

SONY

3-786-996-21 (1)

FM/AM Cassette Car Stereo

XR-7087

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 top.
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. XR-7087 Serial No. _____



INFORMATION

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.

Table of Contents

Features	3
Precautions	4
Location and function of controls	4
Tape playback	6
Playback	6
Radio reception	8
Automatic tuning	8
Manual tuning	9
Memory preset tuning	10
How to set the clock	12
Maintenance	13
Specifications	14

Features

- **Tuner section**
- **Memory preset tuning function** allows you to store a total of 18 stations in memory.
- **Precise tuning is possible** with the digital synthesizer system.

- **Cassette deck section**
- **Auto-reverse function** to listen to both sides of a cassette repeatedly.
- **The Dolby B NR- system** reduces tape hiss noise during playback.
- **METAL** button for high-performance metal tapes.
- **Automatic Music Sensor (AMS)** to locate the beginning of a selection during playback.

General

- **Direct function system** allows you to listen to the program source selected last directly.
- **Auto loudness circuit** to reinforce the bass and treble automatically when listening at a low volume.
- **Maximum power output of 25 W x 4.**
- **A speaker system is possible with the built-in power amplifiers.**
- **Quartz-controlled digital clock.**

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

Precautions

- If your car was parked in direct sunlight and there was a considerable rise in temperature inside the car, allow the unit to cool off before operating.
- If no power is being supplied to the unit, check the connectors first. If everything is in order, check the fuse.

Protection circuit

The built-in power amplifier employs a protection circuit to protect the speakers if the amplifier malfunctions. When a protection circuit activates, there will be an abrupt loss of sound from the speakers. Particularly, when a speaker with a low input impedance (less than 32 ohms) is connected to the unit, the sound will be discontinued. This, however, is not a problem. If this happens, turn the volume down a little.

Cassette care

- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.

Note on the 120-minute cassette

The use of a 120-minute cassette tape is not recommended except for long continuous playback.

If you have any question or problem concerning your unit that is not covered in this manual, please consult your nearest Sony dealer.

Location and Function of Controls

Refer to the page in ● for details.

M. SCAN (memory scan) button ●

A. MEM (automatic memory) button ●

▲ (eject) button ●

Display window

DSPL (display) button ●

MONO (monaural) button ●

MAN (manual) +/- buttons ●

SEEK +/- buttons ●

Preset number buttons ●

BAND button ●

AMS (Automatic Music Sensor) button ●

TREBLE control

FADER control ●

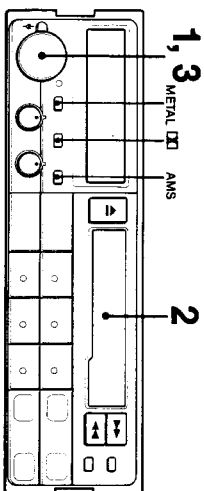
VOL (volume) control ● PUSH POWER switch ● PULL BAL (balance) control ●

METAL button ●

BASS control

DD (Dolby noise reduction) button ●

Tape Playback



- 1 Press **PUSH POWER**.
- 2 Insert a cassette.
- 3 Adjust the volume.

Various operations

- To listen to the other side of the cassette
- To stop playback and listen to the radio
- To stop playback and switch off the unit

Press **▶▶** and **◀◀** at the same time.
Press **▲**
The unit enters the radio mode.
Press **▲** and then press **PUSH POWER**.

Before turning off the unit:

Be sure to eject the tape to avoid tape damage.

To adjust the unit to each tape type	
Tape type	
COQ (TYPE II)	Depress METAL (L ON)
Metal (TYPE IV)	
Normal (TYPE I)	Release METAL (L OFF)

Side of the cassette being played back or fast-wound:

Indicator	
▶	The side facing upwards
◀	The side facing downwards

To Locate the Beginning of a Selection — Automatic Music Sensor (AMS)

- 1 Depress **AMS**.
- 2 Press **▶▶** or **◀◀**, referring to the following table.

Indicator	Cassette side being played
▶	Side facing upwards
◀	Side facing downwards

The desired selection may not be located if:

- the cassette is not properly inserted.
- the space is less than 4 seconds long.
- the **▶▶** or **◀◀** button is pressed immediately before or after the desired selection, or within the blank space.

Desired selection	
Next selection	Current selection
Press ▶▶	Press ◀◀
Press ▶▶	Press ▶▶

Playback may begin in the middle of the selection

- the cassette is not properly inserted.
- the space is less than 4 seconds long.
- a long pause in the selection
- a passage of low frequencies or very low volume
- some classical music

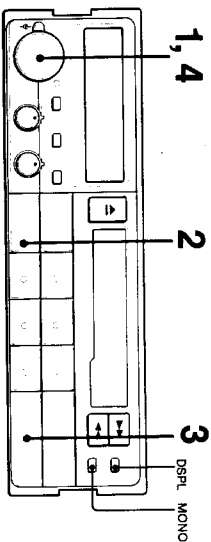
To control the balance of the right and the left speakers:

- Use the **PULL BAL** control.
- Pull out the control and turn clockwise to decrease the volume of the left speakers, and turn counter-clockwise to increase the volume of the right speakers.
- The system boosts these signals and lowers them in playback. Therefore, the DOLBY NR system must be engaged when you listen to tapes recorded with this system.

To control the balance of the front speakers and the rear speaker system:

- Use the **FADER** control.
- Turn clockwise to decrease the volume of the rear speakers.
- Turn counter-clockwise to decrease the volume of the front speakers.

Automatic Tuning



- 1 Press PUSH POWER.
 - 2 Press BAND to select the desired band. (FM 1.2 or AM)
 - 3 Press SEEK + or -.
- The unit automatically scans for a station and stops when a station is tuned in. Repeat pressing the button until the desired station is tuned in.
- 4 Adjust the volume.

To stop the radio

to stop the radio and listen to a tape

to stop the radio and switch off the unit

Insert a cassette.

Press PUSH POWER

When an FM stereo program of sufficient signal strength is tuned in:

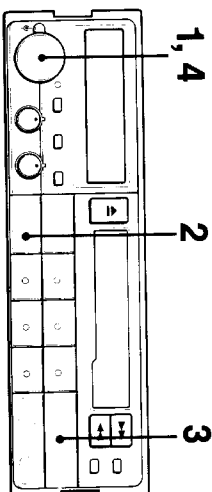
"STEREO" appears on the display window.

For better reception of a weak FM stereo station (FM MONO) ("MONO" appears on the display window).

The sound will be monaural instead.

To display the time indication during radio reception Press DSPL. To restore the frequency indication, press it again.

Manual Tuning



- 1 Press PUSH POWER.
- 2 Press BAND to select the desired band. (FM 1.2 or AM)
- 3 Press MAN + or - until the desired station is tuned in.
- 4 Adjust the volume.

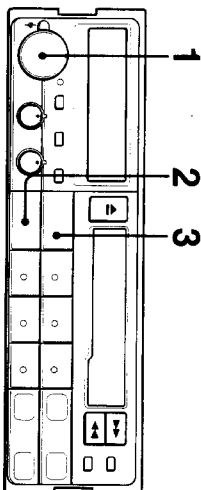
Warning

While driving, keep your eyes on the road and use the automatic tuning or the memory preset tuning.

Memory Preset Tuning

To Memorize the Stations Automatically — Automatic Memory Function

You can memorize a total of 18 stations (6 stations for each band), one for each band on each preset number.



- 1 Press **PUSH POWER**.
- 2 Select the desired band. (FM 1, 2 or AM)
- 3 Keep **M.SCAN/MEM** pressed for more than 2 seconds.
The unit scans for the stations, and memorize them on the preset buttons in order of the frequency, and of the preset number.

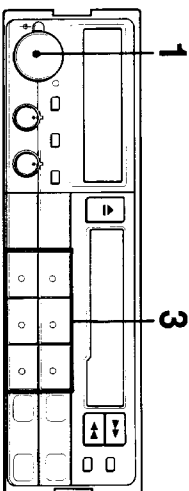
If any station is being received when you start the scanning:
The station is memorized on the preset number 1, and the scanning starts from the frequency indicated on the display window.

When any preset number is indicated on the display window:
The scanned stations are memorized in order from the next preset number to the preset number 6.

10

To Memorize Only the Desired Stations

Use this method when the desired stations are not memorized by the automatic memory function.



- 1 Press **PUSH POWER**.
- 2 Tune in the desired station. (FM 1, 2 or AM)
- 3 Keep the desired preset number button pressed until the momentarily muted sound is restored.
The station has got memorized.
Repeat these steps for each station.

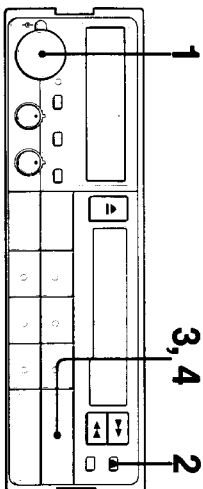
To Receive a Preset Station

- 1 Press **BAND** to select the desired band.
- 2 Press the desired preset number button.

The previously memorized station will be erased
You enter a new station from the same band on the same preset number button.

11

How to Set the Clock



- 1 Press **PUSH POWER**.
 - 2 Press **DSP/L**, once to display the time digits.
 - 3 Press **MAN** – to set the hour digits while keeping **DSP/L** pressed.
 - 4 Press **MAN** + to set the minute digits while keeping **DSP/L** pressed.
- The digits are advanced in sequence. To advance them rapidly, keep **MAN** – or + pressed.

When you set minute digits
 "00" comes after "59". The hour digits do not change then.

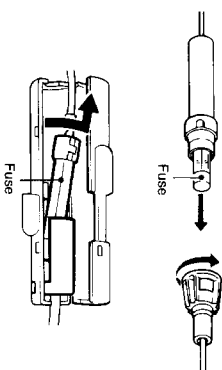
Maintenance

Cleaning the Head

Prolonged use may contaminate the tape head and the tape path. Contamination causes sound drop-outs in playback.
 Clean the tape head every two weeks to enjoy optimum hi-fi stereo sound. Use a commercially available cleaning cassette.

How to Replace the Fuse

If the fuse blows, check the power connection and replace the fuse.



Warning

Use a specified ampere fuse.
 Use of a higher ampereage fuse may cause serious damage to the unit.

Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

12 watts per channel minimum continuous average power into 4 ohms, 4 channels driven, from 20 to 20,000 Hz with no more than 1% total harmonic distortion.

Other Specifications

Power amplifier section	
Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4-8 ohms
Maximum power output	25 W x 4 (at 4 ohms)*

* Measured at 14.4 V

Cassette player section	
Tape track	4-track, 2-channel stereo
Frequency response	40-14,000 Hz
Signal-to-noise ratio (20 Hz-20 kHz)	53 dB with TYPE I cassettes
	57 dB with TYPE II, IV cassettes
Wow and flutter	0.15% (RMS)

Tuner section

FM	
Tuning range	87.5-107.9 MHz
Antenna terminal	External antenna connector/Power antenna relay control lead
Usable sensitivity	12.5 dB (75 ohms)
Selectivity	more than 75 dB at 400 kHz
Signal-to-noise ratio	62 dB (stereo, 67 dB (monaural))
Harmonic distortion at 1 MHz	0.8% (stereo), 0.5% (monaural)
Separation	32 dB at 1 MHz
Frequency response	30-15,000 Hz (+3 dB)
Capture ratio	2.5 dB

AM	
Tuning range	530-1,710 kHz
Antenna terminal	External antenna connector/Power antenna relay control lead
Sensitivity	32 μ V

General	
Output lead	Power antenna relay control lead
Tone controls	Bass +8 dB at 100 Hz Treble +8 dB at 10 kHz
Output connector	Graphic equalizer input/output cords (LINE IN, LINE OUT)
Power requirements	12 V DC car battery (negative ground)
Mounting dimensions	178 x 50 x 145 mm (w/h/d) (7" x 2" x 5 3/4" inches)
Weight	1.5 kg (3 to 5 oz)
Accessories supplied	Mounting hardware (1 set)

Design and specifications subject to change without notice.