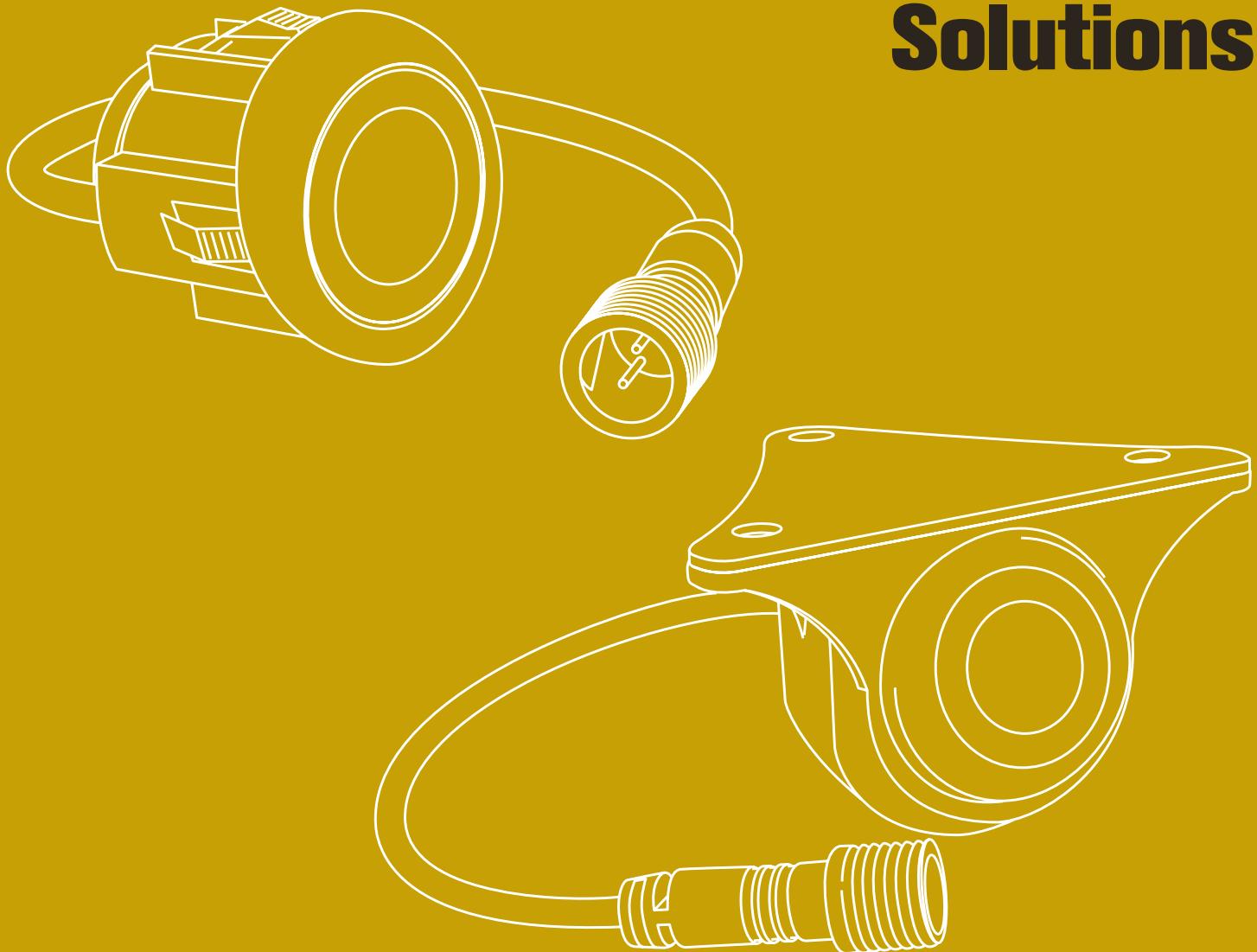




Vehicle Safety Solutions



Ultrasonic Obstacle Detection





Sensing danger

Blind spot legislation is extremely topical. Over the last few years vehicle safety devices such as extra mirrors or camera monitor systems with wider viewing angles have become mandatory. However, despite an increase in all-round visibility, collisions with other vehicles, fixed objects, cyclists, workers and even pedestrians, remain high.

The issue of cyclist fatalities has been of particular concern, with more than half of all cyclist deaths in London attributed to collisions with HGVs. Fiona Hall MEP, who tabled a European written declaration on the matter, says: "Sensors and cameras should be compulsory on all lorries so that drivers are always aware when someone is close to their vehicle. This is everyday technology used to help car drivers with parking – on lorries it will save lives."

Ghost Bikes are becoming an increasingly common sight worldwide, a sombre memorial for a cyclist killed on the road. A bicycle is painted white and placed near the crash site, accompanied by a small plaque.

Ultrasonic Obstacle Detection

How Brigade can help

Brigade's ultrasonic detection and warning systems alert the driver of potential danger. An audible warning informs the driver of the distance between vehicle and obstacle, minimising both vehicle damage and collisions with pedestrians, cyclists or objects. Activation triggers (eg: reverse gear, left indicator) ensure the system is only operational when it is needed and an optional speaking alarm can be added to alert cyclists and pedestrians of the vehicle's path.

Brigade's range of ultrasonic sensor systems include Backscan®, Frontscan®, Sidescan®, Cornerscan™ and Stepscan™ and provide the following benefits.

- ✓ Gives peace of mind to the driver, greater protection to pedestrians, cyclists and workers
- ✓ Minimises damage to vehicle, property and other objects
- ✓ Can be used in conjunction with Brigade's camera monitor system for comprehensive all round blind spot coverage

The cost of turning a blind eye

Even a relatively small accident can be immensely costly to a fleet operator. Apart from repairs to the damaged vehicle, there is downtime and replacement vehicle hire costs to consider and this doesn't take into account any insurance or legal expenses.

Typical damage costs based on a Mercedes Actros:

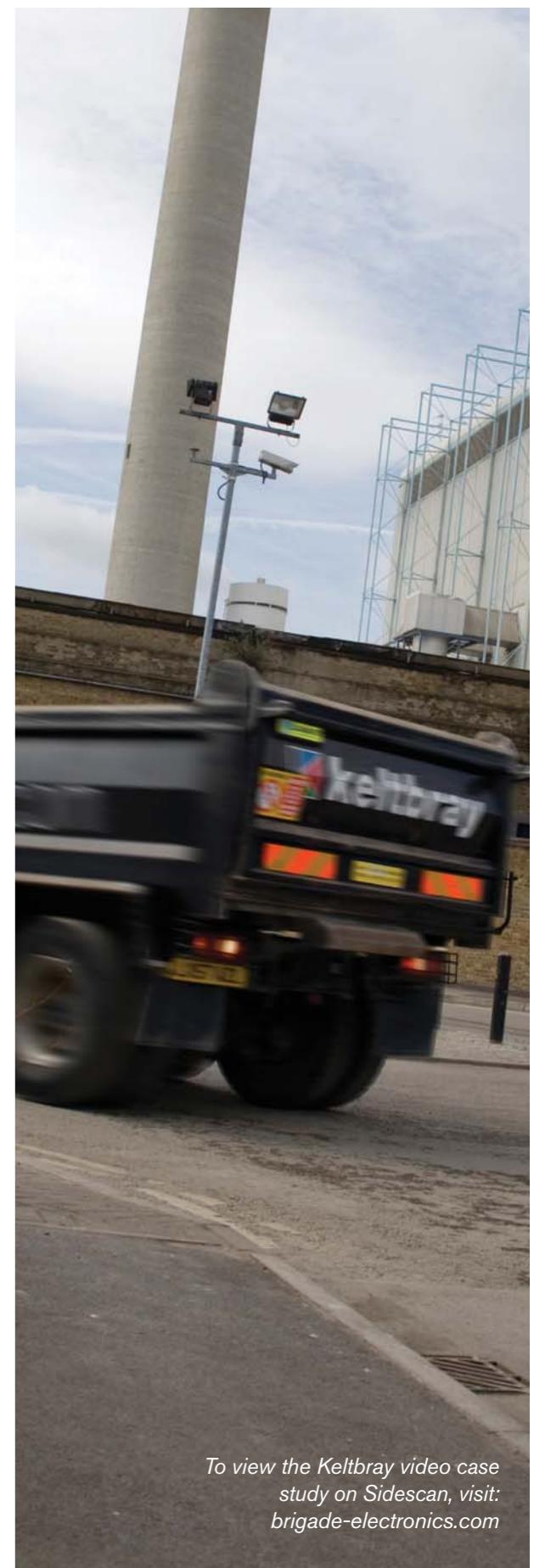
Item	Cost of replacement
Step (bottom part moulded)	£295 - £585
Bumper - two corners and centre	£248
Under run bars (box section welded)	£385
Whole Front light cluster	£246
Rear light	£134

Yet the consequences can be even more severe.

A company was fined £105,000 in September 2009 after an employee was killed by a reversing lorry at the skip waste site where he worked. The man was in the lorry's mirror blind spot when he was struck by the rear of the lorry and run over.

"By fitting Brigade's Ultrasonic sensors, we are achieving a very high standard of health and safety on public highways both for Keltbray and other road users."

Adrian Scott, Haulage Operations Director, Keltbray



To view the Keltbray video case study on Sidescan, visit: brigade-electronics.com

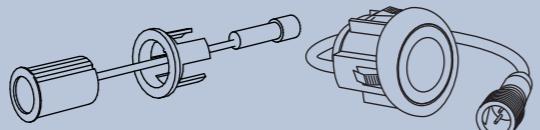


Ultrasonic Obstacle Detection

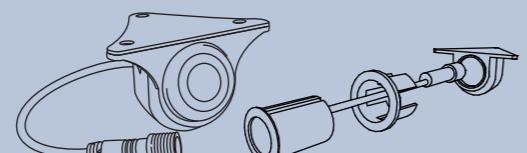
Two, three or four sensor ultrasonic sensor systems inform driver of distance between vehicle and any obstacles, whether moving or stationary. Perfect for road going commercial vehicles regularly operating in confined spaces or manoeuvring at low speed.

Features of all systems:

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from permanent bodywork that intrude in the first 100cm of the detection zone
- Self diagnostic function
- Fixings included for all bodywork types
- Three stage audible distance warning to driver with adjustable volume
- 1 trigger output
- 2 year warranty



Assembly and housing for flush mount fixings



Housing and assembly for underslung fixings



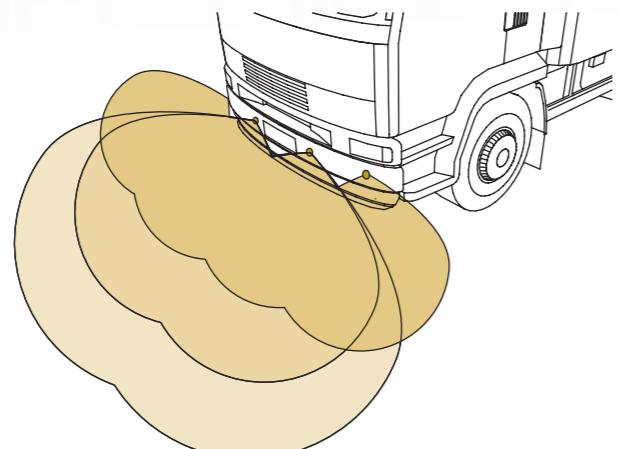
Frontscan®

Fitted to front of vehicle improving safety when manoeuvring at low speed. Particularly relevant for front blind spot on high cabs where low objects or pedestrians can be hidden.

- 4 sensor system
- Flush mount sensors
- 2.0 or 1.0m detection range - outer sensors can be reduced to 0.6m

Options

- System activated below designated speed



Cornerscan™

Fitted to near side corner of vehicle cab to detect objects in front near side blind spot. Minimises the risk of damage to the vehicle cab whilst manoeuvring and turning whilst reversing.

- 3 sensor system
- Flush mount sensors
- 0.6 or 1.0m detection range
- Two levels of sensitivity

Options

- System activated below designated speed



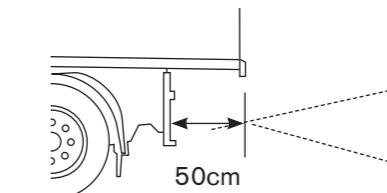
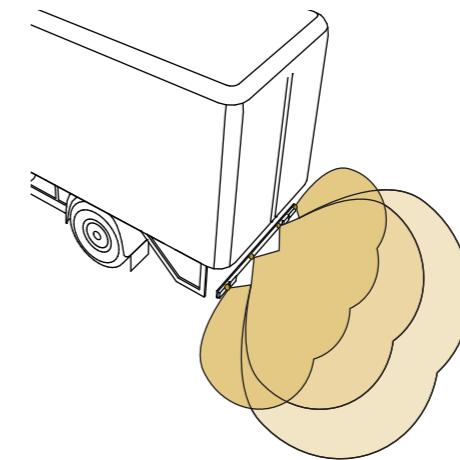
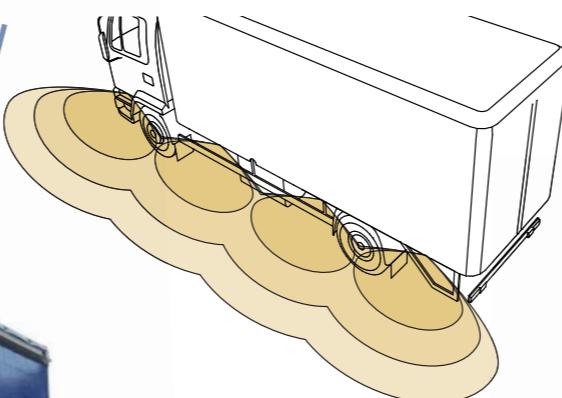
Sidescan®

Fitted to side of vehicle increasing safety when turning or low speed manoeuvring. Particularly relevant for near side blind spot where cyclists or pedestrians can otherwise go undetected.

- 4 sensor system
- Underslung or flush mount sensors
- 1.0 or 1.5m detection range
- Two levels of detection sensitivity

Options:

- System activated below designated speed
- System activated by turn indicator
- External speaking alarm with side turn warning for cyclists/pedestrians
- Can be fitted to articulated vehicles with additional suzie cables



BRIGADE®

Backscan®

Fitted to rear of vehicle as an invaluable aid to safe reversing. Gives greater protection to pedestrians and workers, whilst minimising damage to vehicle and other objects.

- 4 sensor system
- Underslung or flush mount installation
- 2.5m detection range - outer sensors can be reduced to 0.6m
- System activated by reverse gear
- 50cm compensation range for sensors fitted inboard of vehicle rear

Options:

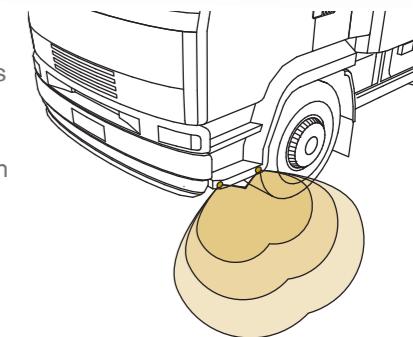
- Can be fitted to articulated vehicles with additional suzie cables
- 3 stage visual distance warning display



Stepscan™

Fitted to nearside cab step giving awareness to the driver of objects when turning and reversing. Minimises the risk of damage to the vehicle from otherwise unseen objects.

- 2 sensor system
- Flush mount sensors
- 0.6 or 1.0m detection range
- Two levels of detection sensitivity
- System activated by reverse gear



Sidescan® Case Study

Safety on the side



Cemex, a leading supplier of cement, ready mixed concrete and aggregates adopted a range of safety measures to resolve the issue of cyclist and HGV collisions.

Cemex fitted a range of Brigade's safety systems to its tippers and mixers to improve the driver's field of vision and make their vehicles more visible to pedestrians and cyclists. The combination systems include Brigade's movement sensors (Sidescan) and talking alarms (Backchat) to alert both parties to potential danger.

During an FTA Seminar, Paul Clarke, Logistics Fleet Engineering Manager at Cemex said "Between 2000 and 2004 vehicles operating on our behalf were involved in 6 road

traffic accidents involving cyclists on the nearside, two of which sadly resulted in fatalities, however...

“...since fitting Brigade Sidescan as part of a wider programme of road safety initiatives, we have not experienced any blameworthy road traffic incidents involving cyclists on the nearside.”

Paul Clarke
Logistics Fleet Engineering
Manager, Cemex



Endorsements



Transport
for London

Transport For London trialled blind spot technologies including Sidescan. Respondents found it particularly helpful in slow manoeuvres, tight spaces and felt it performed well in the dark.



Crossrail has set minimum standards for safety equipment for their contractor vehicles including side sensors.



RoadPeace has prepared a briefing for coroners and collision investigators on how blind spots can be eliminated using life saving vehicle safety equipment, such as sensors.



Lafarge have set a worldwide target standard to install Brigade safety equipment to their vehicles including Ultrasonic Detection Systems.

Backscan® Case Study



Every little helps when it comes to safety

The convenience and popularity of internet shopping has led to a sharp growth in home delivery. However, the increase in number of large cars in small residential streets coupled with the rear blind spot has made reversing and parking manoeuvres very difficult.

Damage to property and parked cars is costly and many operators can ill afford vehicle downtime for repairs. More startling is the real threat of collisions with pedestrians. According to the Health and Safety Executive (HSE) 25% of all workplace fatalities are caused by reversing vehicles.

Tesco.com is the largest online grocery store in the world. Drivers were experiencing problems reversing due to the huge blind spot at the rear of the vehicle and were also reporting damage from overhanging trees, especially in rural areas.

Brigade solved the problem by fitting upper Backscan sensors to protect the Mercedes Sprinters from overhanging branches. In addition, lower Backscan sensors were fitted to the bottom of the delivery vans to detect people and objects in the blind spot when reversing.

“We are very pleased with the performance of Brigade's Backscan which enables home delivery drivers to reverse into tight spaces. This ensures the safety of pedestrians and property, thus reducing damage to the vehicle.”

Duncan Vavangas. Fleet Engineer, Tesco.



To order or for more information on
Brigade's vehicle safety solutions;
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Brigade's extensive portfolio of machine safety systems includes:

- **360° Camera monitor systems**
- **Camera monitor systems**
- **'White sound' reversing and warning alarms**
- **Radar obstacle detection systems**
- **Mobile digital recording**
- **Ultrasonic obstacle detection systems**

