2$ tape) |
| | 30Hz - 17,000Hz (metal tape) |

| | |
|---|---|
| Signal/noise ratio: | 55 dB (Deck 1, playback) |
| | 50 dB (Deck 2, recording) |
| Input impedance: | External mic; 600 ohms |
| | Phono/line in; 50 kohms/50 kohms |
| Loaded impedance: | Headphones; 8 ohms —32 ohms |
| | External speakers; 8 ohme — 16 ohms |
| | Line out; 0.6V/50 kohms |

**RADIO**

| | |
|---|---|
| Frequency range: | AM; 526.5 kHz - 1606.5 kHz |
| | SW1 2.3 MHz - 7.3 MHz |
| | SW2 7.3 MHz - 22 MHz |
| | FM; 87.6 MHz - 108 MHz |

**SPEAKER**

| | |
|---|---|
| Speakers: | 16 cm (6-1/2") free-edge woofer x 2 |
| | tweeter x 2 |
| Impedance: | 8 ohms |
| Input: | 26W (maximum) |

The manufacturer reserves the right to vary specifications, design, or use alternative materials as may be deemed necessary or desirable at any time, any such changes or variations being of a kind as not reduce the quality, performance or appearance.

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