

Fitting Rear Parking Sensors

Ultrasonic parking sensors are no longer the preserve of up-market motors. Inexpensive kits are widely available that give an audible, and optionally visual, signal as a vehicle approaches an obstacle. Retro fitting a simple rear bumper beeper system is a straightforward DIY job that can be completed in less than an hour. The procedure is illustrated below on a 2010 **Kia Venga**.

Kit contents

Clockwise from top left:

1. Electronic Control Unit (ECU) provides five alarm levels from ~150cm to 30cm.
2. Ultrasonic sensors (x4) with 2.4m leads, labelled A, B, C, D.
3. Instruction book.
4. ECU power leads.
5. Hole cutter, 21mm.
6. Tapered washers and ECU adhesive pad.
7. Beeper with 2.4m lead complete with adhesive pad.



Remove boot trims

1. Remove boot rear panel trim: remove two screws then prise out two plastic inserts. Pull the trim away to reveal a third side panel screw and rubber grommet.
2. Remove boot nearside panel trim: remove three screws then prise off the trim starting at the rear. As the trim pulls away, disconnect the boot light and the power socket.



Attach ECU power leads

1. Locate the reverse light supply. The reverse light, in the tailgate, is supplied by a green wire in the harness by the nearside pillar. There are several green wires in the harness but the correct one is easily identified as it is separately insulated. Remove the insulation tape as shown to reveal a bare connection.
2. Solder the red ECU supply lead to the bared connector and make good the insulation.
3. Clamp the black ECU return lead to one of the nearby vehicle Ground points shown in the upper right of the picture.
4. Test that the system is operating satisfactorily before installing the sensors. Do not insert or remove the sensors while power is supplied to the ECU as this can damage the sensors.



Install the sensors

1. Pull the rubber grommet out of the rear boot panel.
2. Mark the vehicle centre line on the rear bumper with a vertical strip of tape.
3. Mark the four drilling locations with vertical strips of tape, two at 20cm and two at 60 cm either side of centre.
4. Carefully mark the exact drilling positions on the four outer tapes. These should be in a horizontal line about 60cm from the ground (where the bumper is vertical, making the tapered washers redundant) spaced 40cm apart.
5. Check there is nothing behind the drill points, cut four 21mm holes and remove the tapes.
6. Thread the sensor cables, A to D from left to right, through the holes and into the boot through the rear panel grommet hole. A pull-wire is handy here. Ensure that the leads are secure inside the bumper.
7. Press the sensors home, flush with the bumper, and thread the cables through the rear-panel grommet.
8. Tape the four leads together inside the boot to form a harness, slide the grommet onto the harness ensuring a water tight seal and replace the grommet into the rear panel.



Install the system

1. Mount the beeper at a convenient location on the side panel using its adhesive pad. As shown, the beeper is positioned to face the small rectangular grille in the nearside trim.
2. Select a suitable location on the side panel for the ECU, route the power leads, sensors and beeper leads to it.
3. Ensure that the leads are secure and connect them to the ECU.
4. Mount the ECU as shown using the adhesive pad.
5. Finally replace the boot trim.

