

SUBARU OUTBACK

Rear Obstacle Detection System 2004 onward

ENSURE THE “SET-UP PROCEDURE” IS CARRIED OUT FOLLOWING INSTALLATION (See Pg 5)

OUTBACK APRIL 04 MODEL ONWARDS

System Part No: XXXXXXXXXXXXXX

Before commencing the installation, it is essential to carry out a pre-installation inspection.

1. Inspect the vehicles interior and exterior condition and not any damage.
2. Verify electrical ancillary equipment operation
3. Disconnect the vehicle’s battery prior to commencing and note any security codes.

KIT COMPOSITION



NOTE:

It is essential to **read all the “Key Points Of The Installation” details** listed prior to commencing the installation.

TRIM REMOVAL

The following trim components will require removal prior to installation: -

- Clip-off panel from offside quarter panel liner
- Offside quarter panel liner
- Upper rear trim panel above rear offside quarter panel liner
- Floor panel and carpet panel above spare wheel
- Cross trim panel surrounding boot retaining catch
- Rear offside light assembly

KEY POINTS OF THE INSTALLATION

- A. Prior to routing the sensor leads ensure the white “identification collar tabs” around the sensor leads are secured in position with insulation tape. This will prevent the collars being trapped behind grommets etc during routing. Each lead is numbered and will require identification when connecting to the ECU.
- B. NOTE: The two **inner sensor leads (2 & 3) are 2.metres** in length and the two **outer sensor leads (1 & 4) are 2.5 metres** in length.
- C. The leads to each sensor eye must be run in numerical order 1,2,3 & 4 across the bumper from left to right. Each lead must then be connected to the appropriate numbered port on the ECU.
- D. Ensure that the small spot on the front of each sensor eye is located at the top when inserting the sensor eyes in position. **Ensure** the sensor eyes are not located in place to tight, as this will significantly affect performance.
- E. Do not apply tension to the leads during routing, as this may result in disengagement and possible damage to the sensor eye.
- F. Should the sensor eyes require spraying to body colour, please refer to the section “Spraying The Sensor Eyes” in the Subaru Rear Obstacle Detection Universal installation manual.
- G. **It is essential** to treat any drilled holes with a Subaru approved anti-corrosion paint.
- H. Following installation, carry out the “System Set-up Procedure” on Pg 5, and leave the Blue loop wire ends in an accessible position for ease of access.
- I. **NOTE: During system Set-up**, in the event a **single intermittent tone** is emitted during the 10 - 30 seconds set-up cycle (see Pg 5, Set-up Procedure) this **indicates the set-up was unsuccessful**. During System Set-up, avoid walls with drainpipes or other surface objects that may adversely influence set-up. Ensure the vehicle is **parallel with the wall and exactly 50cm from the wall**, If no tone at all is heard during the 10 – 30 second set-up cycle, this indicates one or more of the sensor eyes are not connected.

SENSOR LOCATIONS

The sensor eyes are to be installed in the bumper panel (It is not necessary to remove the bumper). Ensure any guidelines marked on the bumper can be wiped away without trace.

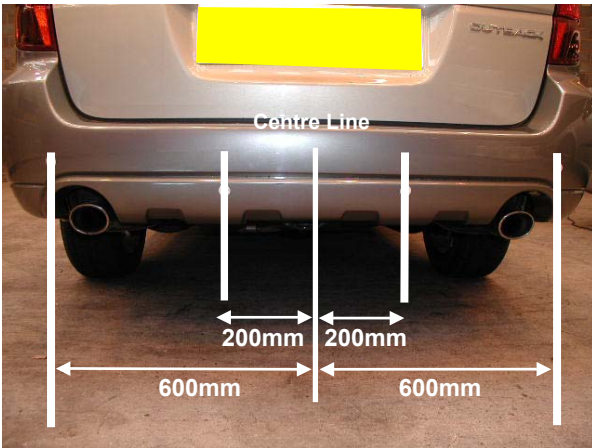


Diagram 1

Locate the centre of the bumper and mark a vertical line.

NOTE: Use a variety of measurements to ensure the centre line is accurate.

From the centre line, carefully measure out 600mm in each direction and mark the two outer sensor location points. See diagram 1.

OUTER SENSOR LOCATION POINTS



Diagram 2

Measure 66mm from the moulding line (on the curved edge) and mark the point where the two lines cross. See diagram 2.

NOTE: It is essential to take additional measurements to ensure the 4 sensors eyes follow a straight line across the bumper and are symmetrically aligned.

INNER SENSOR LOCATION POINTS

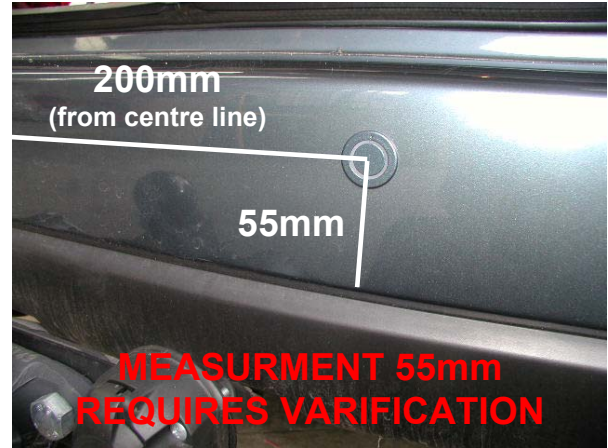


Diagram 3

From the centre line, carefully measure out 200mm in each direction and mark the two (lower) inner sensor location points.

Measure 55mm up from the edge of the bumper moulding line and mark the point where the two lines cross. See diagram 3.

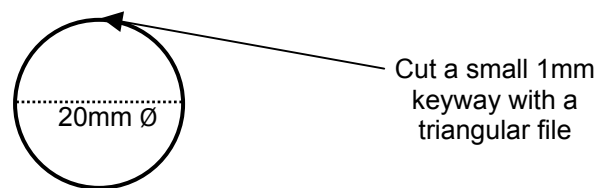
NOTE: It is essential to take additional measurements to ensure the 4 sensors eyes follow a straight line across the bumper and are symmetrically aligned.

DRILLING DETAIL

Take time to confirm all your measurements (and those listed) are correct and accurate.

Following confirmation, drill a 2mm Ø pilot hole through the bumper at the 4 location points. Use a hole saw & arbor to open the holes to exactly 20mm Ø.

Following drilling, Use a small triangular file to cut a small 1mm keyway in the top of the 20mm hole, this is to accommodate the locating tab (on the rear of the sensor eye) and allow the sensor to be mounted with the correct orientation.



CONNECTING THE SENSOR EYE LEADS

Insert the numbered lead of each sensor through their respective holes in the bumper numbered, 1 – 4 (1=Outer Left, 4=Outer Right).

Connect the sensor leads to the rear of the sensors eyes, ensure the connectors click into place, and fit the rubber sealing boots.

Insert the sensors into the bumper and verify the locating tabs are at the top.

The sensor eyes should locate in position with a little pressure only.

SENSOR CABLE ROUTE

Drill a 20mm Ø hole on the side panel just below the existing grommet behind the offside rear light assembly see diagram 4.

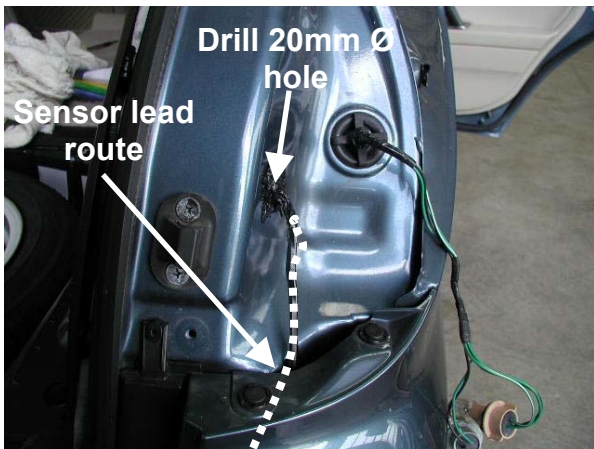


Diagram 4

Route the 4 sensor leads from the bumper chamber (pilot wire may assist) through the grommet supplied and route through to the vehicle's offside rear chamber behind the quarter panel liner.

Apply protective tape to the grommet and ensure a watertight seal.

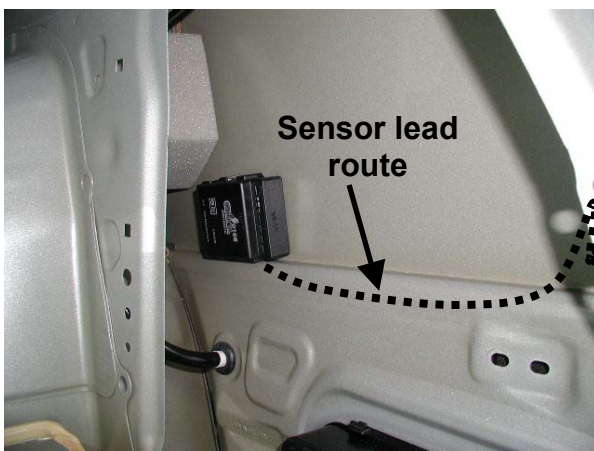


Diagram 5

Secure the leads at regular intervals within the bumper chamber using cable ties. Ensure a small coil of cable is left behind the bumper in order to facilitate any future removal of the bumper.

Route the leads through to the ECU position behind the offside rear quarter panel liner, (see diagrams 5 & 6).

Insert the numbered sensor leads into the appropriate port on the ECU.

ECU



Diagram 6

Connect the main harness/power leads into the ECU "PWR" port.

Mount the ECU in position to the offside inner chamber panel as indicated in diagram 6. Secure in place using the large adhesive pad provided.

BUZZER LOCATION

Mount the buzzer to the upper section of the rear offside panel (using the double-sided pad provided). See diagram 7.

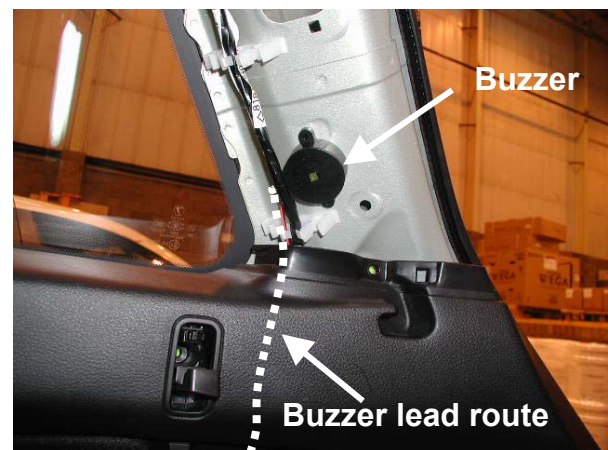


Diagram 7

Route the buzzer lead through to the ECU and connect the buzzer into the port marked "BUZ".

ELECTRICAL CONNECTIONS

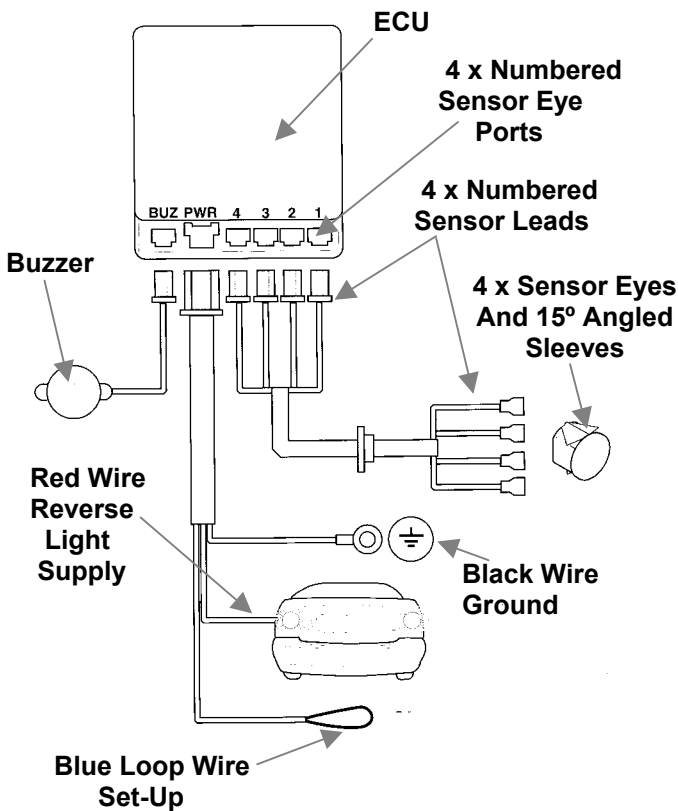


Diagram 8

REVERSE LIGHT SUPPLY

Locate the White 10-pin multi-connector located behind the offside rear quarter panel liner, see diagram 9.

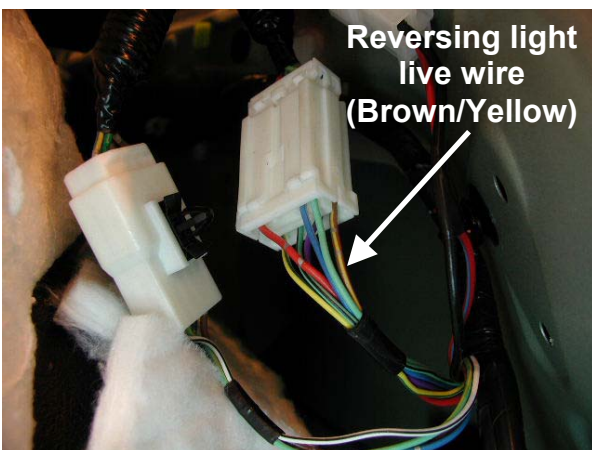


Diagram 9

Route the **Red wire** from the Rear Obstacle Detector ECU through and splice solder to the **Brown/Yellow** wire (reversing light) from the 10-pin multi-connector.

REAR OBSTACLE DETECTION HARNESS

Red wire
ECU Live

WHITE 10-PIN MULTI-CONNECTOR

Brown/Yellow wire
(Reversing light live)

GROUND POINT

Locate the **Black wire** (ECU ground) from the Rear Obstacle Detector ECU harness.

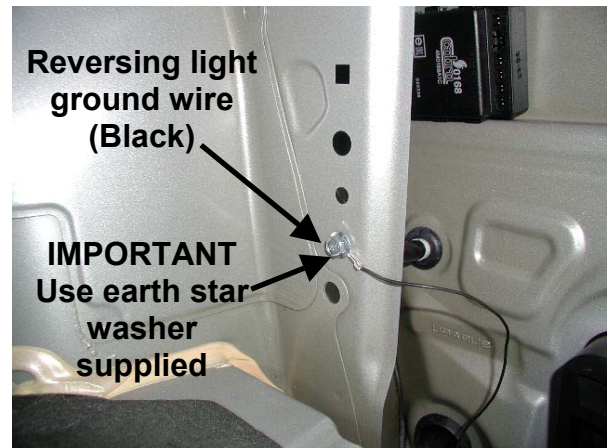


Diagram 10

Connect the **black wire** (earth ring connector) to the existing hole in the offside rear panel using the M6 x 12mm bolt, earth star washer and M6 nut supplied.

SET UP PROCEDURE

- A. Confirm all electrical connections are correct prior to reconnecting the battery terminal.
Position the vehicle 50cm from a wall or flat surface, with the rear of the vehicle **parallel to the wall or flat surface**.
- B. Turn the ignition on and select reverse gear a **DOUBLE TONE will be emitted** followed (approximately 10 – 30 seconds later) by a **single CONSTANT tone**.
- C. After you hear the single constant tone, turn the ignition off and **CUT THE BLUE LOOP WIRE** on the harness going into the rear obstacle detection ECU. Insulate the cut ends of the Blue wire and cable tie the main rear obstacle detection harness in place. **Leave the insulated blue wires in an accessible position** for possible future access.

NOTE: *If an intermittent tone (or no tone at all) is emitted at point B, during the 10 – 30 second set up cycle, this indicates the set-up has been unsuccessful. Refer to item “1” in the “Key Points Of The Installation” on page 1*

OPERATION

As the vehicle gets closer to an obstacle the beeps will increase in frequency until (at 30cm) the buzzer will emit a continuous tone informing you to stop.

Diagram 11.



- The system beeps once when an obstacle is between 200cm & 120cm away, (**safety zone**)
- A repeated beeping begins when an obstacle is between 120cm & 30cm away and increases in frequency as the obstacle becomes closer (**Alert zone**)
- A constant beep is emitted when the vehicle enters the (**maximum alert zone**), this is between 30cm & 0cm from the obstacle. See Diagram 11.

CUSTOMER HANDOVER

Ensure a member of staff at the dealership fully explains the operation of the “Subaru Rear Obstacle Detection System” and provides the customer with the user card.

TECHNICAL HELP-LINE

Should you experience any difficulties during this installation please refer first to all the “Key Points Of The Installation” section on page 1, or the Subaru Rear Obstacle Detection “UNIVERSAL FITTING GUIDE”.

If the issue is not resolved please contact: -

Technical Help-line on: **01932 732331**
 Fax No. **01932 732337**
 E-mail **technical@vestatec.co.uk**