

FM/AM Cassette Car Stereo

Operating Instructions _____

US

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. XR-CA300/CA305 Serial No. _____

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

***XR-CA300
XR-CA305***

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.

Welcome !

Thank you for purchasing this Sony Cassette Player.

In addition to the cassette playback and radio operations, you can expand your system by connecting an optional CD/MD unit*¹. When you operate this unit or a connected optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play a CD TEXT disc*².

*¹ You can connect a CD changer, an MD changer, a CD player, or an MD player.

*² A CD TEXT disc is an audio CD that includes information such as the disc name, artist name, and track names.

This information is recorded on the disc.

Precautions

- 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 two-speaker system, set the fader control to the center position.
- When a tape is played back for a long period, the cassette may become warm because of the built-in power amplifier. However, this is not a sign of malfunction.

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

To maintain high quality sound

If you have drink holders near your audio equipment, be careful not to splash juice or other soft drinks onto the car audio. Sugary residues on this unit or cassette tapes may contaminate the playback heads, reduce the sound quality, or prevent sound reproduction altogether.

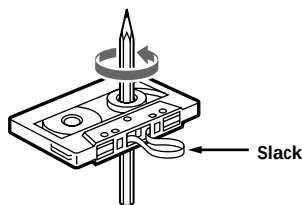
Cassette cleaning kits cannot remove sugar from the tape heads.



Notes on Cassettes

Cassette care

- Do not touch 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.
- Slack in the tape may cause the tape to be caught in the machine. Before you insert the tape, use a pencil or similar object to turn the reel and take up any slack.



- Distorted cassettes and loose labels can cause problems when inserting or ejecting tapes. Remove or replace loose labels.



- The sound may become distorted while playing the cassette. The cassette player head should be cleaned after each 50 hours of use.

Cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tape used for these cassettes is very thin and tends to stretch easily. Frequent playing and stopping of these tapes may cause them to become entangled in the cassette deck mechanism.



Table of Contents

This Unit Only

Location of controls 5

Getting Started

Resetting the unit 6

Detaching the front panel 6

Setting the clock 7

Cassette Player

Listening to a tape 7

Radio reception during fast-forwarding or
rewinding of a tape
— Automatic Tuner Activation (ATA) 8

Radio

Memorizing stations automatically
— Best Tuning Memory (BTM) 8

Memorizing only the desired stations 9

Receiving the memorized stations 9

Other Functions

Adjusting the sound characteristics 10

Attenuating the sound 10

Changing the sound and display settings 10

Boosting the bass sound
— D-bass 11

Selecting the sound position
— “My Best sound Position” 11

With Optional Equipment

CD/MD Unit

Playing a CD or MD 12

Playing tracks repeatedly
— Repeat Play 13

Playing tracks in random order
— Shuffle Play 13

Additional Information

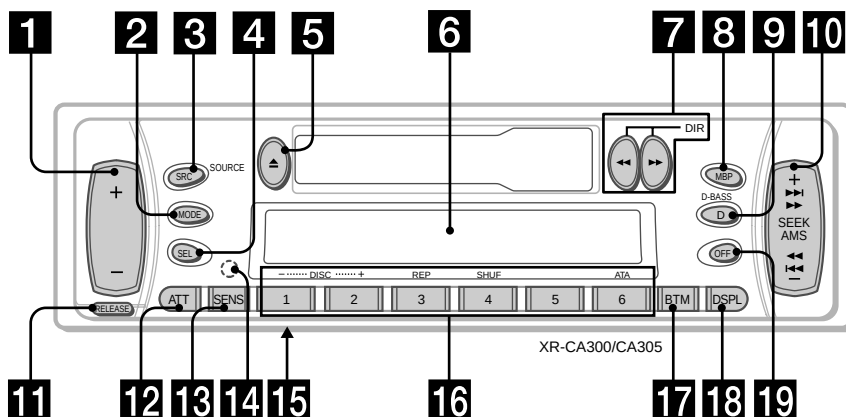
Maintenance 14

Dismounting the unit 15

Specifications 16

Troubleshooting guide 17

Location of controls



Refer to the pages listed for details.

- 1** Volume +/- button 7
- 2** MODE button
During radio reception:
BAND select 8, 9
During CD/MD playback:
CD/MD unit select 12
- 3** SOURCE (TUNER/CD/MD) button
8, 9, 12
- 4** SEL (select) button 7, 10, 11, 12
- 5** ▲ (eject) button 7, 8, 9, 12
- 6** Display window
- 7** ◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons 7, 8
- 8** MBP (My Best sound Position) button 11
- 9** D-BASS button 11
- 10** SEEK/AMS +/- button 9, 13
Seek 9
Automatic Music Sensor 13
Manual search 13
- 11** RELEASE (front panel release) button 6, 14
- 12** ATT (attenuate) button 10
- 13** SENS button 9
- 14** RESET button (located on the front side of the unit behind the front panel) 6
- 15** Frequency select switch* (located on the bottom of the unit)
See "Frequency select switch" in the Installation / Connections manual.
- 16** Number buttons 8, 9, 10, 12, 13
During radio reception:
Preset number select 9
During tape playback:
⑥ ATA 8
During CD/MD playback:
① DISC - 13
② DISC + 13
③ REP 13
④ SHUF 13
- 17** BTM button 8
- 18** DSPL (display mode change) button 7, 12
- 19** OFF button** 6

* XR-CA305 only

** Warning when installing in a car without ACC (accessory) position on the ignition key switch

Be sure to press **OFF** on the unit for two seconds to turn off the clock display after turning off the engine.

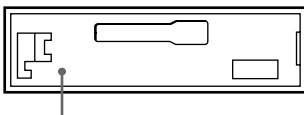
When you press **OFF** momentarily, the clock display does not turn off and this causes battery wear.

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.

Remove the front panel and press the RESET button with a pointed object, such as a ball-point pen.



RESET button

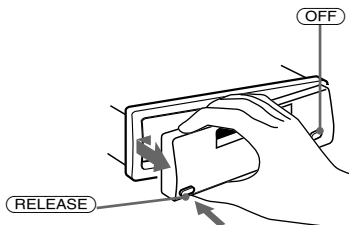
Note

Pressing the RESET button will erase the clock setting and some memorized functions.

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

- 1 Press **OFF**.
- 2 Press **RELEASE**, then slide the front panel a little to the left, and pull it off towards you.

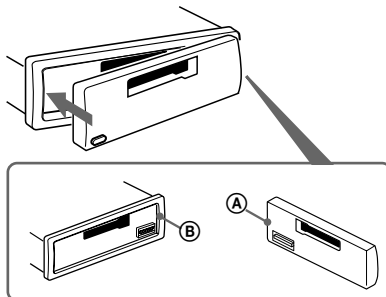


Notes

- Be sure not to drop the panel when detaching it from the unit.
- If you detach the panel while the unit is still turned on, the power will turn off automatically to prevent the speakers from being damaged.
- When carrying the front panel with you, use the supplied front panel case.

Attaching the front panel

Attach part **A** of the front panel to part **B** of the unit as illustrated and push the left side into position until it clicks.



Notes

- Be sure not to attach the front panel upside down.
- Do not press the front panel too hard against the unit when attaching it.
- Do not press too hard or put excessive pressure on the display window of the front panel.
- Do not expose the front panel to direct sunlight or heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight or where there may be a considerable rise in temperature.

Caution alarm

If you turn the car ignition off without removing the front panel, the caution alarm will beep for a few seconds.

If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.

Setting the clock

The clock uses a 12-hour digital indication.

Example: To set the clock to 10:08

1 Press (DSPL) for two seconds.



The hour indication flashes.

1 Press either side of the volume button to set the hour.



to go forward

to go back



2 Press (SEL).



The minute indication flashes.

3 Press either side of the volume button to set the minute.



to go forward

to go back



2 Press (DSPL).



The clock starts.

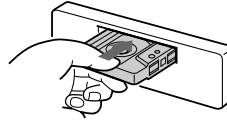
After the clock setting is complete, the display returns to normal playback mode.

Cassette Player

Listening to a tape

Insert a cassette.

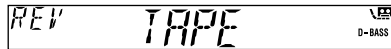
Playback starts automatically.



The side facing up is played.



The side facing down is played.



Tip

To change the tape's playback direction, press ◀◀ and ▶▶.

To stop playback and eject the cassette

Press ▲.

Fast-winding the tape

During playback, press ◀◀ or ▶▶.

Direction indicator*	To advance	To rewind
FWD	▶▶	◀◀
REV	◀◀	▶▶

* The ♪ indicator will flash while fast-winding the tape.

To start playback during fast-forwarding or rewinding, press the other fast-winding button partially until the locked button is released.

Radio reception during fast-forwarding or rewinding of a tape

— Automatic Tuner Activation (ATA)

When fast-forwarding or rewinding with the ◀◀ or ▶▶ button, the tuner will turn on automatically.

During playback, press (6) (ATA) repeatedly until “ATA-ON” in the display appears.

ATA-ON ↔ ATA-OFF



ATA mode starts.

To return to normal playback mode, select “ATA-OFF.”

Radio

Memorizing stations automatically

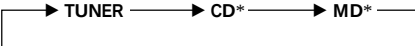
— Best Tuning Memory (BTM)

The unit selects the stations with the strongest signals and memorizes them in the order of their frequencies. You can store up to 6 stations on each band (FM1, FM2, FM3, AM1, and AM2).

Caution

When tuning in stations while driving, use Best Tuning Memory to prevent accidents.

- 1 Press (SOURCE) repeatedly to select the tuner.**
In case of tape playback, press ▲ to eject the tape.
Each time you press (SOURCE), the source changes as follows:



** If the corresponding optional equipment is not connected, this item will not appear.*

- 2 Press (MODE) repeatedly to select the band.**
Each time you press (MODE), the band changes as follows:



- 3 Press (BTM) for two seconds.**
The unit stores stations in the order of their frequencies on the number buttons.
A beep sounds when the setting is stored.

Notes

- The unit does not store stations with weak signals. If only a few stations can be received, some number buttons will retain their former setting.
- When a number is indicated in the display, the unit starts storing stations from the one currently displayed.

Memorizing only the desired stations

You can preset up to 18 FM stations (6 each for FM1, 2, and 3) and up to 12 AM stations (6 each for AM1 and 2) in the order of your choice.

- 1 Press **(SOURCE)** repeatedly to select the tuner.
In case of tape playback, press **▲** to eject the tape.
- 2 Press **(MODE)** repeatedly to select the band.
- 3 Press either side of **(SEEK/AMS)** to tune in the station that you want to store on the number button.
- 4 Press the desired number button (**(1)** to **(6)**) until “MEM” appears.
The number button indication appears in the display.

Note

If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

- 1 Press **(SOURCE)** repeatedly to select the tuner.
In case of tape playback, press **▲** to eject the tape.
- 2 Press **(MODE)** repeatedly to select the band.
- 3 Press the number button (**(1)** to **(6)**) on which the desired station is stored.

If you cannot tune in a preset station

— Automatic tuning/ Local Seek Mode

Automatic tuning:

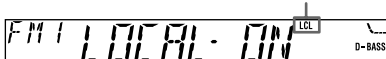
Press either side of **(SEEK/AMS)** to search for the station.

Scanning stops when the unit receives a station. Press either side of **(SEEK/AMS)** repeatedly until the desired station is received.

Local Seek Mode:

If the automatic tuning stops too frequently, press **(SENS)** repeatedly until “LOCAL-ON” appears.

“LCL” indicator is displayed.



Only the stations with relatively strong signals will be tuned in.

Tip

If you know the frequency of the station you want to listen to, press either side of **(SEEK/AMS)** until the desired frequency appears (manual tuning).

If FM stereo reception is poor

— Monaural Mode

During radio reception, press **(SENS)** repeatedly until “MONO-ON” appears.



“MONO” indicator is displayed.

The sound improves, but becomes monaural (“ST” disappears).

To return to normal mode, select “MONO-OFF.”

Other Functions

Adjusting the sound characteristics

You can adjust the bass, treble, balance, and fader.

You can store the bass and treble levels independently for each source.

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

Each time you press (SEL), the item changes as follows:

BAS (bass) → TRE (treble) →
BAL (left-right) → FAD (front-rear)

2 Adjust the selected item by pressing either side of the volume button.

Adjust within three seconds after selecting the item.

Attenuating the sound

Press (ATT).

After "ATT-ON" momentarily flashes, the "ATT" indication appears in the display.

To restore the previous volume level, press

(ATT) again.

"ATT-OFF" flashes momentarily.

Changing the sound and display settings

The following items can be set:

- A.SCRL (Auto Scroll)* (page 12).
- M.DSPL (Motion Display)
 - the demonstration mode which appears when the tape is ejected and no source is selected (e.g., tuner is turned off).
- BEEP – to turn the beep sound on or off.

1 Press (SEL).

2 Press the preset number button to select the desired item.

Number buttons

(3): A.SCRL*

(4): M.DSPL

(6): BEEP

** When no CD or MD is playing, this item will not appear.*

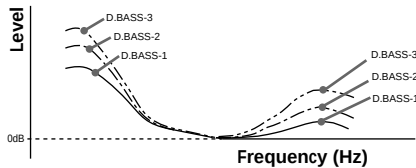
3 Press the preset number button repeatedly to select the desired setting (Example: ON or OFF).

Boosting the bass sound

— D-bass

You can enjoy a clear and powerful bass sound. The D-bass function boosts the low frequency signal and high frequency signal with a sharper curve than conventional bass boost.

You can hear the bass line more clearly even while the vocal volume remains the same. You can emphasize and adjust the bass sound easily with the D-BASS button.



Adjusting the bass curve

Press **(D-BASS)** repeatedly to select the desired bass curve.

As the D-BASS number increases so does the effect.

D.BASS-1 → D.BASS-2 → D.BASS-3 → D.BASS-OFF

Note

The bass sound may distort at same volume. If the bass sound distorts, select less effective bass curve.

Selecting the sound

position — “My Best sound Position”

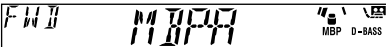
When you drive without passengers, you can enjoy comfortable sound environment by “My Best sound Position.”

“My Best sound Position” has two presets, which adjusts the sound level of balance and fader. You can select one very easily with MBP button.

Display window	Balance Level		Fader Level	
	Right	Left	Front	Rear
MBP-A	− 4dB	0	0	− 4dB
MBP-B	0	− 4dB	0	− 4dB
MBP-OFF	0	0	0	0

Press **(MBP)** repeatedly until the desired listening position.

Mode of “My Best sound Position” will be shown in the display in order of the table.



After one second, the display goes back to the normal playback mode.

If you want to adjust the sound level of balance and fader more precisely, you can do it in **(SEL)** button. (See “Adjusting the sound characteristics” on page 10.)

With Optional Equipment

CD/MD Unit

This unit can control external CD/MD units. If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play a CD TEXT disc.

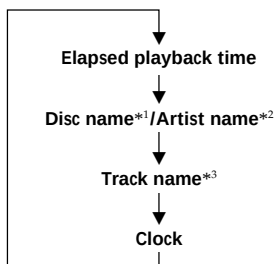
Playing a CD or MD

- 1 Press **(SOURCE)** repeatedly to select CD or MD.
In case of tape playback, press **▲** to eject the tape.
- 2 Press **(MODE)** until the desired unit appears.
CD/MD playback starts.

When a CD/MD unit is connected, all the tracks play from the beginning.

Changing the display item

Each time you press **(DSPL)** during CD, CD TEXT, or MD playback, the item changes as follows:



*1 If you have not labelled the disc or if there is no disc name prerecorded on the MD, "NO NAME" appears in the display.

*2 If you play a CD TEXT disc, the artist name appears in the display after the disc name. (Only for CD TEXT discs with the artist name.)

*3 If the track name of a CD TEXT disc or MD is not prerecorded, "NO NAME" appears in the display.

Automatically scrolling a disc name — Auto Scroll

If the disc name, artist name, or track name on a CD TEXT disc or MD exceeds 8 characters and the Auto Scroll function is on, information automatically scrolls across the display as follows:

- The disc name appears when the disc has changed (if the disc name is selected).
- The track name appears when the track has changed (if the track name is selected).

If you press **(DSPL)** to change the display item, the disc or track name of the CD TEXT or MD disc is scrolled automatically whether you set the function on or off.

- 1 During playback, press **(SEL)**.
- 2 Press **(3)** repeatedly to select "A.SCRL-ON."

To cancel Auto Scroll, select "A.SCRL-OFF."

Note

For some discs with very many characters, the following cases may happen:

- Some of the characters are not displayed.
- Auto Scroll does not work.

Locating a specific track

— Automatic Music Sensor (AMS)

During playback, press either side of (SEEK/AMS) momentarily for each track you want to skip.



To locate succeeding tracks

To locate preceding tracks

Locating a specific point in a track

— Manual Search

During playback, press and hold either side of (SEEK/AMS). Release when you have found the desired point.



To search forward

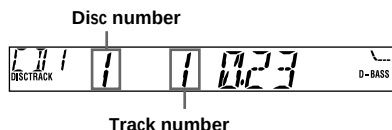
To search backward

Switching to other discs

During playback, press (1) (DISC -) or (2) (DISC +) button.

The desired disc in the current unit begins playback.

- (1) (DISC -): For preceding discs
- (2) (DISC +): For succeeding discs



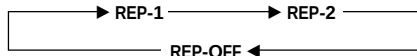
Playing tracks repeatedly

— Repeat Play

You can select:

- REP-1 – to repeat a track.
- REP-2 – to repeat a disc.

During playback, press (3) (REP) repeatedly until the desired setting appears.



Repeat Play starts.

To return to normal playback mode, select "REP-OFF."

Playing tracks in random order

— Shuffle Play

You can select:

- SHUF-1 – to play the tracks on the current disc in random order.
- SHUF-2 – to play the tracks in the current unit in random order.
- SHUF-ALL – to play all the tracks in all the units in random order.

During playback, press (4) (SHUF) repeatedly until the desired setting appears.



Shuffle Play starts.

* "SHUF-ALL" is only available when you connect two or more optional CD/MD units.

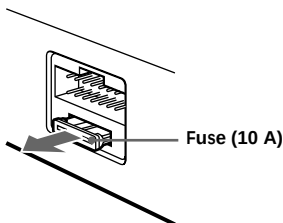
To return to normal playback mode, select "SHUF-OFF."

Additional Information

Maintenance

Fuse replacement

When replacing the fuse, be sure to use one matching the amperage rating stated on the original 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.

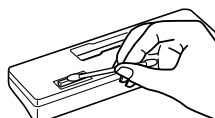
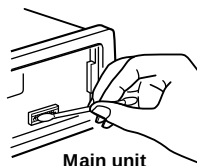


Warning

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

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 **(RELEASE)**, 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.



Back of the front panel

Notes

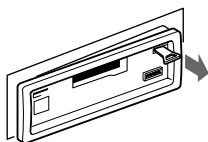
- For safety, turn off the engine before cleaning the connectors and remove the key from the ignition switch.
- Never touch the connectors directly with your fingers or any metal device.

Dismounting the unit

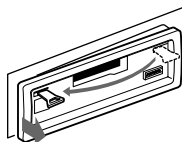
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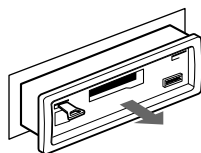
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3



4



Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

22 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 5 % total harmonic distortion.

Other specifications

Cassette player section		Power amplifier section	
Tape track	4-track 2-channel stereo	Outputs	Speaker outputs (sure seal connectors)
Wow and flutter	0.13 % (WRMS)	Speaker impedance	4 – 8 ohms
Frequency response	30 – 15,000 Hz	Maximum power output	45 W × 4 (at 4 ohms)
Signal-to-noise ratio	55 dB		
Tuner section		General	
FM		Outputs	Audio output Power antenna relay control lead Power amplifier control lead
Tuning range	XR-CA305: FM tuning interval: 50 kHz / 200 kHz switchable 87.5 – 108.0 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step) XR-CA300: FM tuning interval: 87.5 – 107.9 MHz (at 200 kHz step) External antenna connector	Tone controls	Bass ±10 dB at 20 Hz Treble ±10 dB at 20 kHz
Antenna terminal	10.7 MHz	Power requirements	12 V DC car battery (negative ground)
Intermediate frequency	11 dBf	Dimensions	Approx. 178 × 50 × 178 mm (7 ¹ / ₈ × 2 × 7 ¹ / ₈ in.) (w / h / d)
Usable sensitivity	75 dB at 400 kHz	Mounting dimensions	Approx. 182 × 53 × 161 mm (7 ¹ / ₄ × 2 ¹ / ₈ × 6 ³ / ₈ in.) (w / h / d)
Selectivity	62 dB (stereo), 68 dB (mono)	Mass	Approx. 1.2 kg (2 lb 10 oz)
Signal-to-noise ratio	0.7 % (stereo), 0.5 % (mono)	Supplied accessories	Parts for installation and connections (1 set) Front panel case (1) BUS cable (supplied with an RCA pin cord)
Harmonic distortion at 1 kHz	33 dB at 1 kHz	Optional accessories	RC-61 (1 m), RC-62 (2 m) CD changer (10 discs) CDX-848X, CDX-747X, CDX-646
Separation	30 – 15,000 Hz	Optional equipment	MD changer (6 discs) MDX-65 Source selector XA-C30
Frequency response			
AM			
Tuning range	XR-CA305: AM tuning interval: 9 kHz / 10 kHz switchable 531 – 1,602 kHz (at 9 kHz step) 530 – 1,710 kHz (at 10 kHz step) XR-CA300: AM tuning interval: 530 – 1,710 kHz (at 10 kHz step) External antenna connector		
Antenna terminal	10.7 MHz / 450 kHz		
Intermediate frequency	30 µV		
Sensitivity			

Design and specifications are subject to change without notice.

Troubleshooting guide

The following checklist will help you remedy the problems you may encounter with your unit. Before going through the checklist below, check the connections and operating procedures.

General

Problem	Cause/Solution
No sound.	• Cancel the ATT function (page 10). • Set the fader control to the centre position for two-speaker systems. • Adjust the volume with (+).
The contents of the memory have been erased.	• The power cord or battery has been disconnected. • The RESET button was pressed. → Store again into the memory.
Indications do not appear in the display.	Remove the front panel and clean the connectors. See "Cleaning the connectors" (page 14) for details.

Tape playback

Problem	Cause/Solution
The sound is distorted.	The tape head is contaminated. → Clean the head with a commercially available dry-type cleaning cassette.

Radio reception

Problem	Cause/Solution
Preset tuning is not possible.	• Store the correct frequency in the memory. • The broadcast signal is too weak.
Automatic tuning is not possible.	• The broadcast signal is too weak. → Use manual tuning. • The local seek mode is set to ON. → Set the local seek mode to OFF (page 9).
The stations cannot be received. The sound is hampered by noises.	Connect an power antenna control lead (blue) or accessory power supply lead (red) to the power supply lead of a car's antenna booster. (When your car has built-in FM/AM antenna in the rear/side glass only.)
The "ST" indication flashes.	• Tune in the frequency accurately. • The broadcast signal is too weak. → Set to MONO mode (page 9).

CD/MD playback

Problem	Cause/Solution
The sound skips.	A dirty or defective disc.

Error displays (when an optional CD/MD unit is connected)

The following indications will flash for about five seconds, and an alarm sound will be heard.

Display	Cause	Solution
NO MAG	The disc magazine is not inserted in the CD/MD unit.	Insert the disc magazine in the CD/MD unit.
NO DISC	No disc is inserted in the CD/MD unit.	Insert discs in the CD/MD unit.
ERROR ^{*1}	A CD is dirty or inserted upside down. ^{*2}	Clean or insert the CD correctly.
	An MD does not play because of some problem. ^{*2}	Insert another MD.
	A CD/MD cannot play because of some problem.	Insert another CD/MD.
BLANK ^{*1}	No tracks have been recorded on an MD. ^{*2}	Play an MD with tracks recorded on it.
RESET	The CD/MD unit cannot be operated because of some problem.	Press the reset button of the unit.
NOT READY	The lid of the MD unit is open or MDs are not inserted properly.	Close the lid or insert the MDs properly.
HI TEMP	The ambient temperature is more than 50°C (122°F).	Wait until the temperature goes down below 50°C (122°F).

^{*1} When an error occurs during playback of a CD or MD, the disc number of the CD or MD does not appear in the display.

^{*2} The disc number of the disc causing the error appears in the display.

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

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