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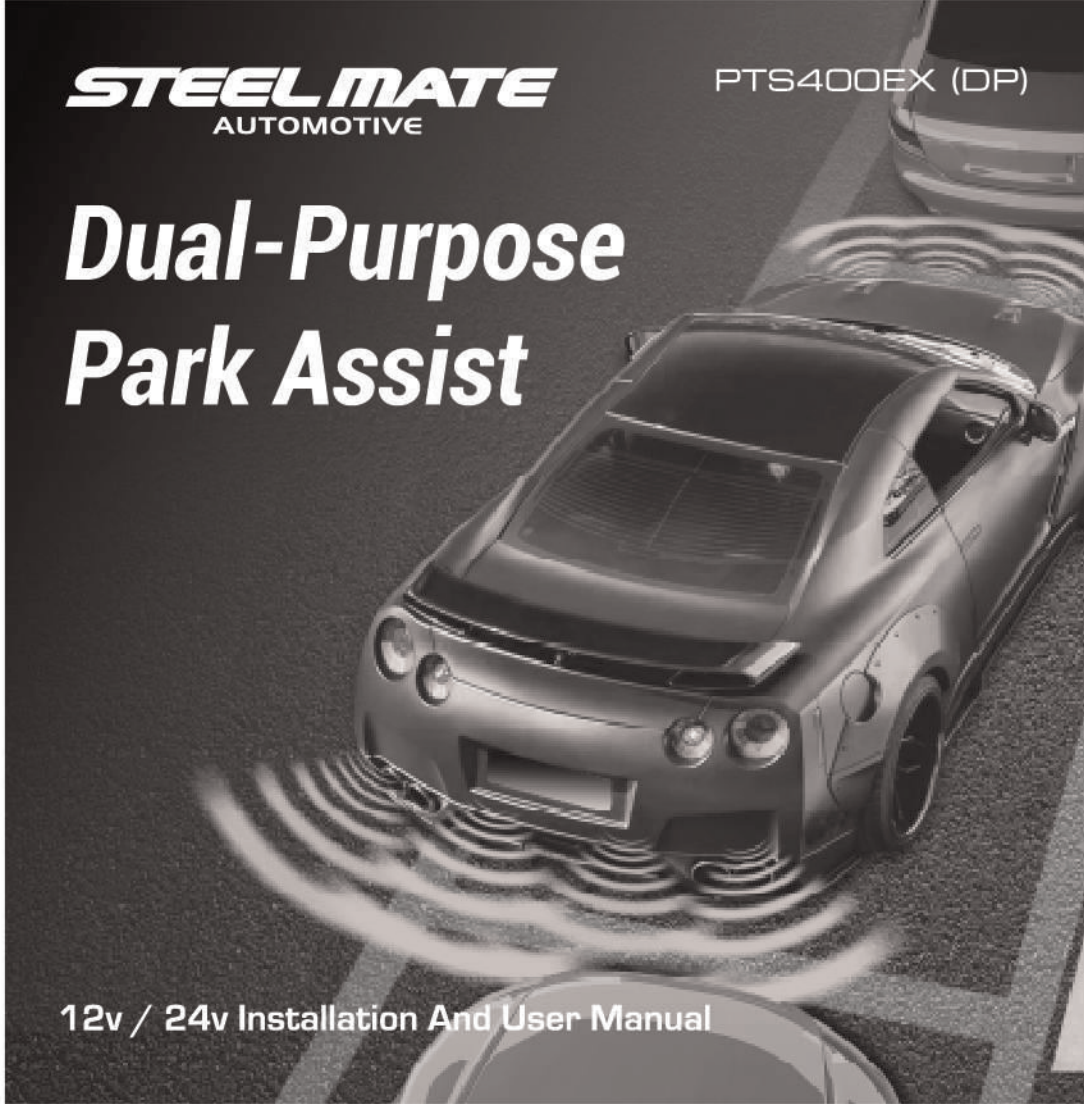
PTS400EX (DP)

Dual-Purpose Park Assist



12v / 24v Installation And User Manual

Contents

User manual

Important notice

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

1. This unit is for vehicles with 12/24V DC only.
2. The system should be installed by a professional auto technician.
3. Wiring harnesses should be routed away from heat sources and other electrical components.
4. It is strongly recommended to check the position of the sensors before actually drilling the holes.
5. Perform a system test after installation.

Disclaimer

The parking 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 manoeuvring must be constantly monitored while parking.

The manufacturer and its distributors do not guarantee or assume liability for collisions or damages while parking your vehicle.

About the product

The PTS400EX (DP) is a 4-sensor parking system that can be used as a front or rear ultrasonic distance monitoring device (Dual Purpose). It electronically detects the area in front or behind your vehicle while driving/parking, and alerts you with audible tones and/or optional visual display, if the system detects an obstacle. If you have one of the optional displays fitted with the digital numbers the system will accurately show the distance to the obstacle. With features like self-test and the learning function, the PTS400EX (DP) is ideal for cars with nudge bars, tow bars, rear externally mounted spare wheels or other protrusions.

The optional visual displays are suitable for dashboard, interior mirror or rear roof mounting. When the display is mounted on the rear roof it can be easily viewed from the interior mirror.

Key features

- Dual purpose, can be used as a front or rear parking system
- Can be used as a 2-sensor system (front or rear)
- Speaker can be upgraded with a visual display
- Learning function for vehicles with nudge bars, tow bars, rear externally mounted spare wheels or other protrusions
- Anti-false alert technology
- Detachable sensors with waterproof cable connectors
- Self-test function
- All weather design

Specifications

Operating voltage:	12/24v DC
Operating current:	<250mA
Detection range	
Front system:	0.3-0.9m/1.0-.3.0ft
Rear system:	0.3-2.5m/1.0-8.2ft
Speaker SPL	
Low frequency:	80+/-10dB
High frequency:	90+/-10dB
ECU:	
Operating temp:	-40°C-+80°C/-40°F-+176°F
Storage temp:	-40°C-+85°C/-40°F-+185°F
LCD:	
Operating temp:	-20°C-+70°C/-4°F-+158°F
Storage temp:	-30°C-+80°C/-22°F-+176°F
LED:	
Operating temp:	-40°C-+80°C/-40°F-+176°F
Storage temp:	-40°C-+85°C/-40°F-+185°F
Speaker:	
Operating temp:	-40°C-+80°C/-40°F-+176°F
Storage temp:	-40°C-+85°C/-40°F-+185°F

2/4-sensor automatic recognition

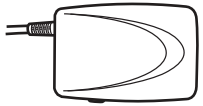
The parking system can be used as a 2-sensor system when fitted on either the front or rear of a vehicle.

When using as a 2 sensor system make sure you connect the two sensors to A & D port on the ECU.

Speaker & Display (optional)

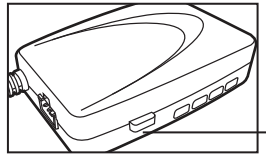
The system can be upgraded to use a visual display. The picture below is for reference only, the actual display may vary.

LED display (optional)


Speaker

Speaker volume & frequency adjustment

Volume adjustment


SET button

With the vehicles ignition on and “R” gear selected press the SET button to adjust the volume to the desired level. Multiple button presses will scroll through the 3 volume levels available.

Note:

- There are 3 volume levels: "High", "Medium", " Low ",
- The default setting: High volume

Frequency adjustment

The speaker sound frequency can be changed making it easier to distinguish if the distance tones are from the front or rear system.

With the vehicles ignition on and “R” gear selected, press and hold the SET button for 3 seconds until a single beep is heard, this indicates frequency adjustment mode has been entered. Release and press the SET button again immediately to change the frequency.

Note:

- There are two frequencies available: “low” and “high”.
- The default setting is the low frequency.

Jumper functions

Front or Rear system

The system can be used as a front or rear parking system (Dual Purpose). This is achieved by changing a jumper on the ECU.

Jumper position: “F”
The system is being used as a front system.

Jumper position: “R”
The system is being used as a rear system.

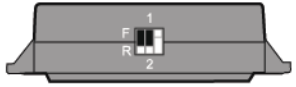
Sensor installation height (Front or Rear system)

Jumper position: “54cm-65cm”
Recommended setting for sensor installation heights between 54cm-65cm from the ground.

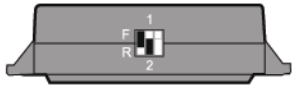
Jumper position: “45cm-54cm” (Default)
Recommended setting for sensor installation heights between 45cm-54cm from the ground.

System on time (Front system)

The system is being used as a Front system (jumper position: “F”)
The front system is activated by pressing the foot brake.
When you press the foot brake and release it, the system will continue to work for some time.



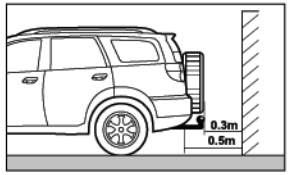
Jumper position: “1” (Default)
The system continues to work for 5 seconds. Recommended for automatic cars.

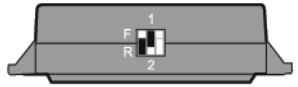


Jumper position: “2”
The system continues to work for 20 seconds. Recommended for manual cars.

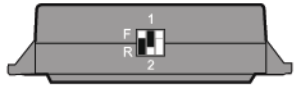
Dual intelligent function for spare wheel (Rear system)

When the system is being used as a Rear system (Jumper position “R”) there is an option to extend the constant tone stopping distance by 20cm from 30cm to 50cm. This function is ideal for vehicles fitted with a tow-bar or rear externally mounted spare wheel.





Jumper position: “1”
(Default)
Normal stopping distance.



Jumper position: “2”
The constant tone stopping distance will be 20cm sooner.

Please note: The optional display will still show a reading of 0.3m before -P even when the jumper is in position 2.

Self-test function

Front system:
When the vehicles ignition is switched on the system will test all sensors automatically.
If all sensors are working the system will work as normal.
If a damaged or defective sensor is detected the speaker will beep 3 times.

For speaker
All sensors are working properly

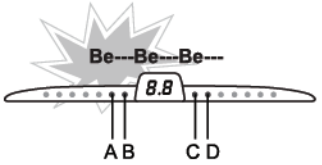
No beep

Damaged or defective sensor is detected

For display
All sensors are working properly

No beep

Damaged or defective sensor is detected



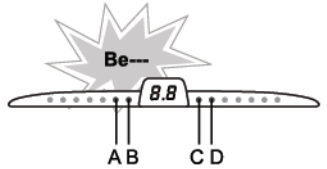
Note:
- 3 beeps indicate at least one faulty sensor, other sensors will continue working after the 3 beeps.
- If an optional display is fitted the location of the damaged/defective sensor will be illustrated on the display.
- If a pair of sensors i.e. A & D or B & C are defective or damaged at the same time the system will work as a 2-sensor system automatically and therefore no error tones will be given.

Rear system:
When reverse gear is selected, the system will test all rear sensors automatically.
If all sensors are working correctly, the speaker will beep once.
If a damaged or defective sensor is detected, the speaker will beep 3 times.

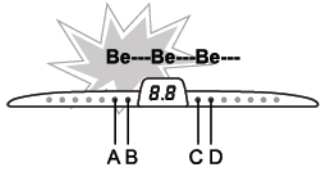
For speaker
All sensors are working properly

Damaged or defective sensor is detected

For display
All sensors are working properly



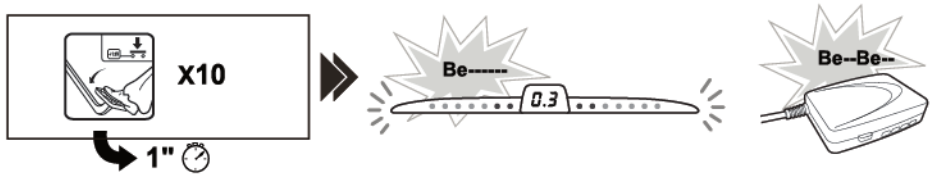
Damaged or defective sensor is detected



Note:
- 3 beeps indicate at least one faulty sensor, other sensors will continue working after the 3 beeps.
- If an optional display is fitted the location of the damaged/defective sensor will be illustrated on the display.
- If a pair of sensors i.e. A & D or B & C are defective or damaged at the same time the system will work as a 2-sensor system automatically and therefore no error tones will be given.

Learning function

Learning function for cars with nudge bars or other protrusions (Front system)



With the ignition on press and release the foot brake 10 times within 1 second intervals. On the 10th press, hold the foot brake down for 6 seconds to complete the learning process.

Clearing the learning function:

With the ignition on press and release the foot brake 12 times within 1 second intervals. On the 12th press, hold the foot brake down for 8 seconds to clear the learning process and reset the system.

Note: The above procedure must be carried out within 3 minutes of the ignition being switched on. If the ignition has been on for over 3 minutes turn the ignition off and back on again.

Tip: If you make a mistake while carrying out the learning procedure release the foot brake for 3 seconds to clear the system memory and then start the procedure again.

Function test after learning function is set.

Learning function for cars with tow-bars or spare wheels (Rear system)

With the ignition on change gear from “N” to “R”10 times. Each gear change must be within 1 second. At the 10th time leave the vehicle in the “R” position for 6 seconds to complete the learning process.

Clearing the learning function:

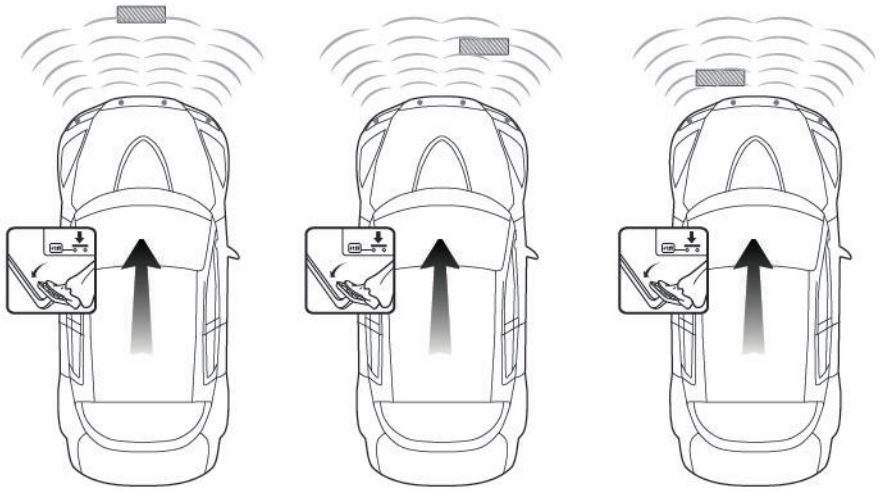
With the ignition on change gear from “N” to “R” 12 times. Each gear change must be within 1 second. At the 12th time leave the vehicle in the “R” position for 8 seconds to clear the learning function and reset the system.

Tip: If you make a mistake while carrying out the above procedure leave the vehicle in the “R” position for 2 seconds to clear the system memory and then start the procedure again.

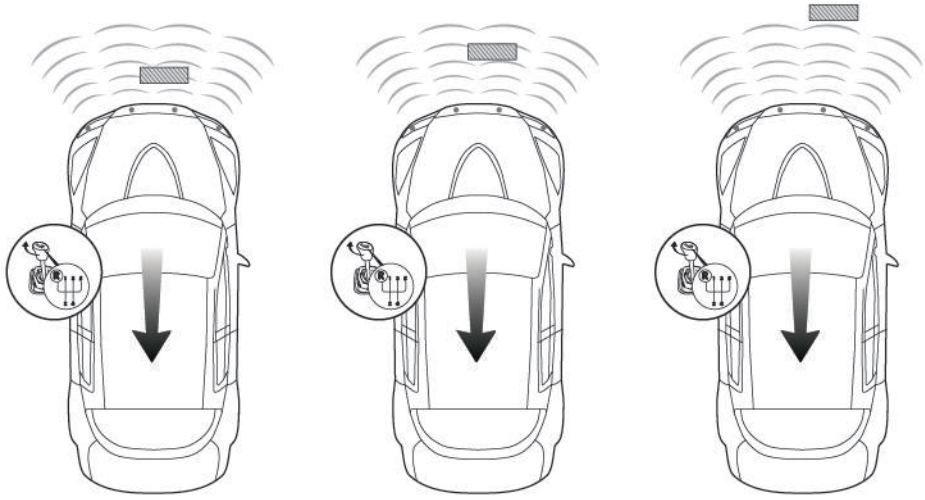
Function test after learning function is set.

How does the system work with the speaker (Front system)

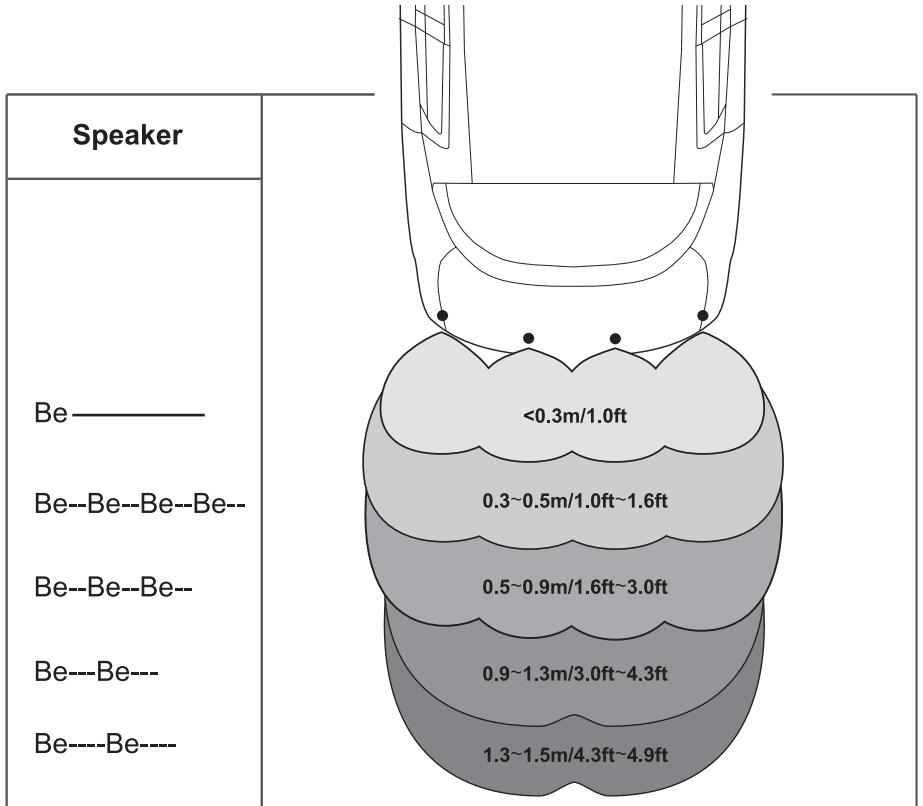
Driving forward, press footbrake



Reversing

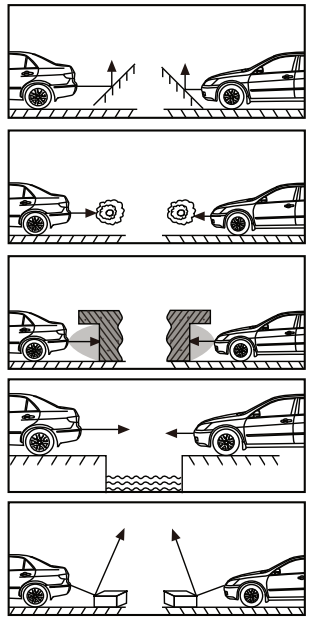


How does the system work with speaker (Rear system)



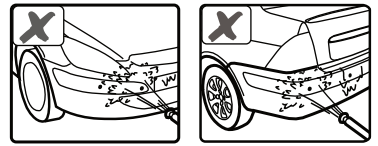
Attention

False detection may occur in the following situations:

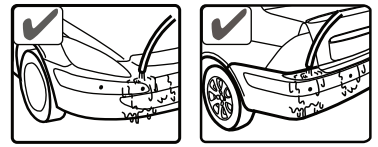


- After installation, please fully test the system before use.
- Heavy rain, dirty or damaged sensors may cause a false alarm occasionally.
- Ensure that the self-test procedure is complete and all sensors are functioning before manoeuvring.

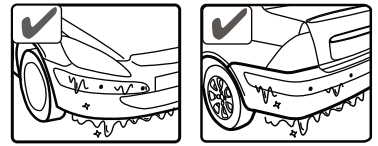
Sensor maintenance



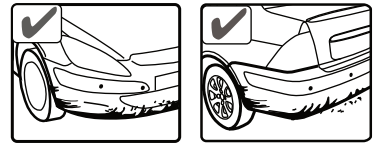
Do not wash the sensors with high pressure or apply too much force.



Please wash the car with low-pressure water.



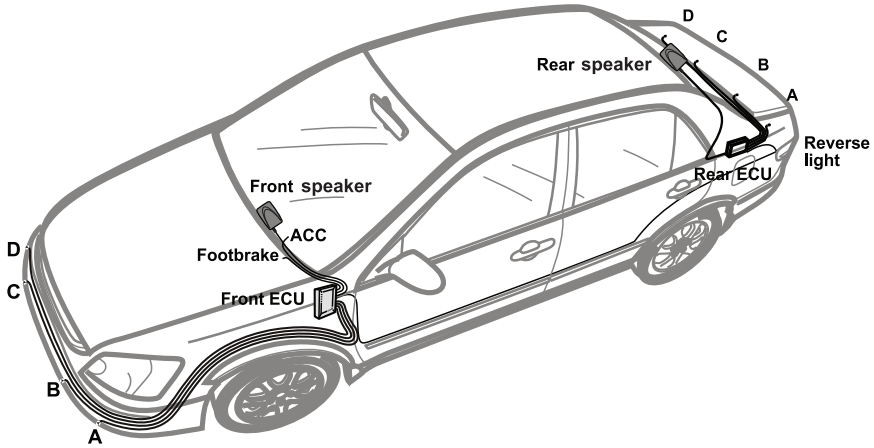
If the sensors are covered with Ice please melt with warm water.



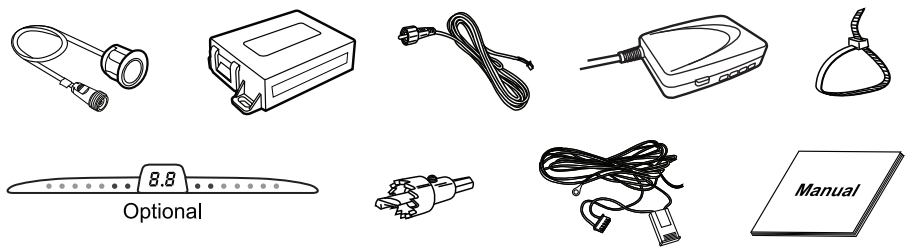
Clean the sensors with a cloth or low-pressure water when the sensors are covered by mud or snow.

Installation Manual

Brief installation diagram

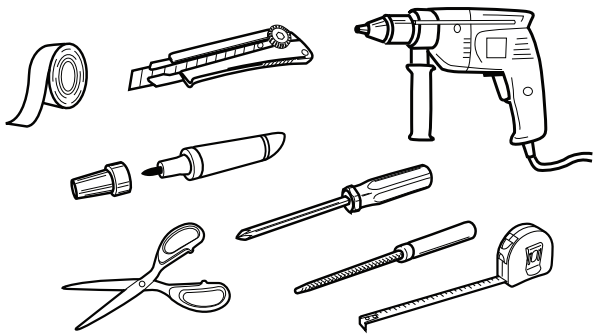


Packing list



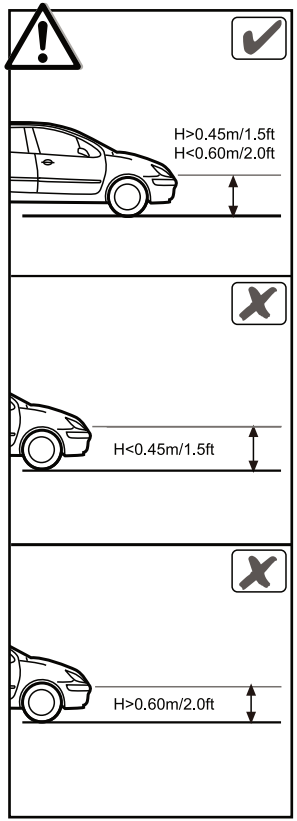
※ The above graphics are for reference only.

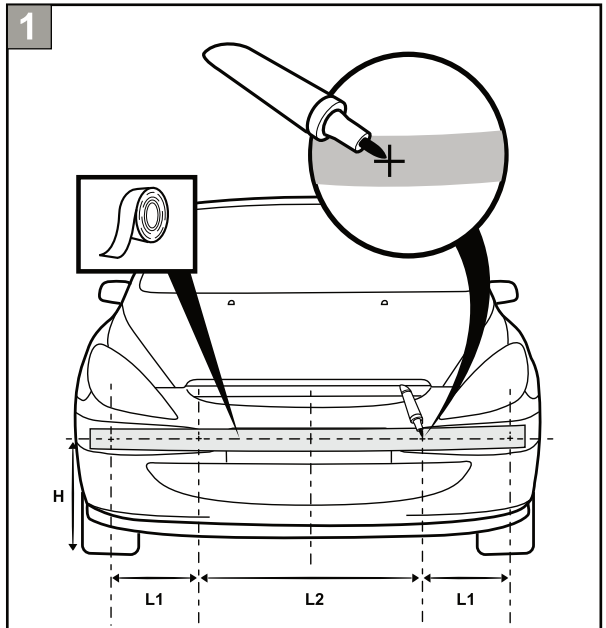
Installation tools



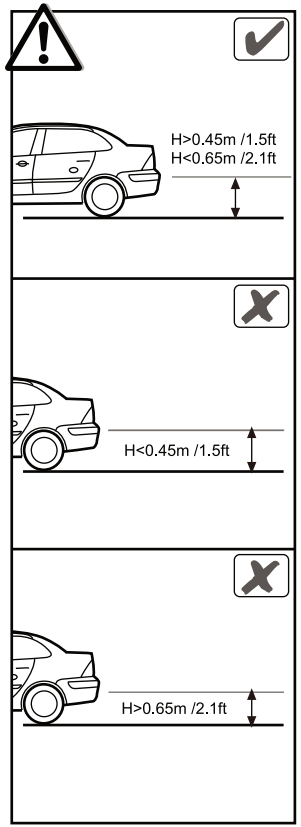
60' ~ 80'

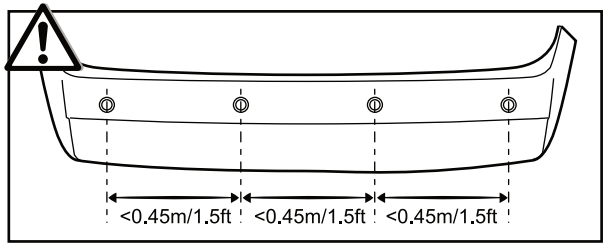
Sensor installation

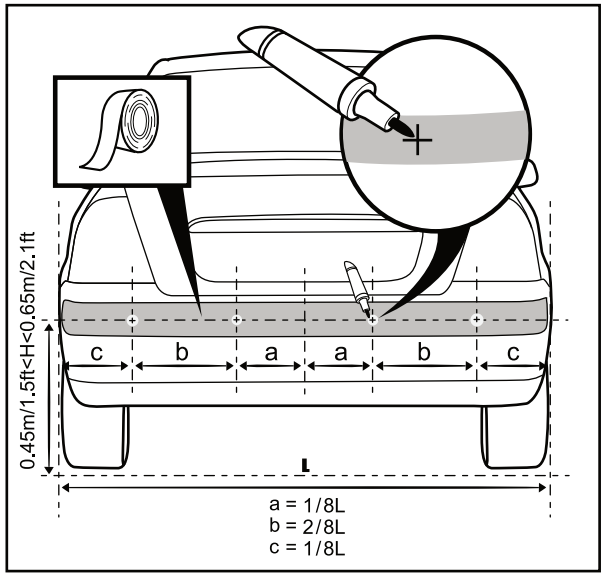




Suggested sensor spacing is 45cm apart. On some vehicles this is unachievable due to the number plate location or bumper design. This will mean the distance between the centre two sensors will be greater (see illustration). The kit will still function, however the system's detection of narrow objects i.e. posts will be reduced.

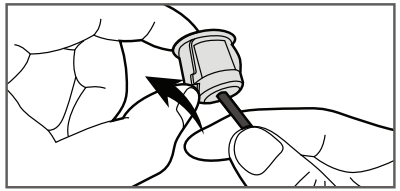


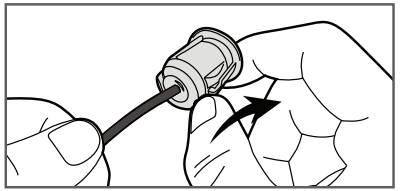


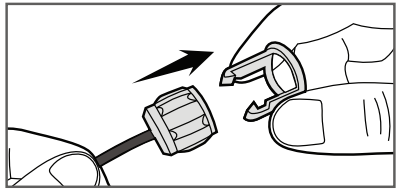


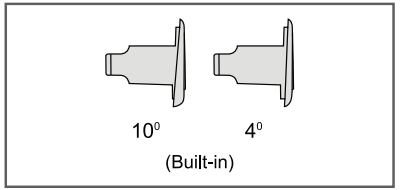
2

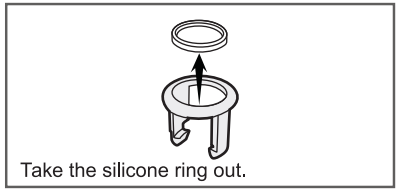
Changing the sensor head angle.



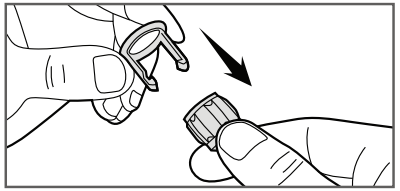


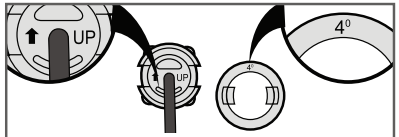




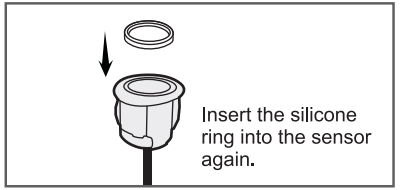


Take the silicone ring out.



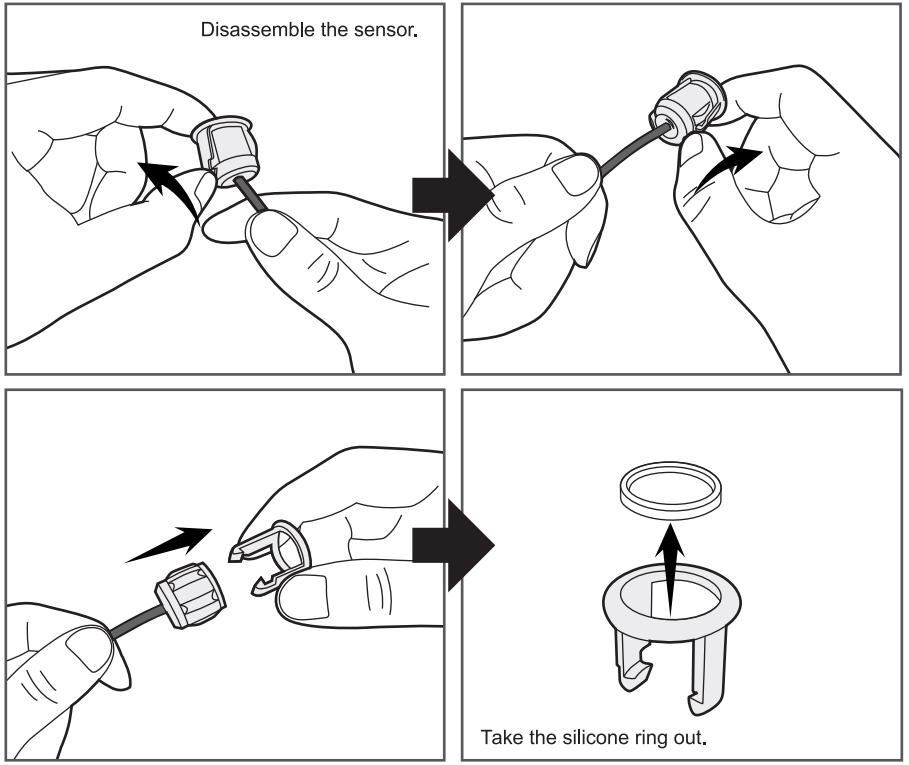


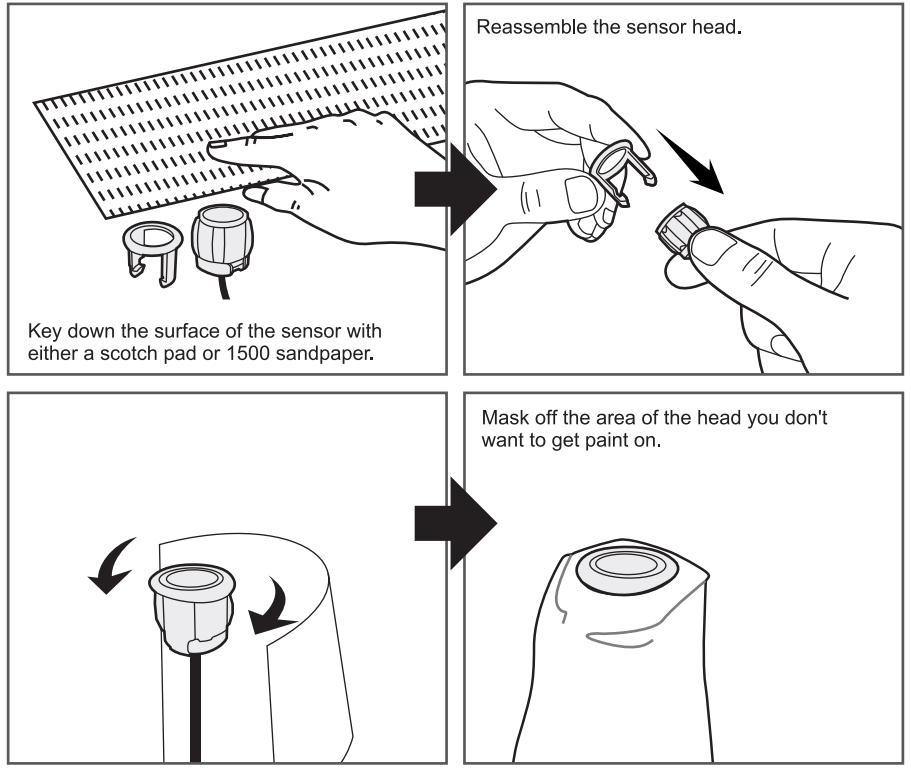
Make sure the degree marking is on top of the sensor.



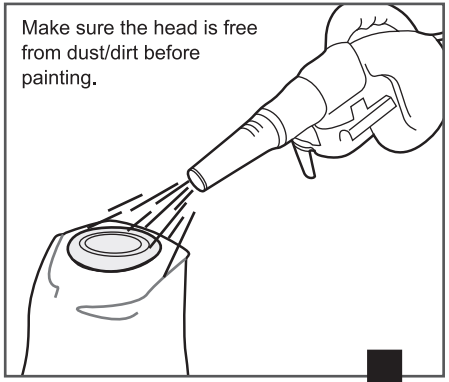
Insert the silicone ring into the sensor again.

2 Painting instructions

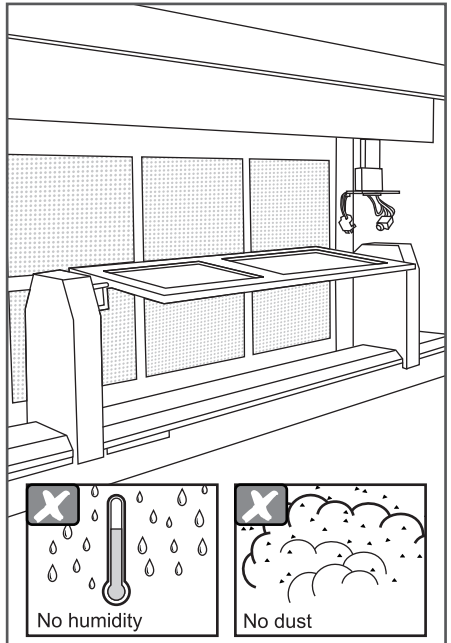




Make sure the head is free from dust/dirt before painting.

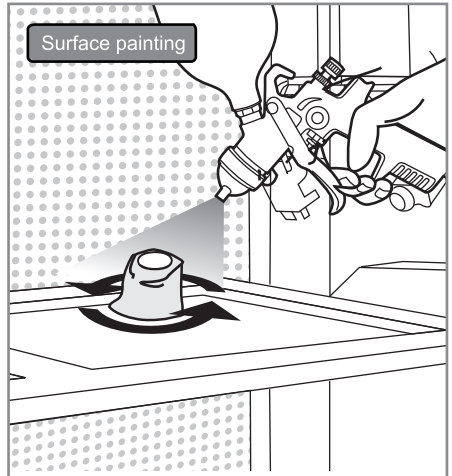


Clean the surface of the sensor thoroughly with a pre paint wipe, do not touch the surface again after cleaning.



The painting should be done in a clean dust free room.

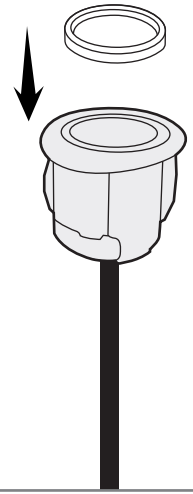
Surface painting



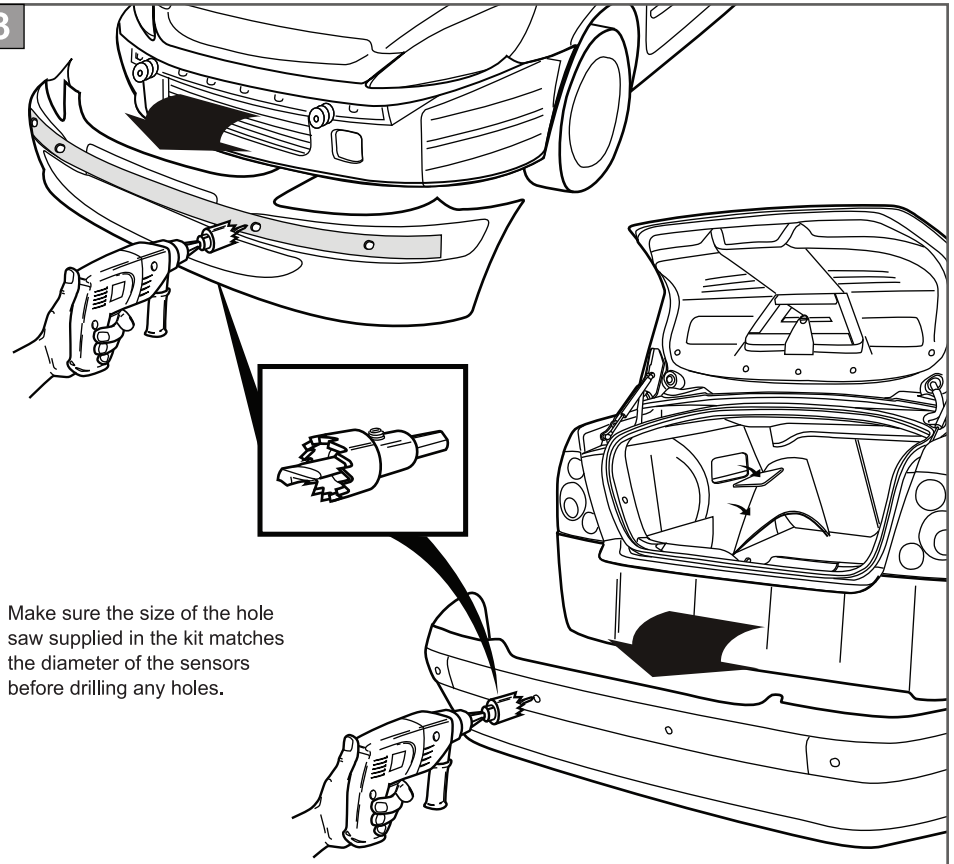
It is generally easier to cover the sensor with paint if you rotate the head while spraying.

When you have finished leave the sensor in a clean dust free room until it has fully dried. Drying times vary depending on the characteristics of the spray paint used.

When the sensor is completely dry, put the silicone ring back in.



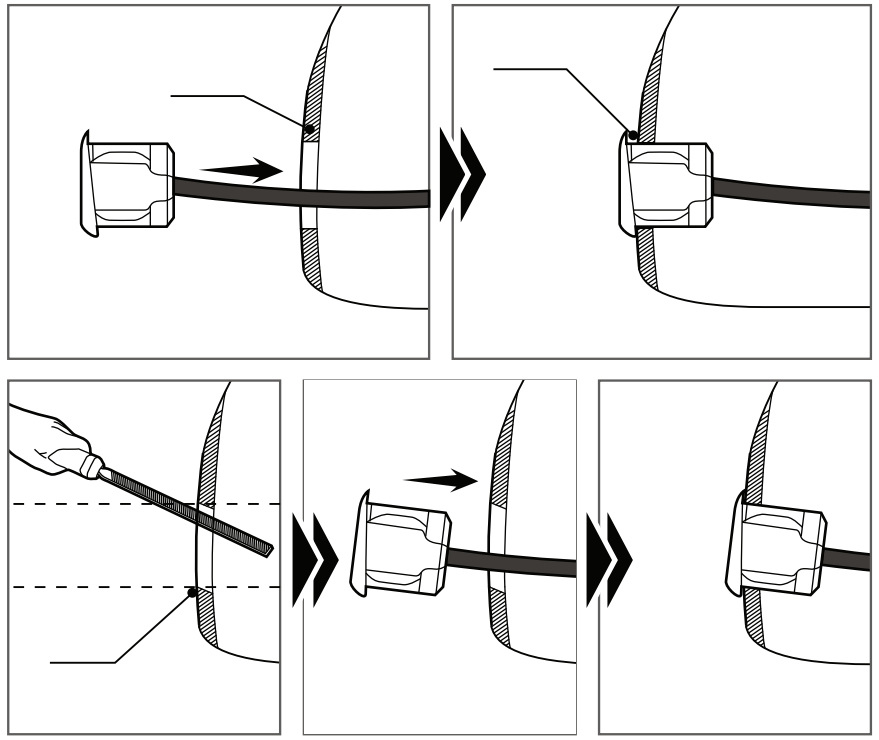
3

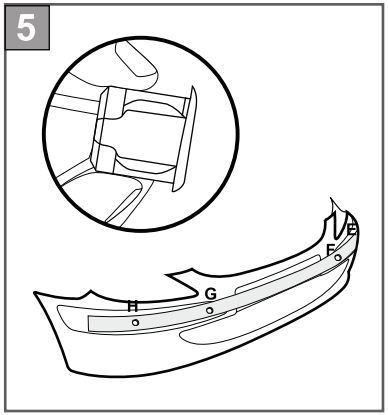


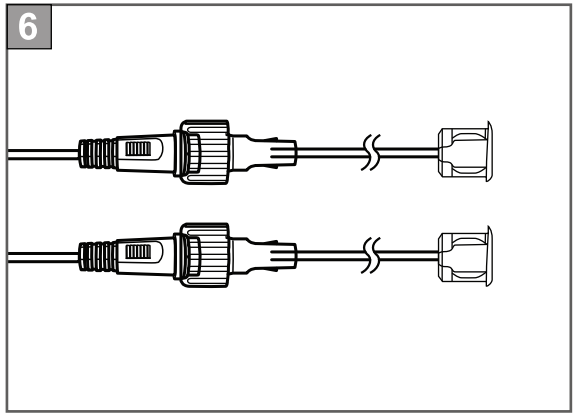
Make sure the size of the hole saw supplied in the kit matches the diameter of the sensors before drilling any holes.

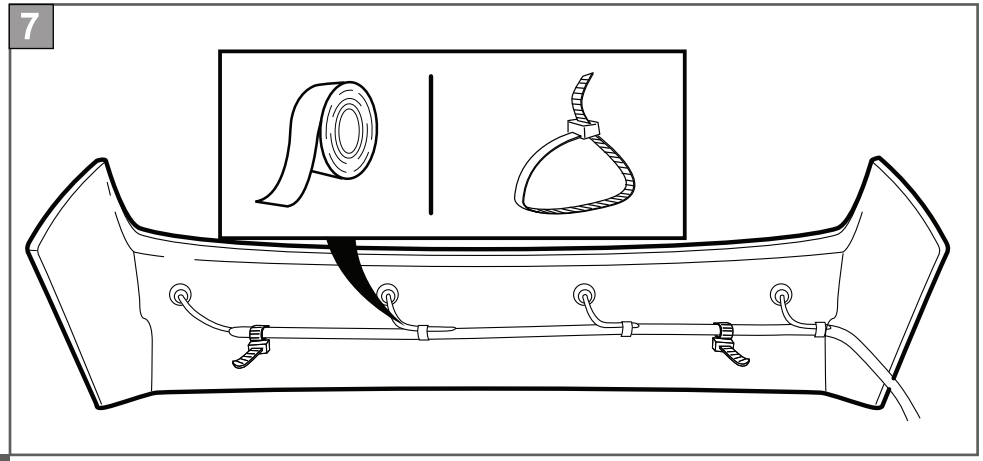
4

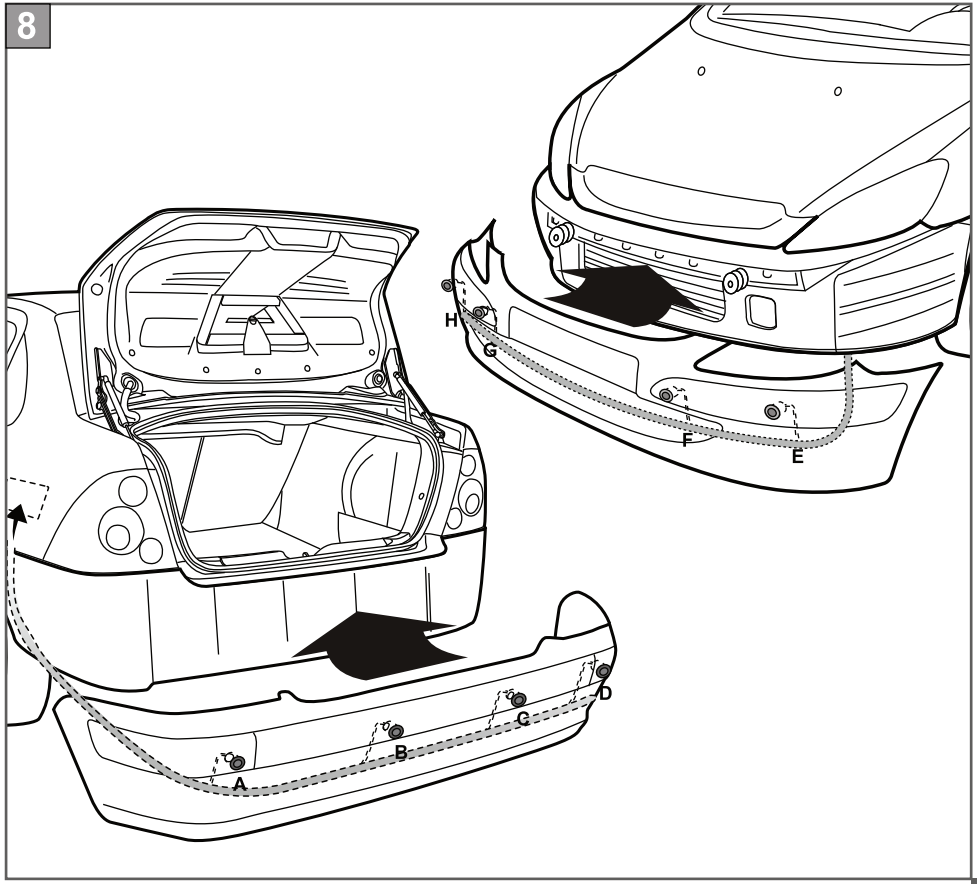
If a gap is found between the bumper and the sensor head when using the 10 degree clip on head, adjust the angle of the hole as shown below.




5
E
F
G
H


6


7


8
H
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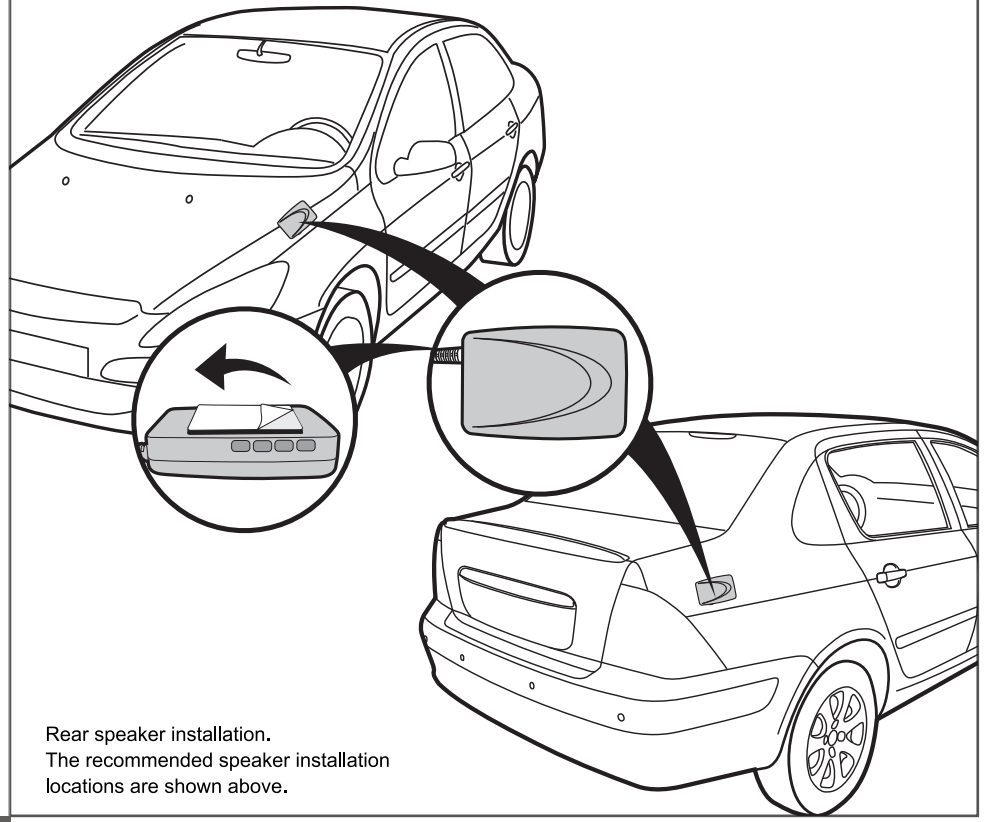
A

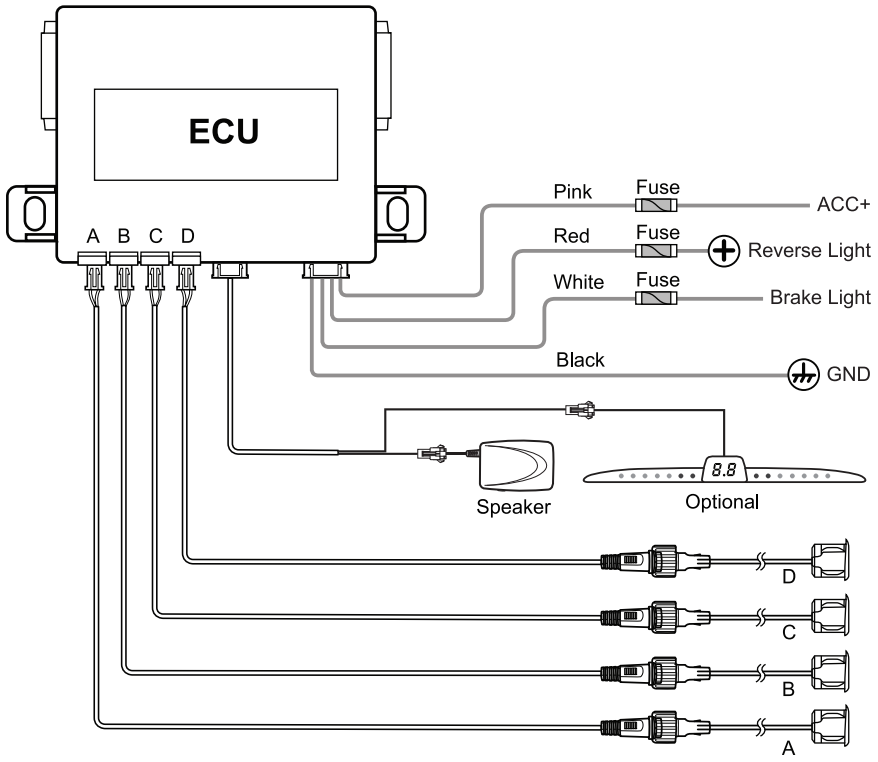
Speaker installation

Front speaker installation.



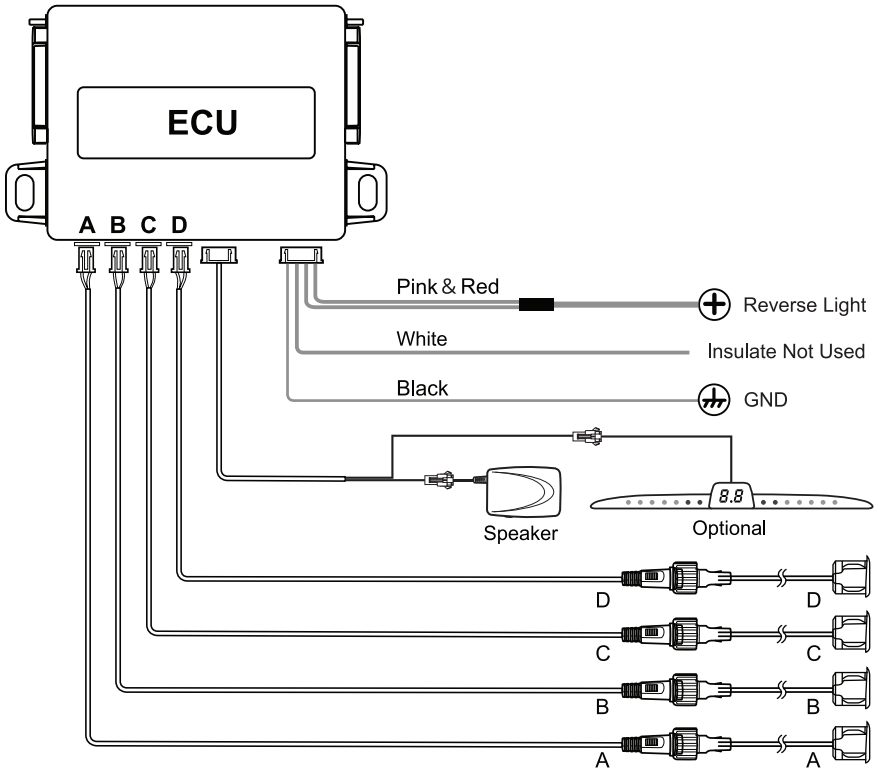
Rear speaker installation.
The recommended speaker installation locations are shown above.

Wiring diagram (Front ECU)



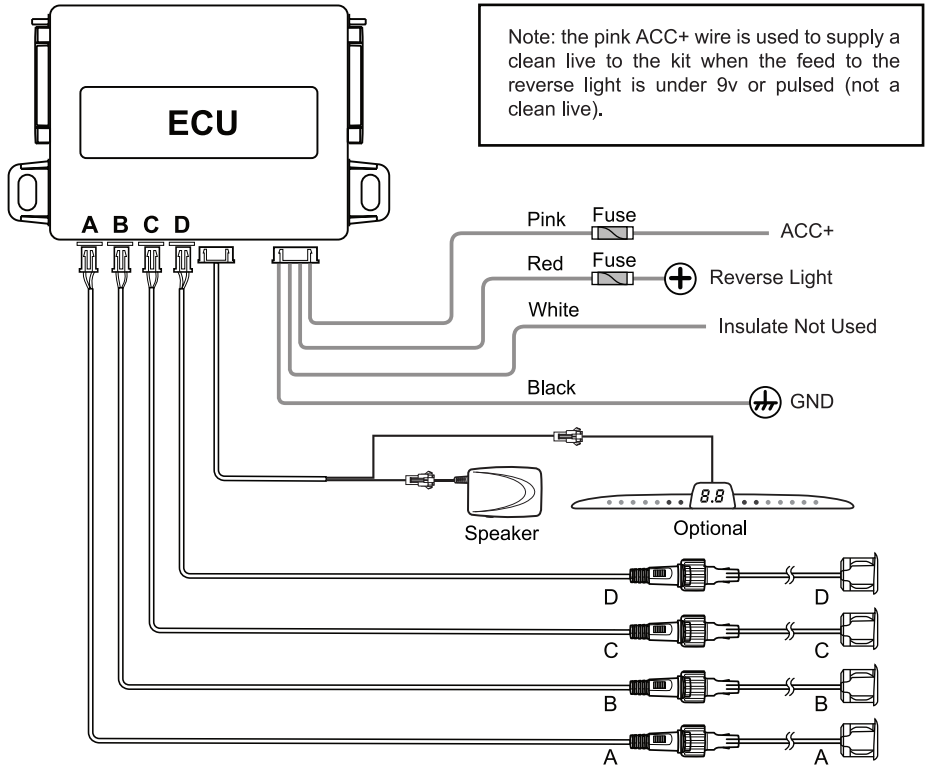
Note: connect A&D sensors if you want to achieve a 2-sensor system.

Wiring diagram (Rear ECU) 1



Note: connect A&D or B&C sensors if you want to achieve a 2-sensor system.

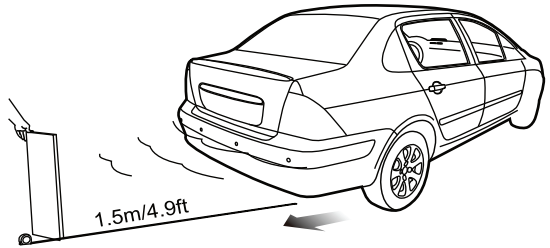
Wiring diagram (Rear ECU) 2



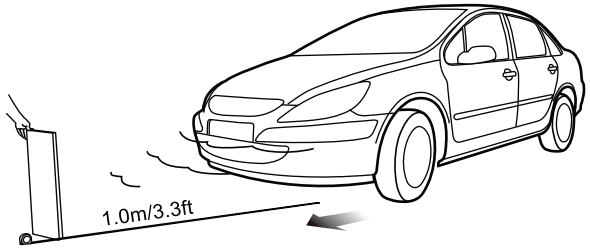
Note: connect A&D or B&C sensors if you want to achieve a 2-sensor system.

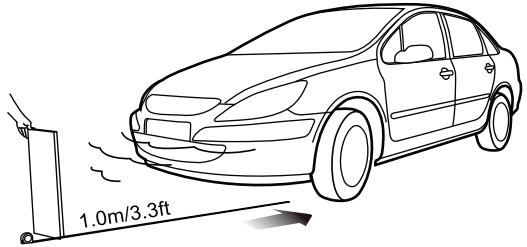
Function test after installation

Complete the function test by using a wooden board (0.3 x 1.0m/1.0x3.3ft).Get someone to hold the board vertical, then drive the car towards it for front or reverse up to it for rear, making sure it is detected correctly by the sensors.



Rear sensor function test





Front sensor function test

Troubleshooting

After installation, the buzzer doesn't work
a) Are all the cables connected properly?
b) Is the vehicles ignition on?

Damaged sensor detected
a) Are all sensors plugged into the ECU correctly and tightly?
b) Is the sensor wire broken or damaged?
c) Is the sensor covered by mud or snow?
d) Is the sensor damaged?

False warning
a) Are all sensors plugged into the ECU in the correct position tightly?
b) Does any sensor detect the ground?

If the problem persists, please contact technical support.

Warranty Card

Dear customer.
Thank you for choosing a Steelmate product.
Please fill in the form below and retain it for your records.

Customer Details:

Date of purchase:
Vehicle make/model:
Vehicle reg no.:
Product model no.:
Serial no.:
Date of installation:
Name of the retailer:

Warranty information

Dear customer:
Thank you for choosing a Steelmate product. This product comes with Steelmate Automotive UK's standard 5 year warranty.

Our standard 5 year warranty only covers parts. Steelmate are not liable and will not pay any labour costs incurred during the removal and/or re-installation of warranted equipment or parts. The 5 year warranty applies only to the original end user/customer of the product for so long as the original end user/customer owns the product. The warranty is not transferable. When making a warranty claim you will need to obtain a returns (RMA) number from us and it is essential to provide your product serial number on all warranty correspondence. All warranty claims should be processed as per the instructions on our website under the warranty section and proof of purchase must be provided with all claims.

Our warranty department is open from 09:00-17:30 Mon-Fri and can be contacted by telephone on 01582 475677 or by email (warranty@steel-mate.co.uk) should you require any further assistance.