

Contents

1. CONTROLS	2
2. PRECAUTIONS	3
Handling Compact Discs	3
LCD Screen	3
3. DCP	4
4. NOMENCLATURE	5
Names of the Buttons and their Functions	5
5. OPERATIONS	6
Basic Operations	6
Radio Operations	7
RDS Operations	7
CD Operations	9
6. SPECIFICATIONS	10
7. IN CASE OF DIFFICULTY	10
8. ERROR DISPLAYS	11


2. PRECAUTIONS

1. This unit is applicable for on-road 4 wheel vehicle purpose only. Use for tractor, fork truck, bulldozer, off road vehicle, 2 or 3 wheel motor bicycle, marine boat or other special purpose vehicle is not appropriate.
2. When the inside of the car is very cold and the player is used soon after switching on the heater moisture may form on the disc or the optical parts of the player and proper playback may not be possible. If moisture forms on the disc, wipe it off with a soft cloth. If moisture forms on the optical parts of the player, do not use the player for about one hour. The condensation will disappear naturally allowing normal operation.
3. Driving on extremely bumpy roads which cause severe vibration may cause the sound to skip.

INFORMATION FOR USERS:

CHANGES OR MODIFICATIONS TO THIS PRODUCT NOT APPROVED BY THE MANUFACTURER WILL VOID THE WARRANTY.

Handling Compact Discs

Use only compact discs bearing the  mark.

Do not play heart-shaped, octagonal, or other specially shaped compact discs.

Handling

- Compared to ordinary music CDs, CD-R and CD-RW discs are both easily affected by high temperature and humidity and some of CD-R and CD-RW discs may not be played.
Therefore, do not leave them for a long time in the car.
- Never stick labels on the surface of the compact disc or mark the surface with a pencil or pen.

LCD Screen

In extreme cold, the screen movement may slow down and the screen may darken, but this is normal. The screen will recover when it returns to normal temperature.

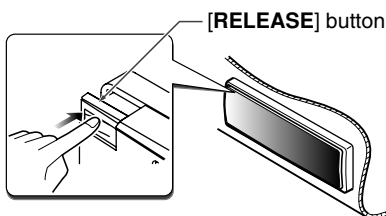
3. DCP

The control panel can be detached to prevent theft. When detaching the control panel, store it in the DCP (DETACHABLE CONTROL PANEL) case to prevent scratches.

We recommend taking the DCP with you when leaving the car.

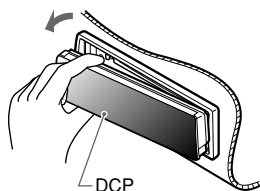
Removing the DCP

1. Press the **[SRC]** button for 1 second or longer to switch off the power.
2. Press in the **[RELEASE]** button.



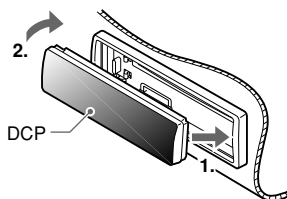
* The DCP is unlocked

3. Remove the DCP.



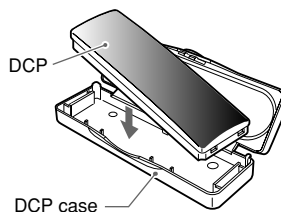
Attaching the DCP

1. Insert the right side of the DCP into the main unit.
2. Insert the left side of the DCP into the main unit.



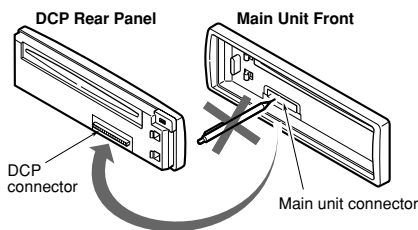
Storing the DCP in the DCP Case

Hold the DCP, in the orientation as shown in the figure below, and put it into the supplied DCP case. (Ensure the DCP is in the correct orientation.)



CAUTION

- The DCP can easily be damaged by shocks. After removing it, be careful not to drop it or subject it to strong shocks.
- When the Release button is pressed and the DCP is unlocked, the car's vibrations may cause it to fall. To prevent damage to the DCP, always store it in its case after detaching it. (See figure below.)
- The connector connecting the main unit and the DCP is an extremely important part. Be careful not to damage it by pressing on it with fingernails, pens, screwdrivers, etc.



Note:

- If the DCP is dirty, wipe off the dirt with a soft, dry cloth only.

4. NOMENCLATURE

Note:

- Be sure to read this chapter referring to the front diagrams of chapter "1. CONTROLS" on page 2.

Names of the Buttons and their Functions

[RELEASE] button

- Press the [RELEASE] button to unlock the DCP.

[ROTARY] knob

- Adjust the volume by turning the knob clockwise or counterclockwise.
- Use the knob to perform various settings.

[CD SLOT]

- CD insertion slot.

[PTY] button

- Use the button to set the PTY (Programme Type) standby mode or PTY items.

[▲] button

- Ejects a CD when it is loaded into the unit.

[DIRECT] button

- Stores a station into memory or recall it directly while in the radio mode.

[RPT] button

- Plays repeatedly while in the CD mode.

[RDM] button

- Performs random play while in the CD mode.

[SCN] button

- Performs scan play for 10 seconds for each track while in the CD mode.

[SS] button

- Press the [SS] button while keeping the [BND] button pressed, to turn the screen saver function on or off.

[▶||] button

- Plays or pauses a CD while in the CD mode.

[TA] button

- Use the button to set the TA (Traffic Announcement) standby mode.

[DISP] button

- Press the [DISP] button while keeping the [BND] button pressed, to switch the display indication (Main display, clock display).

[AF] button

- Press the button to turn on or off the AF (Alternative Frequency) function.
- When the button is pressed and held, Regional function can select ON or OFF.

[BND] button

- Switches the band, or seek tuning or manual tuning while in the radio mode.
- Plays a first track while in the CD mode.

[SRC] button

- Press the button to turn on the power. Press and hold the button for 1 second or longer to turn off the power.
- Switches the operation mode among the radio mode, etc.

[A-M] button

- Press and hold the button for 1 second or longer to switch the MAGNA BASS EXTEND on/off.
- Use the button to switch to the audio mode (bass/treble, balance/fader).

[Z] button

- Use the button to select one of the three types of sound characteristics already stored in memory. (Z-Enhancer)

[◀▶], [⏮], [⏭] button

- Selects a station while in the radio mode or selects a track when listening to a CD.
- Press and hold the button for 1 second or longer to switches the fast-forward/fast-backward.

[P/A] button

- Performs preset scan while in the radio mode. When the button is pressed and held, auto store is performed.

5. OPERATIONS

Basic Operations

⚠ CAUTION

Be sure to lower the volume before switching off the unit power or the ignition key. The unit remembers its last volume setting.

Turning on/off the power

1. Press the **[SRC]** button to turn on the power.
2. Press and hold the **[SRC]** button for 1 second or longer to turn off the power for the unit.

Selecting a mode

1. Press the **[SRC]** button to change the operation mode.
Radio mode → CD mode → Radio mode...

Adjusting the volume

1. Turning the **[ROTARY]** knob clockwise increases the volume; turning it counterclockwise decreases the volume.
* The volume level is from 0 (minimum) to 33 (maximum).

Audio Mode Adjustments

1. Press the **[A-M]** button to select the adjustment mode. The mode switches as follows each time the **[A-M]** button is pressed:
BASS → **TREB** → **BAL** → **FAD** → Previous mode
* When the Z-Enhancer function is turned on, BASS (bass) and TRE (treble) cannot be selected.
2. Turning the **[ROTARY]** knob to adjust the selected audio mode.
 - **BASS** (bass): Adjustment range; -7 to +7
 - **TREB** (treble): Adjustment range; -7 to +7
 - **BAL** (balance): Adjustment range; L13 to R13
 - **FAD** (fader): Adjustment range; F12 to R12
3. When the adjustment is complete, press the **[A-M]** button several times until the function mode is reached.
* The display returns to the previous mode 7 seconds after the adjustment.

Switching display

1. Press and hold the **[BND]** button, and then press the **[DISP]** button to select the desired display.
The display switches in the following order:
Main display → Clock (CT) display → Main ...

- * If the display is changed by other button operation when the clock (CT) is displayed, the clock display returns automatically after the operation.

Setting the Z-Enhancer

This unit are provided with 3 types of sound tone effects stored in memory. Select the one you prefer.

1. Each time you press the **[Z]** button, the tone effect changes in the following order:
"Z-ENHANCER 1" (bass emphasized) →
"Z-ENHANCER 2" (treble emphasized) →
"Z-ENHANCER 3" (bass and treble emphasized) → "Z-EHCR OFF" (no sound effect) → "Z-ENHANCER 1"...

Turning on/off MAGNA BASS EXTEND

1. Press and hold the **[A-M]** button for 1 second or longer to turn the MAGNA BASS EXTEND and "M-B EX" in the display lights on or off.

CT (Clock Time) function

1. Press and hold the **[BND]** button, and then press the **[DISP]** button, the display switches to CT (Clock Time) from RDS data.

Triggered audio mute for cellular telephones

This unit requires special wiring to mute the audio signal automatically when a cellular telephone rings in the car.

1. Press and hold the **[BND]** button, and then press the **[▶||]** to select the "TEL MUTE" or "TEL OFF".
TEL MUTE : mutes the audio sound.
TEL OFF : does not mute the audio sound.

Illumination dimmer function

When the illumination line of this unit is connected with the car-side illumination signal line, the display illumination of this unit dims in connection with turning on the car-side illumination.

Turning the screen saver function on or off

1. Press the **[SS]** button while keeping the **[BND]** button pressed, to turn the screen saver function on or off.

Radio Operations

Listening to the radio

1. Press the [SRC] button and select the radio mode.
The frequency or PS appears in the display.
* PS: Programme service name
2. Press the [BND] button and select the radio band. Each time the button is pressed, the radio reception band changes in the following order:
F1 (FM1) → F2 (FM2) → F3 (FM3) →
AM (MW/LW) → F1 (FM1)...
3. Press the [◀] or [▶] button to tune in the desired station.
* There are 3 types of tuning mode available, seek tuning, manual tuning and preset tuning.

Seek tuning

There are 2 types of seek tuning: DX SEEK and LOCAL SEEK.

● DX SEEK "DX"

Press the [◀] or [▶] button to automatically seek a station.

● LOCAL SEEK "LO"

If you press and hold the [◀] or [▶] button for 1 second or longer, local seek tuning is carried out. Broadcast stations with good reception sensitivity are selected.

Manual tuning

There are 2 ways available: Quick tuning and step tuning.

1. Press the [BND] button and select the desired band (FM or AM (MW/LW)).
* If "MANU" is not lit in the display, press and hold the [BND] button for 1 second or longer. "MANU" is lit in the display and manual tuning is now available.

2. Tune into a station.

● Quick tuning:

Press and hold the [◀] or [▶] button for 1 second or longer to tune in a station.

● Step tuning:

Press the [◀] or [▶] button to manually tune in a station.

Recalling a preset station

A total of 24 preset positions (6-FM1, 6-FM2, 6-FM3, 6-AM) exists to store individual radio stations in memory.

1. Press the [BND] button and select the desired band (FM or AM (MW/LW)).
2. Press the corresponding [DIRECT] button to recall the stored station.
* Press and hold one of the [DIRECT] buttons for 2 seconds or longer to store that station into preset memory.

Manual memory

1. Select the desired station with seek tuning, manual tuning or preset tuning.
2. Press and hold one of the [DIRECT] buttons for 2 seconds or longer to store the current station into preset memory.

Auto store

1. Press the [BND] button and select the desired band (FM or AM (MW/LW)).
2. Press and hold the [P/A] button for 2 seconds or longer. The stations with good reception are stored automatically to the preset channels.
* If auto store is performed in the FM bands, the stations are stored in FM3 even if FM1 or FM2 was chosen for storing stations.

Preset scan

1. Press the [P/A] button.
2. When a desired station is tuned in, press the [P/A] button again to continue receiving that station.

Note:

- Be careful not to press and hold the [P/A] button for 2 seconds or longer, otherwise the auto store function is engaged and the unit starts storing stations.

RDS Operations

RDS (Radio Data System)

This unit has a built-in RDS decoder system that supports broadcast stations transmitting RDS data.

When using the RDS function, always set the radio to FM mode.

AF (Alternative Frequency) function

The AF function switches to a different frequency on the same network in order to maintain optimum reception.

- * The factory default setting is "ON".

● Switching ON/OFF the AF function

1. Press the [AF] button to turn on/off the AF function.
* If the reception of the current broadcast station deteriorates, "SEARCH" appears in the display and the radio searches for the same programme on another frequency.

RDS Operations

REG (Regional programme) function

When the REG function is ON, the optimum regional station can be received. When this function is OFF, if the regional station area switches as you drive, a regional station for that region is received.

Notes:

- This function is disabled when a national station such as BBC R2 is being received.
- The REG function ON/OFF setting is valid when the AF function is ON.

● Switching the REG function ON/OFF

1. Press and hold the [AF] button for 1 second or longer to turn on/off the REG function.

Manually tuning a regional station in the same network

1. This function is valid when the AF function is ON and the REG function is OFF.

Note:

- This function can be used when a regional broadcast of the same network is received.
2. Press any one of the [DIRECT] buttons to call out the regional station.
 3. If the reception condition of the called out station is bad, press the [DIRECT] button of the same number. The unit receives a local station on the same network.

TA (Traffic Announcement) function

● Setting the TA standby mode

If you press the [TA] button when only "TP" is lit in the display, "TP" and "TA" light in the display and the unit is set into the TA standby mode until a traffic announcement is broadcast. When a traffic announcement broadcast starts, "TRA INFO" appears in the display. If you press the [TA] button while a traffic announcement broadcast is being received, the traffic announcement broadcast reception is cancelled and the unit goes into the TA standby mode.

● Cancelling the TA standby mode

With "TP" and "TA" lit in the display, press the [TA] button. The "TA" in the display goes off and the TA standby mode is cancelled.

- * If "TP" is not lit, pressing the [TA] button searches for a TP station.

● Searching for a TP station

When "TP" is not lit, if you press the [TA] button, "TA" in the display lights and the unit automatically receives a TP station.

Auto store function for TP stations

With "TA" lit in the display, press and hold the [P/A] button for 2 seconds or longer. The TP stations with the good reception sensitivity are stored into preset memory.

- * Even if you select F1 (FM1) or F2 (FM2), a TP station is stored into memory for F3 (FM3).

PTY (Programme Type) function

This function enables you to listen to a broadcast of the selected programme type when it starts even if the unit is on a function mode other than radio.

- * Some countries do not yet have PTY broadcast.

● Setting the PTY standby mode

When you press the [PTY] button, the PTY standby mode is turned on. The PTY item name appears in the display.

● Cancelling the PTY standby mode

When you press and hold the [PTY] button for 1 second or longer, the PTY standby mode is cancelled.

● Cancelling a PTY interrupt broadcast

Press the [PTY] button during the PTY interrupt broadcast, the PTY interrupt is cancelled and the unit returns to PTY standby mode.

Selecting PTY

1. When you press the [PTY] button, the unit goes into PTY select mode.
2. Press any one of the [DIRECT] buttons. Alternatively, turn the [ROTARY] knob clockwise or counterclockwise to select the desired PTY.
3. The PTY select mode is cancelled automatically 7 seconds after a PTY is selected.

PTY seek

1. When you press the [PTY] button, the PTY select mode is turned on.
2. Select PTY.
3. Press the [◀] or [▶] button. If you press the [▶] button, the unit seeks a PTY broadcast moving up the frequencies; if you press the [◀] button, it seeks moving down the frequencies.
 - * If no station with the selected PTY broadcast can be received, the unit returns to the PTY select mode.

RDS Operations

PTY preset memory

1. When you press the **[PTY]** button, the PTY select mode is turned on.
2. Turn the **[ROTARY]** knob clockwise or counterclockwise to select the desired PTY. The 29 types of PTY below can be selected.
NEWS, AFFAIRS (Today's events), **INFO** (Information), **SPORT, EDUCATE** (Education), **DRAMA, CULTURE, SCIENCE, VARIED** (Variety), **POP M** (Pop music), **ROCK M** (Rock music), **EASY M** (Easy music), **LIGHT M** (Light music), **CLASSICS, OTHER M** (Other music), **WEATHER, FINANCE, CHILDREN** (For children), **SOCIAL, RELIGION, PHONE IN, TRAVEL, LEISURE, JAZZ, COUNTRY, NATION M** (Nation music), **OLDIES, FOLK M** (Folk music), **DOCUMENT** (Documentaries)
3. If you press and hold any one of the **[DIRECT]** buttons for 2 seconds or longer, the selected PTY is stored into that preset channel memory.

Emergency broadcast

If an emergency broadcast is received, all the function mode operations are stopped.

"**ALARM**" appears in the display and the emergency broadcast can be heard.

● Cancelling an emergency broadcast

If you press the **[AF]** button, emergency broadcast reception is cancelled.

Volume setting of TA, emergency broadcast (ALARM) and PTY


1. During a TA, ALARM or PTY interrupt, turn the **[ROTARY]** knob clockwise or counterclockwise to set the volume to the desired level (0 to 33).

CD Operations

Loading a CD

Insert a CD into the centre of the CD SLOT with the labeled side facing up. "**LOADING**" appears in the display, the CD enters into the slot, and the play starts.

Notes:

- Do not put your hand, fingers, or foreign objects into the CD SLOT.
- If a CD has already been loaded, another CD cannot be inserted. Do not insert another one forcefully.
- Discs not bearing the  mark cannot be played with the unit. CD-ROMs cannot be played.

CD Operations

Listening to a CD already inserted

Press the **[SRC]** button to select the CD mode. Play starts automatically.

Pausing play

1. Press the **[▶||]** button to pause play.
2. To resume CD play, press the **[▶||]** button again.

Ejecting a CD

1. Press the **[▲]** to eject the CD. Take it out from the ejected position.

Note:

- If a CD is left in the ejected position for 15 seconds, the CD is automatically reloaded (Auto reload).

Track-up / track-down

1. Press the **[◀|]** or **[▶|]** button to select the desired track.

Fast-forward/fast-backward

1. Press and hold the **[◀◀]** or **[▶▶]** button for 1 second or longer to quickly move fastward or backward through the disc.

Top function

1. Press the **[BND]** button to play the first track (track No. 1) on the disc.

Scan play

The scan play locates and plays the first 10 seconds of each track on a disc automatically.

1. Press the **[SCN]** button to start scan play. "**SCN**" lights in the display.
2. To cancel the scan play, press the **[SCN]** button again. "**SCN**" goes off from the display and the current track continues to play.

Repeat play

The repeat play continuously plays the current track.

1. Press the **[RPT]** button. "**RPT**" lights in the display and the current track is repeated.
2. To cancel the repeat play, press the **[RPT]** button again. "**RPT**" goes off from the display and normal play resumes.

Random play

The random play selects and plays individual tracks on a disc in no particular order.

1. Press the **[RDM]** button. "**RDM**" lights in the display, an individual track is selected randomly and play begins.
2. To cancel the random play, press the **[RDM]** button again. "**RDM**" goes off and normal play resumes.

6. SPECIFICATIONS

Radio section

Tuning System: PLL synthesizer tuner

Receiving Frequencies:

FM : 87.5 to 108 MHz (0.05 MHz steps)

MW : 531 to 1602 kHz (9 kHz steps)

LW : 153 to 279 kHz (3 kHz steps)

CD player section

System: Compact disc digital audio system

Frequency Response: 10 Hz to 20 kHz (± 1 dB)

Signal to Noise Ratio: 100 dB (1 kHz) IHF-A

Dynamic Range: 93 dB (1 kHz)

Distortion: 0.03%

General

Output Power: 4×25 W (DIN 45324, +B=14.4V)

Power Supply Voltage:

14.4 V DC (10.8 to 15.6 V allowable),
negative ground

Power Consumption: Less than 15 A

Speaker Impedance: 4Ω (4 to 8Ω allowable)

Auto Antenna Rated Current: 500 mA or less

Weight:

Main unit: 1.2 kg

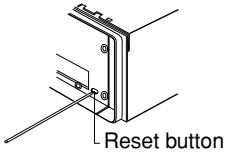
Dimensions:

Main unit : 178 (W) \times 50 (H) \times 155 (D) mm

Note:

- Specifications and design are subject to change without notice for further improvement.

7. IN CASE OF DIFFICULTY

Problem	Cause	Solution
Power does not turn on. (No sound is produced.)	Fuse is blown.	Replace with a fuse of the same amperage. If the fuse blows again, consult your store of purchase.
	Incorrect wiring.	Consult your store of purchase.
Compact disc cannot be loaded.	Another compact disc is already loaded.	Eject the compact disc before loading the new one.
Sound skips or is noisy.	Compact disc is dirty.	Clean the compact disc with a soft cloth.
	Compact disc is heavily scratched or warped.	Replace with a compact disc with no scratches.
Sound is bad directly after power is turned on.	Water droplets may form on the internal lens when the car is parked in a humid place.	Let dry for about 1 hour with the power on.
Nothing happens when buttons are pressed. Display is not accurate.	Microprocessor has malfunctioned due to noise, etc.	Turn off the power, then press the Release button and remove the DCP. Press the reset button for about 2 seconds with a thin rod. 
	DCP or main unit connectors are dirty.	Wipe the dirt off with a soft cloth moistened with cleaning alcohol.

8. ERROR DISPLAYS

If an error occurs, one of the following displays is displayed.
Take the measures described below to eliminate the problem.

Error Display	Cause	Measure
ERROR 2	A CD is caught inside the CD deck and is not ejected.	This is a failure of CD deck's mechanism and consult your store of purchase.
ERROR 3	A CD cannot be played due to scratches, etc.	Replace with a non-scratched, non-warped-disc.

If an error display other than the ones described above appears, press the reset button. If the problem persists, turn off the power and consult your store of purchase.