

SONY

3-750-695-21 (1)

Radio Cassette-Corder

CFS-W510

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Owner's Record

The model and serial numbers are located on the rear exterior. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. CFS-W510 Serial No. _____

Informations

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 the receiving antenna

Relocate the equipment with respect to the receiver

Move the equipment away from the receiver

Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S.

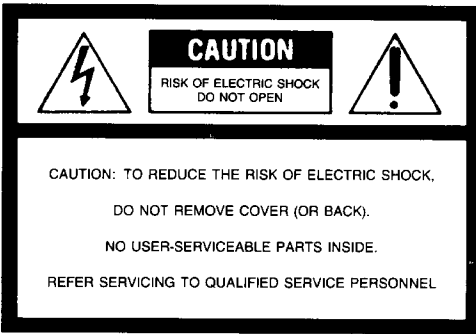
Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

For the customers in Canada

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol 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.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

On safety

- Operate the unit only on 120V AC or 9V DC.
For AC operation, use the supplied AC power cord; do not use other type.
For battery operation, use six size D (R20) batteries.
- Unplug the unit from the wall outlet when it is not to be used for an extended period of time.
- When the internal batteries are not to be used, remove them to avoid damage caused by battery leakage and corrosion.
- Should any solid object or liquid fall into the unit, unplug the unit, and have it checked by qualified personnel before operating it any further.

On placement

- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- If the unit is left in a car parked in the sun, be sure to choose a location in the car where the unit will not be subject to the direct rays of the sun.
- Since a strong magnet is used for the speakers, keep personal credit cards using magnetic coding or spring-wound watches away from the unit to prevent possible damage from the magnet.

On operation

- If the unit has not been used for a long time, set it in the playback mode to warm it up for a few minutes before inserting a cassette.

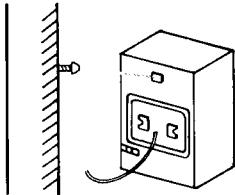
Note on longer than 90-minute cassettes

The use of a cassette tape longer than 90-minutes is not recommended except for long continuous recording or playback.

If you have any question or problem concerning your unit, please consult the nearest Sony dealer.

To connect the speaker wire

- Connect right speaker to R connectors and left speaker to L.



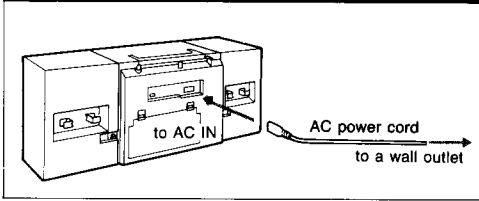
Wall mounting warning

If you plan to attach the speakers to the wall, insert a 4 to 5cm (1.6 to 2.0 inch) heavy wood screw or nail into a post or stud behind the wall, leaving about 1cm exposed. Hang the speakers, using the wall-mounting hole on the rear of the speakers.

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Power Sources

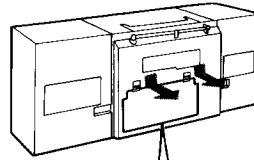
House Current



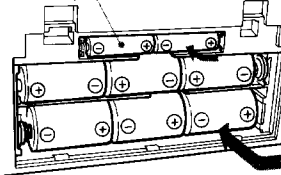
Note

The unit cannot be operated on the internal batteries (if present) when the AC power cord is connected to the unit. You must remove the AC power cord to use battery power.

Batteries



Clock/tuner memory:
2 size AA (R6) batteries



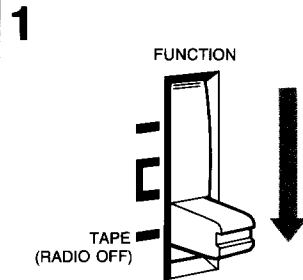
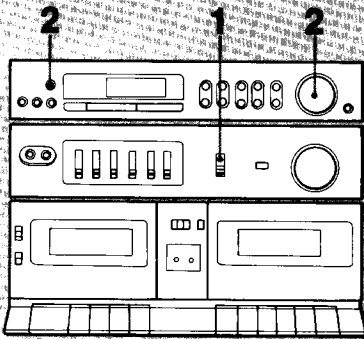
Main power: 6 size D (R20) batteries

Note

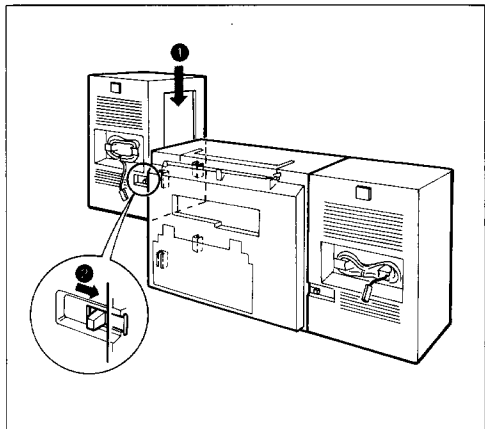
When you replace the batteries for clock/tuner memory, be sure to connect the AC power cord to the unit and to the wall outlet, and set the FUNCTION selector to RADIO/LINE IN, before you remove the batteries.

Setting the Clock

Make sure that TIMER/SLEEP switch is set to OFF.



Connecting Speakers

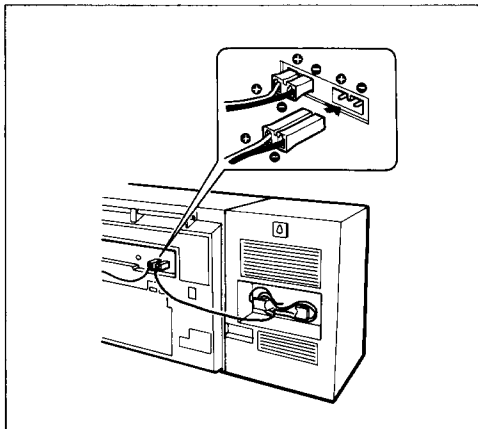


To attach speakers

- 1 Align the grooves and slide the speaker box down.
- 2 Lock as shown in the illustration.

To detach speakers

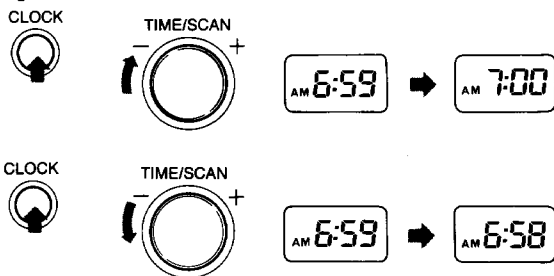
Unlock the speaker and slide the speaker box all the way up and away from the main unit.



To connect the speaker wire

- Connect right speaker to R connectors and left speaker to L.

2 While pressing CLOCK



To set seconds exactly

Ex. To set to 7:00 (00 seconds) AM.

Set clock to 6:59, then continue to hold down CLOCK.

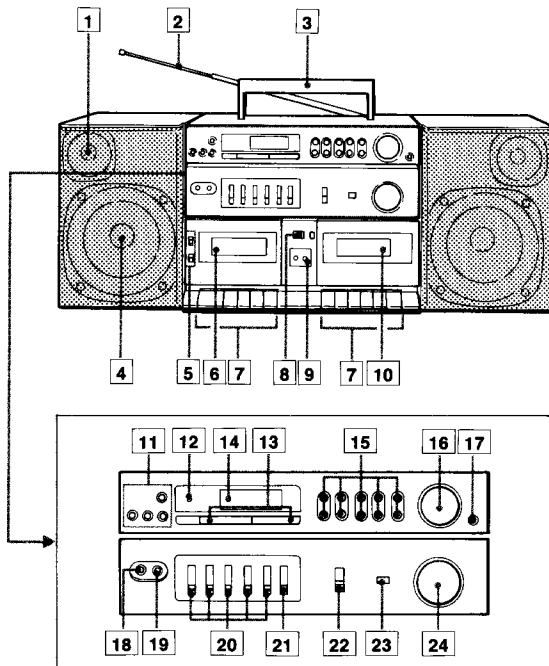
At a signal indicating the exact hour (eg. a radio broadcast or telephone "time" service) turn the TIME/SCAN control to the right (+).

The clock will be set to exactly 7:00 AM.

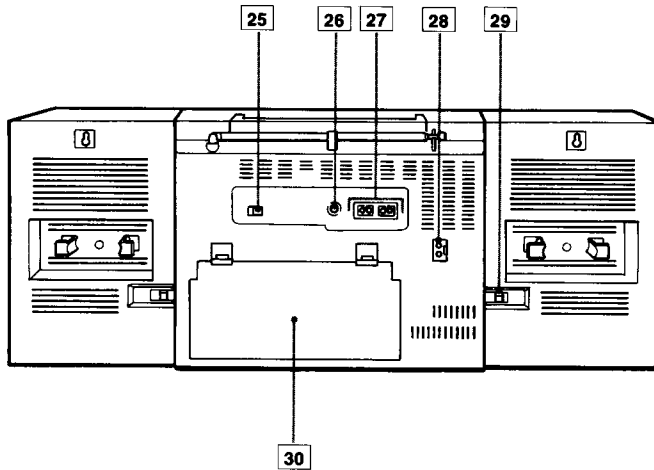
For fast clock advance

Turn the TIME/SCAN control to the right (+) or left (-) and hold a few seconds.

Location and Function of Controls



- 1** Tweeter
- 2** Telescopic antenna
- 3** Handle
- 4** Woofer
- 5** Direction switches
DIR (direction) switch
MODE (direction mode) selector
- 6** Cassette holder A
- 7** Tape operation buttons
 - (record) button (deck B only) — Pressing this will automatically depress ▷ PLAY.
 - ▷ (play) button
 - ◀◀ (rewind) button
 - ▶▶ (fast-forward) button
(note: ◀◀ and ▶▶ do NOT release automatically at tape end.)
 - ▲ (stop/eject)
 - || (pause)
- 8** Tape counter (for deck B)
- 9** OPR/BATT (operation/battery) indicator/Direction indicator
Shows unit is in use. When glow becomes faint, change all batteries.
FWD: Lights while playing the front side on deck A.
REV: Lights while playing the reverse side on deck A.
- 10** Cassette holder B
- 11** Clock/timer operation buttons
CLOCK — to set clock
TIMER — to display or set timer-on time.
SLEEP — for timed radio play.
STANDBY — to activate or turn off wake-to-radio or wake-to-alarm.
- 12** FM STEREO indicator
Lights to show stereo reception. Use to find best tuning.
- 13** FM/AM button
- 14** Synthesized tuner/clock timer display
- 15** FM/AM PRESET TUNING buttons
- 16** TIME/SCAN control
For radio tuning and clock/timer setting.
- 17** MEMORY button
- 18** PHONES (headphones) jack (stereo minijack)
- 19** MIX MIC (mixing microphone) input jack (mono minijack)
- 20** 5-BAND GRAPHIC EQUALIZER controls
Use to tailor tone response to listening room or listening material.
- 21** BALANCE control
Use to improve stereo imaging, especially when speakers are not symmetrically placed.
- 22** FUNCTION selector
Selects RADIO (LINE IN), TAPE, or DUBBING. You can also choose NORMAL or HIGH-SPEED dubbing.
- 23** TIMER/SLEEP switch
- 24** VOLUME control

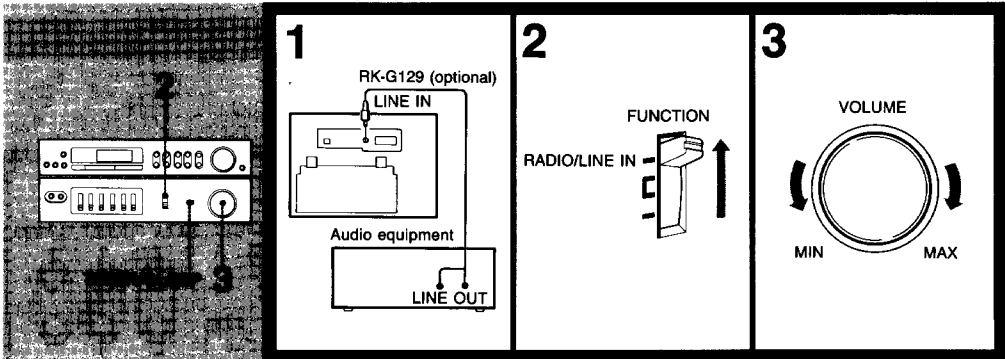


- 25 SENS (sensitivity) (DX/LOCAL) selector**
Normally set to DX. See page 8 about LOCAL setting.
- 26 LINE IN jack (stereo minijack)**
Allows connection of other component (CD player, eg.).
See below.

- 27 Speaker terminals**
- 28 AC IN socket**
- 29 Speaker lock**
- 30 Battery compartment**

Listening to sound from LINE IN jack

Make sure that TIMER/SLEEP switch is turned off.

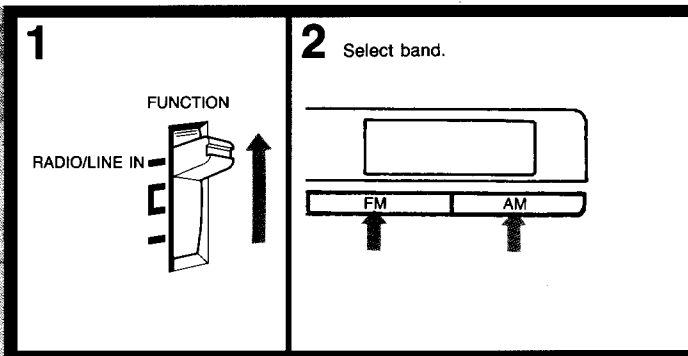
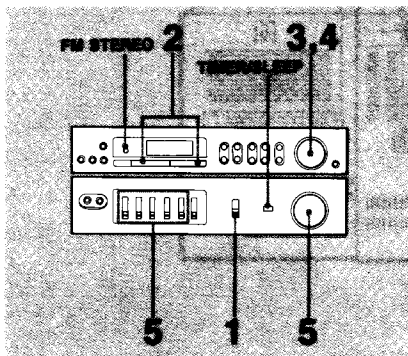


Note
Be sure to remove the plug from the LINE IN jack after listening. Otherwise, the radio sound cannot be heard.

Listening to the Radio

Automatic Tuning

Make sure that TIMER/SLEEP switch is set to OFF.



To eliminate noise when broadcast source is nearby

Set SENS (located on the rear) to LOCAL

To tune in a station of distant or weak broadcast source, set SENS to DX.

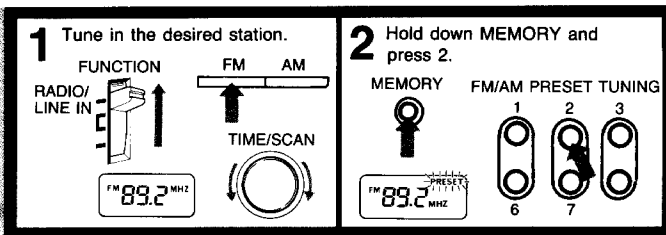
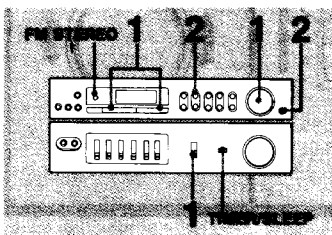
Notes on automatic tuning

- When you turn the TIME/SCAN control, the tuner will tune in the nearest station in that direction, play for 5 seconds, then move to the next station in the selected direction. This process will repeat.
- When you reach the first or last frequency in a band, an alarm tone will sound. Turn the TIME/SCAN control to adjust the tuner in the opposite direction to stop the alarm. (Alarm will not sound if a station is present at the last frequency.)
- Tuner may stop at frequencies with no station when a broadcast source is nearby. If so, set SENS to LOCAL.

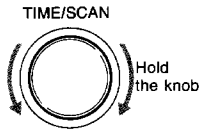
Memory Preset-Tuning

To memorize a preset station (89.2 MHz FM at preset 2, for example)

First make sure that TIMER/SLEEP switch is set to OFF.

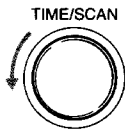


3 Turn quickly, then hold



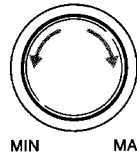
Scanning starts.

4 When the desired station is received



Turn a little.

5 VOLUME



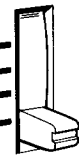
MIN MAX

5 BAND GRAPHIC EQUALIZER



To turn off radio.

FUNCTION



TAPE (RADIO OFF)

Graphic equalizer adjustments

These are the frequency coverages of the equalizer controls.
100 Hz: bass.

400 Hz: speaking voice, middle frequencies of instrumental music.

1 kHz: singing vocals. Boost for increased "presence."

4 kHz: overall brightness of sound.

10 kHz: general treble. Lower to reduce noise.

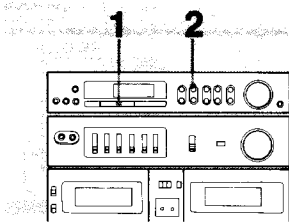
Raise control to emphasize a frequency band, lower to deemphasize.

Manual Tuning

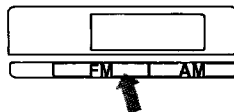
In step 3 of "Automatic tuning", turn TIME/SCAN control + or - without holding more than 5 seconds. You can select a desired frequency station.

To tune in a preset station

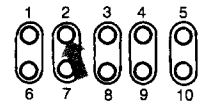
After memorizing in the example:



1 Select the band.

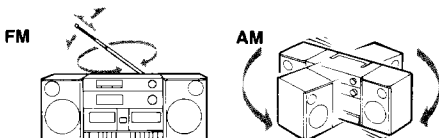


2 FM/AM PRESET TUNING



For improved reception

Adjust the antenna as follows.



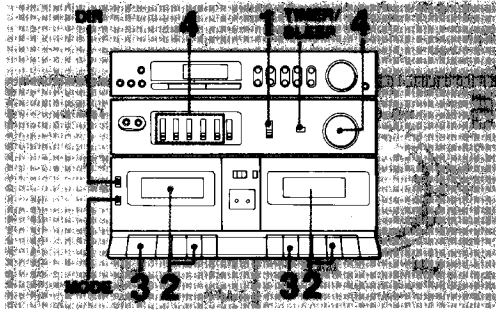
When an FM stereo program is tuned in FM STEREO indicator lights up.

If the received FM stereo is too weak

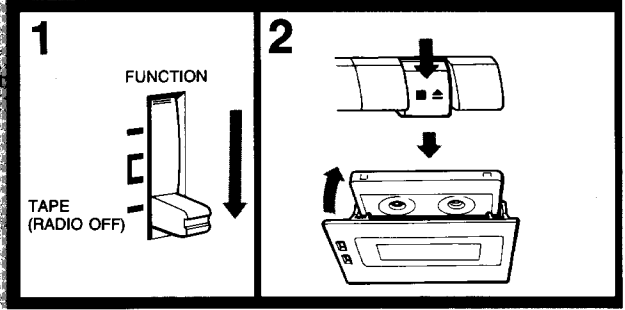
The reception becomes monaural, and the FM STEREO indicator will go off.

Playing Back a Tape

Make sure that TIMER/SLEEP switch is set to OFF.



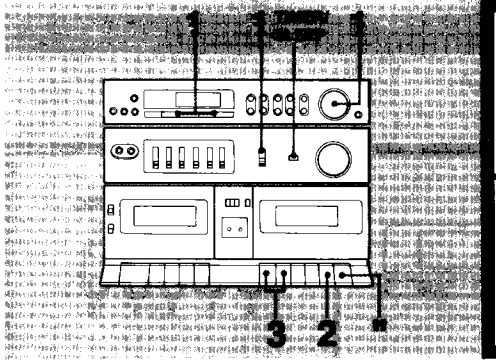
On the side of the tape to be played on deck A
After you press ► the unit will play the front (FWD) lights) and then reverse (REV lights) side of tape continuously.
Slide DIR to ↓ to change the side of the cassette.



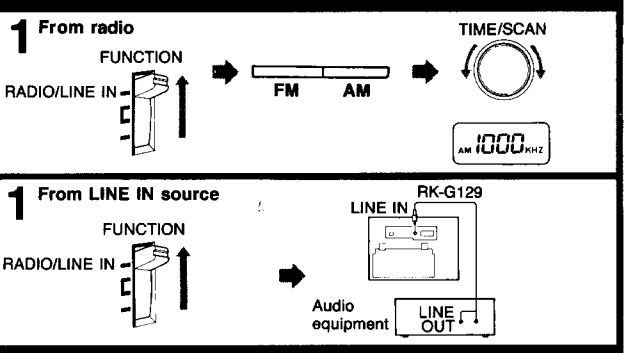
- To select playback mode of deck A
Set the DIR MODE selector to the desired position.
- To play back both sides of a cassette once, starting from the front side to the reverse side.
 - ↻ To play back both sides of a cassette repeatedly.

Recording (deck B only)

Make sure TIMER/SLEEP switch is set to OFF.

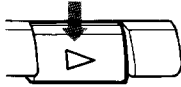


No volume adjustment is necessary
Recording level is set automatically.

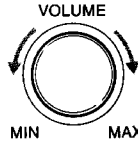


- To avoid recording unwanted programming
Use ■ as follows.
1. While recording, just before the portion to be eliminated, press ■. Sound will come from speakers, but not be recorded.
 2. To resume recording, press ■ again to release.

3



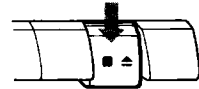
4



5-BAND GRAPHIC EQUALIZER



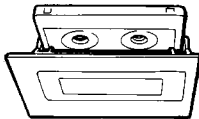
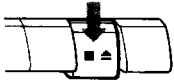
To stop playback.



To wind tape rapidly for ► direction	►►
To wind tape rapidly for ◄ direction	◄◄
To stop playback/recording	■ ▲
To release ►► or ◄◄	■ ▲
To pause playback/recording	

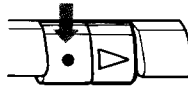
Be sure to press ■ ▲ to release ►► or ◄◄ at the tape end of each direction.

2

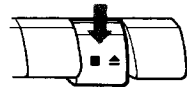


deck B

3



To stop



To prevent accidental erasure

To protect side A recording

Break out the tab of side A.

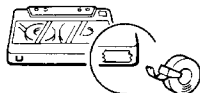


Side A

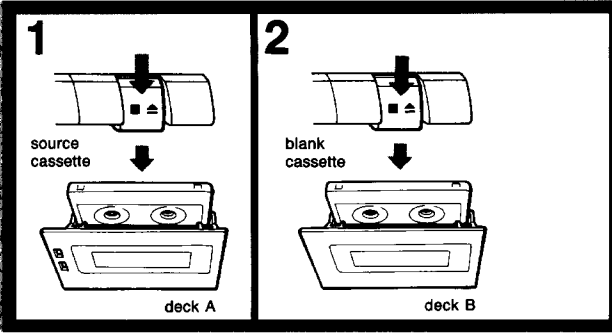
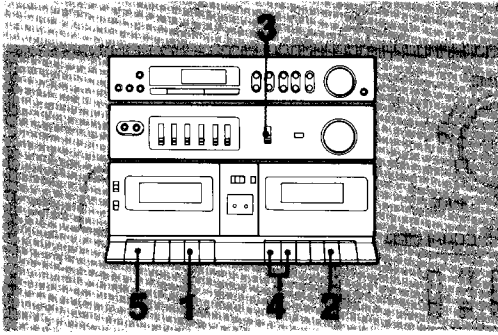
Tab of side B

To reuse a cassette

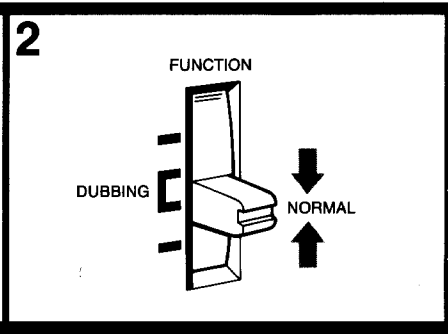
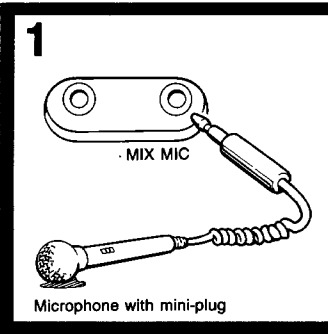
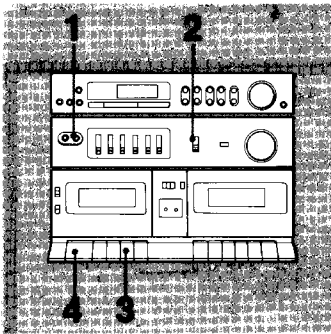
Cover each slot with plastic tape.



Dubbing Tapes (deck A to deck B)



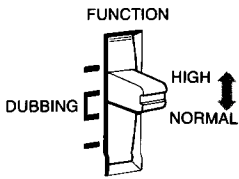
Mixing with Microphone



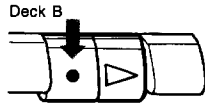
To record mixed microphone and taped program source
 Insert a blank cassette in deck B and press ●. Mix sound as described above. Both voice and tape A sound will be recorded.

Microphone-only recording
 You can also record using microphone only. Set FUNCTION selector to TAPE without playing tape A and record.

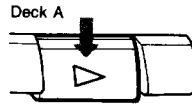
3



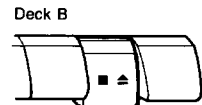
4



5



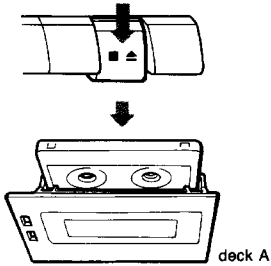
To stop dubbing



Note on dubbing

- Dubbing will stop automatically when either tape finishes:
- If deck A's tape finishes first, deck B will also stop.
(Manually press ■ ▲ to release locked buttons).
 - If deck B's tape finishes first, deck A will continue play.

3

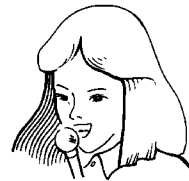


4



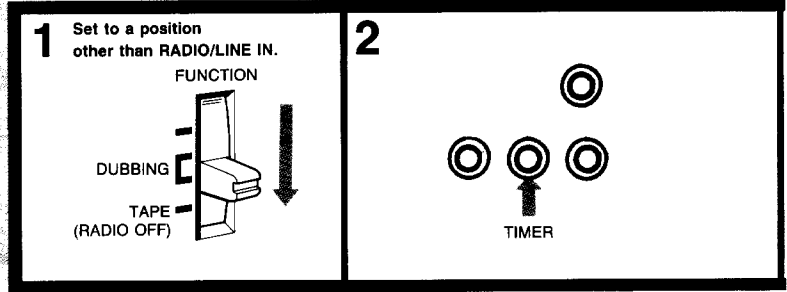
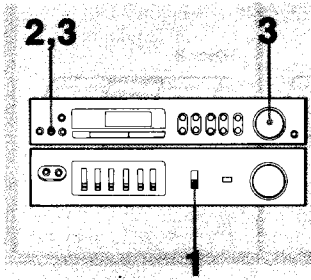
5

Speak into the microphone.

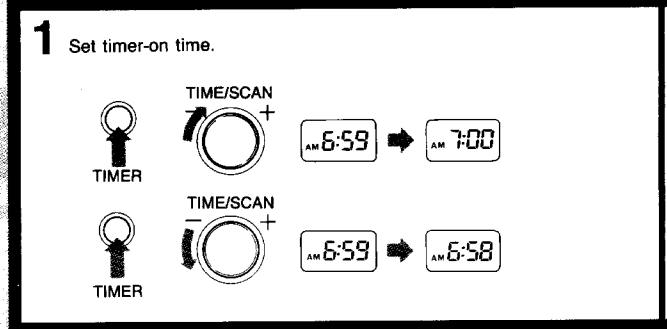
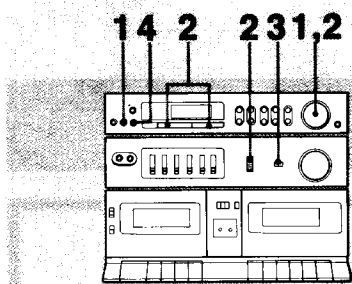


Using the Internal Timer (only for radio or alarm)

Timer-on Time Setting



Waking up to the Radio



Waking up to the alarm

- 1 Set timer-on time.
- 2 Switch TIMER/SLEEP to ON.
- 3 Press MEMORY and TIMER simultaneously — ((•)) display will appear.
- 4 Set FUNCTION selector to RADIO/LINE IN.
- 5 Press STANDBY.
At the timer-on time tone will sound at the same time with the radio sound.

To turn off radio or alarm

Press STANDBY.
When you have set to wake up to the alarm, pressing STANDBY once turns off the alarm and pressing twice turns off the radio.
If you do not, radio or alarm will continue for 65 minutes.

To reset wake-to-radio or alarm for the same time next day

Usually, simply press STANDBY. Make sure STANDBY is not already displayed. If it is, press STANDBY twice so that display is erased and displayed again. When resetting the alarm, first check that the ((•)) indicator is lit. If not, press MEMORY and TIMER simultaneously.

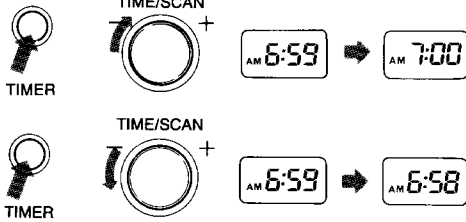
To cancel timer setting before radio or alarm goes off

- 1 Press STANDBY (so that STANDBY display goes off).
- 2 Set TIMER/SLEEP to OFF.

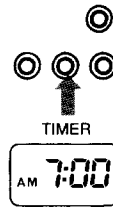
If VOLUME is set to "0"

The radio or alarm will not sound. Check VOLUME when setting the timer.

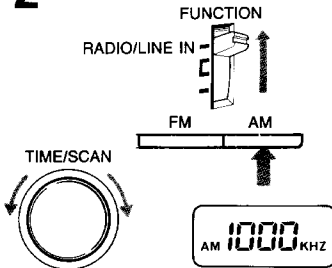
3 While pressing **TIMER**



To check timer-on time



2 Tune in the desired station.

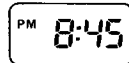


3

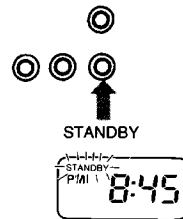
TIMER/SLEEP



Present time is displayed.



4



At the timer-on time, radio will play.

For Timed Music When You Go to Bed (Sleep Function)

1. Tune in a radio station.
2. Set **TIMER/SLEEP** to **ON**.
3. Press **SLEEP**.

To stop timed music play
Press **SLEEP**.

Play will continue for 65 minutes, then stop automatically.

Troubleshooting Guide

The unit does not operate.

- The AC power cord is not connected, and no batteries in battery compartment.
- Batteries installed incorrectly.
- The TIMER/SLEEP switch is set to ON.

Cassette cannot be inserted.

- Improper tape insertion. (Insert with exposed tape side down.)
- ▷ is depressed.
- ● cannot be depressed.
- No cassette in deck B.
- The cassette inserted has tab removed. If so, cover with plastic tape.

No sound from speakers.

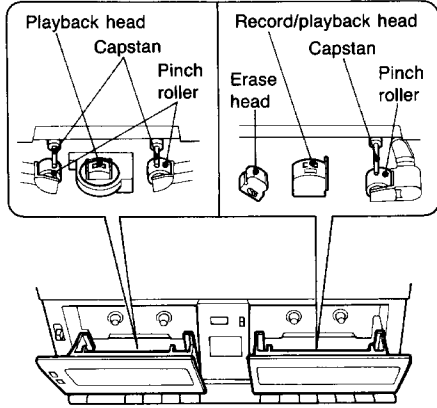
- Headphones are plugged in.
- The VOLUME control is turned down completely.
- The FUNCTION selector setting is incorrect.
- The speaker wire is not securely connected.

The timer does not function correctly.

- The clock is not set to the correct time.
- The timer is not set to the correct time.
- Operation steps were not followed correctly.

Poor playback, recording or erase quality.

- Dirty heads. Clean the illustrated portions with a cotton swab moistened with cleaning fluid or denatured alcohol.



Specifications

AUDIO POWER SPECIFICATIONS POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6 ohm loads, both channels driven, from 150 — 10,000 Hz; rated 7.0 watts per channel minimum RMS power, with no more than 10% total harmonic distortion in AC operation.

Other Specifications

Frequency range	FM 87.6—108 MHz (100 kHz increments) AM 530—1710 kHz (10 kHz increments)
Antennas	FM: Telescopic AM: Built-in ferrite bar
Recording system	4-track, 2-channel stereo
Frequency response	80—10,000 Hz
Speakers	Two-way: tweeter 2 cm (3/4 in.) dia. woofer 12 cm (4.8 inches) dia.
Power output	4.0 W + 4.0 W (at 10% harmonic distortion) in DC operation
Inputs	MIX MIC jack (mono minijack) (1) sensitivity 4.4 mV for low impedance microphone LINE IN jack (stereo minijack) (1) input impedance 47 kilohms, sensitivity 0.44 V

Outputs	Headphones jack (stereo minijack) for 8-300 ohm impedance headphones Speaker terminals for 6 ohm impedance speaker
Power requirements	120 V AC, 60 Hz 9 V DC, six size D (R20) batteries Clock/tuner memory: 3 V DC, 2 size AA (R6) batteries
Power consumption	35 W in AC operation
Battery life	

Batteries	FM recording
Sony New Super SUM-1 (NS)	Approx. 7 hours
Sony AM1 alkaline	Approx. 12 hours

Dimensions	For clock/tuner memory: Approx. 1 years with Sony SUM-3 (NS). Approx. 630 x 243 x 184 mm (24-7/8 x 9-5/8 x 7-1/4 inches) incl. speakers, projecting parts and controls, not incl. handle
Weight	Approx. 5.6 kg (11 lb 9 oz) incl. batteries and speakers
Accessory supplied	AC power cord (1)
Optional accessory	Cleaning kit KK-4

Design and specifications subject to change without notice.