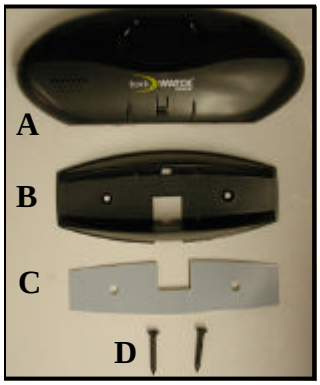
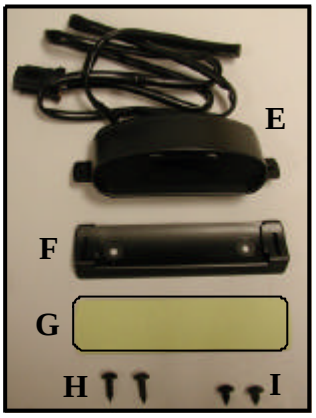
Bulldog Backwatch™ Instructions

The Bulldog Backwatch™ utilises the principles of SONAR (Sound Navigation Ranging) to assist the driver whilst reversing. When the vehicle approaches close to an obstruction an alarm sounds with increasing intensity proportional to the distance from the object whilst displaying its position on the Bulldog Backwatch™ Display module.

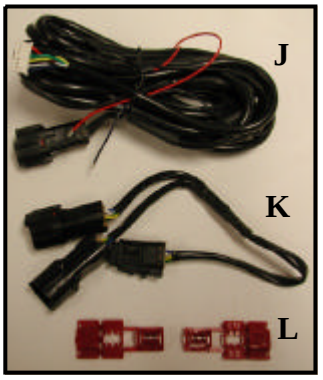
Display Module



Sensor Module



Accessories

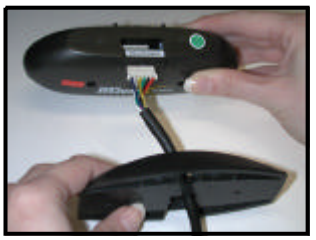


A	Display Module
B	Mounting Bracket
C	Double Sided Tape
D	Fixing Screws (x2)
E	Sensor (x2)
F	Mounting Bracket (x2)
G	Double Sided Tape (x2)
H	Long Bracket Screws (x4)
I	Short Sensor Adjustment Screws (x4)
J	8m Cable Assembly
K	'Y' Cable Joiner
L	Power Cable In Line Connectors (x2)

Installation

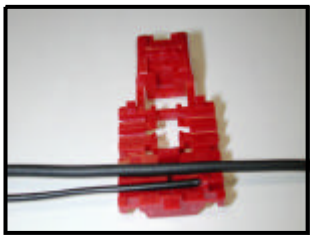
Display Module.

1. Remove the paper on one side of the double sided tape (C) and attach it to the base of the display module mounting bracket (B).
2. Insert the main cable (J) into the mounting bracket (B) and plug into the base of the display module.
3. Remove the paper on the other side of the double sided tape and position the bracket in the vehicle interior where required. (The long screws (D) can also be used if required).
4. Insert the display module into its mounting bracket ensuring the lower side of the bracket faces the front (distance indicator face).
5. Pass the power connection and sensor connection of the main cable towards the rear of the vehicle securing safely beneath interior trim wherever possible.
6. Connect the power connection of the main cable to the reverse light circuit in the rear light unit of the vehicle.
   Red wire to the +ve of the reverse lights
   Black wire to the -ve

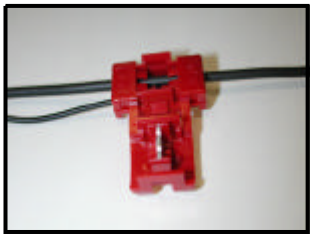


Wiring Connections, In Line Connectors.

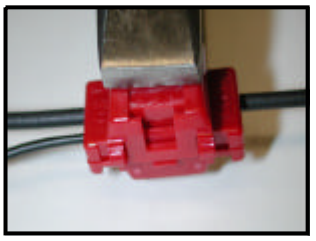
1. Lay the wires into the channels as shown.



2. Close mating channel sections over wires and snap shut.



3. Fold over the third section so that blade slots over the wires. Use pliers to squeeze until the latch snaps shut.



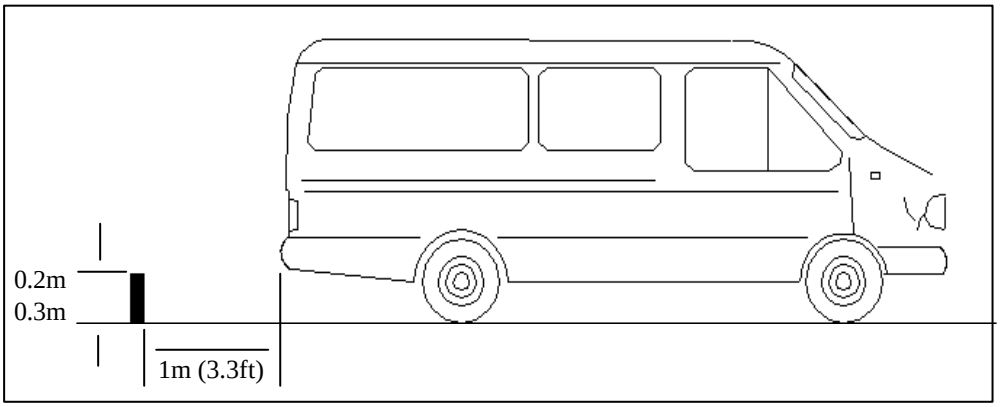
Sensor Modules.

1. Remove the paper on one side of the double sided tape (G) and attach it to the base of the sensor bracket (F).
2. Slide sensor module into the grooves of the mounting bracket (F) and offer up beneath the rear bumper. Choose a position approx 400mm from the outer edge of the vehicle and with the sensor in the mid range of its sliding adjustment it should be initially mounted so that the sensor face is approx vertical. Mark position of mounting bracket, slide sensor out of mounting bracket and fix the mounting bracket with double sided tape and two large screws (H). Refit sensor and repeat on opposite side of the vehicle.
3. Connect the sensor cables to the 'Y' cable joiner (K) and then to the main cable assembly. Carefully route cables and secure with cable ties where necessary.

Setting Up Rear Sensors.

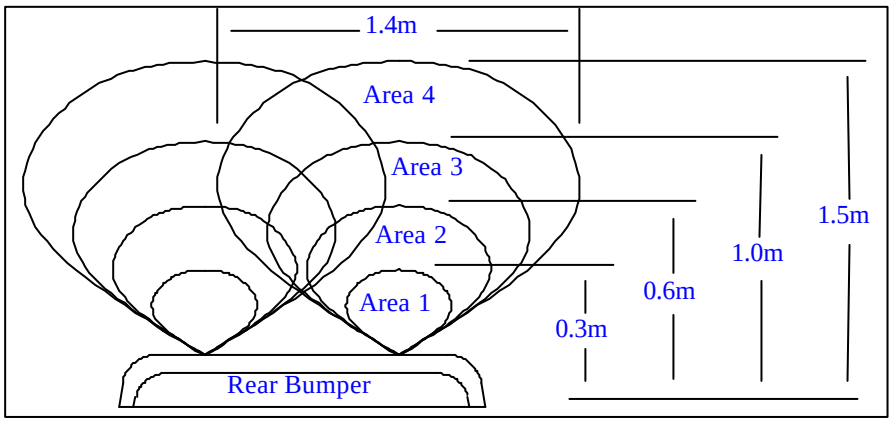
When reverse gear is selected the Backwatch™ is powered up automatically. If there is any obstruction behind the vehicle the distance to the obstacle is indicated on the display module and an alarm frequency proportional to the distance will be heard. Each rear sensor should be set up as follows to avoid picking up signals from the ground.

1. Adjust the angle of the sensor in its sliding bracket so that an object 300mm (1ft) in height 1.0m (3.3ft) directly behind each sensor is registered but an object 200mm (8in) high at the same distance is ignored. Lock the sensor in its slider with the small screws (K) at the correct angle. Repeat for the other sensor.



Sensing Range.

After installing the Bulldog Backwatch™ confirm the sensing range as indicated shown below.



Trouble Shooting.

Problem	Where to Check
No indication on the display when in reverse gear.	Check if the power line of the main cable is connected to the reverse light. (Check 12V dc supply). Check if main cable is connected to the display module.
Does not sense obstacle.	Check if the obstacle is within the sensor range. Check if the main cable is connected to the sensor cables. Check if the sensor module faces to far upwards (wrong adjustment of angle).
Generates a sensing signal when there is no obstacle.	Check if the sensor module faces the ground (wrong adjustment of angle). Check if the car is exposed to excessive noise. Check if there is any dirt on the sensing part of the module.

Caution

Take care of the Bulldog Backwatch™.

- Do not dismantle either the display module or reverse sensors.
- Keep water away from display module.
- Protect the sensing part of the sensor module from foreign objects. If necessary clean with water before using.
- Do not damage insulation on wires during installation.
- Secure all wiring during installation.
- Take care when passing wire through bodywork, use a suitable rubber wiring gromet if necessary.

Your Bulldog Backwatch™ may not sense:-

- Around the ends of both right and left of rear bumper.
- Low objects directly beneath the bumper.
- An object which is right above the sensor.
- Thin lines such as wire netting or rope.

Your Bulldog Backwatch™ may operate wrong:-

- With snow, ice or heavy rain on the sensors.
- If the rear of the car is too low from overloading the vehicle.
- If there is a loud engine sound near the sensors.

It may change sensing range if the vehicle is:-

- Parked in very strong sun for a long period of time.
- Parked in extremely cold weather for a long period of time.

Specification

Conforms to the following standards:

Emissions:	95/54/EC
Radiated Immunity to 200V/m:	ISO TR 10605 ESD
Radiated Emissions:	ISO 7637
Conducted Emissions:	CIS PR 25
Rated Voltage:	12V DC
Operating Voltage:	9V - 16V
Operating Temperature:	-30C +65C
Storage Temperature:	-30C +85C
CE and E Mark Approval:	No. E4-020207
German TUV Approval:	E4*72/245*95/54*206*00
	E4*72/245*95/54*207*00
Cable Length:	Main Cable = 8m
	Sensor Cable = 1m