

SONY[®]

3-858-169-12(1)

CD Radio Cassette-Corder

Operating Instructions

***CFD-222
CFD-DW222***

—
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Warning

To prevent fire or shock hazard, do not expose the player 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.

CAUTION

The use of optical instruments with this product will increase eye hazard.

For customers in Canada

To prevent electric shock, match wide blade of plug to wide slot, fully insert.

Warning

Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

The FUNCTION selector is located on the top exterior.

When you turn on the player, the OPR/BATT indicator lights up.

Information

For customers in the United States

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 generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. 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.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Owner's Record

The model number is located at the bottom and the serial number is located in the battery compartment.

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. CFD-222

Serial No. _____

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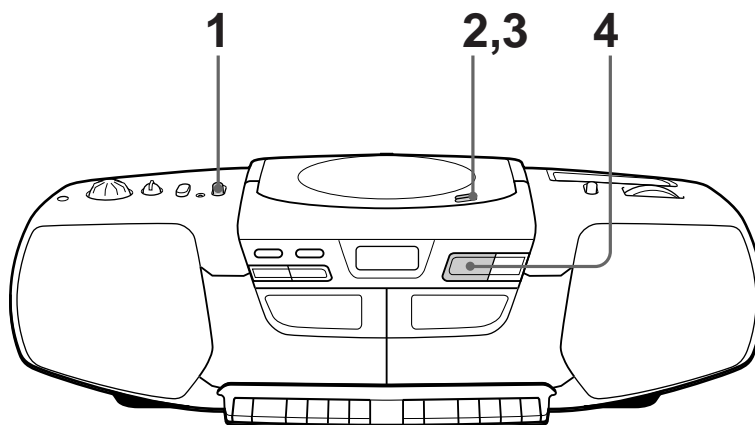
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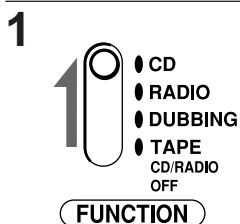
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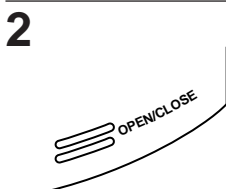
Playing a CD



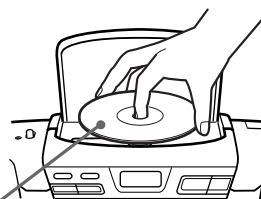
Connect the supplied AC power cord (see page 16).



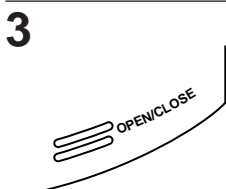
Set FUNCTION to CD.



Press OPEN/CLOSE down to open the CD compartment and place the CD on the CD compartment.



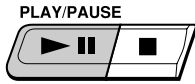
With the label side up



Close the CD compartment.



4



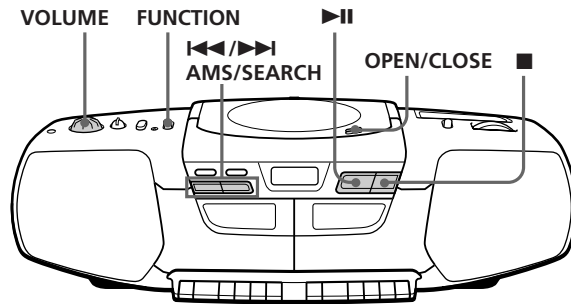
Press **▶▶**.
The player plays all the tracks once.

Display



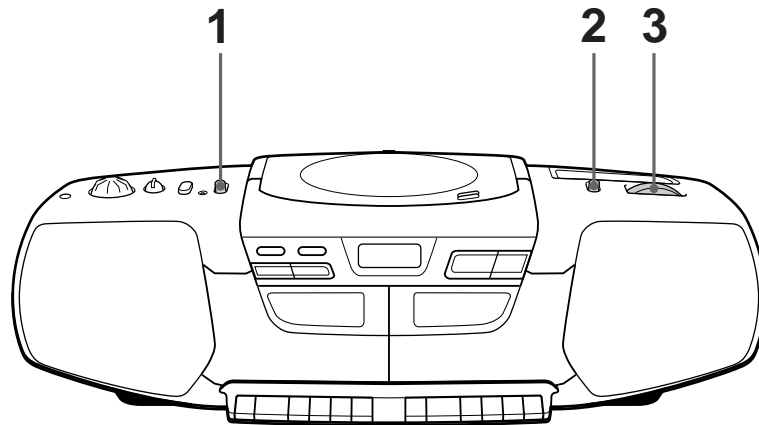
Track number Playing time

Use these buttons for additional operations



To	Do this
Adjust the volume	Turn VOLUME.
Stop playback	Press ■.
Pause playback	Press ▶▶. Press again to resume play after pause.
Go to the next track	Press ▶▶ AMS/SEARCH.
Go back to the previous track	Press ◀◀ AMS/SEARCH.
Remove the CD	Press OPEN/CLOSE.
Turn off the player	Set FUNCTION to TAPE (CD/RADIO OFF).

Listening to the radio



Connect the supplied AC power cord (see page 16).

1



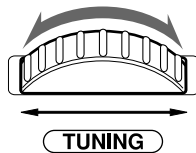
Set FUNCTION to RADIO.

2



Set BAND to FM or AM.

3

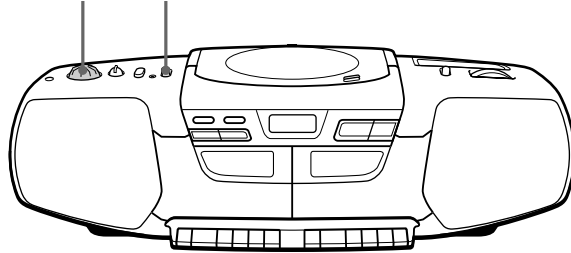


Turn TUNING to tune in a radio station.

If the received FM stereo is too weak, the reception becomes monaural.

Use these buttons for additional operations

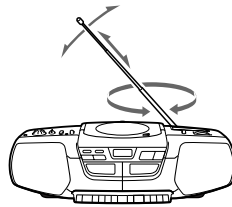
VOLUME FUNCTION



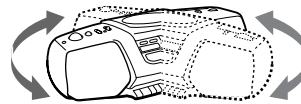
To	Do this
Adjust the volume	Turn VOLUME.
Turn off the radio	Set FUNCTION to TAPE (CD/RADIO OFF).

To improve broadcast reception

Reorient the antenna for FM. Reorient the player itself for AM.

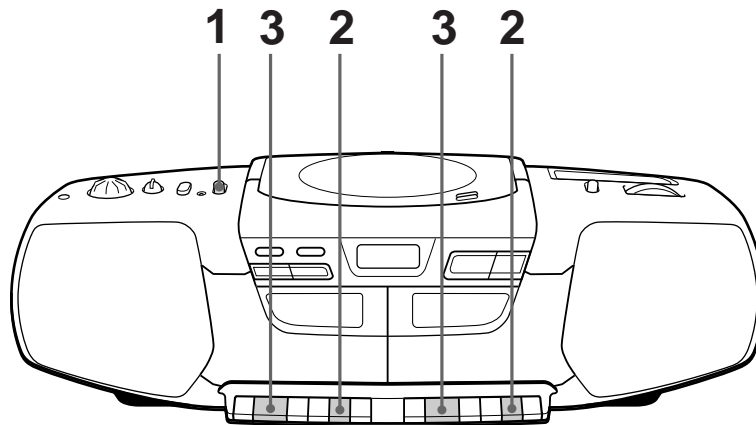


For FM



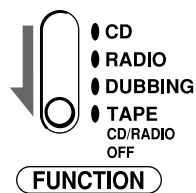
For AM

Playing a tape



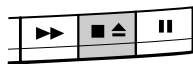
Connect the supplied AC power cord (see page 16).


1



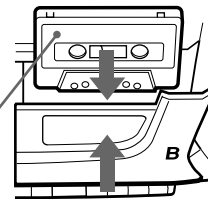
Set FUNCTION to TAPE(CD/RADIO OFF).

2




Press  to open the tape compartment on deck A or deck B and insert a recorded tape. Use TYPE I (normal) tape only. Close the compartment.

With the side you want to play facing forward

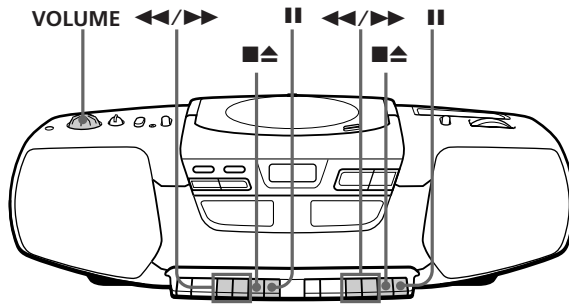


3



Press .

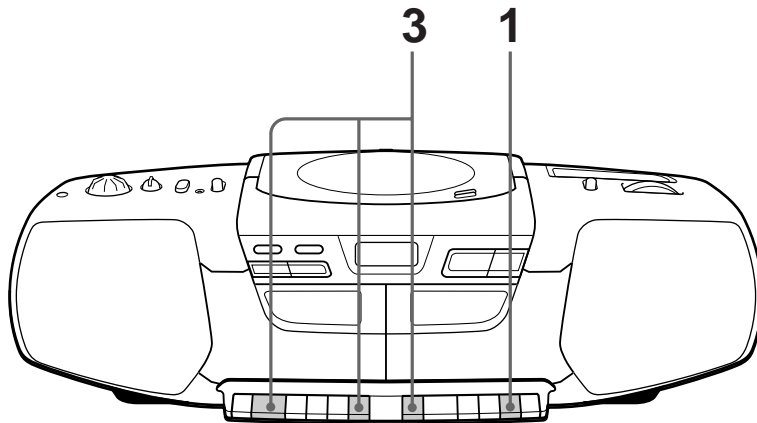
Use these buttons for additional operations



Note
 During playback, do not press buttons on the other deck. Otherwise the playback speed may change.

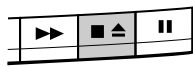
To	Do this
Adjust the volume	Turn VOLUME.
Stop playback	Press ■▲
Fast-forward or rewind the tape	Press ►► or ◀◀
Pause playback	Press . Press the button again to resume play after pause.
Eject the cassette	Press ■▲.

Recording on a tape



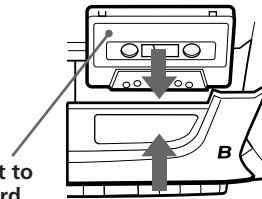
Connect the supplied AC power cord (see page 16).

1



Press to open the tape compartment on deck B and insert a blank tape. Use TYPE I (normal) tape only.

With the side you want to record on facing forward



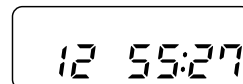
2



Select the program source you want to record.

To record from the CD player, set FUNCTION to CD and insert a CD (see page 4).

Display



To record from the radio, set FUNCTION to RADIO, select the band, and tune in the station you want (see page 6).



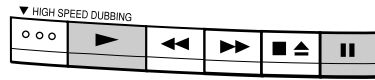
To record from the tape, insert a recorded tape into deck A (see page 8) and set FUNCTION to DUBBING.

3

Deck B



Deck A



Deck B



Start recording.

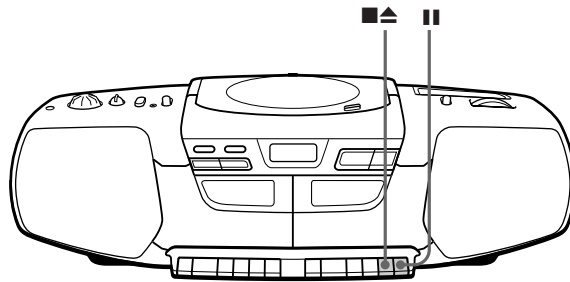
To record from the CD player or the radio, press ● on deck B (▶ is depressed automatically.)

To record from the tape, press ■▲ and ▶ on deck A. (For high speed dubbing, press HIGH SPEED DUBBING instead.) Then press ● on deck B (▶ is depressed automatically).

Tips

- Adjusting the volume or the audio emphasis (see page 17) will not affect the recording level.
- For the best results, use the AC power as a power source for recording.
- If the AM program makes a whistling sound after you've pressed ● in step 3, set the ISS (Interference Suppress Switch) at the rear to the position that most decreases the noise. Normally set the switch to "2".
- To erase a recording, proceed as follows:
 - 1 Insert the tape whose recording you want to erase into the tape compartment on deck B.
 - 2 Set FUNCTION to TAPE (CD/RADIO OFF).
 - 3 Press ● on deck B.

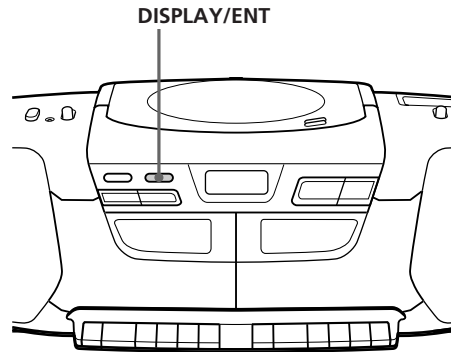
Use these buttons for additional operations



To	Press
Stop recording	■▲ on deck B
Pause recording	on deck B Press the button again to resume recording.

Using the display

You can check information about the CD using the display.



Checking the total track numbers and playing time

Press DISPLAY/ENT in stop mode.



Checking the remaining time

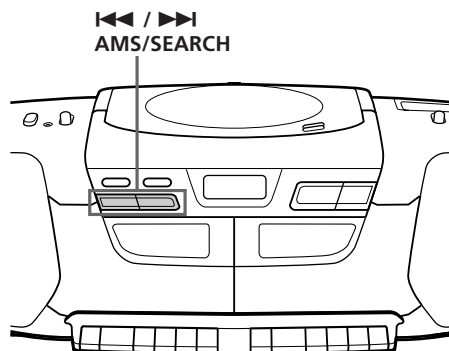
Press DISPLAY/ENT while playing a CD.

To display	Press DISPLAY/ENT
Remaining time on the current track*	Once
Remaining time on the CD and the number of tracks left	Twice
Playing time and the current track number	Three times

* For a track whose number is more than 20, the remaining time appears as "--:--" in the display.

Locating a specific point in a track

You can locate a specific point in a track while playing a CD using **▶▶** or **◀◀** AMS/SEARCH.



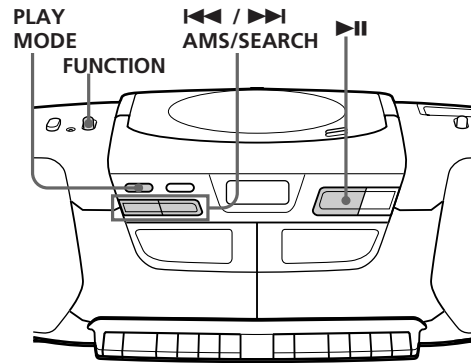
The CD Player

To locate	Press
a point while listening to the sound	▶▶ (forward) or ◀◀ (backward) AMS/SEARCH while playing and hold down until you find the point.
a point while observing the display	▶▶ (forward) or ◀◀ (backward) AMS/SEARCH in pause and hold down until you find the point.

Playing tracks repeatedly

(Repeat Play)

You can play tracks repeatedly in normal, shuffle or program play modes (see page 15).



- 1 Set FUNCTION to CD.
- 2 Press PLAY MODE until the repeat mode you want appears in the display.

To repeat	Select
a single track	REP 1
all tracks	REP ALL
tracks in random order	SHUF REP
programed tracks	PGM REP

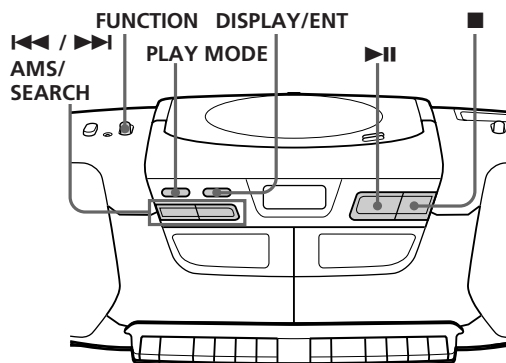
- 3 Do either of the following to start repeat play:
 - **When you've selected REP1**, select the track by pressing ►► or ◀◀ AMS/SEARCH and press ►►.
 - **When you've selected REP ALL and SHUF REP**, press ►►.
 - **When you've selected PGM REP**, program tracks (see step 3 on page 15), then press ►►.

To cancel Repeat Play

Press PLAY MODE until "REP" disappears in the display.

Creating your own program (Program Play)

You can arrange the playing order of the tracks on a CD.

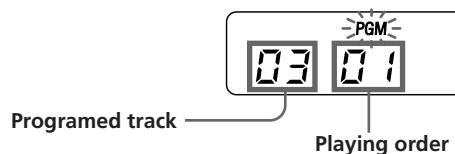


The CD Player

Tips

- You can play the same program again, since the program is saved until you open the CD compartment or switch FUNCTION.
- The current program will be erased if you switch FUNCTION or open the CD compartment.
- You can record your own program. After you've created the program, insert a blank tape into deck B and press ● on deck B to start recording.

- 1 Set FUNCTION to CD.
- 2 Press PLAY MODE until "PGM" appears in the display.
- 3 Press ►► or ◀◀ AMS/SEARCH then press DISPLAY/ENT for the tracks you want to program in the order you want. You can program up to 20 tracks.



- 4 Press ►► to start program play.

To cancel Program Play

Press PLAY MODE until "PGM" disappears in the display.

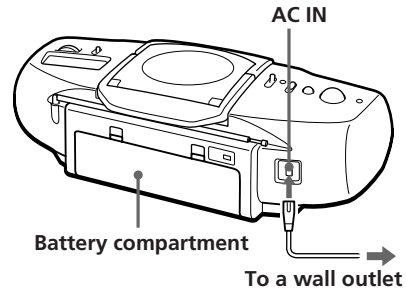
To change the current program

Press ■ once if the CD is stopped and twice if the CD is playing. The current program will be erased. Then create a new program following the programming procedure.

Choosing the power sources

You can use the AC power or batteries as a power source.

Use the AC power source whenever you record since recording consumes much power.



Tip

Replace the batteries when the OPR/BATT indicator dims or when the player stops operating. Replace all the batteries with new ones. Before you replace the batteries, be sure to take out the CD from the player.

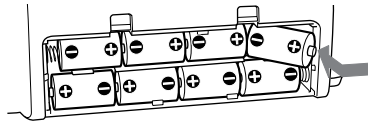
Connecting the AC power cord

Insert one end of the supplied AC power cord to the AC IN socket located at the rear of the player, and the other end to the wall outlet.

Using the player on batteries

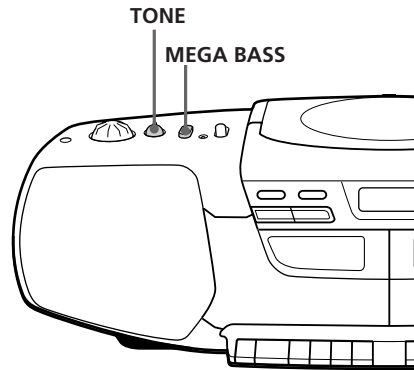
Insert eight size D (R20) batteries (not supplied) into the battery compartment.

To use the player on batteries, disconnect the AC power cord from the player.



Adjusting the sound emphasis (TONE/MEGA BASS)

You can adjust the tone and reinforce the bass sound.



Setting Up

Adjusting the tone

Turn TONE.

Turn the control clockwise to enhance the high tone and counterclockwise to enhance the low tone.

Reinforcing the bass sound

Press MEGA BASS.

To return to normal sound, press the button again.

Precautions

On safety

- As the laser beam used in the CD player section is harmful to the eyes, do not attempt to disassemble the casing. Refer servicing to qualified personnel only.
- Should any solid object or liquid fall into the player, unplug the player, and have it checked by qualified personnel before operating it any further.

On power sources

- For AC operation, use the supplied AC power cord; do not use any other type.
- The player is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the player itself has been turned off.
- Unplug the player from the wall outlet when it is not to be used for an extended period of time.
- For battery operation, use eight size D (R20) batteries.
- When the batteries are not to be used, remove them to avoid damage that can be caused by battery leakage or corrosion.
- The nameplate indicating operating voltage, power consumption, etc. is located at the bottom.

On placement

- Do not leave the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.
- Do not place the player on an inclined or unstable place.
- Do not place anything within 10 mm of the side of the cabinet. The ventilation holes must be unobstructed for the player to operate properly and prolong the life of its components.
- If the player is left in a car parked in the sun, be sure to choose a location in the car where the player will not be subjected 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 player to prevent possible damage from the magnet.

On operation

- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the CD player section. Should this occur, the player will not operate properly. In this case, remove the CD and wait about an hour for the moisture to evaporate.
- If the player 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.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

Notes on CDs

- Before playing, clean the CD with a cleaning cloth. Wipe the CD from the center out.

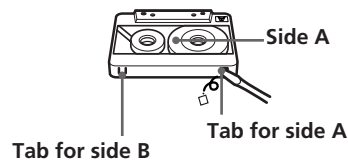


- Do not use solvents such as benzene, thinner, commercially available cleaners or anti-static spray intended for vinyl LPs.
- Do not expose the CD to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight as there can be a considerable rise in temperature inside the car.
- Do not stick paper or sticker on the CD, nor scratch the surface of the CD.
- After playing, store the CD in its case.

If there is a scratch, dirt or fingerprints on the CD, it may cause tracking error.

Notes on cassettes

- Break off the cassette tab from side A or B to prevent accidental recording. If you want to reuse the tape for recording, cover the broken tab with adhesive tape.



- To record on a tape with its tab broken off, cover the respective tab hole for side A or B with adhesive tape.
- The use of a cassette with more than 90 minutes of play time is not recommended except for long, continuous recording or playback.

Troubleshooting

	Symptom	Remedy
General	The power does not come on.	<ul style="list-style-type: none"> • Connect the AC power cord securely. • Make sure the batteries are inserted correctly. • Replace all the batteries with new ones if they are weak.
	There is no audio.	<ul style="list-style-type: none"> • Make sure the FUNCTION selector is set to the function you want to operate. • Adjust the volume. • Unplug the headphones when listening through speakers.
Radio	The audio is weak or has poor quality.	<ul style="list-style-type: none"> • Replace all the batteries with new ones if they are weak. • Move the player away from the TV.
	The picture of your TV becomes unstable.	<ul style="list-style-type: none"> • If you are listening to an FM program near the TV with an indoor antenna, move the player away from the TV.
CD Player	The CD does not play / "00 -- --" lights in the display even when a CD is in place.	<ul style="list-style-type: none"> • Make sure that the disc compartment is closed. • Place the CD with the label surface up. • Clean the CD. • Take out the CD and leave the disc compartment open for about an hour to dry moisture condensation. • Make sure the FUNCTION selector is set to CD.
	The sound drops out.	<ul style="list-style-type: none"> • Reduce the volume. • Clean the CD, or replace it if the CD is badly damaged • Place the player in a location free from vibration.
Tape Player	The tape does not move when you press an operation button.	<ul style="list-style-type: none"> • Close the cassette compartment securely.
	The REC ● button does not function/The tape does not play.	<ul style="list-style-type: none"> • Make sure the safety tab on the cassette is in place.
	The tape does not erase completely.	<ul style="list-style-type: none"> • Clean the erasing heads (see page 22.) • Replace all the batteries with new ones if they are weak.

	Symptom	Remedy
Tape Player	The tape does not record.	<ul style="list-style-type: none"> • Make sure the tape is inserted properly. • Make sure the safety tab of the cassette is in place.
	The audio is weak/The audio quality is poor.	<ul style="list-style-type: none"> • Clean the heads, pinch roller and capstan (See page 22). • Demagnetize the heads using a demagnetizer (see page 22).
	The sound is distorted.	<ul style="list-style-type: none"> • The TYPE II (high position) or TYPE IV (metal) tape is being used. Use TYPE I (normal) tape only.

After trying the above remedies, if you still have problems, unplug the AC power cord and remove all the batteries. After all the indications in the display disappear, plug the power cord and insert the batteries again. If the problem persists, please consult your nearest Sony dealer.

Maintenance

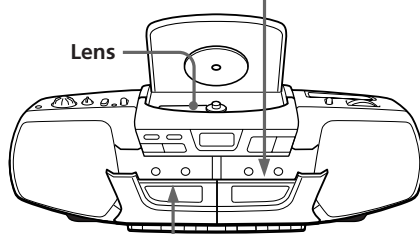
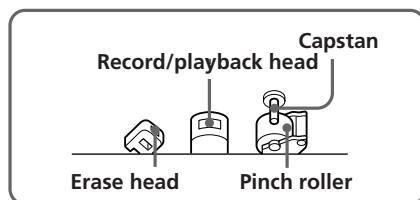
Cleaning the lens

If the lens becomes dirty, it may cause a skipping of sound during CD operation. Clean with a commercially available blower.

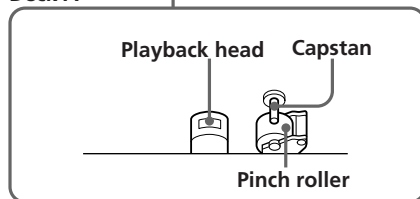
Cleaning the tape heads and tape path

Wipe the heads, the pinch roller and the capstan with a cleaning swab slightly moistened with cleaning fluid or alcohol after every 10 hours of operation for optimum playback and recording quality. To make the best possible recording, however, we recommend that you clean all surfaces over which tape travels before each recording.

Deck B



Deck A



After cleaning, insert a tape when the areas cleaned are completely dry.

Demagnetizing the tape heads

After 20 to 30 hours of use, enough residual magnetism will have built up on the tape heads to begin to cause loss of high frequency sound and hiss. At this time, you should demagnetize the heads and all metal parts in the tape path with a commercially available tape head demagnetizer.

Cleaning the cabinet

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent, such as alcohol or benzine.

Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 4-ohm loads, both channels driven from 150 - 10,000 Hz; rated 2 W per channel - minimum RMS power, with no more than 10 % total harmonic distortion in AC operation.

Other Specifications

CD player section

System

Compact disc digital audio system

Laser diode properties

Material: GaAlAs

Wave length: 780 nm

Emission duration: Continuous

Laser output: Less than 44.6 μ W

(This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Spindle speed

200 r/min (rpm) to 500 r/min (rpm) (CLV)

Number of channels

2

Frequency response

20 - 20,000 Hz $\pm 1/-2$ dB

Wow and flutter

Below measurable limit

Radio section

Frequency range

FM: 87.6 - 107 MHz (Korean model)

87.6 - 108 MHz (Other models)

AM: 530 - 1,605 kHz (Australian model)

531 - 1,602 kHz (Korean model)

530 - 1,710 kHz (Other models)

Aerials

FM: Telescopic aerial

AM: Built-in ferrite bar aerial

Cassette-corder section

Recording system

4-track 2 channel stereo

Fast winding time

Approx. 140 s (sec.) with Sony cassette C-60

Frequency response

TYPE I (normal): 70 - 10,000 Hz

General

Speaker

Full range: 10 cm dia., 4 ohms, cone type (2)

Outputs

Headphones jack (stereo minijack)

For 16 - 68 ohms impedance headphones

Power output (excluding US model)

3 W + 3 W (at 4 ohms, 10 % harmonic

distortion in AC operation) (Korean model)

3 W + 3 W (at 4 ohms, 10 % harmonic

distortion) (Other models)

Power requirements

230 - 240 V AC, 50 Hz (Australian model)

220 V AC, 60 Hz (Korean model)

120 V AC, 60 Hz (Other models)

12 V DC, 8 size D (R20) batteries

Power consumption

AC 20 W (Korean model)

AC 26 W (Other models)

Battery life

For CD radio cassette-corder:

FM recording

Sony R20P: approx. 13.5 h

Sony alkaline LR20: approx. 19 h

Tape playback

Sony R20P: approx. 7.5 h

Sony alkaline LR20: approx. 12 h

CD playback

Sony R20P: approx. 2.5 h

Sony alkaline LR20: approx. 4.5 h

Dimensions

Approx. 580 \times 164 \times 250 mm (w/h/d)

(22 $\frac{7}{8}$ \times 6 $\frac{1}{2}$ \times 9 $\frac{7}{8}$ inches) (incl. projecting parts)

Mass

Approx. 5 kg (11 lb.) (incl. batteries)

Supplied accessory

AC power cord (1)

Design and specifications are subject to change without notice.

Optional accessories

Sony MDR headphone series

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