

**Honesty
Innovation
Passion**



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PR10252/B

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Think about safety think Steelmate

**PTSV401
PTSV402**

User's Manual



**Camera
Parking Assist System**

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Camera Parking Assist System

User's Manual

Thank you for purchasing this product. Please read the manual carefully before installation and using the unit.

8 reasons to choose Steelmate

1. Professional manufacturer with high quality standards.
2. Complete range of products, you can easily select a product to match.
3. There are agents/distributors in more than 80 countries to supply local service.
4. More than 100 engineers in the company, you can enjoy the latest technology.
5. More than 300 patents.
6. Products have international approvals, high quality guaranteed.
7. Leading manufacturer in automotive industry, ISO9001, ISO/TS16949, ISO 14001 and OHSAS18001 certified.
8. Leading brand in China, recognized worldwide.

Disclaimer

The parking assist system is designed as a driver assistance device, and should not be used as a substitute for safe parking practices. The area into which the vehicle is to be reversed must be constantly visually monitored while parking.

Steelmate reserves the right to change the product information without prior notice.

Important notice

Steelmate parking assist systems help to provide assistance when reversing and parking. Driving skills, such as slowing down, use of mirrors etc. is always essential.

1. Please turn off the power supply before connecting the camera to the ECU.
2. To ensure clear view, please keep the camera lens clean and keep it away from sharp items.
3. This unit is for vehicles with 12V DC only.
4. Unit should be installed by a professional auto technician.
5. Route wiring harness away from heat sources and electrical components.
6. Please check the diameter of the hole saw to be compatible with flush mount camera and sensors respectively.
7. It is strongly recommended to check the position of the sensors before the actual drilling of the holes.
8. Perform test after finishing the installation.

About the product

PTSV401 and PTSV402 are Steelmate's new parking assist systems with rearview cameras. PTSV401 works well with most OE In-Dash A/V monitors. PTSV402 comes with TFT LCD monitor.

The rearview camera is a 135° wide angle camera. It is shock, vibration and water resistant and suitable for automotive use. The system will project perfect image even in low light (<1 Lux) conditions.

Turn ACC on and engage reverse gear, the mirror image behind the car will be projected on the TFT LCD monitor (PTSV402) or In-Dash A/V monitor (PTSV401), in the mean time, the system will self-test all the sensors automatically.

Once the self-test function is completed, the system will start scanning the rear area. If there is any object within the detection range, the image and digital distances (obstacles at the left and right side of the vehicle) will appear on the monitor while the audible sound will change tones when the distance gets shorter (voice warning is optional).

Each piece of our products has passed the most stringent test before releasing to the market. It performs well at a wide temperature range. Equipped with Steelmate's rearview camera PTS system in your car, you can not only hear the audible warning sound, see the digital distance, but also view what is happening behind the vehicle.

Key features

- Built-in flush mount or Micro-Tab camera
- Micro camera with 135° angle lens
- Compatible with most In-Dash A/V monitors (PTSV401)
- High quality TFT LCD monitor (PTSV402)
- Performs well at night or in overcast weather
- Shock, vibration and water resistant camera
- PAL or NTSC mode available
- Accurate digital distance and clear rearview shown on the monitor
- Dual guidance by camera and ultrasonic sensors
- Audible warning or voice warning (optional), volume adjustable
- Self-test function
- Anti-false alert technology

Technical specifications

For parking assist system:

Voltage:	10~16V
Working current:	≤ 580mA
Detecting range:	0.1~2.5m
Display range:	0.3~2.5m
Beep volume:	70 ~ 90dB
Operating temperature:	-40°C ~ +80°C

For rearview camera:

Video standard:	NTSC or PAL
Graphic sensor:	Color sensor
Picture element:	640 (H) x 480 (V)
Horizontal resolution:	400 TV lines
Minimum illumination:	<1 Lux
View angle:	135°
Operating temperature:	Camera (-30°C~+80°C)

For TFT monitor:

Size:	2.5"
Resolution:	640 (H) x 240 (V)
System:	NTSC/PAL (Auto-Recognize)
Working current:	≤ 250MA
Standby current:	≤ 10MA
Operating temperature:	-10°C ~ +60°C
Storage temperature:	-30°C ~ +80°C

Brief introduction



1. Rearview on the LCD monitor

The color camera automatically projects the image behind the car to the monitor once the reverse gear is engaged.

2. Digital distance

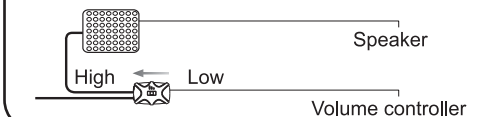
Obstacle distance display range: 0.3~2.5m.

The distance detected by the sensors will be shown on the left and right side of the monitor. The digital number on the display will be refreshed every 0.1m. When the obstacle distance is less than 0.3m, "STOP" will be shown on the display and the speaker will beep continuously or the voice will command "STOP" (only for the model with voice warning function).

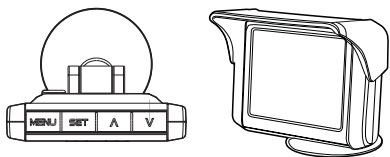
3. Speaker and volume controller

The system will inform the driver the obstacle's distance with beeps or human voice warning (for models with voice warning function).

The volume can be adjusted as needed

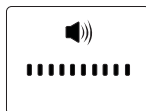


About the monitor



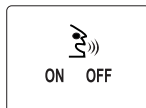
Turn ACC ON (while the engine is not running), engaged in reversing gear, press the "Menu" button to adjust the monitor.

Volume adjustment:



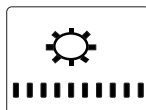
Press "Menu" button once to enter volume adjustment mode. Press "Λ" or "∇" to increase or reduce the volume. Press "SET" button once to confirm the volume selected.

Voice on/ voice off:



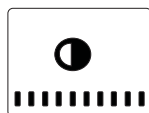
Press "Menu" button twice continuously to enter voice warning ON/OFF mode. Press "Λ" or "∇" to turn on or turn off the voice warning function. Press "SET" button once to confirm the selection.

Brightness adjustment:



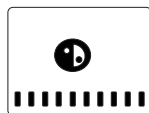
Press "Menu" button 3 times continuously to enter brightness adjustment mode. Press "Λ" or "∇" to increase or reduce the brightness. Press "SET" button once to confirm the selection.

Contrast adjustment:



Press "Menu" button 4 times continuously to enter contrast adjustment mode. Press "Λ" or "∇" to increase or reduce the contrast. Press "SET" button once to confirm the selection.

Color adjustment:



Press "Menu" button 5 times continuously to enter monitor color adjustment mode. Press "Λ" or "∇" to select the color. Press "SET" button once to confirm the selection.

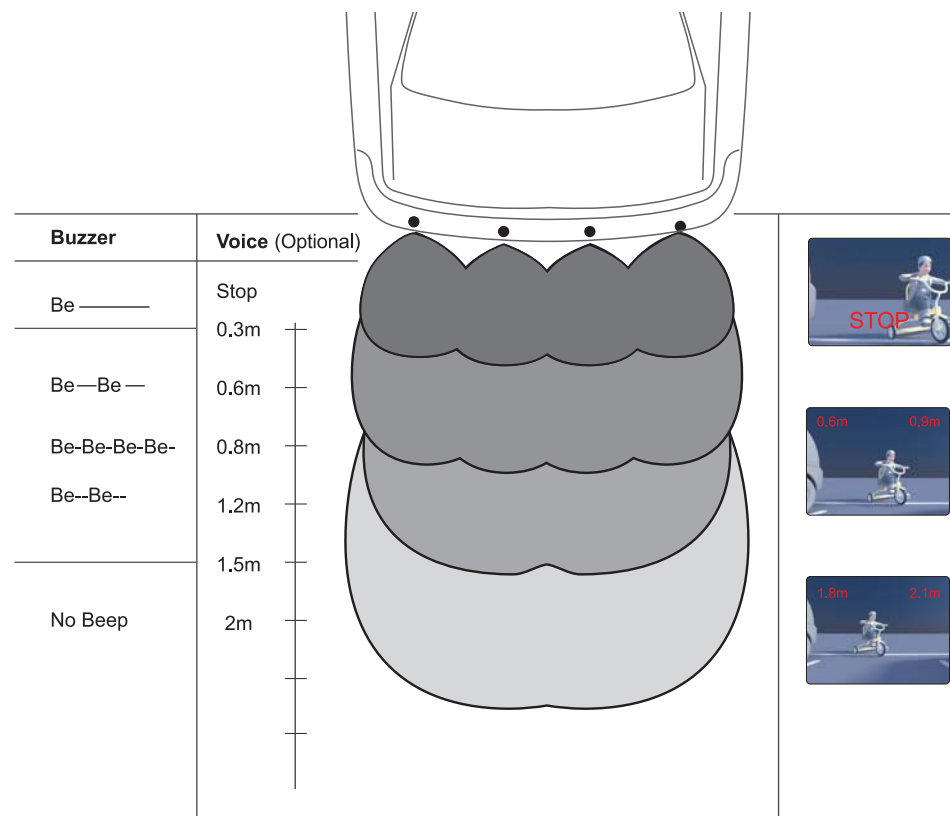
The system will automatically save all the confirmed settings.

Self-test function

The system will test the sensors automatically when the reverse gear is selected.

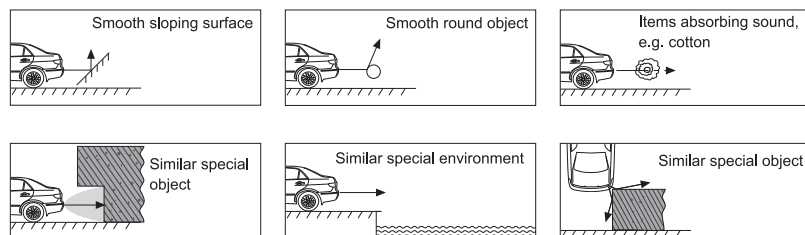
- 1) If all the sensors are functioning, the system will beep once.
- 2) If there is any problem with the sensors, the system will beep three times to indicate that one or more sensors are damaged.

How does the system work



Attention

False detection may occur in the following situations:



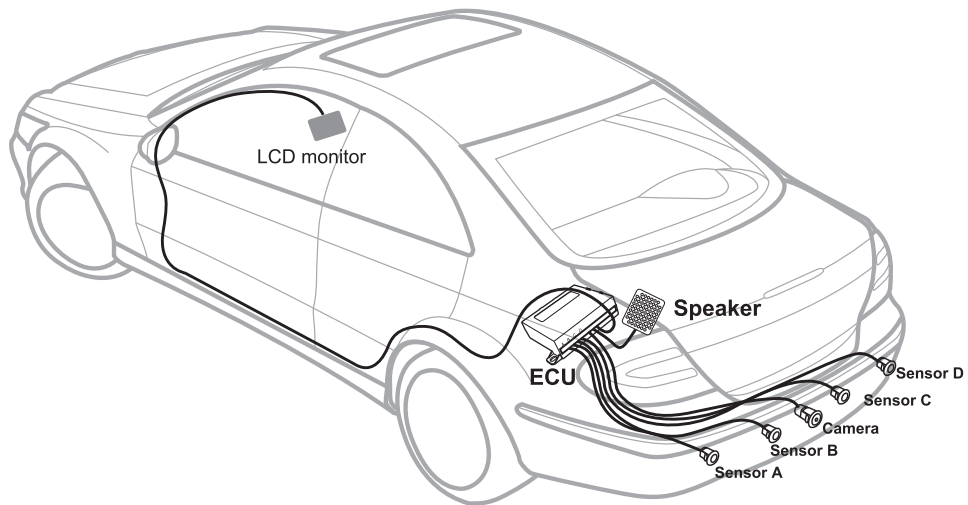
- After installation, fully test the system before use.
- Heavy rain, dirt on the camera or a damaged sensor may cause blurred vision or incorrect detection.
- Ensure that the self-test function is complete and indicates no malfunction before reversing.

The product is a driver assistance device. No warranty as to the operating efficiency of the system or prevention of accidents is guaranteed.

Warranty

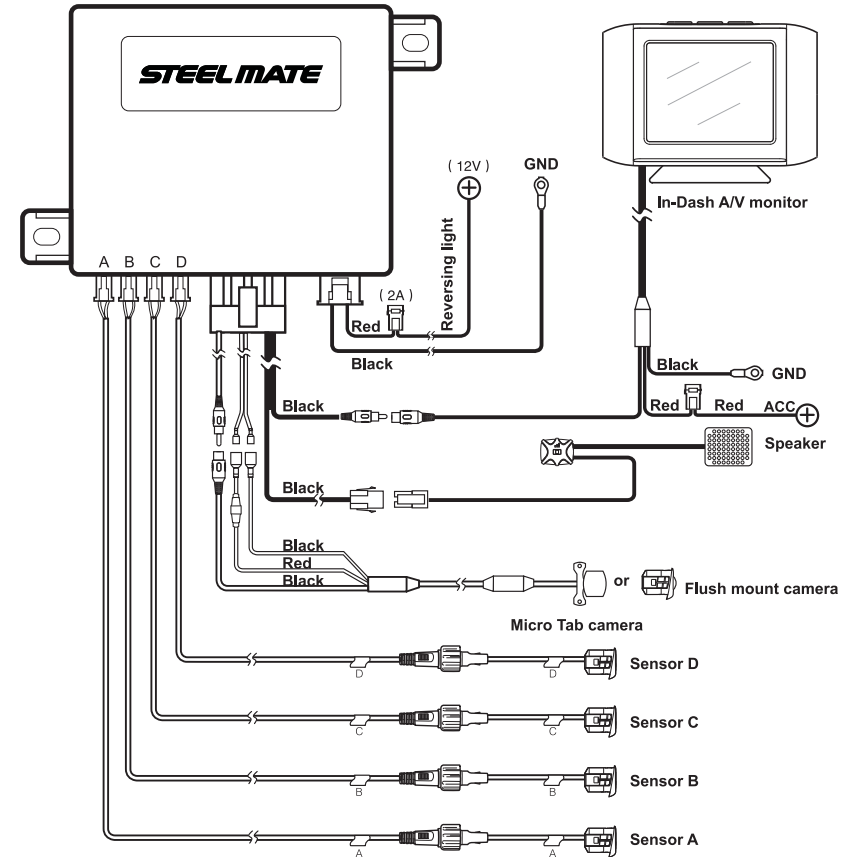
- I. The unit is warranted for a limited period of time from the date of purchase. In the unlikely event of a defect arising in this product when used in accordance with the manufacturer's instructions, the parts would be repaired or replaced free of charge.
 - a) It is required to show warranty card when making any warranty claims.
 - b) The model and serial number on the unit must be the same as the information on the warranty card.
- II. This warranty is non-transferable and is automatically void if:
 - a) The original purchaser has not completed the warranty card.
 - b) The unit's serial number is defaced, missing or altered.
 - c) The unit has been modified or used in a manner contrary to its intended purpose.
 - d) The unit has been damaged by accident, unreasonable use, neglect, improper installation or service.
- III. The warranty does not cover:
 - a) Damage caused by incorrect or poor installation, problems which may be caused by anomalies in the vehicle's electrical system or originating from the environment in which the system is operated;
 - b) Damage to the system caused by accident or improper use in any manner whatsoever not the fault of Steelmate, including but not limited to damage by water or as a result of excess voltage applied to the system or if misused or repaired or altered in any way other than by Steelmate or its authorized agent.

Installation diagram



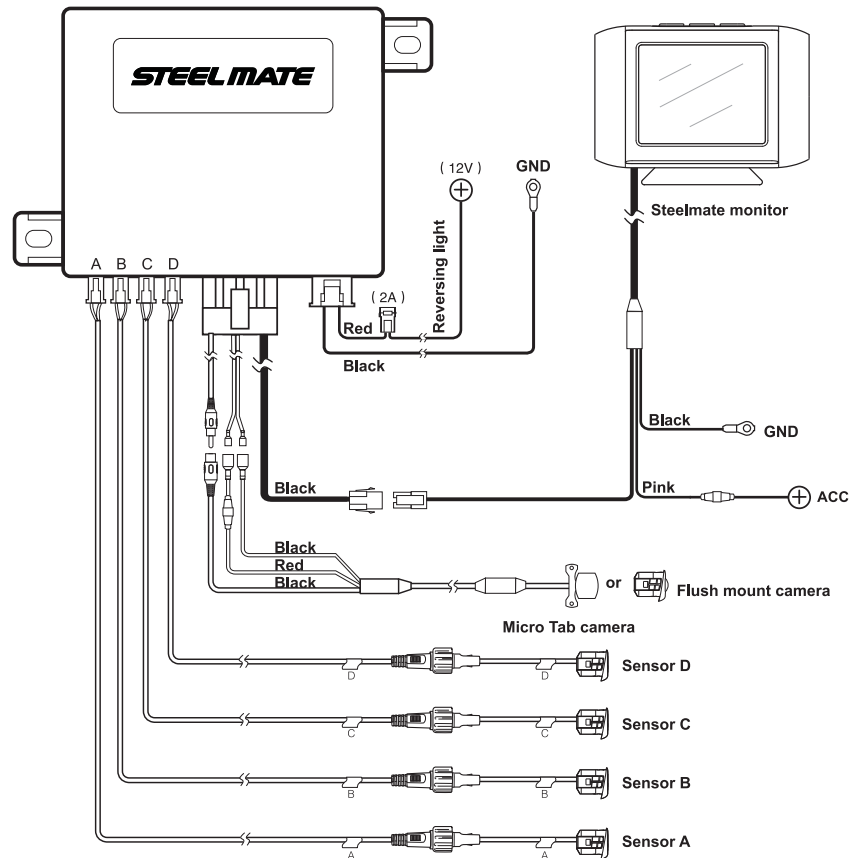
8

Wire connection (PTSV401)



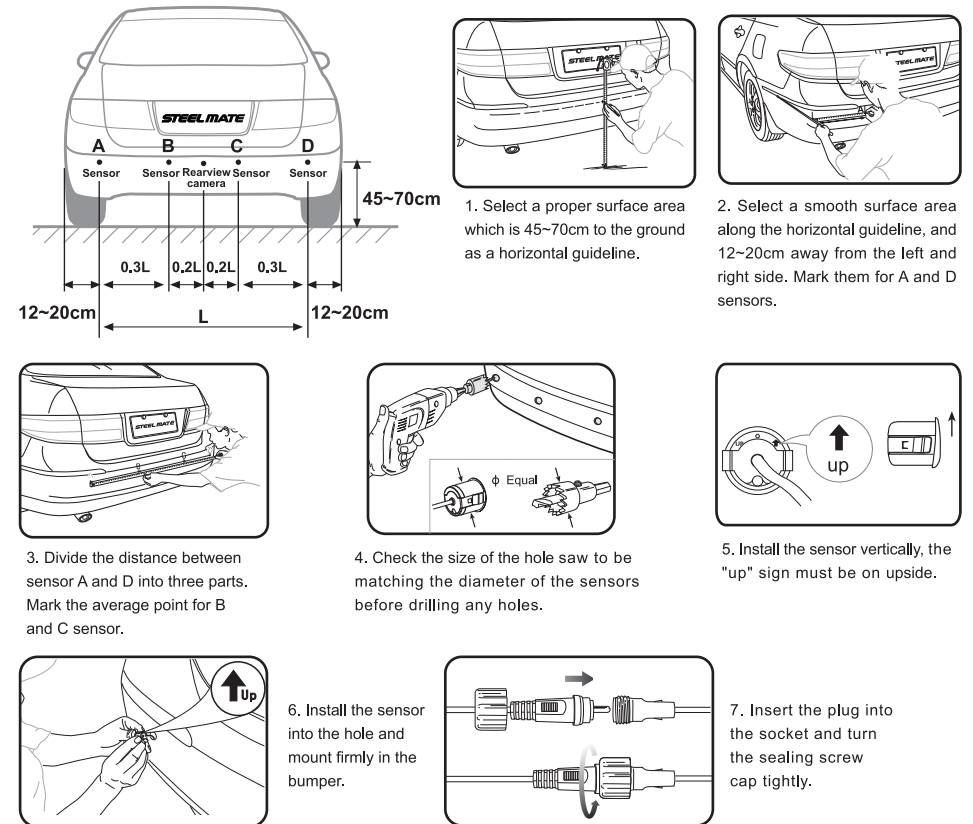
9

Wire connection (PTSV402)



10

Sensor installation

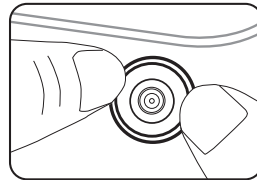
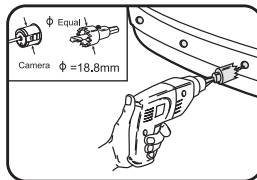
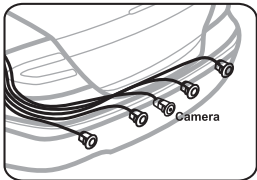


※ The sensor shown above may be different from the product.

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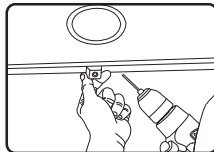
Camera installation

Flush mount camera installation

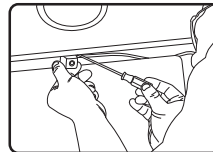


Insert the camera and press into the hole firmly.

Micro Tab camera installation



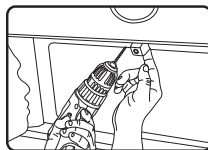
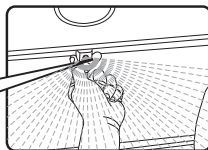
Choose a proper place above the number plate and drill a hole to fix one side of the Micro Tab camera



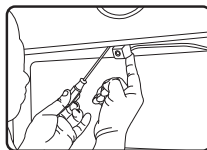
Fix one side of the camera with screw



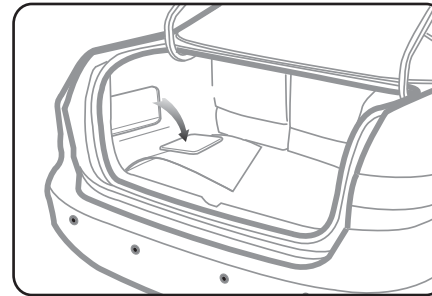
Connect the system to the monitor and adjust the camera direction according to the view of the monitor



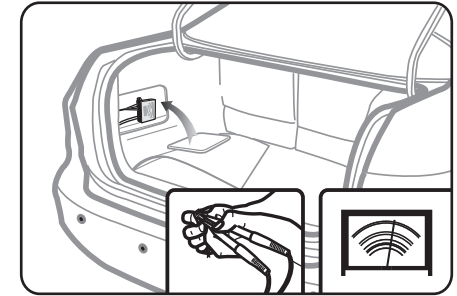
Fix the other side of the camera with screw



ECU installation

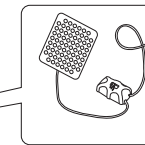
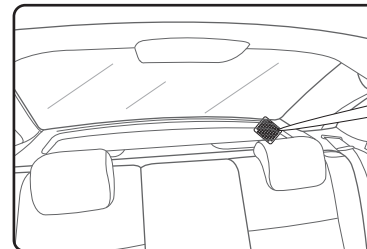


Mount ECU on the driver's side of the trunk.



Connect the red wire to the reversing light wire (+).

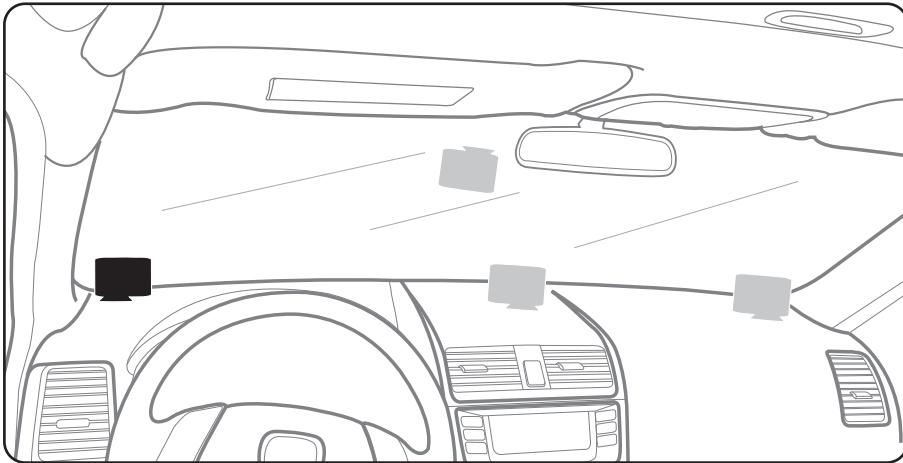
Speaker installation



Volume adjustable speaker

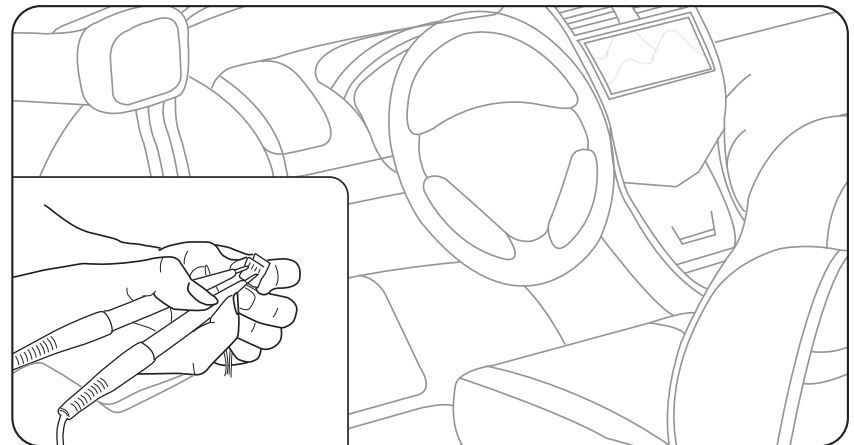
Mount the speaker and the volume controller at a suitable place near the back windshield in the car.

Monitor installation (PTSV402)

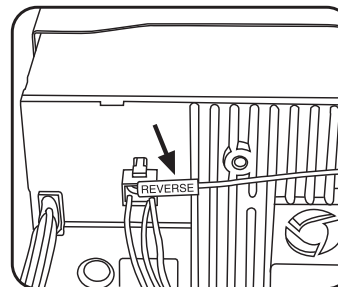


Before fixing the monitor on the dash board, adjust the brightness or contrast of the monitor if needed.

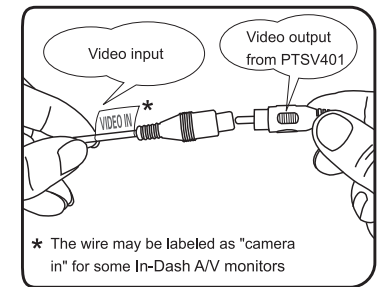
Connecting to In-Dash A/V monitor (PTSV401)



1. Identify the reversing light wire (+) in the driving compartment.



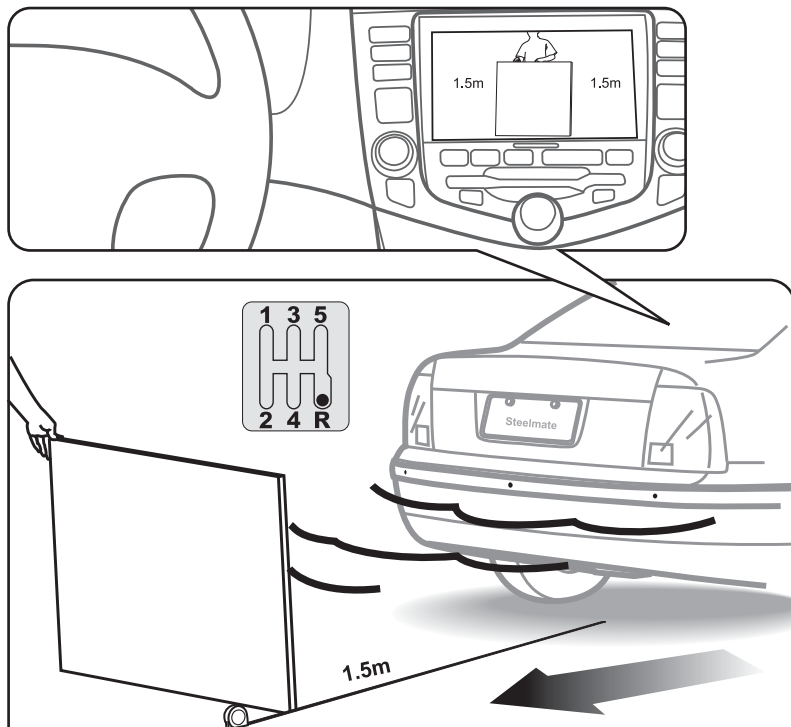
2. Connect the reversing light wire (+) with the reversing signal input wire at the back of the In-Dash A/V monitor.



* The wire may be labeled as "camera in" for some In-Dash A/V monitors

3. Insert the video output plug into the video input socket of the In-Dash A/V monitor.

Function testing



Use a flat board (1.0x1.5m) standing behind the car, reverse slowly to test each function respectively as shown in the manual.

Troubleshooting

1. There is no image on the LCD monitor

- 1) Check whether the power supply wire is connected correctly?
- 2) Check whether the ignition is turned to ACC ON?
- 3) Check whether the reverse gear is selected?
- 4) Check whether all wire connections are correct?
- 5) Check whether the video output plug is connected to the video-in socket of the LCD monitor?
- 6) Check whether if the function setting of the monitor is correct.

2. The display indicates a defective sensor.

- 1) Check whether the sensor surface is clean.
- 2) Check whether the sensor wires are plugged in the ECU properly.
- 3) Check whether the sensor wires are damaged or not.

3. When reverse gear is selected, 0.5m~0.6m will be shown on the LCD monitor.

- 1) Check whether sensors are mounted too low or detecting the ground?
- 2) Check whether the sensor is installed up-side-down.
- 3) Unplug 1 sensor at a time to check for response.

4. Audible voice or warning sound is too low.

- 1) Adjust the volume to a certain level.

5. Blurred image on the LCD monitor

- 1) Check whether there is dirt or water on the lens of the camera.
- 2) Clean the lens with a wet cotton swab and then dry it with a soft clean cloth.

6. If the problem persists, please follow these steps:

- A. For consumers: contact your dealer or nearby service center.
- B. For installer or dealer:
 - 1) Check the wire connection.
 - 2) Replace the ECU and recheck the system.
 - 3) Test the sensors with certified ECU using a flat wooden board.
 - 4) Plug the certified sensors into the ECU and recheck.
 - 5) Email your questions to us and we will reply ASAP.