SONY

3-810-609-**11** (1)

FM/AM Compact Disc Player

Operating Instructions EN

Owner's Record

The model and serial numbers are located on the bottom of the unit.
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. EXCD-31 Serial No. _____

For installation and connections, see the supplied installation/connections manual.

COMPACT disc DIGITAL AUDIO

EXCD-31

© 1995 by Sony Corporation

Actual total number:

Warning

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.

CAUTION

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

EN

Features

General

- **Detachable-front panel** enables you to take the front panel away with you when you leave your car (page 4).
- **Caution alarm** will be activated if you turn off the ignition key without removing the front panel from the unit.
- **12-hour digital clock** provided (page 5).
- **Built-in power amplifier (max. output: 20 W × 4 ch)** enables you to enjoy 4-speaker systems.
- Line outputs for connecting an optional power amplifier.

CD player section

- **1 bit DAC** (Digital-to-Analog Converter) for clear sound reproduction.
- **Quick recovery mechanism** for preventing sound skipping.
- Convenient functions such as the **Intro Scan Function** for locating a desired track, the **Repeat Play Function** for playing a track repeatedly, and the **Shuffle Play Function** for playing tracks in random order.

Tuner section

- Up to 24 stations can be preset: 18 FM stations and 6 AM stations.
- **Automatic Memory function** stores a total of 24 stations in memory quickly and easily (page 8).

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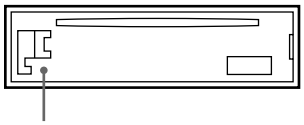
Precautions

- Before operating the unit for the first time or after replacing the car battery, press the reset button with a ball-point pen etc., then operate the unit.



Reset button

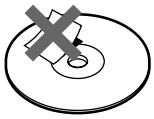
- If your car is parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers in 2-speaker systems, set the fader control to the center position.

EN

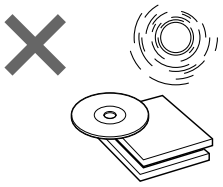
If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Notes on CDs

A dirty or defective disc may cause sound dropouts during playback. To enjoy optimum sound, handle the disc as follows.
Handle the disc by its edge to keep the disc clean. Do not touch the surface.



Do not stick paper or tape on the labeled surface.



Do not expose the discs to direct sunlight or heat sources such as hot air-ducts. Do not leave them in a car parked in direct sunlight where there can be a considerable rise in the temperature inside the car.

Before playing, clean the discs with an optional cleaning cloth. Wipe each disc from the center of the disc outward.
Do not use solvents such as benzine, thinner, commercially available cleaners or antistatic spray intended for analog discs.

Notes on Moisture condensation

On a rainy day or in a very damp area, moisture may condense on the lenses inside the CD player. Should this occur, the unit will not operate properly. In this case, remove the disc and wait for about an hour until the moisture has evaporated.

When you play 8 cm (3 in.) CDs

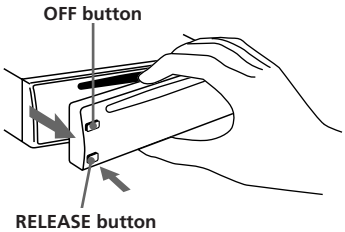
To use the optional Sony compact disc single adapter (CSA-8) to protect the CD player from damage.

Detaching and Attaching the Front Panel

The front panel of this unit can be detached in order to prevent the unit from being stolen.

Detaching the Front Panel

Before detaching the front panel, be sure to press the OFF button first. Then press the RELEASE button to open up the front panel and detach the panel by pulling it towards you as illustrated.



Be sure not to drop the panel after detaching it from the unit.

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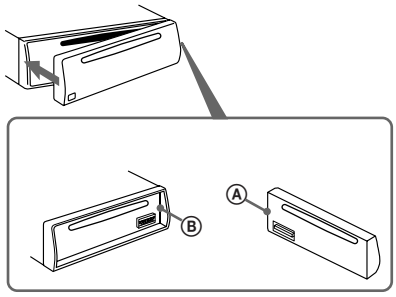
Attaching the Front Panel

Apply the right side of the front panel to the unit by attaching part Ⓐ of the front panel to part Ⓑ of the unit as illustrated, then swing the left side into the unit and push it until clicks.



Notes

- *Make sure that the front panel is the right way up when attaching it to the unit as it cannot be attached upside down.*
- *Do not press the front panel hard against the unit when attaching it to the unit. It can easily be attached by pressing it lightly against the unit.*
- *When you carry the front panel with you, put it in the supplied front panel case.*
- *Do not press hard or give excessive pressure to the display window of the front panel.*
- *Before removing the front panel, be sure to turn the power off. However, if you press the RELEASE button to detach the panel while the unit is still turned on, the power will automatically turn off in order to protect the speakers from being damaged.*
- *Do not expose the front panel to direct sunlight, heat sources such as hot air ducts or leave it in a humid place. Never leave it on the dashboard etc. of a car parked in direct sunlight where there may be a considerable rise in temperature inside the car.*

Caution Alarm

If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will be activated and a beep tone will be heard for a few seconds (only for cars with an accessory position on the ignition key switch).

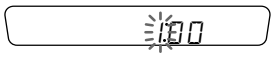
Setting the Clock

The clock has a 12-hour digital indication.

For example, setting it to 10:08

1 Display the time.
(Press the OFF or DSPL button during unit operation.)

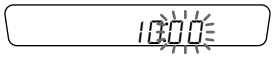
2 Press the DSPL button for more than two seconds.



The hour digits blinks.

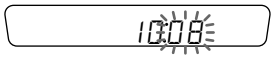
Set the hour digits.

3 Press the SEL button momentarily.



The minute digits blink.

Set the minute digits.



4 Press the DSPL button momentarily.
The clock activates.

Note

If the car has no accessory position on the ignition key switch, the clock cannot be set unless the power is turn on. Set the clock after you have turned on the radio, or started CD playback.

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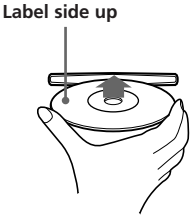
CD Player Operation

Playing a CD

After inserting the CD, playback will start from the first track automatically.



If a CD is already inserted, press the CD button to start playback.

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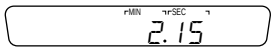
When the unit stars CD playback, the elapsed playing time will be displayed.
To display the elapsed playing time and the track number alternately, press the DSPL button.



Elapsed playing time

When the last track on the CD is over,

the track number indication will return to "1", and playback will continue from the first track of the CD.

Note

To play a 8 cm (3 in.) CD, use the optional Sony compact disc single adapter (CSA-8).

To stop playback,

eject the CD by pressing the ⏏ button or press the OFF button.
Playback stops also when you select another source (radio) by pressing the FM/AM button.

Ejecting the CD

Press the ⏏ button.

Note

If you leave the ejected disc in the disc insertion slot after you have pressed the ⏏ button, the disc will automatically retract into the unit after about 15 seconds in order to protect it.

Locating the Beginnings of Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS/MANU button once for each track you wish to skip.

To locate previous tracks — **To locate succeeding tracks**

Locating the Desired Part of a Track — Manual Search Function

During playback, press and hold either side of the SEEK/AMS/MANU button for more than two seconds. Release the button when you have found the desired part.

To reverse — **To forward**

If you reverse to the beginning of the disc, "_ _ " appears on the display. Forwarding to the end of the disc causes " _ _" to be displayed.
In either case, you can neither proceed to the previous nor the following track.

Searching for the Desired Track — Intro Scan Function

Press the INTRO 1 button during playback.
→ "INTRO" appears on the display.
The first 10 seconds of all the tracks are played. When you find the desired track, press the button once more. The unit returns to normal playback mode.

Playing Tracks Repeatedly

— Repeat Play Function

Press the REPEAT 2 button during playback.
→ "REPEAT" appears on the display.
When the currently played track is over, it will be played again from the beginning.
To cancel this mode, press the button again.

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Playing Tracks in Random Order —Shuffle Play Function

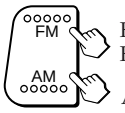
Press the SHUF 3 button during playback.
→ "SHUF" appears on the display.
All tracks on the currently selected disc are played in random order.

Radio Reception

Searching for Stations Automatically

— Automatic Tuning

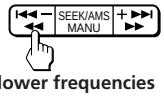
1 Select the desired band.



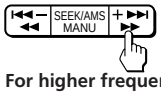
FM I → FM II → FM III → FM I → ···

AM

2 Press either side of the SEEK/AMS/MANU button once to search for the next station (automatic tuning).



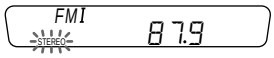
For lower frequencies



For higher frequencies

The scanning stops when a station is received. Press either side of the SEEK/AMS/MANU button repeatedly until the desired station is received.

When an FM stereo program with sufficient signal strength is tuned in,



the "STEREO" indication appears.

To keep the automatic tuning from stopping on stations too frequently (local seek mode), press the SENS button momentarily to get the "LOCAL" indication.

Only the stations with relatively strong signals will be tuned in. The local seek mode functions only when automatic tuning is in operation.

If FM Stereo Reception is Poor — Monaural Mode

Press the SENS button momentarily.
→ "MONO" appears on the display.
The sound will improve, but it will be monaural.

By pressing the SENS button, you can change the displayed items as follows:

LOCAL → MONO → Normal mode

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Tuning in by Adjusting the Frequency — Manual Tuning

1 Select the desired band (page 7).

2 Press and hold either side of the SEEK/AMS/MANU button.
Release the button when the desired station is received.

For lower frequencies **For higher frequencies**

PREVENT ACCIDENTS!
When tuning in during driving, use automatic tuning.

EN

Memorizing Stations Automatically
— Automatic Memory Function

Stations with the clearest reception are automatically searched and memorized on each band (FM I, FM II, FM III, and AM). Up to 6 stations on each band can be stored on the preset number buttons 1 to 6 in the order of band frequency.

1 Select the desired band (page 7).

2 Press the A.MEM button for more than two seconds.
The unit will be start scanning the selected band and memorize the tuned stations on the preset number button 1 through 6 automatically.

Memorizing Only the Desired Stations

1 Select the desired band (page 7).

2 Tune in the station which you wish to store on a preset number button.

3 Press and hold the desired preset number button (INTRO 1 to 6) for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears in the display window.

Up to 6 stations on each band (FM I, FM II, FM III and AM) can be stored on the preset number buttons in the order of your choice. Therefore, 18 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

1 Select the desired band (page 7).

2 Press momentarily the preset number button (INTRO 1 to 6) on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

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Other Functions

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the SEL button repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BALANCE → FADER → VOL (volume) → ···

2 Adjust the selected item by pressing either side of the +/– button.

Adjust within three seconds after selecting. (After three seconds the buttons will again serve as volume control buttons.)

Enjoying Bass and Treble at Low Volume

— Loudness Function

Press the REPEAT 2 button while pressing the SEL button. → "LOUD" will appear on the display.
The bass and treble will be boosted.
To cancel, press again.

Muting the Sound Quickly

— Mute Function

Press the MUTE button. → The "MUTE" indication flashes.
The sound is muted at once.
To restore the previous volume level, press again.

This function will be also cancelled when:
— + side of the +/– or OFF button is pressed.
— ejecting a CD by pressing the ⏏ button during CD playback.

Muting the Beep Tone

Press the 6 button while pressing the SEL button.
To reactivate the beep tone, press these buttons once more.

Note
When connecting an optional power amplifier to the LINE OUT, the beep tone is disabled.

Turning on the Clock Display — Power Select Function

Only for cars with accessory position on the ignition key switch

To turn the Power Select Function on
Press the OFF button while pressing the SEL button.
To turn the accessory position ON or OFF, the clock will be displayed or not.
To avoid battery wear, the clock is not displayed when the unit is initialization.

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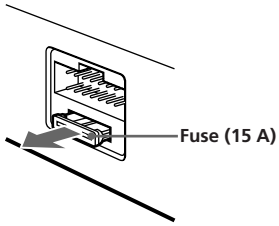
Maintenance

Fuse Replacement

When replacing the fuse, be sure to use one matching the amperage rating stated on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.



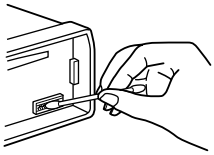
Warning

Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

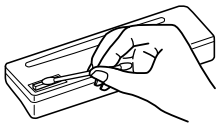
EN

Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing the RELEASE button, then detach it and clean the connectors with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connectors may be damaged.



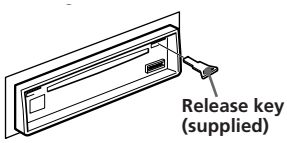
Main unit



Back of the front panel

Dismounting the Unit

1



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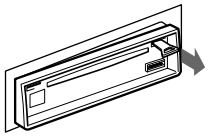

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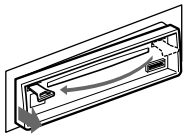

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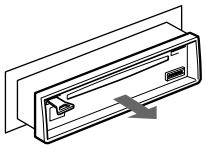

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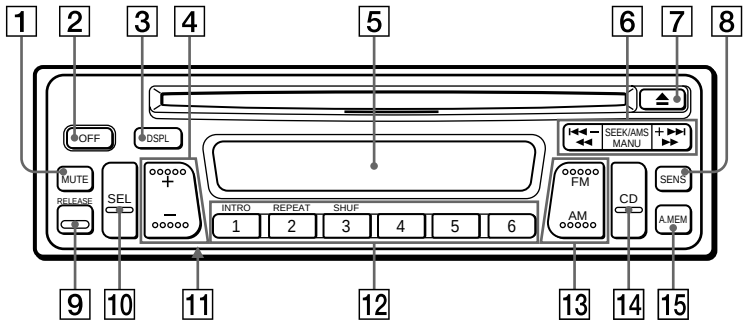
Location of Controls



EN

Refer to the pages in ● for details.

1 **MUTE button ❾**

2 **OFF button ❹❺❻❾**

3 **DSPL (display mode change/time set) button ❺❻**

4 **+/– (volume/bass/treble/balance/fader control) buttons ❺❾**

5 **Display window**

6 **SEEK/AMS/MANU (automatic tuning/ Automatic Music Sensor/preset search) button ❻❼❽**

7 **⏏ (eject) button ❻❾**

8 **SENS (sensitivity adjust) button ❼**

9 **RELEASE (front panel release) button ❹❿**

10 **SEL (control mode select) button ❺❾**

11 **Reset button (located on the front side of the unit hidden by the front panel) ❹**

12 **During radio reception:**
Preset number buttons ❽

During CD playback:

INTRO 1 **INTRO (intro scan) button ❻**

REPEAT 2 **REPEAT (repeat play) button ❻**

SHUF 3 **SHUF (shuffle play) button ❼**

13 **FM/AM (radio on/band select) button ❻❼**

14 **CD (CD play) button ❻**

15 **A.MEM (Automatic Memory function) button ❽**

Actual total number:

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Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
7 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1 % total harmonic distortion.

Other Specifications

CD player section

System	Compact disc digital audio system
Signal-to- noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

EN

Tuner section

FM

Tuning range	87.5 – 107.9 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	13 dBf
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	33 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	32 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	20 W × 4 (at 4 ohms)

General

Output lead	Power antenna control/ Power amplifier control lead
Tone controls	Bass ±10 dB at 100 Hz Treble ±10 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 180 mm ($7\frac{1}{2} \times 2 \times 7\frac{1}{8}$ in.) (w/h/d)
Mounting dimension	Approx. 183 × 53 × 158 mm ($7\frac{1}{4} \times 2\frac{1}{8} \times 6\frac{1}{4}$ in.) (w/h/d)
Mass	Approx. 1.3 kg (2 lb 14 oz.)
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)
Optional accessories	RCA pin cord RC-63 (1 m), RC-64 (2 m), RC-65 (5 m) Cleaning cloth XP-CD1 Compact disc single adapter CSA-8

Design and specifications are subject to change without notice.

Actual total number:

SONY EXCD-31 (E) 3-810-609-**11**(1)

Troubleshooting Guide

The following checklist will assist in the correction of most problems which you may encounter with your unit.
Before going through the checklist below, refer to the connection and operating procedures.

General

Problem	Cause/Solution
No sound	• Adjust the volume with + side of the +/– button. • Set the fader control to the center position for 2-speaker systems.
The contents of the memory have been erased.	• The power cord or battery has been disconnected. • The reset button has been pressed. → Store stations into memory again.
Indications do not appear in the display window.	Remove the front panel and clean the connectors. See "Cleaning the Connectors" of "Maintenance" for details.
Antenna does not retract.	When the AMP/ANT REM lead is connected to the power antenna, the antenna will be extended as long as the unit is turned on.
No beep tone.	• An optional power amplifier is connected to the LINE OUT. • The beep tone is muted (page 9).

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CD playback

Problem	Cause/Solution
CD cannot be loaded.	• Another CD is already loaded. • The CD was forcibly inserted upside down.
Play does not begin.	Dusty disc.
CD is automatically ejected.	The ambient temperature is more than 50°C.
CD will not eject.	Press the ⏏ button for more than two seconds.
The operation buttons do not function.	Press the reset button.
The sound skips due to vibration.	• The unit is installed at an angle of more than 20°. • The unit is not installed in a sturdy part of the car.

Radio reception

Problem	Cause/Solution
Preset tuning is not possible.	• Memorize the correct frequency. • The broadcast is too weak.
Automatic tuning is not possible.	The broadcast is too weak. → Use manual tuning.
The "STEREO" indication flashes.	• Tune in precisely. • The broadcast is too weak. → Press the SENS button to enter the MONO mode.

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Error displays

The following indications will flash for about five seconds.

Display	Cause	Solution
E-04	CD is dirty or inserted upside down.	Clean or insert the CD correctly.
E-99	The CD player cannot be operated because of some problem.	Press the reset or ⏏ button.

If the above-mentioned solutions do not help to improve the situation, consult your nearest Sony dealer.

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