

STEELMATE

SLC-2C

Lane Change Assist System-Single Sensor

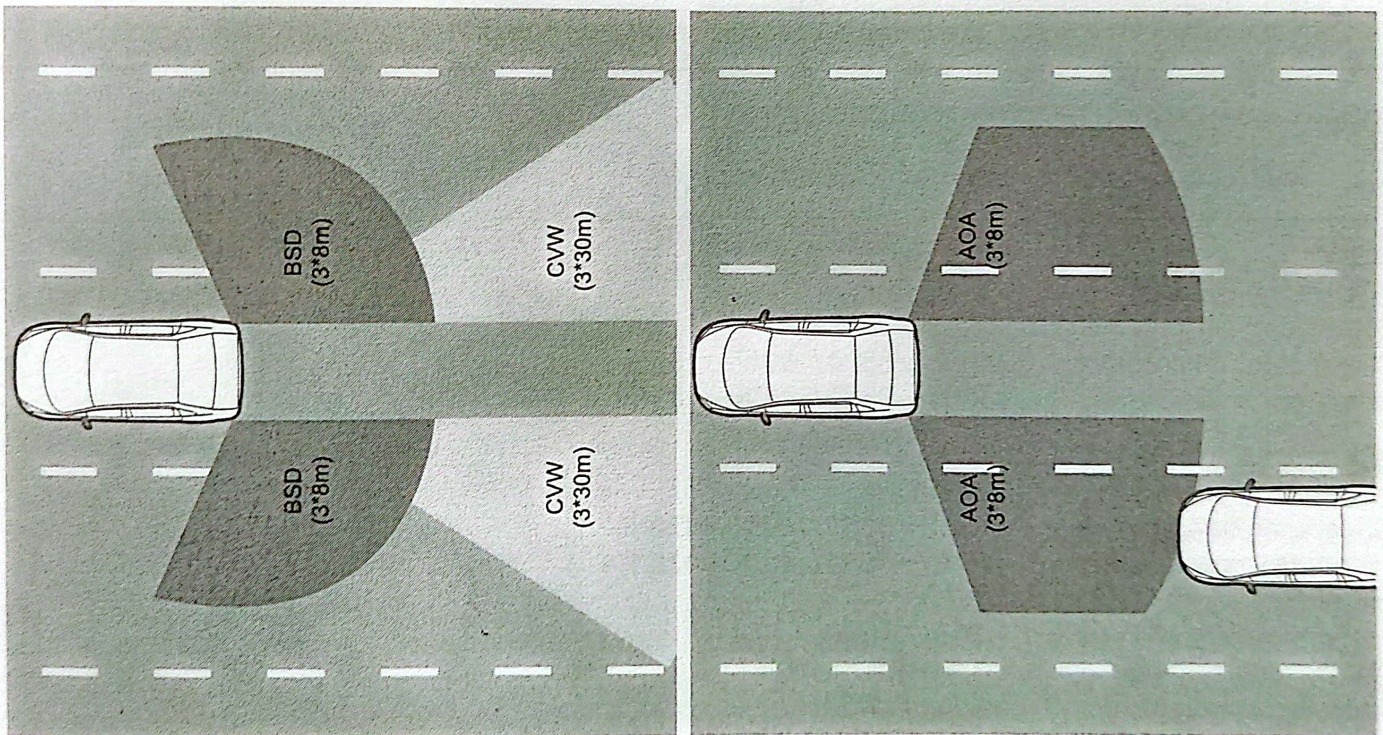
User Manual

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Operating principle

This system is using 77GHz microwave radar to warn drivers of approaching vehicles in blind spot zone. It has three types of detection mode: Blind Spot Detection (BSD), Closing Vehicle Warning (CVW) and Active Overtaking Alert (AOA). The system is most effective in the following situations: When the driver turns on the turn signal to overtake and change lanes, and if a vehicle enters the rear or side detection areas, the system will prompt the driver with audible and visual alarms to avoid side collision accidents.



Disclaimer

1. This system is designed for warning drivers of approaching adjacent lanes vehicles in blind spot zone, but can not completely replace driver's judgment. Driver should follow the local rules and coupled with good driving habits. Steelmate does not guarantee or assume liability for any accident.
2. Before using this system please read the manual carefully and you should pay attention to page 8~16.
3. This system should be installed by a professional technician.
4. Incorrect installation angle or height may occur false detection.
5. Do not add any decoration like anti-rub anticollision on rear bumper.

Specifications

ECU

Operating voltage:	DC 9~16V
Operating current:	<250mA (system)
Operating temperature:	-40°C~+85°C / -40°F~+185°F
Storage temperature:	-40°C~+85°C / -40°F~+185°F

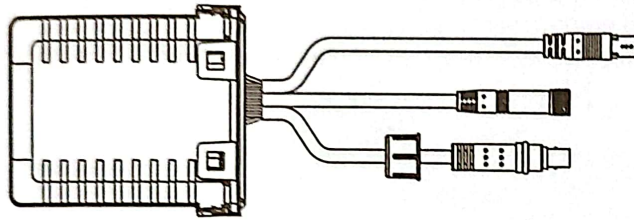
Sensor

Operating frequency:	77~79GHz
Operating temperature:	-40°C~+80°C / -40°F~+176°F
Storage temperature:	-40°C~+80°C / -40°F~+176°F
IP rate:	IP67
Maximum detection range:	≤50m / ≤164ft
Detection accuracy:	±0.2m / ±0.6ft
Installation height:	≥50cm / ≥1.6ft

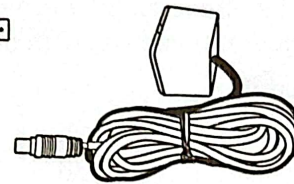
Display

Buzzer sound frequency:	4.0KHz ±0.5KHz
Operating temperature:	-40°C~+85°C / -40°F~+185°F
Storage temperature:	-40°C~+85°C / -40°F~+185°F

Includes



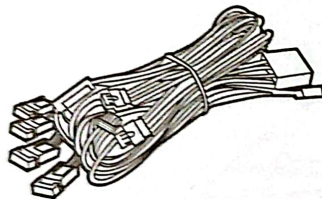
ECU x 1



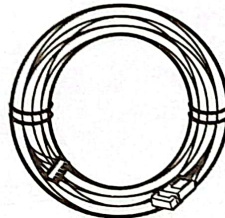
Sensor x 1



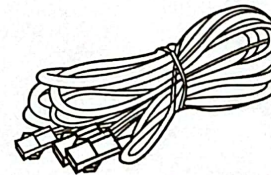
Display x 2



Power cable x 1



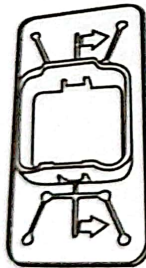
Display extension cable x 1



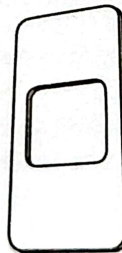
Display cable x 1



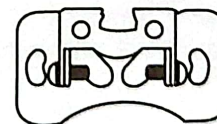
Screw x 4



Self-adhesive
bracket x 1



Adhesive x 1



Bracket x 1



Manual x 1

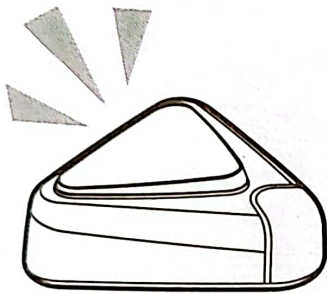
Note: The above graphics are for reference only.

Self-testing function

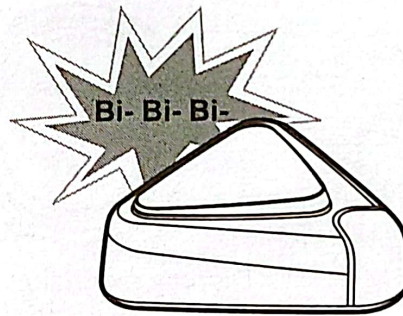
When power is on, system will test both left & right sensors automatically.

Normal: If the sensor is working properly, both two displays will flash yellow light once.

Issue: If the sensor is damaged or defective, both displays will beep and flash with red light three times, cycling twice.



Sensor is working properly



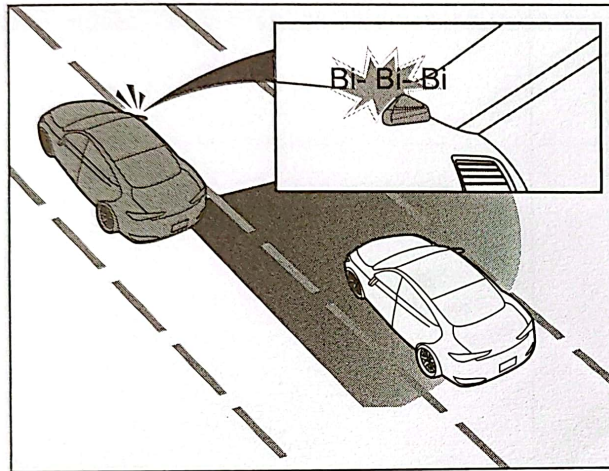
Damaged or defective sensor

Note:

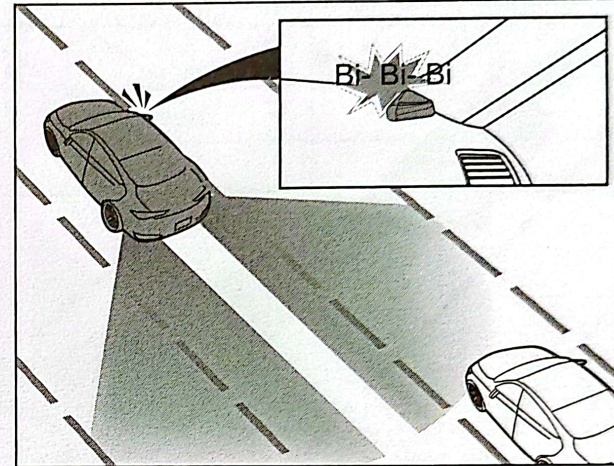
1. If the sensor is damaged or defective while driving, both displays will also beep and flash with red light three times, cycling twice.
2. The system will not work if the sensor is damaged or defective after self-testing.

How does the system work

Blind Spot Detection (BSD) & Active Overtaking Alert (AOA)



BSD function
(detection range: 3x8m)



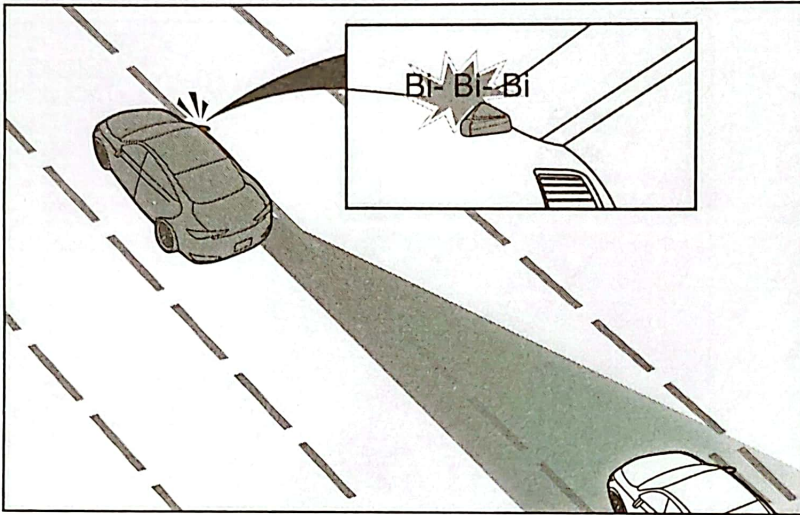
AOA function
(detection range: 3x8m)

When the driver is overtaking, making a lane change, or being passed by other vehicles, If the turn signals is on, the corresponding direction of display will beep and flash with red light for warning while approaching vehicle is closing and enter the detection area.
If the turn signals is off, the corresponding direction of display will light on with yellow light for warning while approaching vehicle is closing and enter the detection area.

Notes:

1. When the hazard warning lights are turned on, the corresponding direction of display will light on with yellow light for warning while approaching vehicle is closing and enter the detection area.
2. When vehicle is reversing, These functions will be invalid temporarily.
3. The system may not operate correctly when the following conditions occur: The target vehicle may be traveling too fast or too slow.

Relative Motion Warning (CTW)



CVW function
(detection range: 3x30m)

When the driver is being passed by other vehicles or making a lane change,
If the turn signals is on, the corresponding direction of display will beep and flash with red light for warning while approaching vehicle is closing and enter the detection area.
If the turn signals is off, the corresponding direction of display will flash with yellow light for warning while approaching vehicle is closing and enter the detection area.

Notes:

1. When the hazard warning lights are turned on, the corresponding direction of display will flash with yellow light only for warning while approaching vehicle is closing and enter the detection area.
2. When vehicle is reversing, These functions will be invalid temporarily.
3. The system may not operate correctly when the following conditions occur: The target vehicle may be traveling too fast or too slow.

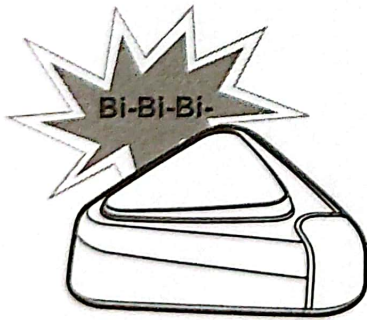
Brightness setting

For yellow light, there are two brightness modes for day and night.

Day mode: high-brightness when you enter the system.

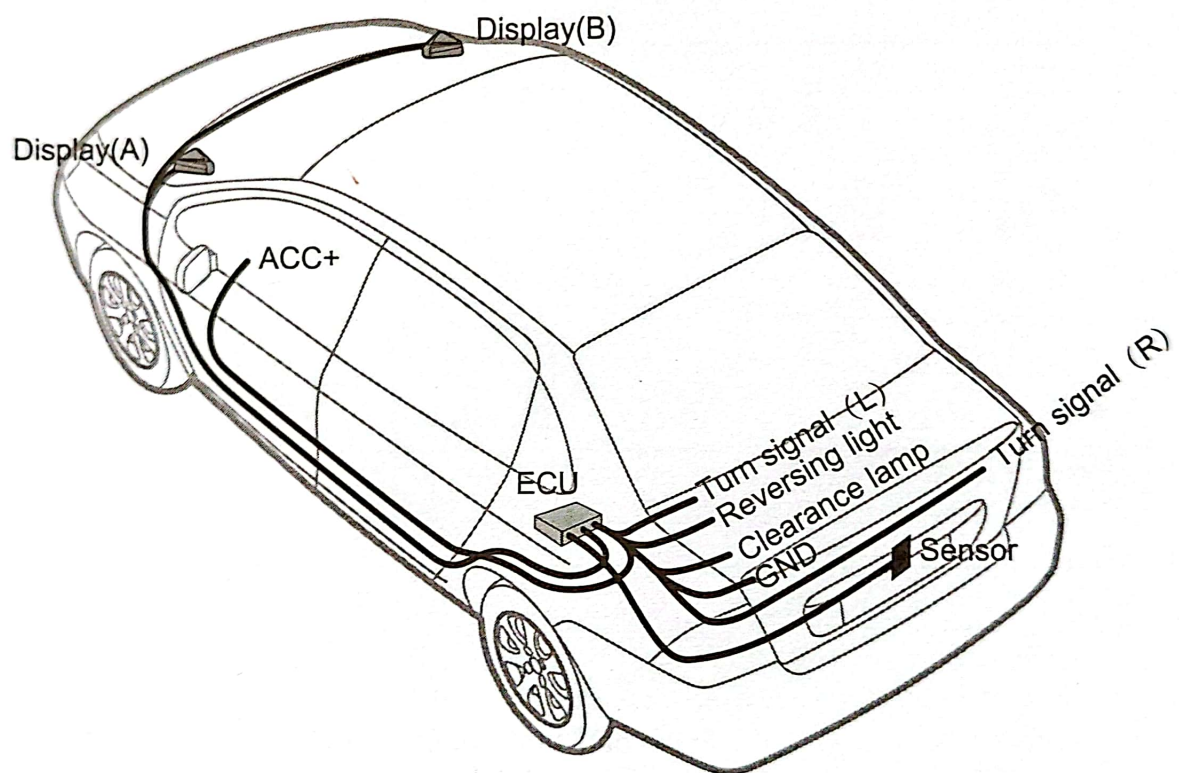
Night mode: low-brightness when you turn on the tail lamp or headlights.

Functional test

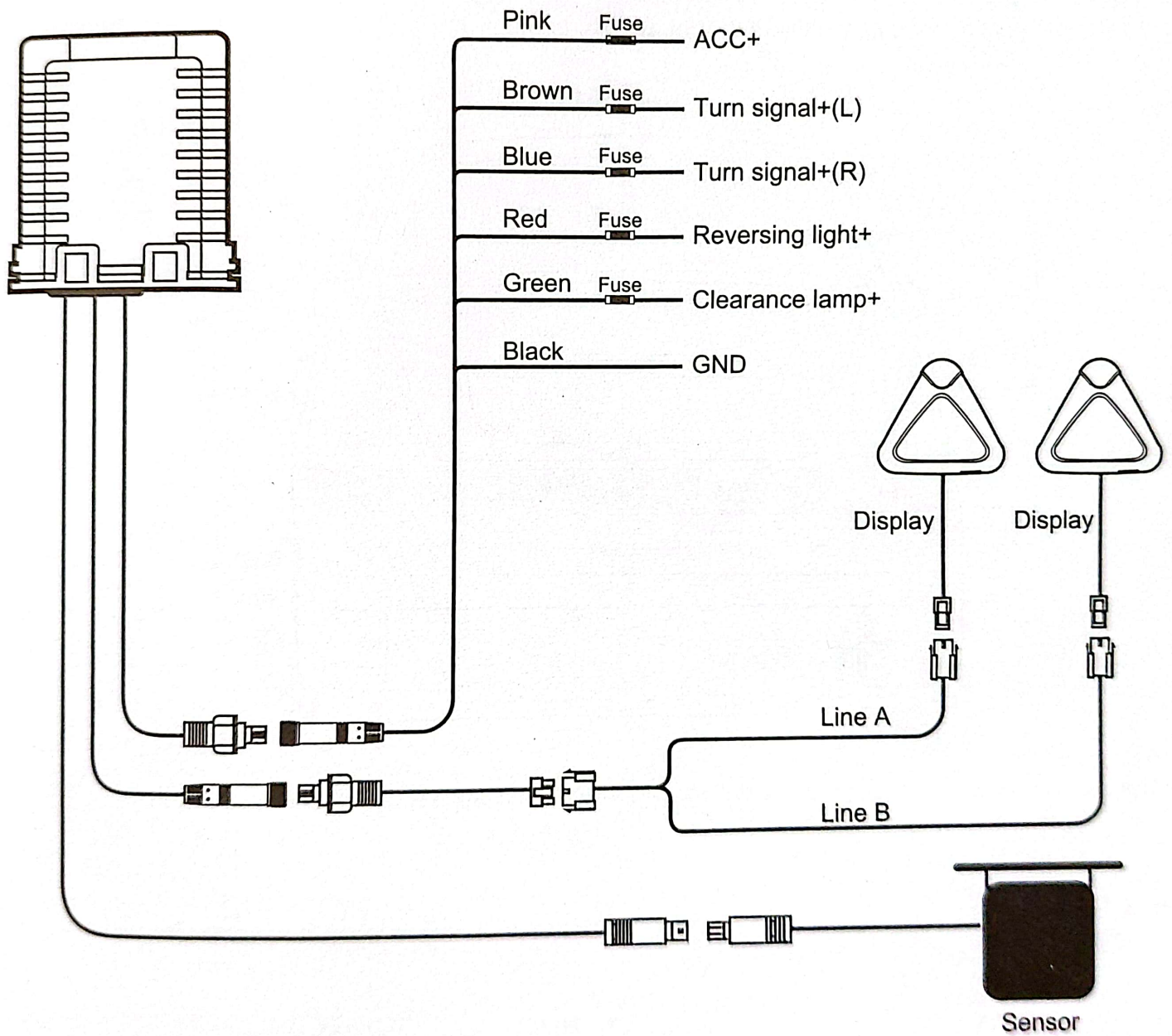


Functional test is performed by turning on the left or right turn signal light, the corresponding direction of display will "Bi" and flash for warning while moving object is closing and enter the detection area.

Installation diagram

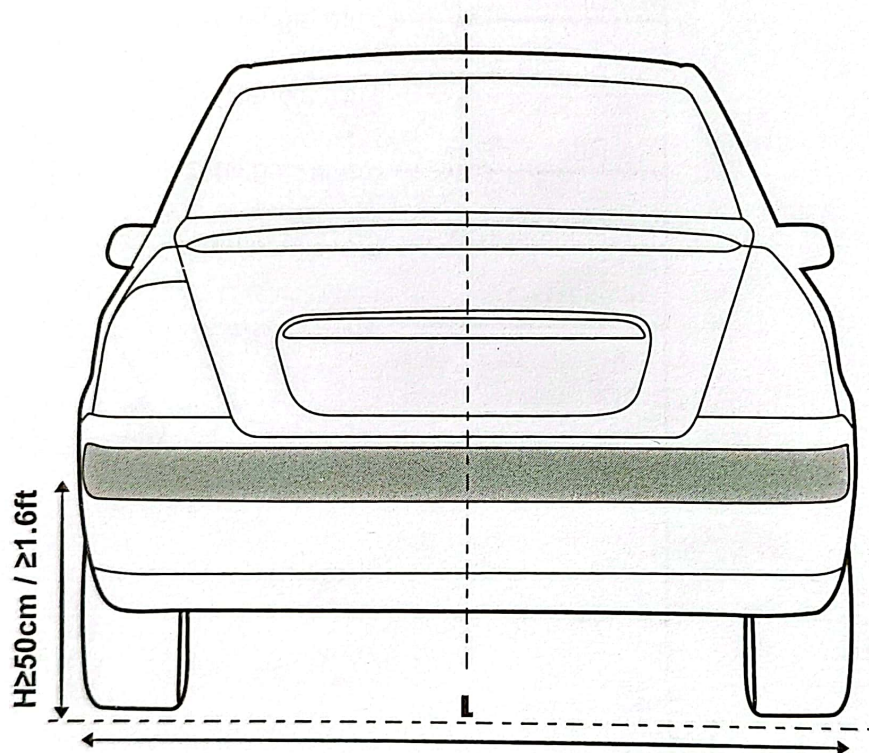


Wiring diagram



Sensor installation

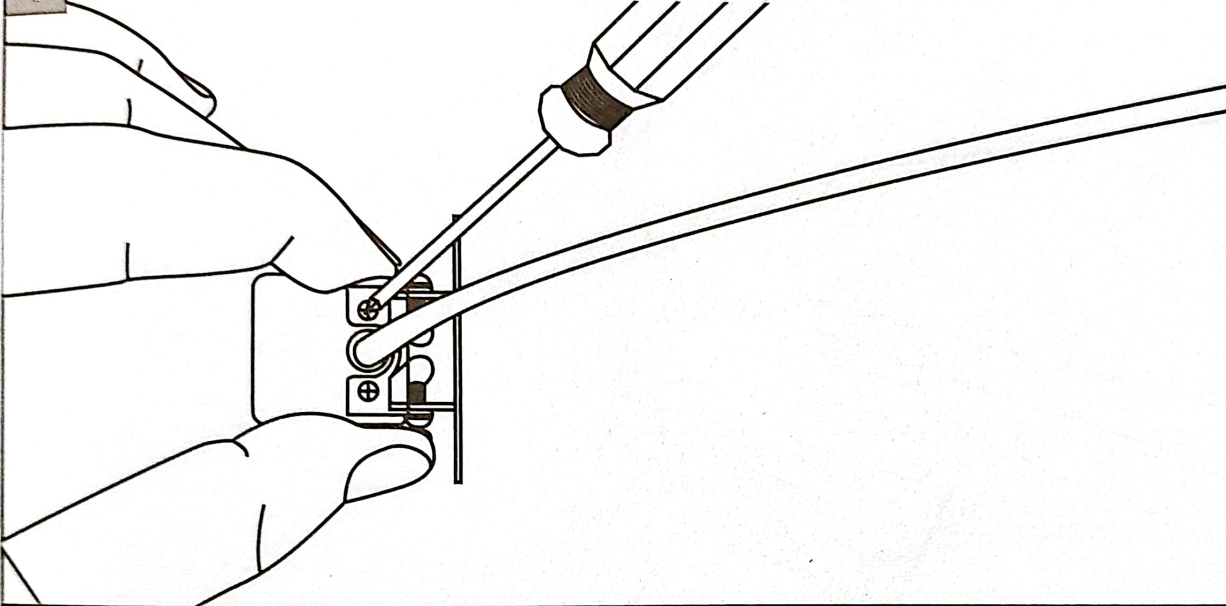
The sensor must be mounted in the middle of the rear bumper.



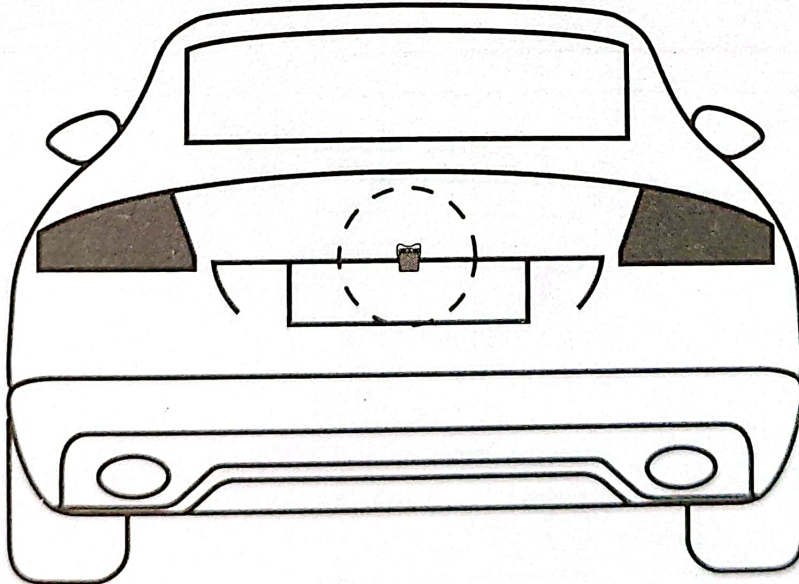
There are two options for sensor installation: Adhesive installation and Screw-in installation.

• Screw-in installation

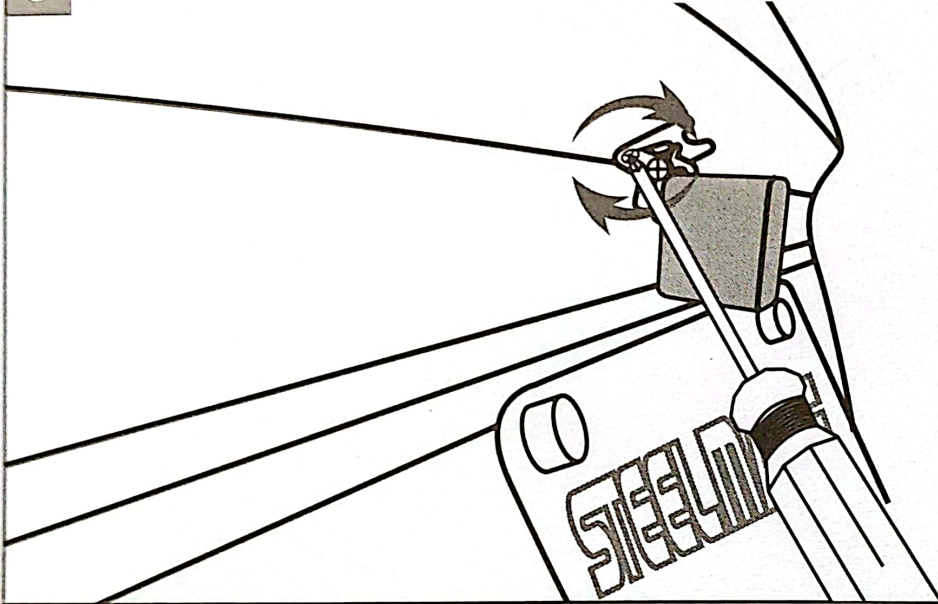
1 Tighten the sensor to the bracket with the supplied screws.



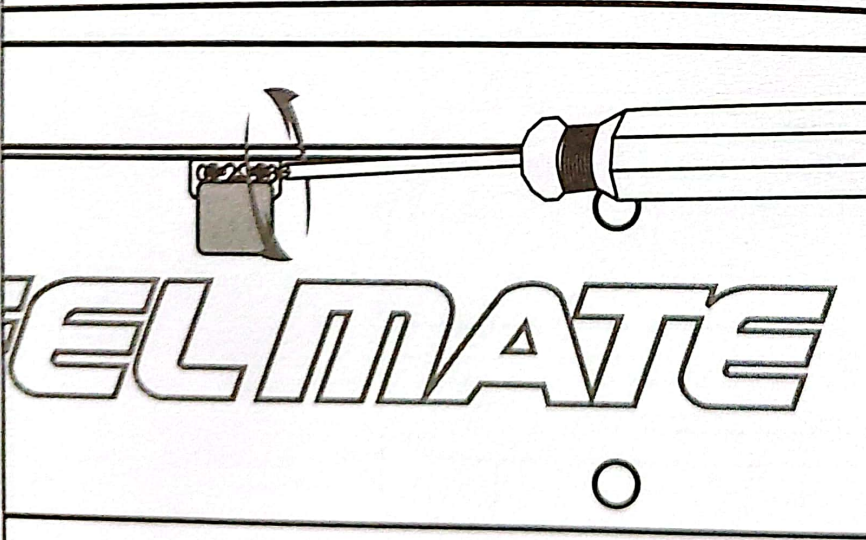
2 Find a suitable location above the license plate.



- 3 Install the sensor on the vehicle with the supplied screws.

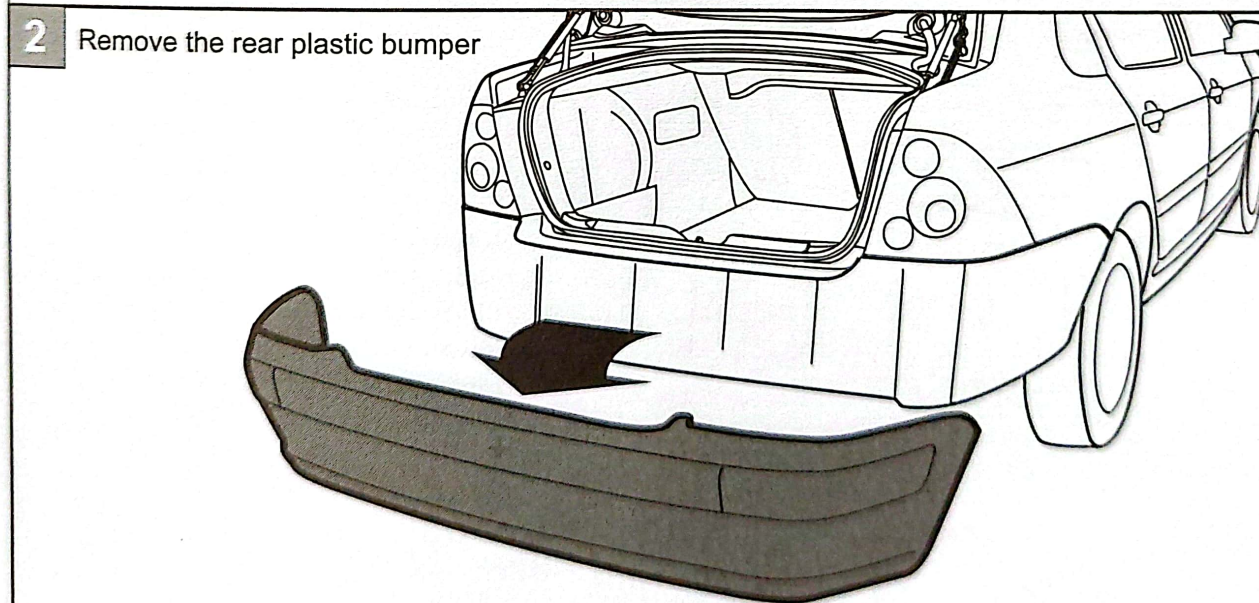
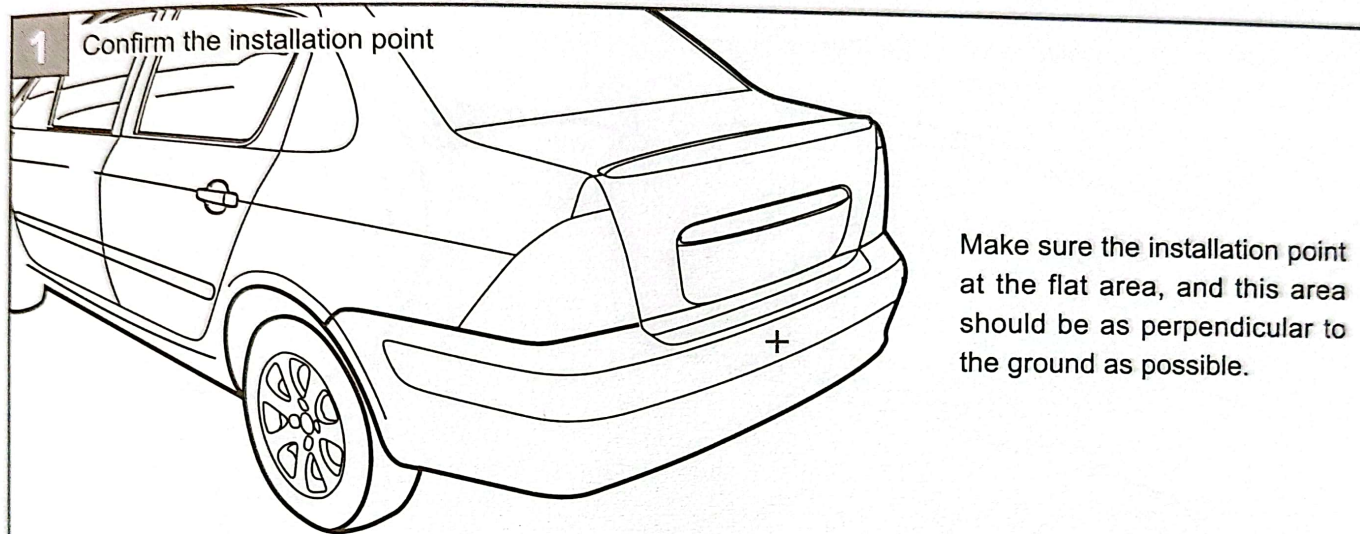


- 4 Adjust the sensor angle, and then use a screwdriver to tighten the side screws to prevent wobbling.



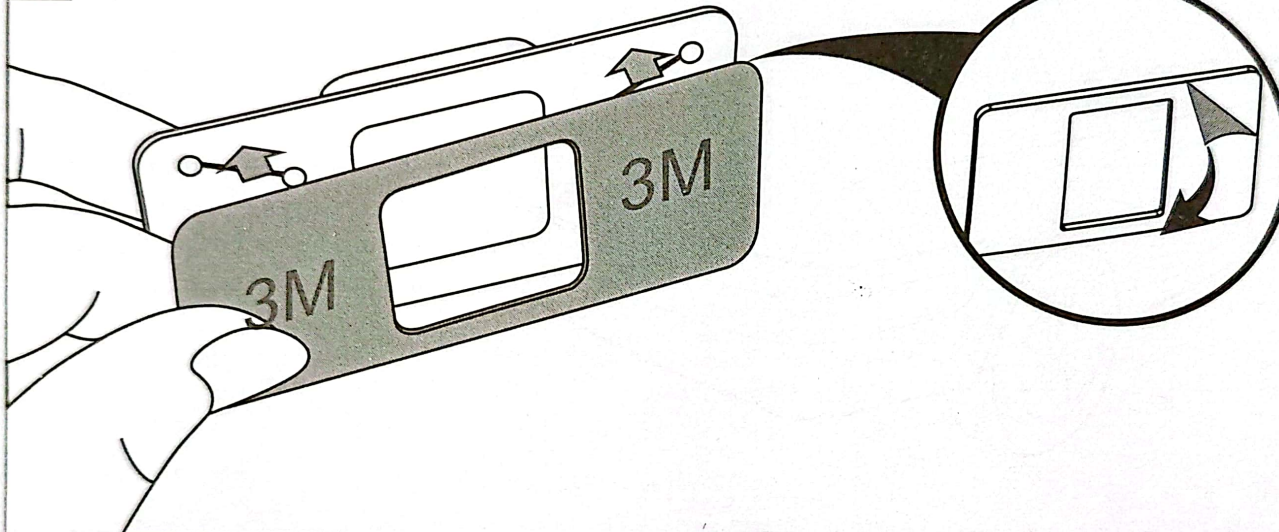
Make sure the sensor surface is perpendicular to the ground.

• Adhesive installation



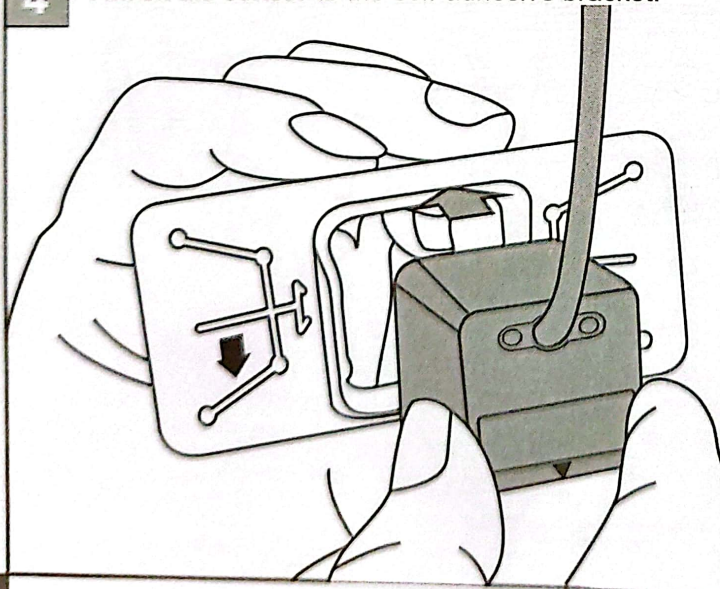
3

Adhere the adhesive to the self-adhesive bracket.



4

Attach the sensor to the self-adhesive bracket.

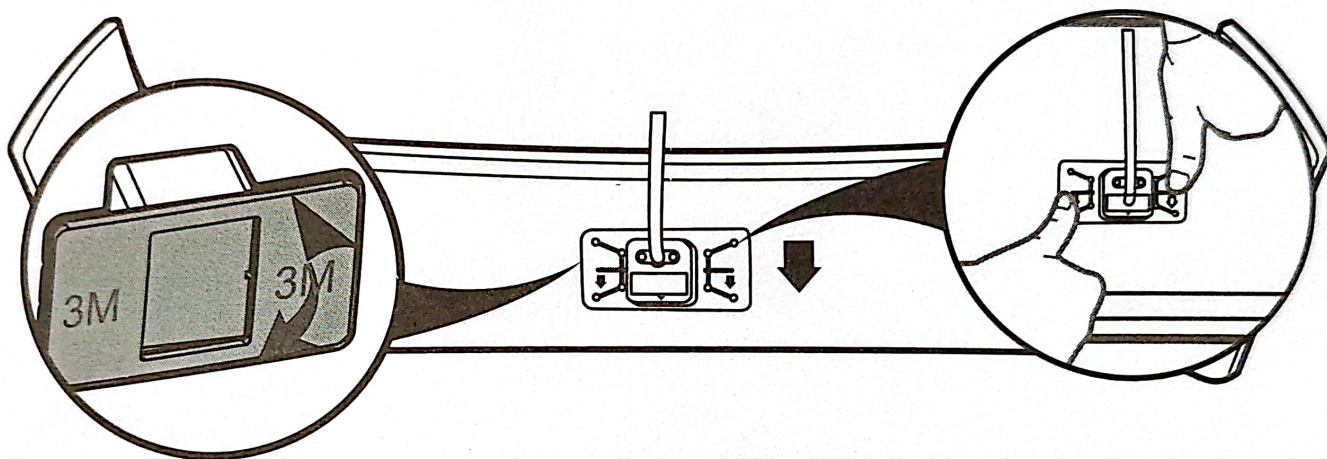


Notes:

- Make sure that the arrow direction of the self-adhesive bracket and the sensor are aligned.
- Make sure that the adhesive does not cover the sensor.

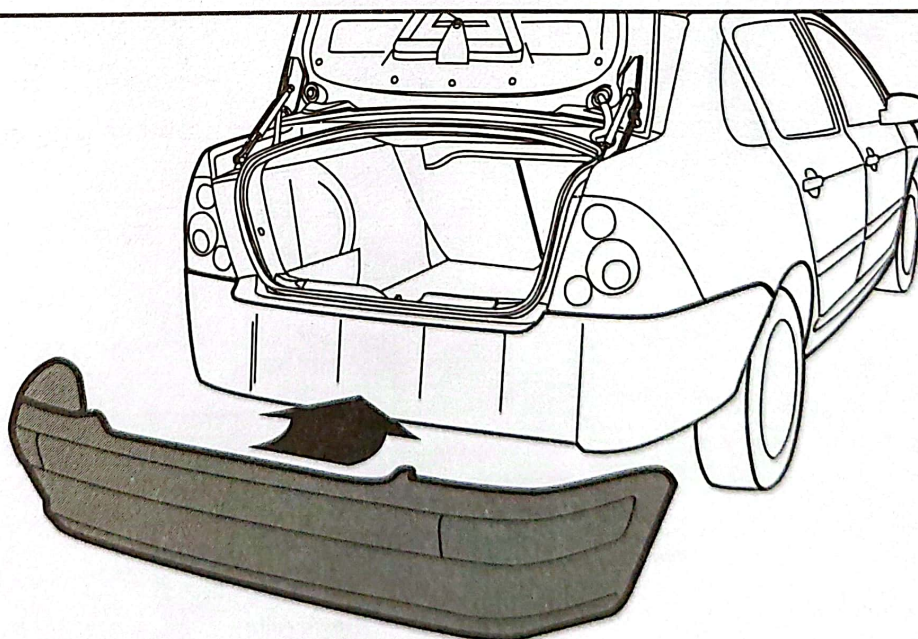
5

Attach the sensor to the inner bumper with the sensor facing down.



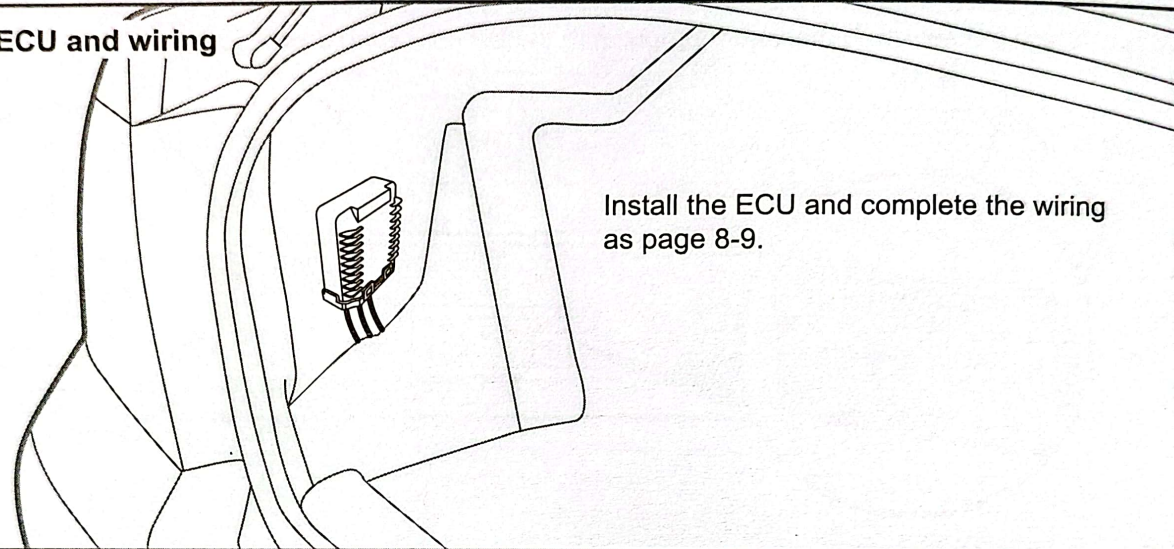
6

Replace the bumper.



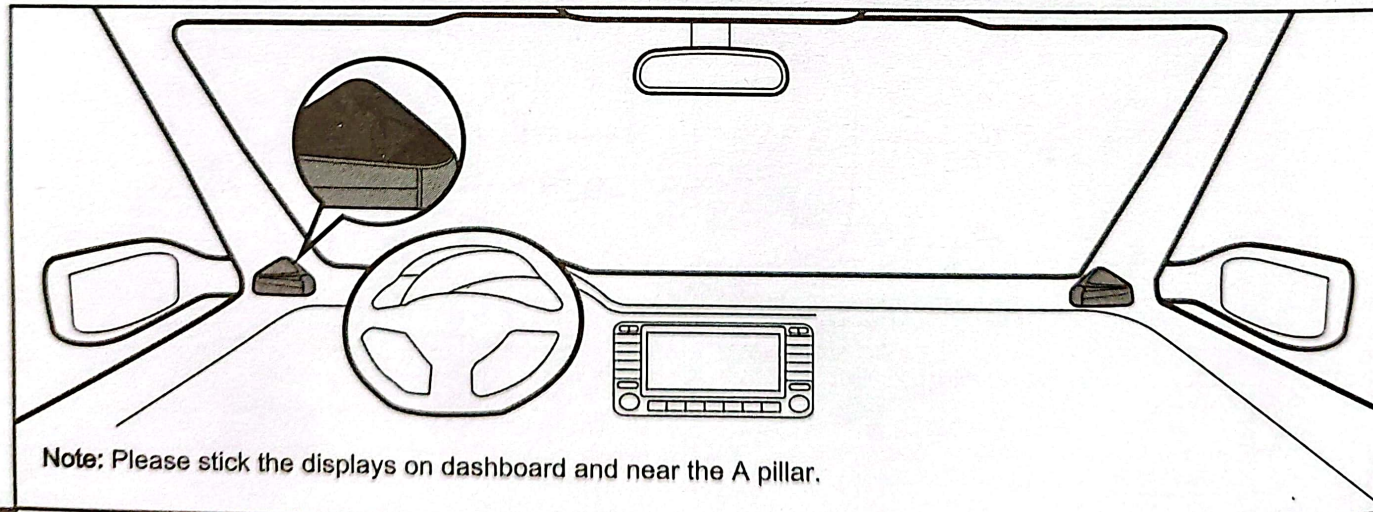
ECU installation

Install the ECU and wiring



Install the ECU and complete the wiring as page 8-9.

Display installation



Note: Please stick the displays on dashboard and near the A pillar.

Troubleshooting

1. Display without any sound

- ACC did not in ON position
- Fuse damaged
- ECU damaged
- Display damaged
- Turn signal cable is improperly inserted
- Display cable is improperly inserted
- ECU cable is improperly inserted
- The hazard warning lights are turned on

2. Display light not turn on

- ACC did not in ON position
- Fuse damaged
- ECU damaged
- Display damaged
- Display cable is improperly inserted
- ECU cable is improperly inserted

3. light always on while there is not moving object.

- ECU damaged
- Sensor damaged
- Sensor cable is improperly inserted

4. Detection area is abnormal

- There is any metal object in front of the sensor
- Installation did not follow the manual
- Stormy weather or heavy snow etc.

5. Wrong alert

- There is any metal object in front of the sensor

6. Display / ECU damaged

- Please go to the auto repair shop for inspection first.
- If still a problem, please buy a new display / ECU from retailer or Steelmate online shop.

Think safety think Steelmate



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