

# SONY

3-810-599-11 (1)

FM/AM Cassette Car Stereo

# XR-2590

## Operating Instructions

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

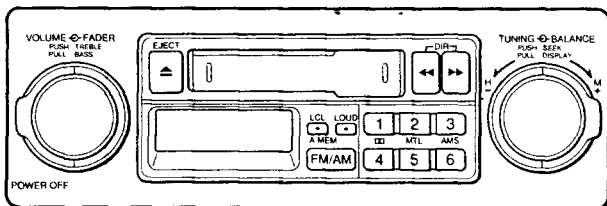
## Owner's Record

The model and serial numbers are located on the top 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. XR-2590 Serial No. \_\_\_\_\_



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

**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.

**Features****General**

- **With the built-in high power amplifier (max. output: 20 W × 4 ch)** enables you to enjoy a 4-speaker system.
- **Provided with a digital 12-hour clock** (page 6).

**Cassette player section**

- **The auto-reverse function** changes the tape direction automatically.
- **Dolby\* B NR system** reduces tape hiss noises during tape playback.
- **AMS (Automatic Music Sensor) function** for automatically locating the beginning of a track during tape playback.

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

**Tuner section**

- **SSIR (Sony Super Interference Rejection) PLL synthesizer tuner**
- The quartz-locked digital synthesizer system enables easy and accurate tuning.
- Up to 18 stations can be preset, 12 stations on FM, 6 stations on AM.
- Automatic memory function allows you to store a total of 18 stations in the memory quickly and easily.

## Precautions

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- If your car was 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 of a 2-speaker system, set the fader control to the center position.

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 Cassettes

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### 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 built-in 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.
- The cassette shell may become warm when the tape is played back for a long period of time because of the built-in power amplifier. However, this is not a sign of a malfunction.

### Note on cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tapes used for these cassettes are very thin and tends to be stretched easily. Frequent playing and stopping operation for these tapes may cause them to be pulled into the cassette deck mechanism.

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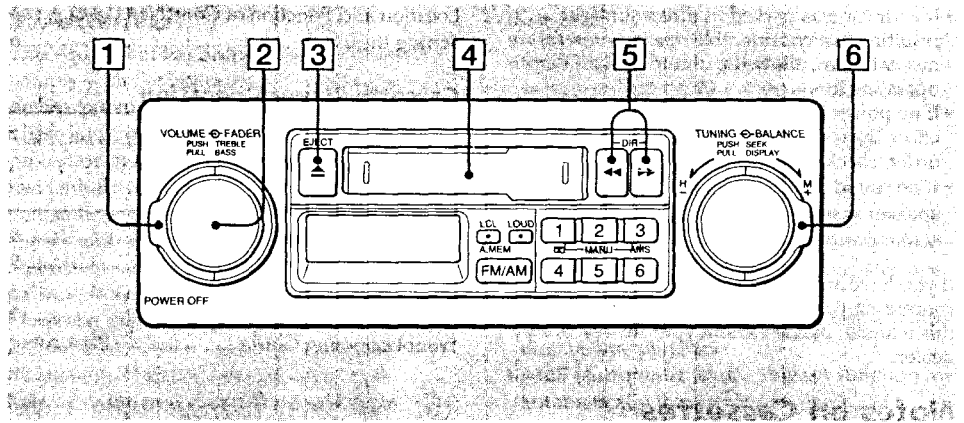
### Radio Reception

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# Location and Function of Controls



Refer to the pages in ● for details.

## 1 FADER control

Turn clockwise to decrease the volume of the rear speakers or counterclockwise to decrease the volume of the front speakers.

## 2 POWER OFF (power on/off) switch/VOLUME/PUSH TREBLE/PULL BASS control

<b>POWER OFF switch</b>	Turn clockwise to turn on the unit and counterclockwise to turn off.
<b>VOLUME control</b>	Turn clockwise to increase volume and counterclockwise to decrease.
<b>PUSH TREBLE control</b>	Turn to adjust treble while pressing.
<b>PULL BASS control</b>	Turn to adjust bass while pulling.

## 3 EJECT button

Press to stop the tape and take out the cassette.

## 4 Cassette insertion door

## 5 ◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons 7

During playback, press ◀◀ or ▶▶ for fast winding, or press both ◀◀ and ▶▶ simultaneously to listen to the other side of the cassette.

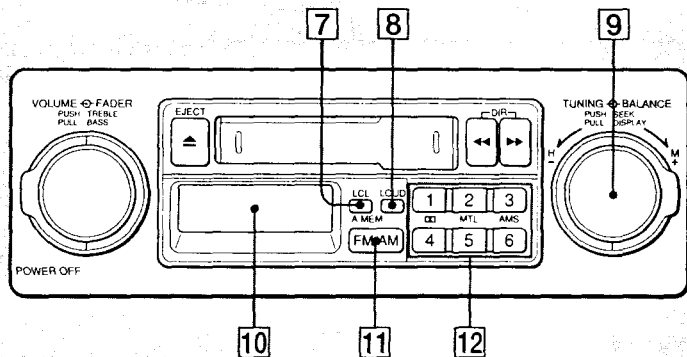
To Wind the Tape Rapidly

Direction indicator	To advance	To rewind
▶▶	Press ▶▶.	Press ◀◀.
◀◀	Press ◀◀.	Press ▶▶.

To resume playback, press ◀◀ or ▶▶ (that one which is not depressed) lightly.

## 6 BALANCE control

Turn to adjust the balance of the left and right speakers.



### LCL (local)/A.MEM (automatic memory) button 8 9

<b>LCL button</b>	Press to eliminate interference from adjacent stations during reception of a station with comparatively strong broadcasting signals. To go back to the normal receiving sensitivity, press it again.
<b>A.MEM button</b>	Press for more than two seconds to memorize the stations automatically.

### LOUD (loudness) button

Press to reinforce bass especially when listening at low volume.  
To disengage the button, press it again.

### TUNING/PUSH SEEK/PULL DISPLAY knob 3 Use this knob also for clock setting. 6

<b>TUNING knob</b>	Turn to normally tune in the desired station.
<b>PUSH SEEK knob</b>	Press for automatic tuning.
<b>PULL DISPLAY knob</b>	Pull to display the time indication during radio reception.

### Display window

#### FM/AM (band select) button 8 9

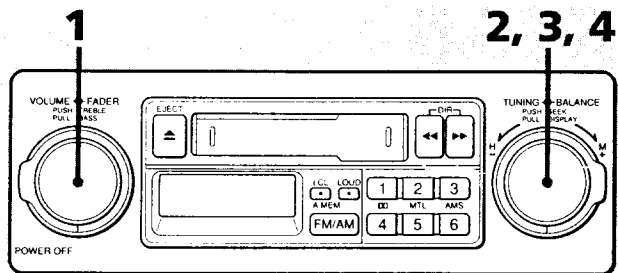
Each time you press the button, the band changes as follows:

→ FM1 → FM2 → AM →

### Preset number buttons 7 10

	During tape playback	During radio reception
<b>1</b> DOLBY NR	<b>DOLBY NR (Dolby noise reduction) button</b> Select the same Dolby NR system used for the recorded cassette.	<b>Preset number buttons</b>
<b>2</b> MTL	<b>MTL (metal/CrO2) button</b> "MTL" indication appears on the display window. To listen to the normal (TYPE I) tapes, press it again.	
<b>3</b> AMS	<b>AMS (automatic music sensor) button 7</b>	
<b>4 - 6</b>		

# Setting the Clock



The clock has a 12-hour digital indication.

For example, to set it to 10:08.

**1** Turn clockwise to turn the power on.

POWER OFF

**2** Pull out the DISPLAY knob to display the time digits.

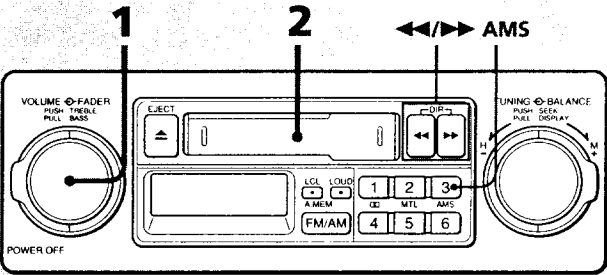
**3** Turn to "H" while pulling out the TUNING knob. Set the hour digits.

**4** Turn to "M" while pulling out the TUNING knob. Set the minute digits.

When you set minute digits "00" comes after "59". Setting the hour digits will not affect the minute digits.

The digits will advance in sequence. To advance them rapidly, keep the TUNING knob turned while pulling it out.

# Listening to the Tape Playback

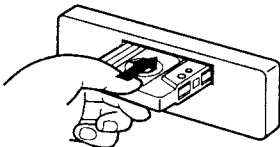


Before inserting a cassette, take up any slack in the tape with a thick pencil.

Cassette Player Operation

**1** Turn clockwise to turn the power on.

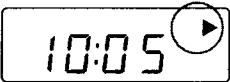
**2** Insert a cassette.  
Playback starts automatically.



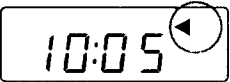
To listen to the reverse side of the cassette, press simultaneously.

**Note**  
Before turning off the unit; eject the tape to avoid tape damage.

**Tape transport direction indication.**



The side facing up is being played back.



The side facing down is being played back.

**To stop the tape playback and listen to the radio**  
Press the EJECT button. The unit enters the radio mode.

## Locating the Beginning of a Track — AMS function

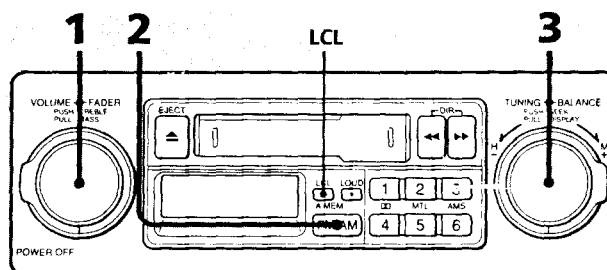
- 1 Press .
- 2 Press or , referring to the following table.

Indicator	Cassette side being played	Desired track	
		Next track	Current track
	Side facing upwards	Press .	Press .
	Side facing downwards	Press .	Press .


**The desired track may not be located if ...**  
— there is a noise in the space between tracks.  
— the space is less than four seconds long.  
— the or button is pressed immediately before or after the desired track, or with in the blank space.

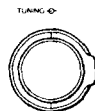
Playback may begin in the middle of the track when AMS is activated, as the followings are treated as blanks:  
— a long pause in the track  
— a passage of low frequencies or very low volume  
— gradual increase or decrease of volume, as in some classical music.

## ***Tuning in a Station***



## Searching for the Stations Automatically — Automatic Tuning

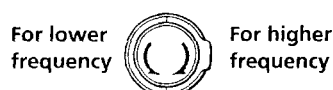
- 1 Turn clockwise to turn the power on.
- 2 Press to select the desired band, FM1, FM2, or AM.  

- 3 Press the **PUSH SEEK** button.  
Stations will be scanned automatically and scanning will stop when a station is tuned in. Repeat pressing the **PUSH SEEK** button until the desired station is tuned in.



## Tuning in by Adjusting the Frequency

### — Manual Tuning

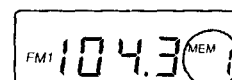
- 1 Press to select the desired band. FM1, FM2, or AM.
- 2 Turn to tune in the desired station.



**PREVENTING ACCIDENTS!**

While you are driving, the use of Automatic Tuning and the Memory Preset Tuning is recommended instead of the Manual Tuning.

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



The "ST" indication appears.

**To play back a cassette during radio reception**

**Radio reception.** Insert a cassette. The radio will be turned off and playback will start automatically.

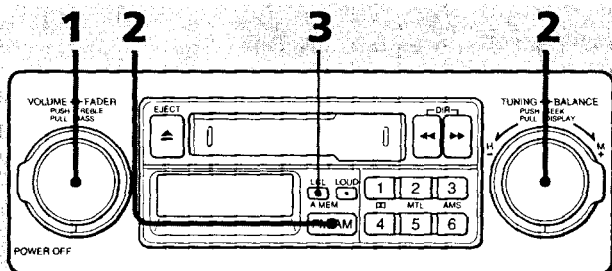
**When there are too many stations and the scanning stops too frequently during the automatic tuning**

Press the LCL button lightly to get the "LCL" indication.

The mode changes to the local seek mode where only the stations with relatively strong signals are turned in. It functions only when the Automatic Tuning is in operation.



# Using the Memory Preset Tuning



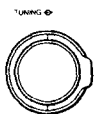
You can memorize a total of 18 stations (6 stations for each band), one on each preset number button in any order.

## Memorizing the Stations Automatically — Automatic Memory Function

**1** Turn clockwise to turn the power on.

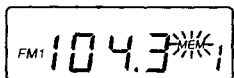
**2** Tune in a desired station using automatic or manual tuning (see page 8).

FM/AM



**3** Press the A.MEM button for more than two seconds.

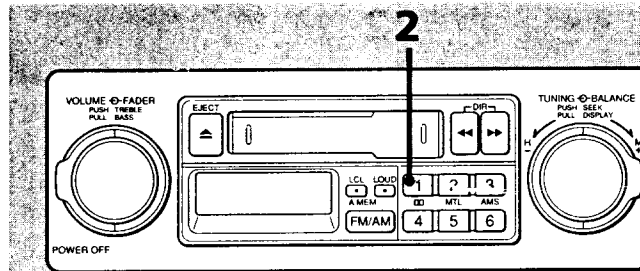
A.MEM



The unit will start scanning the selected band and memorizes the tuned stations on the preset number buttons 1 through 6 automatically.

Radio Reception

## Using the Memory Preset Tuning

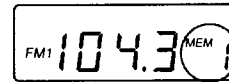


Up to 6 stations on each band (FM1, FM2, and AM) can be stored on the preset number buttons in order of your choice.

## Memorizing Only the Desired Stations

For example, store a station on the preset number button 1.

- 1** Tune in a desired station using automatic or manual tuning (page 8).
- 2** Keep the preset number button pressed for about two seconds until the "MEM" indication comes on in the display window.



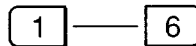
Repeat the same procedure to store other stations.

Only one station per band (FM1, FM2, and AM) can be stored in the memory on each preset number button. If you try to store another station on the same preset number button, the previously stored station will be erased.

When the "MEM" indication comes on, the station is stored in the memory and the operation is completed. The "MEM" indication goes off after a while.

## Receiving the Memorized Stations

Select the desired band. Press the desired preset number button lightly.



### Note

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

# 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

### Power amplifier section

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

### Cassette player section

Tape track 4-track 2-channel stereo  
Frequency response 40 – 15,000 Hz  
Signal-to-noise ratio

Cassette type	Dolby B	Dolby off
TYPE II, IV	66 dB	58 dB
TYPE I	63 dB	55 dB

Wow and flutter 0.13 % (WRMS)

### Tuner section

#### FM

Tuning range 87.5 – 107.9 MHz  
Antenna terminal External antenna connector  
Intermediate frequency 10.7 MHz  
Usable sensitivity 13 dBf (75 ohms)  
Selectivity 70 dB at 400 kHz  
Signal-to-noise ratio 65 dB (stereo), 68 dB (mono)  
Harmonic distortion at 1 kHz  
0.9% (stereo), 0.5% (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  $\mu$ V

### General

Power requirements 12 V DC car battery  
(negative ground)  
Output lead Power antenna relay control  
lead  
Tone controls Bass  $\pm$  8 dB at 100 Hz  
Treble  $\pm$  8 dB at 10 kHz  
+ 10 dB at 100 Hz  
Loudness + 10 dB at 100 Hz  
Mounting dimensions Approx. 178 x 50 x 140 mm  
(w/h/d) (7 <sup>1</sup>/<sub>8</sub> x 2 x 5 <sup>5</sup>/<sub>8</sub> in.),  
not incl. projecting parts and  
controls  
Mass Approx. 1.2 kg (2 lb. 10 oz.)  
Accessories supplied Mounting hardware (1 set)  
Power connecting cord (1)

Design and specifications subject to change without notice.

# Troubleshooting Guide

The following checks will assist in the correction of most problems which you may encounter with your unit.

Before going through the check list below, refer back to the connection and operating procedures.

## Radio reception

Trouble	Cause/Solution
Preset tuning is not possible.	<ul style="list-style-type: none"><li>• Memorize the correct frequency.</li><li>• The broadcast is too weak.</li></ul>
Automatic tuning is not possible.	The broadcast is too weak. → <b>Use manual tuning.</b>
The "ST" indication flashes.	<ul style="list-style-type: none"><li>• Tune in precisely.</li><li>• The broadcast is too weak.</li></ul>

## Tape playback

Trouble	Cause/Solution
Playback sound is distorted.	The tape head is contaminated. → <b>Clean the head.</b>

## General

Trouble	Cause/Solution
No sound.	<ul style="list-style-type: none"><li>• Control the volume.</li><li>• Set the fader control to the center position on the 2-speaker system.</li></ul>

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