

# User's Manual

## MR1520W

**MP3-COMPATIBLE  
IN-DASH MARINE CD RECEIVER**



# BOSS<sup>®</sup>

## AUDIO SYSTEMS

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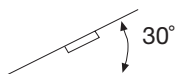
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# INSTALLATION

## Notes:

- The unit can be installed on the vehicle or the ships.
- Choose the mounting location where the unit will not interfere with the normal driving function of the driver.
- Before finally installing the unit, connect the wiring temporarily and make sure it is all connected up properly and the unit and the system work properly.
- Use only the parts included with the unit to ensure proper installation. The use of unauthorized parts can cause malfunctions.
- Consult with your nearest dealer if installation requires the drilling of holes or other modifications of the vehicle or the ship.
- Install the unit where it does not get in the driver's way and cannot injure the passenger if there is a sudden stop, like an emergency stop.
- If installation angel exceeds 30° from horizontal, the unit might not give its optimum performance.

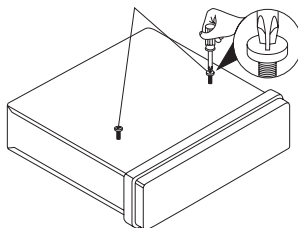


- Avoid installing the unit where it would be subject to high temperature, such as from direct sunlight, or from hot air, from the heater, or where it would be subject to dust, dirt or excessive vibration.

## TAKE OUT SCREWS BEFORE INSTALL

Before install the unit, please remove the two screws.

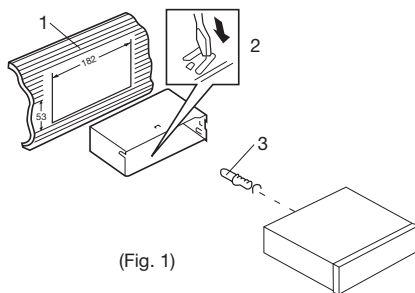
Take out screw before installation



NOTE: If this unit is installed on the ship, you should use two pieces of plastic film (30mmX20mm) supplied with the unit to seal the two holes after remove the screws. And this will be waterproof.

## DIN FRONT-MOUNT

### Installing the unit

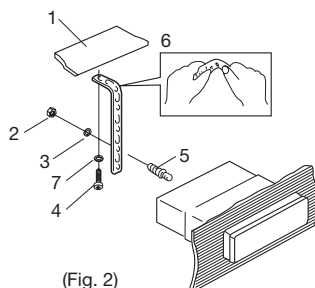


1. Dashboard
2. Holder

After inserting the holder into the dashboard, select the appropriate tab according to the thickness of the dashboard material and bend them inwards to secure the holder in place.

3. Screw

# INSTALLATION

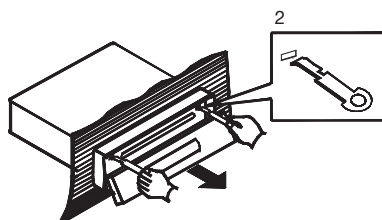
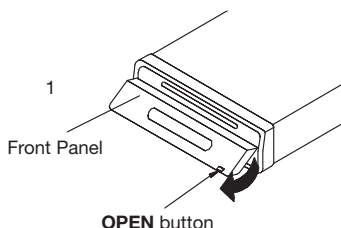


1. Dashboard
2. Nut (5mm)
3. Spring washer
4. Screw (5x25mm)
5. Screw
6. Strap

Be sure to use the strap to secure the back of the unit in place. The strap can be bent by hand to the desired angle.

7. Plain washer

## Removing the unit

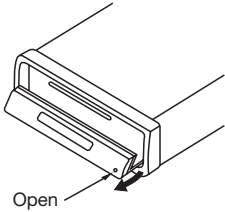


1. Before removing the unit, press the **OPEN** button to slide down the front panel.
2. Key  
Insert the keys supplied with the unit into the grooves in the housing as shown in figure until they click. Pulling the keys makes it possible to remove the unit from the dashboard.

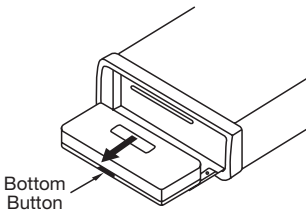
# USING THE DETACHABLE FRONT PANEL

## To Detach the Front Panel

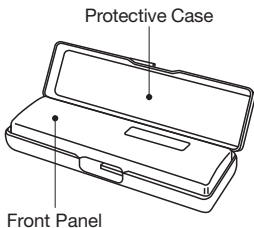
1. Press the **OPEN** button, the front panel will slide down.



2. When the front panel slides down, press the bottom button of the front panel upward and pull it out from the panel bracket.

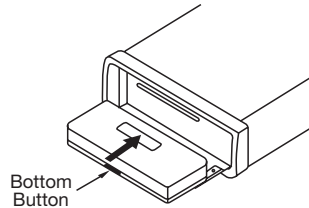


3. For safekeeping, store the front panel in the supplied protective case immediately after being removed.

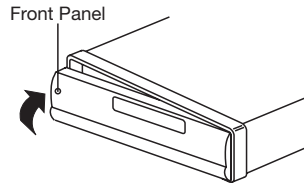


## To Reinstall the Front Panel

1. When the panel bracket is in slide down position, insert the front panel into the panel bracket and push the front panel from the middle to slide it up.

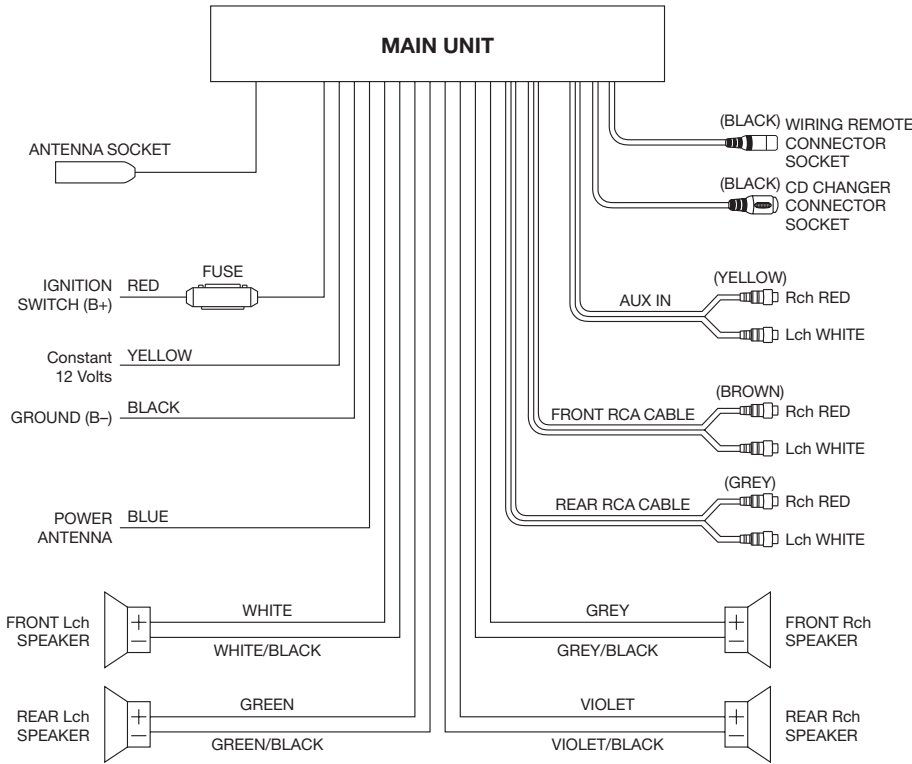


2. When the panel bracket is in slide up position, insert a side of the front panel to its proper position and push another side into the panel bracket, a 'click' sound should be heard.

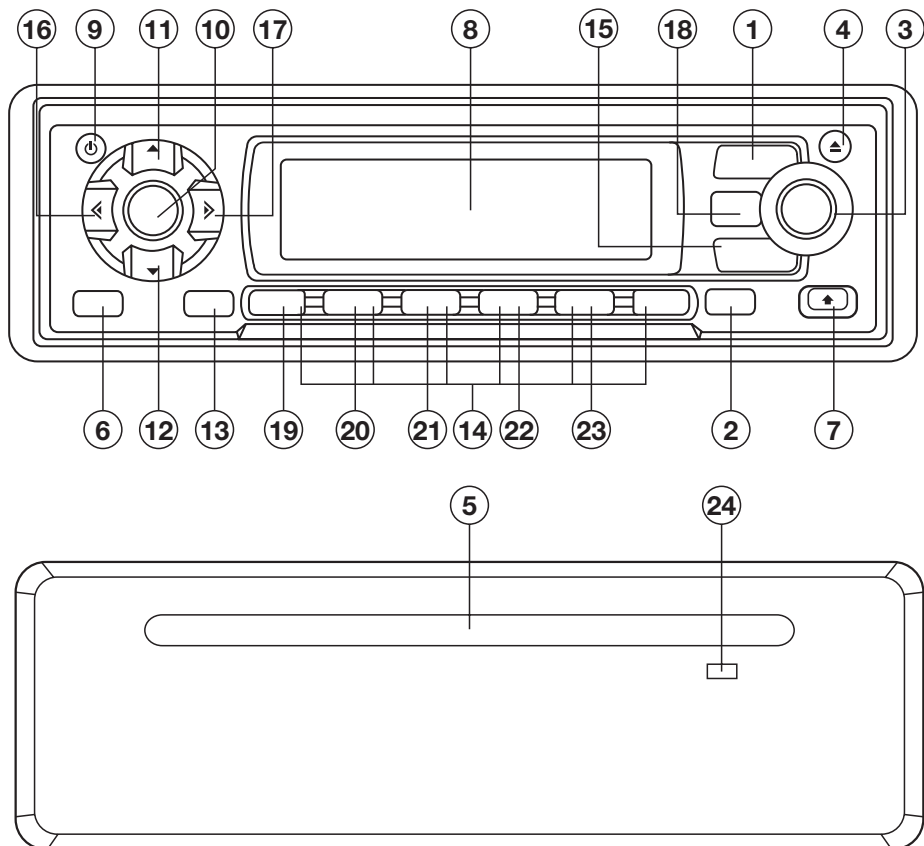


3. Note that if the front panel fails to lock in position properly, pressing control button may not function and LCD display may be missing some segments. Press the **OPEN** button and then re-install the front panel again.

# WIRING CONNECTION



## OPERATION



### GENERAL OPERATION

#### • ON/OFF

Switch on the unit by pressing **POWER** button (9). When system is on, press **POWER** button (9) again to turn off the unit.

#### • FACEPLATE RELEASE

Press **OPEN** button (7) to slide down the removable faceplate.

#### • SOUND ADJUSTMENT

Press **SEL/MENU** (10) shortly to change audio mode through volume, bass, treble, balance, and fader modes.

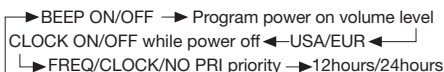
Press the **VOL ▲** button (11) or **VOL ▼** button (12) to adjust the selected mode. When the currently displayed function has not been adjusted for several seconds, the mode shall return to volume position and display will return to normal radio, CD or CDC display.

► Volume ► Bass ► Treble ► Balance ► Fader

#### • MENU SELECTION FUNCTION

Hold press **SEL/MENU** (10) for several seconds to enter menu select function, then step short press **SEL/MENU** (10) to select different set mode and separately to press **VOL ▲** button (11) or **VOL ▼** button (12) to select your requisite as following order.

# OPERATION



For detailed operations, please see below:

## BEEP ON/OFF

When beep on, the beep is generated when every button is pressed.

When beep off, the beep is disabled when press any button.

## Program power on volume level

In this mode, you can set the desired volume level when the unit turns on.

## USA/EUR

In this mode, you can select USA or European radio frequency spacing.

- USA radio spacing is 200k for FM and 10k for AM. This is the default frequency spacing.
- European radio spacing is 50k for FM and 9k for AM.

## CLOCK ON/OFF while power off

In this mode, you can select if the clock is to be displayed while power off.

## FREQ/CLOCK/NO PRI priority

When select Frequency Priority:

The frequency will appear on the unit all the while. Pressing DISP button (1) while in Frequency Priority will temporarily display clock and then returns to frequency display.

When select Clock Priority:

The clock will appear on the unit all the while. Pressing DISP button (1) while in Clock Priority will temporarily display selected station frequency (in RADIO mode) or track number (in CD/CDC mode) and then returns to clock display.

When select No Priority:

When the frequency appears on the unit, pressing DISP button (1) will display clock and it will not return to frequency display until DISP button (1) pressed again. When the clock appears on the unit, pressing DISP button (1) will display frequency information.

## 12hours/24hours

In this mode, you can set 24 hours mode or 12 hours mode.

- When the currently displayed function has not been adjusted for several seconds, it will exit menu set mode.
- When you have set CLOCK ON during power off state, LCD backlight will be turn on together.

## LOUDNESS

Press **LOUD/DIM** button (15) shortly to reinforce the bass output and display will show "LOUD". Press it again to release this function.

## ILLUMINATION

Press **LOUD/DIM** button (15) for more than 2 seconds to adjust the brightness of the LCD display backlight.

## MUTE

In radio/AUX IN mode, press **►/II** /MUTE button (3) to mute audio level. Press the button again to release mute function.

## SELECT MODE

Press **MODE** button (6) to choose desired listening mode. (e.g. radio mode to CD mode to CDC mode to AUX IN mode).

## SET THE CLOCK

Press **DISP** button (1) for more than 2 seconds until the clock is shown on the display and flashes. Then press the **►** button (17) to change minutes or button **◄** (16) to change hours.

## LIQUID CRYSTAL DISPLAY

Exhibit current frequency and activated functions on the display (8).

## ESP FUNCTION

If the unit has the electronic shockproof function, it can be shockproof about several tens of seconds.



## OPERATION

### • RESET

Reset button (24) must be activated with either a ballpoint pen or thin metal object. The reset button is to be activated for the following reasons:

- Initial installation of the unit when all wiring is completed.
- All the function buttons do not operate.
- Error symbol on the display.

**Note:** If press reset button (24), the unit can't work yet, please use a cotton swab soaked in isopropyl alcohol to clean the socket on the front panel.

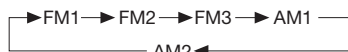
### • RESET TO FACTORY SETTING

In radio (AM/FM) mode, press **MODE** button (6) for more than three seconds, the display will appear "EEP INIT", and all settings recover factory value.

## RADIO OPERATION

### • BAND SELECTION

At tuner mode, press **BAND** button (18) shortly to select the desired band. The reception band will change in the following order:



### • SELECTING STATION

Press ◀ button (16) or ▶ button (17) shortly to activate automatic seek function. Press for more than 3 seconds until "**MAN**" appeared on the display, the manual tuning mode is selected. If both buttons have not pressed for several seconds, they will return to seek tuning mode and "**AUTO**" appeared on the display.

### • AUTOMATICALLY MEMORY STORING & PROGRAM SCANNING

- Automatic memory storing  
Press **AS/PS (ELAPSE)** button (2) for more than 2 seconds, the radio searches from the current frequency and checks the signal strength until

6 strongest stations are stored into the corresponding preset number button. When all completed, it will change to scan preset station automatically.

- Program scanning  
Press **AS/PS (ELAPSE)** button (2) shortly to scan all station preset saved in memory.

### • STATION STORING

The preset buttons (14) can be used to store 6 stations in each band (FM 1, FM 2, FM 3 and AM1, AM2) for convenient access to your favorite stations.

- Programming stations
  1. Select the desired band, then tune in the station you want to store in memory.
  2. Press and hold one of the preset buttons (14) for more than 2 seconds until the corresponding preset button number appears. Repeat steps 1. and 2. to program additional stations.
- Quick tuning  
Select the desired band, then press one of the six preset buttons (14).

### • SCAN

Press **SCAN** button (13) to scan through strong stations in the current band. Radio pauses for five seconds at each strong station. At each time the frequency is flashing on the display. Press **SCAN** button (13) again to listen to current station.

## CD OPERATION

### • SELECT TRACKS

Press ◀ button (16) or ▶ button (17) to move to the previous track or the following track. Track number shows on display.

Hold press ◀ button (16) or ▶ button (17) to fast reverse or fast forward. Disc play starts from when you release the button.

## OPERATION

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- **PAUSE PLAYING**

Press **▶/II/MUTE** button (3) to pause CD player. Press it again to resume play.

- **REPEAT THE SAME TRACK**

Press **RPT** button (21) to continuously repeat the same track. Press it again to stop repeat.

- **PREVIEW ALL TRACKS**

Press **SCH** button (23) to play first several seconds of each track on current disc. Press it again to stop intro scan and listen to track.

- **PLAY ALL TRACKS IN RANDOM**

Press **SHF** button (22) to play all tracks on the current disc in random. Press it again to cancel the function.

- **PROGRAM CD TRACKS**

Use Program function to select up to 32 tracks to play in any order. Program works by allowing you to select a track number for each spot in the playing sequence. A CD must be inserted and in CD playing mode to use Program.

- How to program CD tracks

1. Press **MEM** button (19) to enter Program mode, then "PGM" starts flashing and "P-01" icon appear on the display.
2. Press **◀** button (16) or **▶** button (17) to choose track number.  
For example, select track 6, then press **MEM** button (19) shortly to memorize it and "P-02" will appear on the display. So track 6 will be played first. Thus, you can also press **▶/◀** buttons (17) and (16) to choose track number 10 and press **MEM** button (19) shortly, then "P-03" will appear. So track 10 will be secondly played. Repeat these operations, and you can program CD tracks to your need. If you completed program setting, press **PGM** button (20) to play CD in programmed order.

Note: Using Program function can only select up to 32 tracks to play in any

order. When you have selected 32 tracks to be programmed. "FULL" will appear on the display.

- When the CD is played in programmed order by pressing **PGM** button (20), pressing it again will exit PGM mode.
- When the disc is playing in programmed order, pressing **MEM** button (19) will cancel the all programmed content and "CLEAR" appears on the display.
- If you don't press **MEM** button (19) to carry out program setting, then press **PGM** button (20), "NO-PGM" will appear.

- **TRACK/TIME DISPLAY**

Press **AS/PS (ELAPSE)** button (2) to show running time/remain time of track.

- **EJECT**

When the front panel is sliding down, press **EJ** button (4) to eject the disc.

# OPERATION

## CD CHANGER OPERATION

### • SELECT TRACKS

Press ◀ button (16) or ▶ button (17) to move to the previous track or the following track. Track number shows on display.

Hold press ◀ button (16) or ▶ button (17) to fast reverse or fast forward. Disc play starts from when you release the button.

### • PAUSE PLAYING

Press ►/II/MUTE button (3) to pause CDC player. Press it again to resume play.

### • REPEAT THE SAME TRACK

Press RPT button (21) to continuously repeat the same track. Press it again to stop repeat.

### • PREVIEW ALL TRACKS

Press SCN button (23) to play first several seconds of each track on current disc. Press it again to stop intro scan and listen to track.

### • PLAY ALL TRACKS IN RANDOM

Press SHF button (22) to play all tracks on the current disc in random. Press it again to cancel the function.

### • TRACK/TIME DISPLAY

Press AS/PS (ELAPSE) button (2) to show running time of track.

### • SELECT DISC

Press SHIFT/SCAN button (13) to shift mode and then "SHIFT" will appear on the display. At shift mode, press ◀ button (16) or ▶ button (17) to select previous disc or next disc. If there isn't any operation for several seconds, it will exit shift mode automatically.

## MP3 OPERATION

### • SELECT SONGS

#### □ SINGLE STEP SELECTION:

Press button ◀ (16) or ▶ button (17) to reverse or advance the previous song in single step.

#### □ SELECT BY SCAN/MP3 BUTTON:

"Searching track directly" =>  
"Searching Directory or File Name"=>  
searching from root by VOL ▲/▼ buttons (11&12) =>searching from current directory by VOL ▲/▼ buttons (11&12).

### 1. SEARCHING TRACK DIRECTLY

Press the MP3 button (13) one time to enter into "Searching track directly" mode. Set desired track by VOL ▲/▼ buttons (11&12), and then press BAND/ENTER button (18) shortly.

#### **Note:**

The unit searches the track after few seconds, even if the BAND/ENTER button (18) is not pressed.

### 2. SEARCHING DIRECTORY OR FILE NAME

Press the MP3 button (13) two times. It enters into "Searching Directory or File Name" mode.

The unit searches files and directories by name which is entered by the user with the VOL ▲/▼ buttons (11&12).

- Use VOL ▲/▼ buttons (11&12) to select the characters A to Z, blank, 0 to 9, \_, -, +.
- Press SEL/MENU button (10) to confirm entry of each characters.
- Press BAND/ENTER button (18) to start the title search.

In case the selected title is a directory name, display will show (' '), then

- Use VOL ▲/▼ buttons (11&12) to list all songs under this directory and select the title.
- Press BAND/ENTER button (18) to confirm and start the play.
- Repeat the above steps if the newly selected title is again a directory.

Note: In this mode, you can also press the corresponding buttons listed on the Table 1 below to input your desired character to select the files or directories.

## OPERATION

Key Assigned in Searching mode (Table 1)

Normal	In MP3 seaching
SCAN	MP3 Seaching Mode Select
BAND	ENTER
M1	A, B, C, 1
M2	D, E, F, 2
M3	G, H, I, 3
M4	J, K, L, 4
M5	M, N, O, 5/ Directory DOWN
M6	P, Q, R, 6/ Directory UP
MODE	S, T, U, 7
TUNE DOWN	V, W, X, 8
TUNE UP	Y, Z, SPACE, 9
SELECT	Character shift
DSP	←, →, +, 0
VOL UP/DOWN	CHARACTER SELECT (A, B~Z, SPACE, 0~9, -, +)
AS/PS	Backspace

### 3. SEARCHING FROM ROOT DIRECTORY

Press the **MP3** button (13) three times, the unit searches file or directory from root directory by **VOL ▲/▼** buttons (11&12).

(D-DIR icon turns on if the name is a directory). Display will list all available directories and songs.

Select the desired directory/songs by using **VOL ▲/▼** buttons (11&12) and **BAND/ENTER** button (18) to confirm. If the selected title is a song, it starts to play.

If the selected title is a directory name, display will show (' '), then

- Use **VOL /** buttons (11&12) to list all

songs under this directory and select the title.

- Press **BAND/ENTER** button (18) to confirm and start the play.
- Repeat the above steps if the newly selected title is again a directory.

### 4. SEARCHING FROM CURRENT DIRECTORY

Press the **MP3** button (13) four times, the unit searches file or directory from current directory by **VOL ▲/▼** buttons (11&12).

(D-DIR icon turns on if the name is directory). The current directory name is displayed for a second and the currently playing file name is displayed. The user can select the directory or file in the directory by **VOL ▲/▼** buttons (11&12). The selected file can be played by pressing **BAND/ENTER** button (18).

#### • PAUSE

Press **▶/II/MUTE** button (3) to pause MP3 player. Press it again to resume play.

#### • REPEAT THE SAME SONG

Press **RPT** button (21) to continuously repeat the same song. Press it again to cancel repeat function.

#### • PLAY SONGS IN RANDOM ORDER

During MP3 operation, press **SHF** button (22) to play songs in random order. Press it again to cancel the function.

#### • SCAN

The scan function enables you to listen to the first few seconds of the song.

Press **SCN** button (23) to activate/deactivate scan function.

#### • DISPLAY INFORMATION

Press **DISP** button (1) to show the following information, such as the clock, the ID3 TAG (if available: song title, directory name, artist name, other contents...) and other information.

## OPERATION

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### Note:

#### **A. Notes on discs:**

1. Attempting to use non-standard shape discs (e.g. square, star, heart) may damage the unit. Be sure to use round shape CD discs only for this unit.
2. Do not stick paper or tape, etc, onto the label side or the recording side of any discs, as it may cause a malfunction.
3. Dirt, dust, scratches and warping discs will cause misoperation.

#### **B. Notes on CD-Rs (recordable CDs)/ CD-RWs (rewritable CDs):**

1. Be sure to use discs with following marks only for the unit to play:



2. The unit cannot play a CD-R and CD-RW that is not finalized. (Please refer to the manual of your CD-R/CD-RW recorder or CD-R/CD-RW software for more information on finalization process).
3. Depending on the recording status, conditions of the disc and the equipment used for the recording, some CD-Rs/CD-RWs may not be played on this unit. (see \*1)

\*1: To have more reliable play back, please see following recommendations:

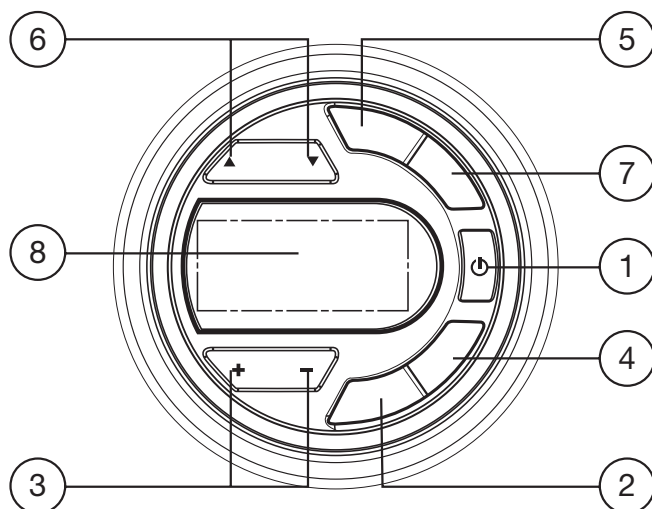
- a: Use CD-RWs with speed 1x to 4x and write with speed 1x to 2x.
- b: Use CD-Rs with speed 1x to 8x and write with speed 1x to 2x.
- c: Do not play a CD-RW which has been written for more than 5 times.

#### **C. Notes on MP3 files:**

1. The disc must be in the ISO9660 level 1 or level 2 format, or Joliet or Romeo in the expansion format.
2. When naming a MP3 file, be sure the file name extension is ".MP3".

3. For a non-MP3 file, even though the file name extension is ".MP3", the unit cannot recognize it.


## CONTROL & FUNCTIONS KEYS




This unit is a marine rated wired remote control made using a modified controller or similar layout. It is capable of operation specified functions on the marine AM/FM/CD receiver and the marine AM/FM receiver. The body, buttons, controls and display need to be UV and water-resistant. It includes LCD and an illumination circuit. The flat body should be watertight and the circuit board clear coated.


### 1 Power button

Press the  button (1) shortly to turn on/off the head unit.

Press  button (1) for more than 3 seconds, the button is operated to initial volume control button. When system power turns on, the volume is set to initial volume level.

### 2 MUTE button

In RADIO/AUX IN mode, press **MUTE** () button (2) to activate mute function and "MUTE" will appear on the display. Press the button once again to release mute function and return the volume to the last position before it was muted.

In CD or CDC mode, press  (**MUTE**) button (2) to pause CD/CDC player. Press it again to resume play.

### 3 VOLUME +/- buttons

Press **VOL**+/- buttons (3) to increase/decrease volume level.

### 4 MODE SELECTION button

Press the **MODE** button (4) to step sequentially through the following sources: e.g. radio mode to CD mode (or cassette mode) to CDC mode to AUX IN mode.

### 5 BAND SELECTION buttons

Press the **BAND** button (5) to step sequentially through the following bands: FM1, FM2, FM3, AM1, AM2.

In MP3 mode, press **ENTER (BAND)** to confirm the selected track.

# INSTALLATION

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## 6 TRACK/SEARCH/TUNE buttons

- STATION SELECTION (FOR RADIO OPERATION)

Press **▲ / ▼** buttons (6) shortly to activate automatic seek function. Press for more than 3 seconds until **"MAN"** appears on the display, the manual tuning mode is selected. If both buttons have not been pressed for several seconds, they will return to seek tuning mode and **"AUTO"** appears on the display.

- SELECT TRACKS (FOR CD OR CDC OPERATION)

Press the **▲ / ▼** buttons (6) shortly to move to the following track or the previous track.

Press the **▲ / ▼** buttons (6) for more than 3 seconds to activate fast forward or rewind of the disc. Disc play starts from when you release the button.

## 7 SHIFT/SCAN/MP3 button

- SCAN (FOR RADIO OPERATION)

Press **SHIFT/SCAN** button (7) to scan through strong stations in the current band. Radio pauses for five seconds at each strong station. At each time the frequency is flashing on the display. Press **SHIFT/SCAN** button (7) again to listen to current station.

- SELECT DISC (FOR CDC OPERATION)

During CDC operation, press **SHIFT/SCAN** button (7) to shift mode. And then **"SHIFT"** will appear on the display. At shift mode, press **▲ / ▼** buttons (6) to select next disc or previous disc. If there isn't any operation for several seconds, it will exit shift mode automatically.

- During CDC operation, press **SHIFT/SCAN** button (7) to shift mode. And then **"SHIFT"** will appear on the display. At shift mode, press **▲ / ▼** buttons (6) to select next disc or previous disc. If there isn't any operation for several seconds, it will exit shift mode automatically.

- In MP3 mode:

- 1). SEARCHING TRACK DIRECTLY

Press the **MP3(SCAN/SHIFT)** button (7) one time to enter into "Searching track directly" mode. Set desired track by **VOL+/-** buttons (3), and then press **ENTER(BAND)** button (5) shortly.

**Note:**

The unit searches the track after few seconds, even if the **ENTER(BAND)** button (5) is not pressed.

- 2). SEARCHING DIRECTORY OR FILE NAME

- Press the **MP3(SCAN/SHIFT)** button (7) two times. It enters into "Searching Directory or File Name" mode. The unit searches files and directories by name which is entered by the user with the **VOL+/-** buttons (3).

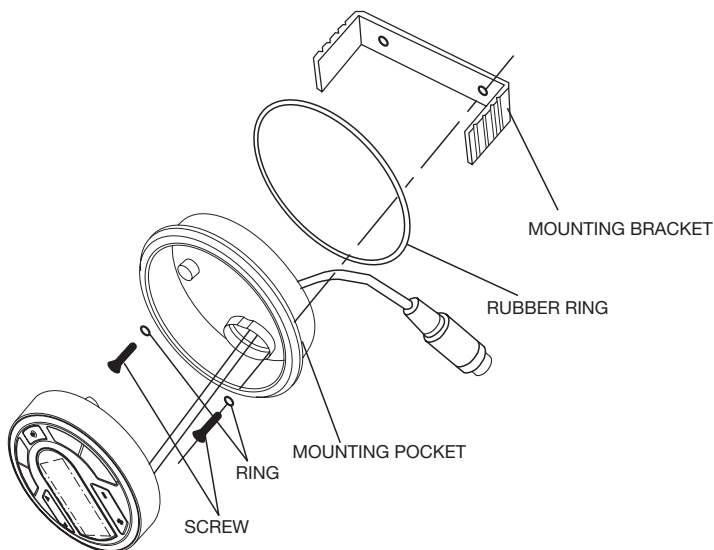
## 8 Liquid Crystal Display

Exhibit the number the current disc and the current track, and other activated functions on the display (8).

## INSTALLATION

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Select the proper position to install the remote controller and then cut a hole with the diameter about 88mm. Then use mounting bracket and two screws to install the controller to the board. Be sure to place the rubber washer and rubber ring between the controller and the board.( Please refer to the following picture.)





# SPECIFICATION

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## GENERAL

Power Supply Requirements	: DC 12 Volts, Negative Ground
Chassis Dimensions	: 178 (W) x 178 (D) x 50 (H) mm
Tone Controls	
- Bass (at 100 Hz)	: $\pm 10$ dB
- Treble (at 10 KHz)	: $\pm 10$ dB
Maximum Output Power	: 4 x 50 Watts
Current Drain	: 15 Ampere (max.)

## CD PLAYER

Signal to Noise Ratio	: More than 60 dB
Channel Separation	: More than 50 dB
Frequency Response	: 40 Hz - 18 KHz

## RADIO

### FM

Frequency Coverage	: 87.5 to 107.9 MHz
IF	: 10.7 MHz
Sensitivity (S/N = 30 dB)	: 3 $\mu$ V
Stereo Separation	: > 30 dB

### AM

Frequency Coverage	: 530 to 1720 KHz
IF	: 450 KHz
Sensitivity (S/N = 20 dB)	: 32 dBu

## TROUBLE SHOOTING

Before going through the check list, check wiring connection. If any of the problems persist after check list has been made, consult your nearest service dealer.

Symptom	Cause	Solution
No power.	The car ignition switch is not on.	If the power supply is properly connected to the car accessory circuits, but the engine is not moving, switch the ignition key to "ACC".
	The fuse is blown.	Replace the fuse.
Disc cannot be loaded or ejected.	Presence of CD disc inside the player.	Remove the disc in the player, then put a new one.
	Inserting the disc in reverse direction.	Insert the compact disc with the label facing upward.
	Compact disc is extremely dirty or defective disc.	Clean the disc or try to play a new one.
	Temperature inside the car is too high.	Cool off or until the ambient temperature return to normal.
	Condensation.	Leave the player off for an hour or so, then try again.
No sound.	Volume is in minimum.	Adjust volume to a desired level.
	Wiring is not properly connected.	Check wiring connection.
Sound skips.	The installation angle is more than 30 degrees.	Adjust the installation angle less than 30 degrees.
	The disc is extremely dirty or defective disc.	Clean the compact disc, then try to play a new one.
The operation keys do not work.	The built-in microcomputer is not operating properly due to noise.	Press the RESET button. Front panel is not properly fixed into its place.
The radio does not work. The radio station automatic selection does not work.	The antenna cable is not connected.	Insert the antenna cable firmly.
	The signals are too weak.	Select a station manually.



**BOSS**  
marine

**MR1520W**

MP3-COMPATIBLE  
IN-DASH MARINE CD RECEIVER

3.2006

tech support: [www.bossaudio.com/support](http://www.bossaudio.com/support)

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