



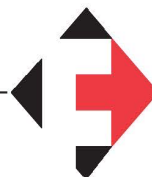
Driving Global Safety

## Product Catalog

# 2017

Preventing  
collisions and  
saving lives!

North  
America



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# Brigade

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Brigade pioneered the cause of reversing safety in 1976, when we introduced the very first reversing alarm to Europe.

Since then, we have continued to lead the way in blind-spot safety solutions, extending our range to include products that give drivers visibility and sensing/warning of people in blind-spots around their vehicle.

We are passionate about helping road transport and mobile machine operators prevent collisions and save lives.

We are also dedicated to using our 40 years experience to help you make the most appropriate safety product choices for your vehicles and machines.

With 14 Brigade Group companies around the world and a global network of specialist distribution partners, we are able to provide expert advice, sales, service and support for our customers on every continent.



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A stylized illustration of a globe on the left side of the page, with various vehicles (trucks, forklifts, etc.) arranged in a line along its curve, suggesting global reach and safety.

## Driving Global Safety

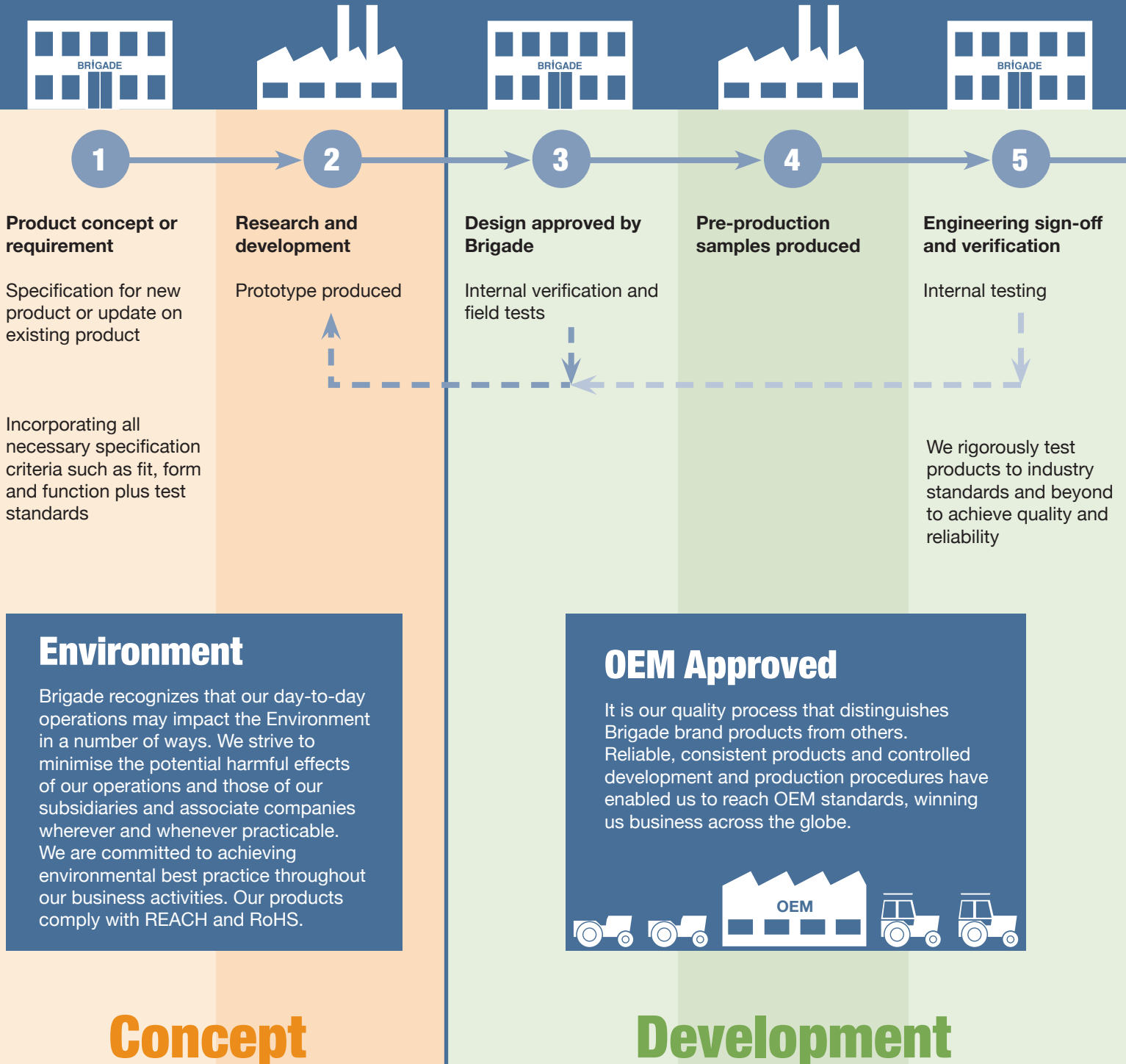
# Why Brigade?

We understand that safety and efficiency can only be achieved with high quality, reliable products, which is why we go the extra mile in product development and testing of Brigade brand products; to make sure that safety is not compromised.

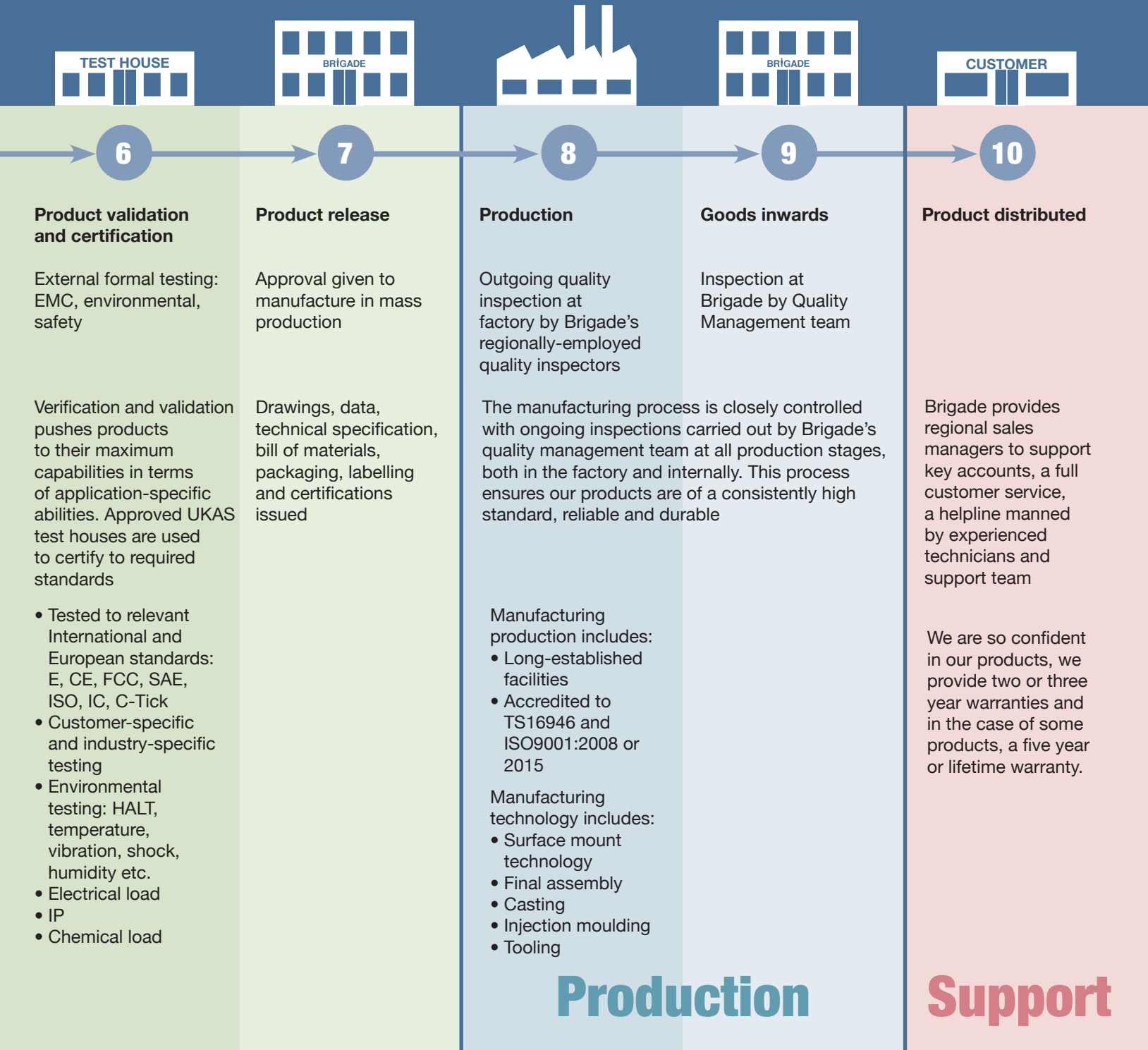
We believe it is more important for you that we deliver reliable quality assured products that are fit for purpose than it is for us to be first to market (though we frequently are!).

Products are only released once we are confident they are fit for purpose. It would be easy to forget this with the lure of new technologies, but this is not the Brigade way. Whatever the product or technology, it has to pass rigorous and comprehensive testing before we consider it suitable to be included in our portfolio.

A closely controlled design and manufacturing process plus in-house Research and Development is all managed by a proficient engineering team that sets us apart from the competition.



- Brigade Electronics Group Plc management systems meet the ISO9001:2008 standard
- Our manufacturing facilities work to the highest automotive quality standard ISO/TS16949:2009.
- All our applicable products have CE-marking in Europe and FCC approval in North America.
- The majority of our products comply with UN ECE Regulation 10 (EMC)
- Combinations of camera monitors comply with Regulation 46 (Indirect Vision) required for vehicle type approval. (see page 14)



**Production**

**Support**

## Safety Recommendations Rigid on Road



Level 1 Minimum recommended safety specification	Level 2 + level 1 Increased safety specification	Level 3 + levels 1 & 2 Ultimate safety specification
<p><b>Camera Monitor Systems</b></p> <p><b>BV-701C</b> Select range Rear view camera</p> <p><b>VBV-770M</b> Select range 7" Digital LCD Monitor</p> <p>or</p> <p><b>BV-750M</b> Select range 5" Digital LCD Monitor</p> <p>Select series camera monitors are our best selling, mid-range systems that offer quality and features at a cost-effective price.</p> <p><b>Ultrasonic Obstacle Detection</b></p> <p><b>BS-4000W</b> Backscan® sensor system</p> <p>4 sensor system increases safety when reversing.</p> <p><b>Warning Alarm</b></p> <p>bbs-tek, white sound alarms are the safest in the world due to their instant locatability and directional sound. The alarm is only heard in the danger zone, thus eliminating noise nuisance.</p> <p><b>SA-BBS-97</b> bbs-tek® white sound® smart reversing alarm. 77-97 dB</p> <p>Continually adjusts to 5-10 decibels above ambient so ideal in varying noise level environments and urban areas.</p> <p>or</p> <p><b>BBS-87</b> bbs-tek® white sound® standard reversing alarm. 87 dB</p>	<p><b>Ultrasonic Obstacle Detection</b></p> <p><b>SS-4000W</b> Sidescan® sensor system</p> <p>4 sensor system increases safety when turning or low speed manoeuvring.</p> <p><b>FS-4000W</b> Frontscan® sensor system</p> <p>4 sensor system covering the front blind spot. Improves safety when manoeuvring at low speed.</p> <p><b>Warning Alarm</b></p> <p><b>SS-BC-08</b> Speaking alarm</p> <p>Speaking alarm with side turn warning for cyclists/pedestrians. Activates on left turn indication and complements Sidescan sensor system.</p> <p><b>Camera Monitor Systems</b></p> <p><b>VBV-301C</b> Compact, flush mount eyeball camera</p>	<p><b>Digital Recording</b></p> <p><b>MDR-404-500</b></p> <p>Mobile digital recorder with 500GB hard disk. Records footage from up to four cameras. All channels can be viewed on the monitor in the cab, aiding all round visibility for the driver.</p> <p>Available with 3G &amp; Wi-Fi.</p> <p><b>Camera Monitor Systems</b></p> <p><b>VBV-301C</b> Compact, flush mount eyeball camera</p> <p><b>SE-770-100</b> Backeye®360 360° 4-camera monitor system</p> <p>An intelligent camera monitor system that provides the driver with a bird's-eye, 360° view of the vehicle and surroundings within a single image. Replaces all individually listed cameras and monitor.</p>

## Safety Recommendations Semi on-road vehicle



Level 1 Minimum recommended safety specification	Level 2 + level 1 Increased safety specification	Level 3 + levels 1 & 2 Ultimate safety specification
<p><b>Camera Monitor Systems</b></p> <p><b>BE-801C</b> Elite range Rear view camera</p> <p><b>BE-870LM</b> Elite range 7" Digital LCD Monitor</p> <p>or</p> <p><b>BE-865DDM</b> Elite range 6.5" Double-DIN Digital LCD Monitor</p> <p>Elite series cameras and monitors are a superior, high quality range for comprehensive blind spot coverage.</p> <p><b>Wireless camera monitor connection system</b></p> <p><b>DW-1001-TX</b> Digital wireless transmitter</p> <p><b>DW-1001-RX</b> Digital wireless receiver</p> <p>Secure connection eliminates need for retractable coiled cables. Allows for interchangeable trailers. For use with single camera only.</p> <p><b>Warning Alarm for trailer</b></p> <p>bbs-tek, white sound alarms are the safest in the world due to their instant locatability and directional sound. The alarm is only heard in the danger zone, thus eliminating noise nuisance.</p> <p><b>SA-BBS-97</b> bbs-tek® White sound® smart reversing alarm. 77-97 dB</p> <p>Continually adjusts to 5-10 decibels above ambient so ideal in varying noise level environments and urban areas.</p> <p>or</p> <p><b>BBS-92</b> bbs-tek® White sound® standard reversing alarm. 92 dB</p>	<p><b>Warning Alarm for cab</b></p> <p><b>SA-BBS-97</b> 77-97 dB or <b>BBS-92</b> 92 dB bbs-tek® White sound® warning alarm</p> <p><b>Camera Monitor Systems</b></p> <p><b>VBV-301C</b> Compact, flush mount eyeball camera</p> <p><b>Ultrasonic Obstacle Detection</b></p> <p><b>ST-2000</b> Stepscan™ sensor system</p> <p>2 sensor system fitted to near side cab step giving awareness to the driver of objects when turning and reversing.</p> <p><b>FS-4000W</b> Frontscan® sensor system</p> <p>4 sensor system covering the front blind-spot. Improves safety when manoeuvring at low speed.</p>	<p><b>Camera Monitor Systems</b></p> <p><b>VBV-301C</b> Compact, flush mount eyeball camera</p> <p><b>Digital Recording</b></p> <p><b>MDR-408-1000</b></p> <p>Mobile digital recorder with 1TB hard disk. Records footage from up to eight cameras. All channels can be viewed on the monitor in the cab, aiding all round visibility for the driver.</p> <p>Available with 3G &amp; Wi-Fi.</p> <p><b>Ultrasonic Obstacle Detection</b></p> <p><b>SS-4000W</b> Sidescan® sensor system</p> <p>4 sensor system increases safety when turning or low speed manoeuvring.</p> <p><b>FS-4000W</b> Frontscan® sensor system</p> <p>4 sensor system covering the front blind-spot. Improves safety when manoeuvring at low speed.</p>

# Which products do I need?

## Safety Recommendations Refuse vehicle



Level 1 Minimum recommended safety specification	Level 2 + level 1 Increased safety specification	Level 3 + levels 1 & 2 Ultimate safety specification
<p><b>Camera Monitor Systems</b></p> <p><b>BE-801C</b> Elite range Rear view camera</p> <p><b>BE-970WFM</b> Extreme range 7" Digital LCD multi-image Monitor</p> <p>or</p> <p><b>BE-970WM</b> Extreme range 7" Digital LCD Monitor</p> <p>The Extreme range features robust camera monitor systems especially suited to heavy duty applications.</p> <p><b>Warning Alarm</b></p> <p>bbs-tek, white sound alarms are the safest in the world due to their instant locatability and directional sound. The alarm is only heard in the danger zone, thus eliminating noise nuisance.</p> <p><b>SA-BBS-97</b> bbs-tek® White sound® smart reversing alarm. 77-97 dB</p> <p>Continually adjust to 5-10 decibels above ambient so ideal in varying noise level environments and urban areas.</p> <p>or</p> <p><b>BBS-87</b> bbs-tek® White sound® standard reversing alarm. 87 dB</p>	<p><b>Camera Monitor Systems</b></p> <p><b>VBV-301C</b> Compact, flush mount eyeball camera</p> <p><b>Vehicle Intercom</b></p> <p><b>BC-VI</b> Two way intercom</p> <p>Open channel rear to cab; Button press cab to rear.</p> <p><b>Ultrasonic Obstacle Detection</b></p> <p><b>CS-3000</b> Cornerscan™ sensor system</p> <p>3 sensor system detects objects in front near side blind spot.</p> <p><b>SS-4000W</b> Sidescan® sensor system</p> <p>4 sensor system increases safety when turning or low speed manoeuvring.</p>	<p><b>Radar Detection</b></p> <p><b>BS-8000</b> Programmable Backsense® rear obstacle detection</p> <p>or</p> <p><b>BS-7030</b> Fixed Backsense® rear obstacle detection</p> <p>Heavy duty sensors that detect stationary, moving and multiple objects.</p> <p><b>Digital Recording</b></p> <p><b>MDR-404-500</b></p> <p>Mobile digital recorder with 500GB hard disk. Records footage from up to four cameras. All channels can be viewed on the monitor in the cab, aiding all round visibility for the driver.</p> <p>Available with 3G &amp; Wi-Fi.</p> <p><b>Camera Monitor Systems</b></p> <p><b>VBV-301C</b> Compact, flush mount eyeball camera</p> <p><b>SE-770-000</b> Backeye®360 360° 4-camera monitor system</p> <p>An intelligent camera monitor system that provides the driver with a bird's-eye, 360° view of the vehicle and surroundings within a single image. Replaces all individually listed cameras and monitor. Compatible with MDR-404-500 Digital recorder.</p>

## Safety Recommendations Medium off-road machine



Level 1 Minimum recommended safety specification	Level 2 + level 1 Increased safety specification	Level 3 + levels 1 & 2 Ultimate safety specification
<p><b>Camera Monitor Systems</b></p> <p>BE-801C Elite range rear view camera</p> <p>or</p> <p>BE-811C Elite range rear view shutter camera</p> <p>BE-870LM Elite range 7" Digital LCD Monitor</p> <p>Elite series cameras and monitors are a superior, high quality range for comprehensive blind spot coverage.</p> <p>or</p> <p>VBV-770M Select range 7" Digital LCD Monitor</p> <p>Features multiple camera inputs</p>	<p><b>Camera Monitor Systems</b></p> <p>VBV-301C Compact, flush mount eyeball camera</p>	<p><b>Radar Detection</b></p> <p>BS-8000 Programmable Backsense® rear obstacle detection</p> <p>or</p> <p>BS-7045 or BS-7060 Fixed Backsense® rear obstacle detection</p> <p>Heavy duty sensors that detects stationary, moving and multiple objects.</p>
<p><b>Warning Alarm</b></p> <p>bbs-tek, white sound alarms are the safest in the world due to their instant locatability and directional sound. The alarm is only heard in the danger zone, thus eliminating noise nuisance.</p> <p>SA-BBS-107 bbs-tek® White sound® heavy duty smart reversing alarm. 87-107 dB</p> <p>Continually adjusts to 5-10 decibels above ambient so ideal in varying noise level environments and urban areas.</p> <p>or</p> <p>BBS-107 bbs-tek® White sound® heavy duty reversing alarm. 107 dB</p>		

To help you decide, we have created a series of guides featuring the Brigade safety products we recommend for specific applications.

Each guide has been split into three levels: Minimum safety, increased safety and ultimate safety so that you can easily choose the level and products best suited to you.

To see our full range of guides, including CLOCS and FORS requirements, please visit our website at:

[brigade-inc.com](http://brigade-inc.com)

## Safety Recommendations Coach



Level 1 Minimum recommended safety specification	Level 2 + level 1 Increased safety specification	Level 3 + levels 1 & 2 Ultimate safety specification
<p><b>Ultrasonic Obstacle Detection</b></p> <p>BS-4000W Backscan® sensor system</p> <p>4 sensor system increases safety when reversing.</p> <p><b>Camera Monitor Systems</b></p> <p>VBV-770M Select range 7" Digital LCD Monitor</p> <p>VBV-701C Select range Rear-view camera</p> <p>Select series camera monitors are our best selling, mid-range systems that offer quality and features at a cost-effective price.</p>	<p><b>Ultrasonic Obstacle Detection</b></p> <p>FS-4000W Frontscan® sensor system</p> <p>4 sensor system covering the front blind spot. Improves safety when manoeuvring at low speed.</p> <p>SS-4000W Sidescan® sensor system</p> <p>4 sensor system increases safety when turning or low speed manoeuvring.</p>	<p><b>Camera Monitor Systems</b></p> <p>MD-51 Mini dome internal camera</p> <p>Additional internal camera.</p> <p><b>Digital Recording</b></p> <p>MDR-408-1000</p> <p>Mobile digital recorder with 1TB hard disk. Records footage from up to eight cameras. All channels can be viewed on the monitor in the cab, aiding all round visibility for the driver.</p> <p>Available with 3G &amp; Wi-Fi.</p>
<p><b>Warning Alarm</b></p> <p>bbs-tek, white sound alarms are the safest in the world due to their instant locatability and directional sound. The alarm is only heard in the danger zone, thus eliminating noise nuisance.</p> <p>SA-BBS-97 bbs-tek® white sound® smart reversing alarm. 77-97 dB</p> <p>Continually adjusts to 5-10 decibels above ambient so ideal in varying noise level environments and urban areas.</p> <p>or</p> <p>BBS-87 bbs-tek® white sound® standard reversing alarm. 82 dB</p>		
	<p><b>Camera Monitor Systems</b></p> <p>VBV-301C Compact, flush mount eyeball camera</p> <p>MD-51 Mini dome internal camera</p>	<p><b>Camera Monitor Systems</b></p> <p>SE-770-000 Backeye®360 360° 4-camera monitor system</p> <p>An intelligent camera monitor system that provides the driver with a bird's-eye, 360° view of the vehicle and surroundings within a single image. Replaces all individually listed cameras and monitor. Compatible with MDR-408-1000 Digital recorder.</p>

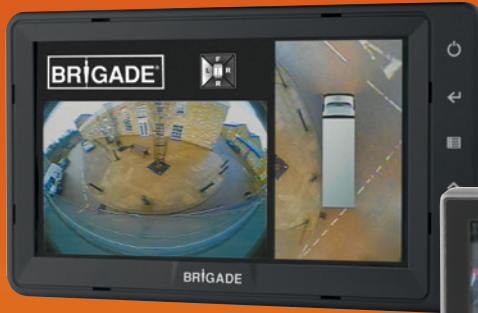
## Safety Recommendations Large off road vehicle



Level 1 Minimum recommended safety specification	Level 2 + level 1 Increased safety specification	Level 3 + levels 1 & 2 Ultimate safety specification
<p><b>Camera Monitor Systems</b></p> <p>BE-890C Elite range IP69K cameras</p> <p>Rear view and Front view (PAL only)</p> <p>BE-970WFM Extreme range 7" Digital LCD multi-image Monitor</p> <p>The Extreme range features robust camera monitor systems especially suited to heavy duty applications.</p>	<p><b>Radar Detection</b></p> <p>BS-8000 Programmable Backsense® rear obstacle detection</p> <p>Heavy duty sensors that detects stationary, moving and multiple objects.</p>	<p><b>Radar Detection</b></p> <p>BS-8000 Programmable Backsense® front obstacle detection</p> <p>Heavy duty sensors that detects stationary, moving and multiple objects.</p>
<p><b>Warning Alarm</b></p> <p>bbs-tek, white sound alarms are the safest in the world due to their instant locatability and directional sound. The alarm is only heard in the danger zone, thus eliminating noise nuisance.</p> <p>SA-BBS-107 bbs-tek® White sound® heavy duty smart reversing alarm. 87-107 dB</p> <p>Continually adjusts to 5-10 decibels above ambient so ideal in varying noise level environments and urban areas.</p> <p>or</p> <p>BBS-107 bbs-tek® White sound® heavy duty reversing alarm. 107 dB</p>		
	<p><b>Camera Monitor Systems</b></p> <p>BE-890C Elite range IP69K cameras (PAL only)</p> <p>Left side view and right side view</p>	<p><b>Digital Recording</b></p> <p>MDR-408-1000</p> <p>Mobile digital recorder with 1TB hard disk. Records footage from up to eight cameras. All channels can be viewed on the monitor in the cab, aiding all round visibility for the driver.</p> <p>Available with 3G &amp; Wi-Fi.</p> <p><b>Camera Monitor Systems</b></p> <p>SE-970W-000 Backeye®360 360° 4-camera monitor system</p> <p>An intelligent camera monitor system that provides the driver with a bird's-eye, 360° view of the vehicle and surroundings within a single image. Replaces all individually listed cameras and monitor. Compatible with MDR-408-1000 Digital recorder.</p>

# Backeye®360° Camera Systems

**4 cameras**  
**1 image**  
**0 blind spots**



Actual Backeye®360 images



This exciting new development provides drivers with a single clear view image of all near-field blind spots around the vehicle – which is a massive leap forward in vehicle safety!

Ultrawide-angle cameras mounted on the front, sides and rear of the vehicle capture the surrounding areas of the vehicle, including blind spots. The digital images from these cameras are processed and ‘video stitched’ together to produce a top-down 360° ‘birds eye view’ of the vehicle and surrounding areas in a single image.

The software also removes the fisheye camera effect, so that the driver is presented with a clear and undistorted image.

Backeye®360 Systems are compatible with Brigade MDR digital recorders, providing you with footage that can help make major cost savings by refuting bogus claims, and providing evidence in the event of any accident or incident.

- **Eliminates blind spots, improves safety**
- **Comprehensive view of the surrounding area in a single image**
- **Reduces collisions with people and objects**

Features	Benefits	Backeye®360 ASL360	Backeye®360 BN360
Customizable triggers	Best view of each maneuver	Bespoke views 8 triggers	Fixed views 3 triggers
Dual views on monitor	View the most critical areas	Bespoke image views	Fixed dual views
Customized joins between camera images	Seamless surround image optimized for your vehicle	✓	✓
Flexible camera positioning	Backeye®360 System will still be accurate if cameras installed off-center	✓	✓
Full-screen 360° view	Entire screen can be devoted to the 360° view	✓	✓
Automatic light balancing between camera images	Easy to view, balanced image	✓	✗
'Pie dish' effect	Reduced image stretch, so that distant people and objects appear recognizable	✓	✗
R46 Approved	Suitable to replace Class V and Class VI mirrors	✗	✓



### Which system is for you?

#### Backeye®360 BN360

Regulation 46 approved.

Full screen 360 or a twin image split screen view.

In split screen mode, the 360 'birds eye view' is permanently displayed together with the blind spot to the front, rear, left or right of the vehicle – auto-switching between these according to vehicle maneuver.

This means that the driver always has both the 360 'birds eye view' plus a conventional view of the area into which the vehicle is moving.



#### Backeye®360 ASL360

Suitable for most vehicle and mobile plant machines.

Full screen 360 plus a flexible and wide range of bespoke split screen viewing options.

'Pie Dish' image correction feature allows a wider area around the machine to be displayed to the driver, and provides a more natural view of objects that are at some distance from the vehicle.

Automatic light balancing between camera images makes for easier viewing on days when one side of the vehicle is bathed in bright sunlight and the other is in shadow.



## 360° CAMERA SYSTEM

**BN360-000 - Backeye®360 system**

**4483**



- IP69K cameras
- 12-24Vdc
- Size (WxHxD) ECU  
170 x 126.4 x 36mm  
6.7 x 5 x 1.4 inches
- Size (WxHxD) Camera  
35.4 x 60.7 x 45.8mm  
1.4 x 2.4 x 1.8 inches
- 2 year warranty

**Contents**

- 1 x BN360-ECU-10
- 4 x BN360-100C cameras
- 1 x BN360-VBV-L4015 video-out cable to connect to SELECT range monitor.

**Note: Monitor and camera extension cables not included**

**Features**

- 360° full screen image or split screen option
- Triggered views (rear, left and right)
- 4 x ultra-wide viewing angle cameras (HxV) 185° x142°
- 1/3" CMOS sensor
- TV system: NTSC

**Power**

- Power consumption: 15 Watts
- Current: 1.23 Amps

**Durability & Standards**

- Mechanical vibration: 1G
- Mechanical shock: 50G
- Operating temperature: -30 to +75°C / -22 to 167°F
- CE marked
- EMC approved: E
- HALT tested

**Note: A calibration kit is required for installation.**

### BN360 CABLES AND ADAPTERS

BN360-L120	20m/66' camera cable	4493
BN360-L115	15m/49' camera cable	4495
BN360-L110	10m/33' camera cable	4496
BN360-L105	5m/16' camera cable	4498
BN360-L1025	2.5m/8' camera cable	4499
AC-305	Splitter cable for MDR (1 required per camera)	4903

### MOUNTING BRACKETS



BN360-100C-BKT01	Adaptable mounting bracket <small>Can be shaped to allow installation on non-vertical surfaces</small>	4649
BN360-100C-BKT02	Mounting bracket to adjust camera angle	4714
BE360-CD	Deflector to shield camera from knocks <small>(To be used with BN360-100C-BKT02 Mounting bracket)</small>	4701
BN360-100C-BKT03	Deflector to shield camera from knocks	4743

### REQUIRED FOR ARTICULATED VEHICLES



BN360-Enclosure	IP66 Enclosure kit to enable ECU to be installed on outside of vehicle <small>Note: Coiled cable kit or wireless connector also required</small>	4723
SK-15-05	3-camera Backeye®360 cable kit for articulated vehicles	5066

**Model**

**Part No:**

**360° CAMERA SYSTEM**

**ASL360-SV - Backeye®360**

**4328**



- IP68 cameras
- 12-24Vdc
- Size (WxHxD) ECU  
225 x 35 x 120mm  
8.8 x 1.4 x 4.7 inches
- Size (WxHxD) Camera  
70 x 50 x 62mm  
2.7 x 2 x 2.4 inches
- 2 year warranty

**Contents**

- 1 x ASL360-ECU
- 4 x ASL360-CM2 cameras

**Note: Monitor, camera cables and adapters NOT included**

**Features**

- 360° full screen or split screen options
- Flexible blend widths and positioning
- Up to 30 frames per second
- Self-monitoring to eliminate frozen images
- Triggered views
- 4 x ultra-wide viewing angle cameras (HxV) 185 x 180°
- 1/4" CMOS sensor
- TV system: PAL

**Power**

- Power consumption:  
Camera: 0.5 Watts  
ECU: 5.0 Watts
- Current:  
Camera: 0.04 Amps  
ECU: 0.4 Amps

**Durability & Standards**

- Operating temperature:  
-40 to +85°C / -40 to +185F
- CE marked
- EMC approved: E

**Note: A calibration kit is required for installation. Available to Brigade trained fitters only**

**ASL360 CABLES AND ADAPTERS**

ASL360-L120	20m/66' camera cable	4333
ASL360-L115	15m/49' camera cable	4334
ASL360-L110	10m/33' camera cable	4335
ASL360-L1025	2.5m/8' camera cable	4336
AC-054	2.5m/8' adapter cable to connect ECU to monitor via AC-016 / AC-024 (BNC B to Phono A)	4340
AC-016	Adapter cable to connect AV/Phono to Elite monitor	2150
AC-024	Adapter cable to connect AV/Phono to Select monitor	3183

**MOUNTING BRACKET**

BE360-CD	Deflector to shield camera from knocks	4701
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**REQUIRED FOR ARTICULATED VEHICLES**

BN360-Enclosure	IP66 Enclosure kit to enable ECU to be installed on outside of vehicle	4723
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Note: Coiled cable kit or wireless connector also required



**Model**

**Part No:**

## BN360 360° CAMERA MONITOR SYSTEMS

Complete kits including monitor, Backeye®360 camera system, cables and adapters



**SE-7104F-100 - 360 camera monitor system for large rigid vehicles**

**4618**



- 1 x VBV-7104FM - 10.4" monitor
- 1 x BN360-000 360 system
- 1 x BN360-L110 - 10m/33' camera cable
- 2 x BN360-L115 - 15m/49' camera cables
- 1 x BN360-L120 - 20m/66' camera cable

See individual products for detailed specifications

- 2 year system warranty



**SE-770-100 - 360 camera monitor system for large rigid vehicles**

**4804**



- 1 x VBV-770M 7" monitor
- 1 x BN360-000 360 system
- 1 x BN360-L110 - 10m/33' camera cable
- 2 x BN360-L115 - 15m/49' camera cables
- 1 x BN360-L120 - 20m/66' camera cable

See individual products for detailed specifications

- 2 year system warranty
- R46 Approved

**R46**

## ASL360 360° CAMERA MONITOR SYSTEMS

Complete kits including monitor, Backeye®360 camera system, cables and adapters



**SE-770-000 - 360 camera monitor system for large rigid vehicles**

**4803**



- 1 x VBV-770M - 7" monitor
- 1 x ASL-360SV 360 system
- 1 x ASL-L110 - 10m/33' camera cable
- 2 x ASL-L115 - 15m/49' camera cables
- 1 x ASL-L120 - 20m/66' camera cable
- 1 x AC-024 - phono adapter cable
- 1 x AC-054 - adapter cable

See individual products for detailed specifications

- 2 year system warranty

## Which range is for you?

### Backeye® Elite

Top of the range systems for comprehensive blind-spot coverage. Suitable for large road-going vehicles, specialist applications, heavy duty off-road machines or where the cab is exposed to the elements.



### Backeye® Select

Mid-range systems suitable for medium to large road-going vehicles.



### Backeye® Essential

Entry level reversing solution ideally suited to light commercial vehicles and vans.



# Camera Monitor Systems

## Choosing your Backeye® camera monitor system

Select from our range of popular complete standard systems featured on pages 24-27 or build your own system referring to the camera monitor compatibility chart below, adding cables, adapters and ancillaries to connect and upgrade your system.

### Camera/monitor compatibility for building your own system.

			MONITORS			
			ELITE		SELECT	
			BE-970WFM BE-970WM BE-865DDM BE-870LM	BE-856GM	VBV-7104FM VBV-770FM VBV-770M VBV-750M	VBV-770M-S VBV-750M-S
<b>CAMERAS</b>	<b>ELITE</b>	<b>BE-811C shutter camera</b>	✓	SC-1000-ECU	AC-007 + SC-1000-ECU	✗
		<b>All other Elite range cameras</b>	✓	✓	AC-007	AC-007
	<b>SELECT</b>	<b>VBV-711C shutter camera</b>	AC-035 + AC-006	AC-035 + AC-006	AC-035	✓
		<b>All other Select range cameras</b>	AC-006	AC-006	✓	✓

### Camera/monitor combinations approved to R46

UN ECE Regulation No 46 (R46) is a regulation which covers devices for indirect vision and their installation.

R46 is widely recognised as a mark of exceptional performance, reliability and quality. In order to comply with the R46 regulation, the components of a camera monitor system must reach specified performance standards and be installed within pre-defined guidelines See [brigade-inc.com](http://brigade-inc.com) for further information

An R46 approved camera monitor system can be used instead of a conventional mirror for the Class V and Class VI areas.

			MONITORS		
			ELITE BE-870LM	SELECT VBV-770M	SELECT VBV-750M
<b>CAMERAS</b>	<b>ELITE</b>	<b>BE-800C</b>	✓ Plus full or half screen with SS-002 screen splitter	✗	✗
		<b>BE-890C</b>	✓ Plus full or half screen with SS-002 screen splitter	✗	✗
		<b>BE-850C</b>	✓ Plus full or half screen with SS-002 screen splitter	✗	✗
	<b>SELECT</b>	<b>VBV-300C</b>	✓ Plus full or half screen with SS-002 screen splitter	✓ Plus full or half screen with SS-002 screen splitter	✓
		<b>VBV-320C</b>	✓ Plus full or half screen with SS-002 screen splitter	✓ Plus full or half screen with SS-002 screen splitter	✓
	<b>360</b>	<b>BN360-000</b>	✗	✓ Full screen and standard split screen	✗

**Model**

**Part No:**

**ELITE CAMERA**



<b>BE-801C</b>	- NTSC	<b>1905</b>
<b>BE-801C(40)</b>	- Narrow viewing angle: 33 x 25 x 40° NTSC	<b>2085</b>
<b>BE-801C(78)</b>	- Narrow viewing angle: 64 x 47 x 78° NTSC	<b>2084</b>
<b>BE-890C</b>	- Waterproof to IP69K, No audio (PAL)	<b>2871</b>
<b>BE-850C</b>	- 12/24Vdc Waterproof to IP69K (PAL)	<b>4924</b>

- Viewing angle (HxVxD)  
100 x 69 x 133° NTSC
- IP68
- Size (WxHxD)  
86 x 72 x 80mm  
3.3 x 2.8 x 3.1 inches
- 3 year warranty + optional 2 further years on registration



**Features**

- 5 Infrared LEDs for ultra-low light performance
- 5m illumination distance
- Heater
- Audio
- Day / Night sensor
- Mirror / Normal view
- 1/3" Sony CCD
- TV System: NTSC
- TV lines: 450

**Durability & Standards**

- Mechanical vibration: 20G (HALT)
- Mechanical shock: 100G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- FCC Approved
- EMC approved: E
- HALT tested
- ISO 13766: 2006
- BN EN13309
- Corrosion Test - ISO 16750-4

**Power**

- Power consumption: 4 Watts
- Current: 0.33 Amps (0.33 - 2.63 Amps BE-850C)

**ELITE CAMERA**



<b>BE-811C - Heated Shutter camera</b>	<b>2914</b>
--	-------------

- Viewing angle (HxVxD)  
103 x 71 x 134°
- IPX9K
- Size (WxHxD)  
123 x 86 x 80mm  
4.8 x 3.3 x 3.2 inches
- 3 year warranty + optional 2 further years on registration



**Features**

- 6 Infrared LEDs for ultra-low light performance
- 5m illumination distance
- Shutter
- Heater
- Audio
- Day / Night sensor
- Mirror / Normal view
- 1/3" Sony CCD
- TV System: NTSC
- TV Lines: 400

**Power**

- Power consumption: 7 Watts
- Current: 0.4 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Mechanical shock: 100G
- Operating temperature: -40 to +80°C / -40 to +176°F
- CE Marked
- EMC approved: E
- FCC approved

**ELITE CAMERA**



<b>DMC-1025 - Mini camera (internal use) PAL</b>	<b>4910</b>
<b>DMC-1021 - Mini camera (internal use) NTSC</b>	<b>5163</b>

- Viewing angle (HxVxD)  
69 x 54 x 90° PAL  
76 x 55 x 98° NTSC
- IP30
- Size (WxHxD)  
43 x 45 x 37.5mm  
1.7 x 1.8 x 1.5 inches
- 3 year warranty



**Features**

- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- 1/3" Sony CCD
- TV System: PAL or NTSC
- TV Lines: 550 PAL / 400 NTSC

**Power**

- Power consumption: 1.0 Watt
- Current: 0.07 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature: -30 to +60°C / -4 to +158°C
- CE marked
- EMC Approved: E
- FCC Approved

**Model**

**Part No:**

## ELITE CAMERA

**BE-821C - Mini camera (mirror image)**

**2002**



- Viewing angle (HxVxD)  
111 x 87 x 129°
- IP68
- Size (WxHxD)  
47 x 40 x 50mm  
1.8 x 1.6 x 1.7 inches
- 3 year warranty

**Features**

- 1/4" Sony CCD
- TV System: NTSC
- TV Lines: 380

**Power**

- Power consumption: 1.5 Watts
- Current: 0.1 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Mechanical shock: 100G
- Operating temperature:  
-20 to +70°C / -4 to +158°F
- CE marked
- EMC approved: E
- FCC approved
- HALT tested

## ELITE CAMERA

**MD-51 - Mini dome camera NTSC**

**5164**



- Viewing angle (HxVxD)  
76 x 55 x 98°
- IP66
- Size (Diameter x H)  
76 x 59.2mm  
3 x 2.3 inches
- 3 year warranty



**Features**

- Dome camera with 150° movement range in all directions
- Can be used internally or externally
- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- 1/3" Sony CCD
- TV System: NTSC
- TV Lines: 400

**Power**

- Power consumption: 1 Watt
- Current: 0.07 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Mechanical shock 50G
- Operating temperature:  
-30 to +60°C / -22 to +140°F
- CE marked
- EMC Approved: E
- FCC Approved

## OPTIONAL EXTRAS

**MD-50SM-30 - Surface mounting adapter (30mm/1.2" deep)**

**5003**

**MD-50AM-15 - Angled surface mounting adapter (adds 15°)**

**5004**

**MD-50AM-25 - Angled surface mounting adapter (adds 25°)**

**5005**

## SELECT CAMERA

**VBV-701C - NTSC**

**2575**

**VBV-791C - Waterproof to IP69K, no audio NTSC**

**2842**



- Viewing angle (HxVxD)  
86 x 72 x 122° NTSC
- IP67
- Size (WxHxD)  
81 x 77 x 70mm  
3.2 x 3 x 2.8 inches
- 2 year warranty



**Features**

- 4 high-power Infrared LEDs for ultra-low light performance
- 7m illumination distance
- Audio
- Day / Night sensor
- Mirror view
- 1/3" Sharp CCD
- TV Lines: 750

**Power**

- Power consumption: 3 Watts
- Current: 0.2 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Mechanical shock: 51G
- Operating temperature:  
-30 to +70°C / -22 to +158°F
- CE marked
- EMC approved: E
- FCC Approved
- HALT tested

**Camera icons**



Infrared LEDs for ultra-low-light performance



Day/night sensor



Audio



Heater



Normal/mirror view



**Model**

**Part No:**

**SELECT CAMERA**



**VBV-711C - Heated Shutter camera**

**2841**

Direct connection to VBV-770DM-S and VBV-750DM-S monitors via 5-pin 10m / 33' (VBV-L510) or 20m / 66' (VBV-L520) camera cable. Use AC-035 5-pin to 4-pin adapter for connection to other Select monitors

- Viewing angle (HxVxD)  
90 x 70 x 110°
- IP69K
- Size (WxHxD)  
122 x 85 x 82mm  
4.8 x 3.3 x 3.2 inches
- 2 year warranty



**Features**

- 12 Infrared LEDs for ultra-low light performance
- 10m illumination distance
- Shutter
- Heater
- Audio
- Day / Night sensor
- Mirror / Normal view
- 1/3" Sharp CCD
- TV System: NTSC
- TV Lines: 420

**Power**

- Power consumption: 4.6 Watts
- Current: 0.38 Amps

**Durability & Standards**

- Mechanical vibration: 2.8G
- Mechanical shock: 50G
- Operating temperature: -20 to +70°C / -4 to +158°F
- CE Marked
- EMC approved: E
- FCC approved

**SELECT CAMERA**



**VBV-481C - Cylinder camera**

**2843**

- Viewing angle (HxVxD)  
90 x 69 x 117°
- IP67
- Size (Diameter x Length)  
35 x 50mm  
1.4 x 2 inches
- 2 year warranty



**Features**

- 9 LEDs for ultra-low light performance
- 10m / 33' illumination distance
- Mirror view
- 1/3" Sharp CCD
- TV System: NTSC
- TV Lines: 420

**Power**

- Power consumption: 2.4 Watts
- Current: 0.2 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Operating Temperature: -30 to +70°C / -22 to +158°F
- CE marked
- FCC approved

**SELECT CAMERA**



**VBV-301C - Compact flush-mount eyeball camera - Mirror view**

**4611**

**VBV-321C - Compact flush-mount eyeball camera - Normal view**

**4615**

- Viewing angle (HxVxD)  
102 x 78 x 145°
- IP69K
- Size (WxHxD)  
57 x 41 x 68mm  
2.2 x 1.6 x 2.7 inches
- 2 year warranty



**Features**

- Lens swivel adjustment: 35° (Top) x 5° (Bottom) x 8° (Left) x 8° (Right)
- Lens rotation adjustment: ±180°
- 5 infrared LEDs for ultra-low light performance
- 3-6m / 10-20' illumination distance
- Day / Night sensor
- Audio
- 1/3" Sharp CCD
- TV System: NTSC
- 420 TV lines

**Power**

- Power consumption: 1.2 Watts
- Current consumption: 0.14 Amps

**Durability & Standards**

- Corrosion resistant: ISO9227 salt spray standard
- Mechanical vibration: 4G
- Operating temperature: -30 to +70°C / -22 to +158°F
- CE marked
- EMC approved: E
- FCC approved

**OPTIONAL EXTRAS**



**SM-3XX-25 Surface mounting adapter (25mm / 1" deep)**

**4596**

## ELITE MONITOR



### BE-970WFM - Waterproof 7" Quad digital LCD monitor

3560

- 12-24Vdc
- IP69K
- Size (WxHxD)  
194 x 124 x 48mm  
7.6 x 4.9 x 1.9 inches
- 3 year warranty + optional 2 further years on registration



Plus additional in-built image options

**Features**

- 4 camera inputs
- Shutter camera compatible (inputs 1&2)
- Backlit touch screen button panel
- 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Mirror / Normal switching from menu
- On screen distance and vertical line markers
- Audio
- Speed switch trigger to turn monitor on/off or trigger a split screen
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 500cd/m<sup>2</sup>
- Viewing angles:  
Side 65° x Top 50° x Bottom 60°

**Power**

- Power consumption: min 28 Watts
- Current: max 2.15 Amps

**Durability & Standards**

- Aluminium die-cast casing
- Mechanical vibration: 10G
- Mechanical shock: 100G
- Operating temperature:  
-40 to +75°C / -40 to +167°C
- CE marked
- EMC approved: E
- FCC approved
- ISO 16750
- ISO 20653: 2006
- HALT tested

## ELITE MONITOR



### BE-970WM - Waterproof 7" Digital LCD monitor

3351

- 12-24Vdc
- IP69K
- Size (WxHxD)  
194 x 124 x 48mm  
7.6 x 4.9 x 1.9 inches
- 3 year warranty + optional 2 further years on registration



**Features**

- 2 Camera inputs
- Shutter camera compatible - both inputs
- Backlit touch screen button panel
- 'Button-lock' anti-tamper feature
- 2 Auto-triggers
- Mirror / Normal switching from menu
- On screen distance and vertical line markers
- Audio
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 500cd/m<sup>2</sup>
- Viewing angles:  
Side 65° x Top 50° x Bottom 60°

**Power**

- Power consumption: 11 Watts
- Current: 0.9 Amps

**Durability & Standards**

- Aluminium die-cast casing
- Mechanical vibration: 20G
- Mechanical shock: 100G
- Operating temperature:  
-40 to +70°C / -40 to +158°F
- CE marked
- EMC approved: E
- FCC approved
- ISO 16750
- ISO 13766: 2006
- HALT tested

**Monitor icons**

- Number of camera inputs
- Number of auto-triggers
- Audio
- 'Button-lock' anti-tamper feature
- On-screen distance and vertical line markers
- Normal/mirror view - switching from menu

**ELITE MONITOR**
**BE-870LM - 7" Digital LCD monitor**
**2705**


- 12-24Vdc
- Size (WxHxD)  
197 x 128 x 34mm  
7.8 x 5 x 1.3 inches
- 3 year warranty + optional 2 further years on registration


**Features**

- 2 Camera inputs
- Shutter camera compatible - both inputs
- 'Button-lock' anti tamper feature
- 2 Auto-triggers with configurable trigger-off delays
- Mirror / Normal switching from menu
- On-screen distance and vertical line markers
- Audio
- Sun shield
- Auto-dimmer and keypad illumination
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen

- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 400cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

**Power**

- Power consumption: 12 Watts
- Current: 1 Amp

**Durability & Standards**

- Mechanical vibration: 2.5G
- Mechanical shock: 51G
- Operating temperature:  
-30 to +70°C / -22 to +158°F
- CE marked
- EMC approved: E
- FCC approved

**ELITE MONITOR**
**BE-865DDM - Double DIN 6.5" Digital LCD Monitor**
**3935**


- 12-24Vdc
- IP69K
- Size (WxHxD)  
188 x 116 x 142mm  
7.4 x 4.7 x 5.6 inches
- 3 year warranty + optional 2 further years on registration



Plus additional in-built image options

**Features**

- 4 camera inputs with independent control
- Shutter camera compatible (all inputs)
- Backlit touch screen button panel
- 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Mirror / Normal switching from menu
- On screen distance and vertical line markers
- Audio
- Speed switch trigger to turn monitor on/off or trigger a split screen
- Sun shield
- Multi-lingual menus
- Audio / video inputs / output
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 500cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

**Power**

- Power consumption: min 15.4 Watts
- Current: min 1.4 Amps

**Durability & Standards**

- Mechanical vibration: 6G
- Operating temperature:  
-40 to +70°C / -40 to +158°F
- CE marked
- EMC approved: e
- FCC approved
- ISO 16750

**ELITE MONITOR**
**BE-856GM - 5.6" Digital LCD monitor**
**3756**


- 12-24Vdc
- Size (WxHxD)  
172 x 115 x 32mm  
6.8 x 4.5 x 1.2 inches
- 3 year warranty + optional 2 further years on registration


**Features**

- 2 camera inputs
- 2 Auto-triggers
- Mirror / Normal switching from menu
- On-screen distance & vertical line markers
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 640 x 480
- Contrast ratio: 500:1
- Brightness: 350cd/m<sup>2</sup>

- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

**Power**

- Power consumption: 11 Watts
- Current: 0.9 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature:  
-40 to +70°C / -40 to +158°F
- CE marked
- EMC approved: E
- FCC approved
- ISO 13766: 2006
- ISO 16750
- HALT tested

**SELECT MONITOR**

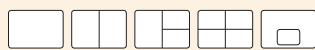
**VBV-7104FM - 10.4" Digital LCD Monitor**

**4474**



- 12-24Vdc
- Size (WxHxD)  
267 x 193 x 30mm  
10.5 x 7.6 x 1.2 inches

• 2 year warranty



Plus additional in-built image options

**Features**

- 4 camera inputs
- 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Configurable trigger delay
- Mirror / Normal switching from menu
- On-screen distance markers
- Built-in speaker
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 30,000 hours life)
- Anti-glare screen
- Resolution: 1024 x 768
- Contrast ratio: 500:1
- Brightness: 400cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 60° x Bottom 60°

**Power**

- Power consumption: 31 Watts
- Current: 2.8 Amps

**Durability & Standards**

- Mechanical vibration: 4G
- Mechanical shock: 50G
- Operating temperature:  
-20 to +70°C / -4 to +158°F
- CE marked
- EMC approved: E
- FCC approved
- HALT tested

**SELECT MONITOR**

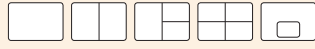
**VBV-770FM - 7" Digital LCD monitor**

**4982**



- 12-24Vdc
- Size (WxHxD)  
182 x 122 x 27mm  
7.2 x 4.8 x 1 inch

• 2 year warranty



Plus additional in-built image options

**Features**

- 4 camera inputs
- 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Mirror / Normal switching from menu
- On-screen distance markers
- Audio
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 400cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

**Power**

- Power consumption: 27 watts
- Current: 2.2 Amps

**Durability & Standards**

- Mechanical vibration: 4G
- Mechanical shock: 50G
- Operating temperature:  
-30 to +70°C / -4 to +158°F
- CE marked
- EMC approved: E

**SELECT MONITOR**

**VBV-750M - 5" Digital LCD monitor**

**4287**

**VBV-750M-S - 5" Digital LCD monitor**

**4710**

Includes 1 5-pin input for connection to VBV-710C shutter camera



- 12-24Vdc
- Size (WxHxD)  
149.5 x 99 x 22mm  
5.9 x 3.9 x 0.8 inches

• 2 year warranty



**Features**

- 3 camera inputs
- 3 Auto-triggers
- Mirror / Normal switching from menu
- On-screen distance markers
- 'Button lock' anti-tamper feature
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480

- Contrast ratio: 500:1
- Brightness: 350cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

**Power**

- Power consumption: 11.5 Watts
- Current: 0.95 Amps

**Durability & Standards**

- Mechanical vibration: 4G
- Mechanical shock: 100G
- Operating temperature:  
-30 to +70°C / -4 to +158°F
- CE marked
- EMC approved: E
- HALT tested

**Model**

**Part No:**

**SELECT MONITOR**



**VBV-770M - 7" Digital LCD monitor**

**4288**

**VBV-770M-S - 7" Digital LCD monitor**

**4697**

Includes 1 x 5-pin input for connection to VBV-710C shutter camera

- 12-24Vdc
- Size (WxHxD)  
196 x 118 x 26mm  
7.7 x 4.6 x 1 inches
- 2 year warranty



**Features**

- 3 camera inputs
- 3 Auto-triggers
- Mirror / Normal switching from menu
- 'Button lock' anti-tamper feature
- On-screen distance markers
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching PAL / NTSC

**Power**

- Power consumption: 18 Watts
- Current: 1.5 Amps

**Durability & Standards**

- Mechanical vibration: 4G
- Mechanical shock: 100G
- Operating temperature:  
-30 to +70°C / -4 to +158°F
- CE marked
- EMC approved: E
- FCC approved
- HALT tested

**Picture Quality**

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 400cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

**ESSENTIAL MONITOR**



**VBV-243M - 4.3" Digital Mirror monitor**

**4070**

- 12Vdc
- Size (WxDxH)  
259 x 88 x 22mm  
10.1 x 3.5 x 0.9 inches
- 1 year warranty



**Features**

- On screen display menu
- Digital LCD panel
- 1 Auto-trigger
- TV system: PAL / NTSC

**Power**

- Power consumption: 4.95 Watts
- Current: 0.45 Amps

**Durability & Standards**

- Vibration rating: 6G
- Operating temperature:  
-20 to +70°C / -4 to +158°F
- CE marked
- FCC approved

**Picture Quality**

- Resolution: 480 x 272
- Contrast ratio: 500:1
- Brightness: 200cd/m<sup>2</sup>
- Viewing angles:  
Side 50° x Top 60° x Bottom 55°

**Monitor icons**



Number of camera inputs



Number of auto-triggers



Audio



'Button-lock' anti-tamper feature



On-screen distance and vertical line markers



Normal/mirror view - switching from menu

**Model**

**Part No:**

## RIGID VEHICLES ELITE RANGE CAMERA MONITOR SYSTEM

**BE-870L-000N - Single camera monitor system for rigid vehicles**

**3131**



- BE-870LM - 7" TFT LCD colour monitor
- BE-801C - Colour ultra-low-light camera
- BE-L120 - 20m / 66' camera cable

See individual products for detailed specifications

- 3 year system warranty

## RIGID VEHICLES SELECT RANGE CAMERA MONITOR SYSTEMS

**VBV-770-301 - Single camera monitor system for rigid vehicles**

**4779**



- VBV-770M - 7" TFT LCD colour monitor
- VBV-301C - colour flush-mount camera, NTSC format
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications

- 2 year system warranty

**R46**

**VBV-770-000N - Single camera monitor system for rigid vehicles**

**4693**



- VBV-770M - 7" TFT LCD colour monitor
- VBV-701C - NTSC colour ultra-low-light camera
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications

- 2 year system warranty

**VBV-750-301 - Single camera monitor system for rigid vehicles**

**4778**



- VBV-750M - 5" TFT LCD colour monitor
- VBV-301C - colour flush-mount camera, NTSC format
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications

- 2 year system warranty

**VBV-750-000N - Single camera monitor system for rigid vehicles**

**4706**



- VBV-750M - 5" TFT LCD colour monitor
- VBV-701C - colour ultra-low-light camera, NTSC format
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications

- 2 year system warranty

**VBV-750-100N - Single camera monitor system for rigid vehicles**

**4709**



- VBV-750M - 5" TFT LCD colour monitor
- VBV-711C - colour ultra-low-light shutter camera, NTSC format
- VBV-L520 - 20m / 66' camera cable

See individual products for detailed specifications

- 2 year system warranty

**Model**

**Part No:**

**SMALL RIGID VEHICLES AND VANS  
SELECT RANGE CAMERA MONITOR SYSTEMS**

**VBV-770-311 - Single flush-mount camera monitor system for small rigid and vans**

**4783**



- VBV-770M - 7" TFT LCD Colour Monitor
- VBV-301C Colour Flush-Mount Camera, NTSC Format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications

- 2 year system warranty

**VBV-770-010N - Single camera monitor system for small rigid and vans**

**4694**



- VBV-770M - 7" TFT LCD colour monitor
- VBV-701C colour ultra-low-light camera, NTSC format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications

- 2 year system warranty

**VBV-770-100N - Single shutter camera monitor system for rigid vehicles**

**4770A**



- VBV-770M - 7" TFT LCD colour monitor
- VBV-711C colour Ultra-low-light shutter camera, NTSC format
- VBV-L520 20m / 66' camera cable

See individual products for detailed specifications

- 2 year system warranty

**VBV-750-311 - Single flush-mount camera monitor system for rigid vehicles**

**4782**



- VBV-750M - 5" TFT LCD colour monitor
- VBV-301C colour flush-mount camera, NTSC format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications

- 2 year system warranty

**VBV-750-010N - Single camera monitor system for vans**

**4707**



- VBV-750M - 5" TFT LCD colour monitor
- VBV-701C colour ultra-low-light camera, NTSC format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications

- 2 year system warranty

**RIGID VEHICLES  
ESSENTIAL RANGE CAMERA MONITOR SYSTEM**

**VBV-650-000N - Single Camera Rear View Systems for Large Rigid Vehicles; eg Trucks, Buses, Dump Trucks, etc**

**4766**



- VBV-650M - 5" TFT LCD colour monitor
- VBV-621C - Colour ultra-low-light CMOS camera, NTSC format
- VBV-L420 - 20m / 66' camera cable
- 1 year warranty



**Monitor**

- 12-24Vdc
- 1 camera input
- Size (WxHxD)  
148 x 110 x 30.2mm  
5.8 x 4.3 x 1.2"

**Camera**

- Viewing angle (HxVxD)  
81 x 59 x 106°
- IP67
- Size (WxHxD)  
64.5 x 59 x 55mm  
2.5 x 2.3 x 2.2"

**Model**

**Part No:**

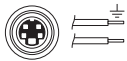
## WIRELESS CAMERA MONITOR CONNECTION SYSTEM

**DW-1001-TX - Digital Wireless Transmitter**

**4282**

**DW-1001-RX - Digital Wireless Receiver**

**4283**



Transmitter



Receiver

- Digital technology
- 12-24Vdc
- 1 camera input
- IP69K (Transmitter)
- Size (WxHxD)  
113 x 114 x 31mm  
4.4 x 4.8 x 1.2 inches
- 2 year warranty

### Features

- Image Latency: 200 milliseconds
- No need for retractable coiled cables
- Reduces installation time
- Re-pair facility allows for interchangeable trailers
- Triggered by reverse gear
- TV System NTSC
- Secure connection

### Power

- Maximum Current Amps:  
TX: 0.85 RX: 0.17
- Power consumption:  
TX: 9.8 Watts RX: 2.2 Watts

### Durability & Standards

- Operating temperature:  
-40 to +70°C / -40 to +158°F
- Mechanical vibration: 6G
- Mechanical shock: 20G
- CE marked
- EMC approved: E
- FCC approved

AC-006 & AC-007 adapter cables are required to connect to Select range camera and monitor - see page 28

## ELITE TRUCK/TRAILER CABLE KIT

**SK-31E - Cable kit for articulated trucks - unique pin layout**

**1830**

Inclusive of SK-31E-T - Trailer only kit



SC-7



SP-7A



SP-7B

- BE-L110 - 10m/33' cable for cab **0803**
- SP-7A - 7-pin bulkhead socket for cab & cab-end camera connector (unique pin layout) **1827**
- SC-7 - Coiled cable with 7-pin plugs (unique pin layout) **1829**

**SK-31E-T - Trailer only kit**

**1886**

- BE-X020 - 20m/66' extension cable for trailer **1143**
- SP-7B - 7-pin bulkhead socket for trailer & trailer-end camera connector (unique pin layout) **1828**

## ELITE TRUCK/TRAILER CABLE KIT

**SK-30E - Cable kit for articulated trucks**

**1144**

Inclusive of SK-30E-T - Trailer only kit



SC-07



SP-07C



SP-07T

- BE-L110 - 10m/33' cable for cab **0803**
- SP-07C - 7-pin bulkhead socket for cab & cab-end camera connector **1140**
- SC-07 - Coiled cable with 7-pin plugs **1046**

**SK-30E-T - Trailer only kit**

**1885**

- BE-X020 - 20m/66' extension cable for trailer **1143**
- SP-07T - 7-pin bulkhead socket for trailer & trailer-end camera connector **1142**

## ELITE TRUCK/TRAILER CABLE KIT

**SK-15-01 - Three camera cable kit for articulated trucks**

**3427**



SP-15A-01



SP-15A-01



SC-15-01

- SP-15A-01 - 15-pin bulkhead socket for cab & 3 cab-end camera connectors **3423**
- SP-15B-01 - 15-pin bulkhead socket for trailer & 3 trailer-end camera connectors **3422**
- SC-15-01 - Coiled shielded cable with 15-pin plugs **3268**



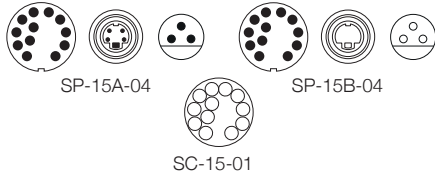
**Model**

**Part No:**

**ELITE TRUCK/TRAILER CABLE KIT**

**SK-15-04 - Single camera & single buzzer Ultrasonic Detection System (new generation) cable kit for articulated trucks**

**3997**



- **SP-15A-04 - 15-pin bulkhead socket for cab & cab-end camera connector plus stripped wires and display/buzzer connection for Ultrasonics** 3955
- **SP-15B-04 - 15-pin bulkhead socket for trailer & trailer-end camera connector plus stripped wires and display/buzzer connection for Ultrasonics** 3956
- **SC-15-01 - Coiled shielded cable with 15-pin plugs** 3268

**ELITE TRUCK/DRAWBAR TRAILER CABLE KIT**

**SK-50E - Twin camera cable kit with unique pin layout for truck with drawbar trailer**

**1570**

Inclusive of SK-50E-A Truck only kit and SK-31E-T trailer only kit



- |   |  |
|---|--|
| <p><b>SK-50E-A - Truck only kit</b> <span style="float: right;">1879</span></p> <ul style="list-style-type: none"> <li>• <b>BE-L115 - 15m/49' cable for truck</b> <span style="float: right;">0802</span></li> <li>• <b>BE-X005 - 5m/16' extension cable for truck camera</b> <span style="float: right;">2099</span></li> <li>• <b>CS-020 - Two way camera selector</b> <span style="float: right;">1571</span></li> <li>• <b>SP-7A - 7-pin bulkhead socket for trailer &amp; trailer-end camera connector (unique pin layout)</b> <span style="float: right;">1827</span></li> <li>• <b>SC-7 - Coiled cable with 7-pin plugs (unique pin layout)</b> <span style="float: right;">1829</span></li> </ul> | <p><b>SK-31E-T - Trailer only kit</b> <span style="float: right;">1886</span></p> <ul style="list-style-type: none"> <li>• <b>BE-X020 - 20m/66' extension cable FOR trailer camera</b> <span style="float: right;">1143</span></li> <li>• <b>SP-7B - 7-pin bulkhead socket for cab &amp; cab-end camera connector (unique pin layout)</b> <span style="float: right;">1828</span></li> </ul> |
|---|--|

**SELECT TRUCK/TRAILER CABLE KIT**

**VSK-31E - Cable kit for articulated trucks - unique pin layout**

**2539**

Inclusive of VSK-31E-T - Trailer only kit



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• <b>VBV-L410 - 10m/33' cable for cab</b> <span style="float: right;">1386</span></li> <li>• <b>SP-7A - 7-pin bulkhead socket for cab &amp; cab-end camera connector (unique pin layout)</b> <span style="float: right;">1827</span></li> <li>• <b>AC-014 - Adapter cable</b> <span style="float: right;">2094</span></li> <li>• <b>SC-7 - Coiled cable with 7-pin plugs (unique pin layout)</b> <span style="float: right;">1829</span></li> </ul> | <p><b>VSK-31E-T - Trailer only kit</b> <span style="float: right;">2543</span></p> <ul style="list-style-type: none"> <li>• <b>VBV-L420 - 20m/66' cable for trailer</b> <span style="float: right;">1380</span></li> <li>• <b>AC-006 - Adapter cable</b> <span style="float: right;">1983</span></li> <li>• <b>SP-7B - 7-pin bulkhead socket for trailer &amp; trailer-end camera connector (unique pin layout)</b> <span style="float: right;">1828</span></li> </ul> |
|--|--|

**Model**

**Part No:**

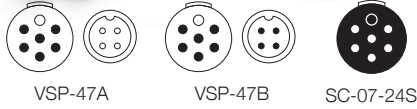
## SELECT TRUCK/TRAILER CABLE KIT



**VSK-30E - Cable kit for articulated trucks**

**2538**

Inclusive of SK-30E-T - Trailer only kit



- **VBV-L410 - 10m/33' cable for cab** 1386
- **VSP-47A - 7-pin bulkhead socket for cab & cab-end camera connector** 1847
- **SC-07-24S - Coiled cable with type 24S 7-pin plugs** 1227

**VSK-30E-T - Trailer only kit** 2542

- **VBV-L420 - 20m/66' extension cable for trailer** 1380
- **VSP-47B - 7-pin bulkhead socket for trailer & trailer-end camera connector** 1846

## SELECT TRUCK/TRAILER CABLE KIT



**VSK-305E - Cable kit for articulated trucks - Shutter camera**

**3871**



- **VBV-L510 10m/33' cable for cab** 3663
- **VBV-L520 20m/66' cable for trailer** 3664
- **VSP-57A 7-pin bulkhead socket for cab & cab-end camera connector** 3869
- **VSP-57B 7-pin bulkhead socket for trailer & trailer-end camera connector** 3870
- **SC-07-24S - Coiled cable with type 24S 7-pin plugs** 1227

## SELECT TRUCK/TRAILER CABLE KIT



**SK-15-05 - 3-camera Backeye®360 cable kit for articulated vehicles**

**5066**



- **SP-15A-05 - 15-pin bulkhead socket for cab & cab-end connector plus 3x connections for Backeye®360 Select** 5066
- **SP-15B-05 15-pin bulkhead socket for trailer & trailer-end connector plus 3x connections for Backeye®360 Select** 5065
- **SC-15-01 Coiled shielded cable with 15-pin plugs** 3268

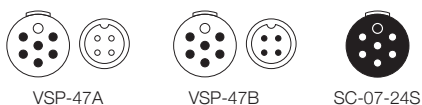
## SELECT TRUCK/ DRAWBAR TRAILER CABLE KIT



**VSK-50E - Twin camera cable kit for truck with drawbar trailer**

**2540**

Inclusive of VSK-50E-A Truck only kit and VSK-30E-T Trailer only kit



**VSK-50E-A - Truck only kit** 2541     **VSK-30E-T - Trailer only kit** 2542

- **VBV-L420 - 20m/66' cable for truck** 1380
- **VBV-L405 - 5m/16' camera cable for truck camera** 1499
- **VCS-020 - Two-way camera selector** 1844
- **1 x VSP-47A - 7-pin camera bulkhead socket for truck rear** 1847
- **SC-07-24S - Coiled cable with 7-pin sockets** 1227

- **VBV-L420 - 20m/66' cable for trailer** 1380
- **VSP-47B - 7-pin camera bulkhead socket for trailer** 1846

**Model**

**Part No:**

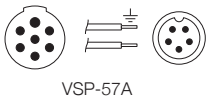
**SELECT TRUCK/DRAWBAR TRAILER CABLE KIT**

**VSK-505E - Twin shutter camera cable kit for truck with drawbar trailer**

**4005**



- **VBV-L420** - 20m/66' cable for truck 1380
- **VBV-L520** - 20m/66' camera cable for truck camera 3664
- **VBV-L505** - 5m/16' camera cable for cab 4001
- **VCS-020** - Two-way camera selector 1844
- **2 x AC-035** - 5-pin to 4-pin shutter camera adapter 3702
- **VSP-57A** 7-Pin bulkhead socket for cab & cab-end camera connector 3869
- **VSP-57B** 7-pin bulkhead socket for trailer & trailer-end camera connector 3870
- **SC-07-24S** - Coiled cable with 7-pin plugs 1227



**ELITE CAMERA CABLES**



- BE-L130** - 30m / 98' cable 0800
- BE-L120** - 20m / 66' cable 0801
- BE-L115** - 15m / 49' cable 0802
- BE-L112** - 12m / 39' cable 3008
- BE-L110** - 10m / 33' cable 0803
- BE-L108** - 8m / 26' cable 3007
- BE-L105** - 5m / 16' cable 0804
- BE-L101** - 1m / 3.3' cable 5042
- BE-L1003** - 0.3m / 1' cable 2797

**ELITE CAMERA EXTENSION CABLES**



- BE-X025** - 25m / 82' extension cable 1907
- BE-X020** - 20m / 66' extension cable 1143
- BE-X015** - 15m / 49' extension cable 2101
- BE-X010** - 10m / 33' extension cable 2100
- BE-X005** - 5m / 16' extension cable 2099
- BE-X003** - 3m / 10' extension cable 0805

**SELECT CAMERA CABLES**



- VBV-L430** - 30m / 98' cable 2108
- VBV-L425** - 25m / 82' cable 3513
- VBV-L420** - 20m / 66' cable 1380
- VBV-L415** - 15m / 49' cable 3150
- VBV-L412** - 12m / 39' cable 3106
- VBV-L410** - 10m / 33' cable 1386
- VBV-L407** - 7m / 23' cable 3151
- VBV-L406** - 6m / 20' cable 3152
- VBV-L405** - 5m / 16' cable 1499
- VBV-L403** - 3m / 10' cable 4977
- VBV-L4025** - 2.5m / 8' cable 1554
- VBV-XM003** - 0.3m / 1' cable 4193
- VBV-L520** - 20m / 66' 5-pin shutter camera cable 3664
- VBV-L510** - 10m / 33' 5-pin shutter camera cable 3663
- VBV-L505** - 5m / 16' 5-pin shutter camera cable 4001

**Model**

**Part No:**

## CAMERA MONITOR ADAPTERS



**AC-006 - Connects Select camera (not shutter) to Elite cable**

**1983**



**AC-007 - Connects Select monitor to Elite cable**

**1984**



**AC-014 - Connects Elite camera to Select cable**

**2094**



**AC-014(5M) - Connects Elite camera to Select cable, 5m / 16.4' long**

**5049**



**AC-016 - Connects AV to Camera input of Elite monitor**

**2150**



**AC-019 - Connects Elite camera to male phono (video only)**

**2589**



**AC-020 - Connects Elite monitor to Select cable**

**2590**



**AC-021 - Connects FLIR PathFindIR camera to Elite cable**

**2704**



**AC-024 - Connects phono to Select cable**  
(video & audio input, 12Vdc output)

**3183**



**AC-035 - 5-pin to 4-pin Select shutter camera adapter**

**3702**



**AC-041 - Connects Elite camera to John Deere 7-pin amp output**

**4245**



**AC-042 - Connects Select camera to John Deere 7-pin amp output**

**4246**



**AC-044 - Connects Elite camera to Molex M12 (Fendt)**

**4279**



**AC-045 - Connects Select camera to Molex M12 (Fendt)**

**4280**



**AC-056 - Connects Select camera to Orlaco monitor**

**4401**



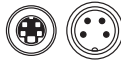
**AC-062 - Connects Elite camera to Orlaco monitor**

**4691**

Model

Part No:

### CAMERA MONITOR ADAPTERS



AC-063 - Connects Elite camera to Orlaco monitor, screw fit

4925

AC-065 - Connects FLIR PathFindIR camera (BNC) to RCA input

4963



AC-066 - Connects Orlaco camera to Elite monitor

5027



AC-067 - Connects Orlaco camera to Select monitor

5028

### CAMERA MONITOR IN-LINE VOLTS CONVERTER/ADAPTERS

AC-24-12(001) - in-line 24/12Vdc converter - Select camera to Elite connector 4235

AC-24-12(002) - in-line 24/12Vdc converter - Elite camera to Daimler monitor 4266

AC-24-12(004) - in-line 24/12Vdc converter - Select camera to MAN MMT HSD 4281

AC-24-12(006) - in-line 24/12Vdc converter - Select camera to Volvo FH(4) & FM(4) 4719

AC-24-12(007) - in-line 24/12Vdc converter - Select camera to Iveco connect system 4762

AC-24-12(008) - in-line 24/12Vdc converter - Select camera to Mercedes sprinter 4763

AC-24-12(009) - in-line 24/12Vdc converter - Elite camera to Mekra 507405 monitor 4926

### OEM CAMERA MONITOR ADAPTER CABLES

A further range of OEM specific adapters to connect Brigade cameras to factory fit monitors is available.

### CAMERA MONITOR SYSTEM ANCILLARIES



LS-60-A - Speed switch

4851

- 12-24Vdc
- Auto-triggers safety equipment at the designated speed
- Size (WxHxD)  
44 x 16 x 64mm  
1.7 x 0.6 x 2.5"
- 2 year warranty

#### Features

- Normally closed - safety device on by default, turning off at designated speed
- 10 speed threshold settings
- Compact size
- Easy to install and set up
- Short circuit protection on camera inputs
- Reverse polarity protected
- Compatible with Brigade products

#### Power

- Power consumption: 21.6 Watts
- Max current: 1.8 Amps
- Switch Output max. current: 1.2 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: E
- FCC approved

**Note:** A relay is required if connected to a device that is higher than 1.2 Amps

### CAMERA MONITOR SYSTEM ANCILLARIES



SC-1000-ECU - Shutter camera module

3666

- Allows BE-801C shutter camera to function on non-shutter enabled inputs on Elite range monitors (using Elite range cables).

- Current: 2 Amps
- CE marked
- EMC approved: E

Use AC-007 adapter to connect to Select monitor.

**Model**

**Part No:**

## CAMERA MONITOR SYSTEM ANCILLARIES

**SS-002 - Twin camera screen splitter**

**3044**



- 12-24Vdc
- 2 camera inputs
- Size (WxHxD)  
147 x 37 x 78mm  
5.7 x 1.5 x 3"
- 2 year warranty



In-built image options

Single

Split

**Features**

- Offers split-screen option for monitors without in-built functionality
- 3 auto-triggers for each camera
- Shutter camera compatible
- TV System: NTSC
- Manual Mirror/Normal switching - choose from horizontal normal/mirror or vertical normal/flip
- Short circuit protection on camera inputs
- Reverse polarity protected
- Compatible with Brigade's camera monitors (adapters required for Elite)

**Power**

- Power Consumption: 8.4 Watts
- Current: 0.7 Amps

**Durability & Standards**

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature: -30 to +70°C / -22 to +158°F
- CE marked
- EMC approved: E
- FCC approved

## CAMERA MONITOR SYSTEM ANCILLARIES

**EDM-50 - Multi-camera module and screen splitter**

**2152**



- 12-24Vdc
- 4 camera inputs
- Size (WxHxD)  
154 x 28 x 105mm  
6 x 1.1 x 4.1"
- 2 year warranty



Single Split Triple Quad Picture in picture  
Plus additional in-built image options

**Features**

- Shutter camera compatible (inputs 1,2&3)
- AV input to accept DVD, sat nav or other add-ons
- 5 manual or auto-triggers for each camera
- On screen distance markers
- Mirror / Normal image switch for each camera
- Selectable camera audio
- Auto-scanning function
- Compatible across Brigade camera monitor range (adapters required for Select series)

**Power**

- Power consumption: 20 Watts
- Current: 2 Amps

**Durability & Standards**

- Mechanical vibration: 5G
- Operating temperature: -25 to +70°C / -13 to +158°F
- CE marked
- EMC approved: E
- FCC approved

## CAMERA MONITOR SYSTEM ANCILLARIES

**CS-020 - Two-way camera switcher (Elite range)**

**1571**



- Allows a 2nd Select range camera to be connected to a Select range monitor

- 2nd camera view selected by trigger wire
- Full screen view only

## CAMERA MONITOR SYSTEM ANCILLARIES

**VCS-020 - Two-way camera switcher (Select range)**

**1844**



- Allows a 2nd Select range camera to be connected to a Select range monitor

- 2nd camera view selected by trigger wire
- Full screen view only

By capturing footage from vehicle mounted cameras, mobile digital recorders provide an accurate witness, giving irrefutable evidence in the case of false claims, crash for cash incidents or vandalism. Disproving these claims means companies can make major cost savings, whilst importantly supporting their drivers, who are often the subject of increased scrutiny.

- False claim prevention
- Protection for drivers who may be wrongly accused
- Provides irrefutable evidence in the case of accidents and legal proceedings
- Useful in reducing shrinkage and catching perpetrators
- Driver training and best practice
- Peace of mind for passengers and drivers



## New!

### WiFi and 3G Connectivity

Brigade's new range of digital recorders now include models with WiFi and/or 3G connectivity capabilities. Wirelessly connecting an MDR to a secure server can save many man-hours, as data can be obtained from the recorder without needing to access the vehicle.

**In order to set up and use the WiFi and/or 3G MDR models, IT infrastructure, services and dedicated hardware such as servers will be required.**

## Model

## Part No:

### MOBILE DIGITAL RECORDER



<b>MDR-408-1000</b>	<b>- 8 channel 1TB hard disk recorder</b>	<b>4869</b>
<b>MDR-408GW-1000</b>	<b>- 8 channel 1TB hard disk recorder with Wi-Fi and 3G</b>	<b>4944</b>
<b>MDR-408G-1000</b>	<b>- 8 channel 1TB hard disk recorder with 3G</b>	<b>4942</b>
<b>MDR-408W-1000</b>	<b>- 8 channel 1TB hard disk recorder with Wi-Fi</b>	<b>4943</b>

- 9-32Vdc
- 8 camera inputs
- 8 trigger/alarm inputs
- Lockable and removable Mobile Caddy Unit
- Fast, easily downloadable recordings and data
- Size (WxHxD)  
215 x 78 x 292mm  
8.5 x 3 x 11.5 inches
- 3 year warranty (MDR & HDD)
- 1 year warranty (Optional extras)

#### Main Contents

- Mobile Digital Recorder with 2.5" 1TB SATA HDD
- Remote control
- Trigger cable loom
- GPS antenna
- Security key
- 64GB SD card
- Mounting bracket and screws
- 3G antenna (4943 & 4944)
- Wi-Fi antenna (4942 & 4944)

#### Features

- Remotely access MDR units using wireless (WiFi models only) and/or Mobile network (3G models only)
- Mobile apps for remote view (WiFi/3G models only)
- Robust aluminium housing
- Anti-vibration mounting allows for installation at any angle
- Built-in GPS
- Internal G-sensor
- Up to 1164 hours recording
- Recordings saved to hard disk (protected by non-visible digital watermark) and in-built Mirror recording onto SD card
- Recording modes: normal, alarm & timer (speed, optional G-force, motion detection, video loss, voltage)
- Record images prior to alarm activation and after vehicle switched off

- MDR-Dashboard (full player) and MDR-Player (portable) with Google and MS Bing maps (English only)
- Search by date, time or triggered events
- Multi-level password protected access
- Mobile Caddy Unit directly pluggable to PC via USB-B port
- Remote control
- 8 x trigger Inputs, 2x trigger outputs and 1x12V power output
- Built-in HDD heater
- TV System: PAL/NTSC

#### Image and Audio Quality

- High quality H.264 image compression
- ADPCM - audio compression
- Choice of 8 low to high resolution settings
- Record at between 1 and 25 frames per second, per channel

#### Power

- Power consumption: 12 Watts
- Current: 5.5 Amps

#### Durability & Standards

- Mechanical vibration: 1G
- Mechanical shock: 40G
- Operating temperature: -25 to +60°C / -13 to +140°F
- EMC approved: E
- CE marked
- RoHS2 Compliant

### OPTIONAL EXTRAS



**AC-306** Connects 1 Select camera to MDR and monitor **4904**

**AC-307** Connects 1 Elite camera to MDR and monitor **4905**

**MDR-RP01** Remote status & interface panel with panic button **4872**

**MDR-06RPC** 6m (24') cable for Remote status & interface panel **4873**

**MDR-400-GS01** External G-sensor **4871**

**MDR-03GSC** 3m (12') G-sensor cable **4874**

**MDR-408-1000-MCU** 8 channel caddy with 1TB HDD **4900**

**SD-32GB-IND** 32GB industrial grade Class 10 SD card **4875**

**SD-64GB-IND** 64GB industrial grade Class 10 SD card **4876**

**MDR-400-FPB-32** External SD Mirror-recorder in fireproof housing with 32GB industrial grade Class 10 SD card **4896**



### 3G/Wi-Fi UPGRADES FOR MDR-408-1000

**MDR-408GW-EXP-0** Wi-Fi & 3G Expansion Module for MDR-408-1000 **5044**  
SD card not included

**MDR-408G-EXP-0** 3G Expansion Module for MDR-408-1000 **5045**  
SD card not included

**MDR-408W-EXP-0** Wi-Fi Expansion Module for MDR-408-1000 **5046**  
SD card not included



**Model**

**Part No:**

**MOBILE DIGITAL RECORDER**



<b>MDR-404-500</b>	- 4 channel <b>500GB</b> hard disk recorder	<b>4868</b>
<b>MDR-404GW-500</b>	- 4 channel <b>500GB</b> hard disk recorder with <b>Wi-Fi</b> and <b>3G</b>	<b>4941</b>
<b>MDR-404G-500</b>	- 4 channel <b>500GB</b> hard disk recorder with <b>3G</b>	<b>4939</b>
<b>MDR-404W-500</b>	- 4 channel <b>500GB</b> hard disk recorder with <b>Wi-Fi</b>	<b>4940</b>

- **9-32Vdc**
- **4 camera inputs**
- **8 trigger/alarm inputs**
- **Lockable and removable Mobile Caddy Unit**
- **Fast, easily downloadable recordings and data**
- **Size (WxHxD)**  
190 x 75 x 212mm  
7.5 x 3 x 8.3 inches
- **3 year warranty (MDR & HDD)**
- **1 year warranty (Optional extras)**

**Contents**

- 1 x Mobile Digital Recorder with 2.5" 500GB SATA HDD
- 1 x Remote control
- 1 x Trigger cable loom
- 1 x Power cable
- 1 x Video output cable
- 1 x GPS antenna
- 1 x USB A to B cable
- 1 x Security key
- 1 x 32GB SD card
- 1 x Mounting bracket and screws
- Installation guide & CD
- 3G antenna (4941 & 4940)
- WiFi antenna (4939 & 4941)

**Features**

- Remotely access MDR units using wireless (WiFi models only) and/or Mobile network (3G models only)
- Mobile apps for remote view (Wi-Fi/3G models only)
- Robust aluminium housing
- Anti-vibration mounting allows for installation at any angle
- Built-in GPS
- Up to 1164 hours recording
- Recordings saved to hard disk (protected by non-visible digital watermark) and in-built Mirror recording onto SD card
- Recording modes: normal, alarm & timer
- Configurable alarm trigger settings (speed, optional G-force, motion detection, video loss, voltage)

- Record images prior to alarm activation and after vehicle switched off
- MDR-Dashboard (full player) and MDR-Player (portable) with Google and MS Bing maps (English only)
- Search by date, time or triggered events
- Multi-level password protected access
- Mobile Caddy Unit directly pluggable to PC via USB-B port
- Remote control
- 8 x trigger Inputs, 2x trigger outputs and 1x12V power output
- Built-in HDD heater
- TV System: PAL/NTSC

**Image and Audio Quality**

- High quality H.264 image compression
- ADPCM - audio compression
- Choice of 8 low to high resolution settings
- Record at between 1 and 25 frames per second, per channel

**Power**

- Power consumption: 12 Watts
- Current: 6.9 Amps

**Durability & Standards**

- Mechanical vibration: 1G
- Mechanical shock: 40G
- Operating temperature: -25 to +60°C / -13 to +140°F
- EMC approved: E
- CE marked
- RoHS2 Compliant

**OPTIONAL EXTRAS**



<b>AC-306</b>	<b>Connects 1 Select camera to MDR and monitor</b>	<b>4904</b>
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<b>AC-307</b>	<b>Connects 1 Elite camera to MDR and monitor</b>	<b>4905</b>
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<b>MDR-RP01</b>	<b>Remote status &amp; interface panel with panic button</b>	<b>4872</b>
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<b>MDR-06RPC</b>	<b>6m (24') cable for Remote status &amp; interface panel</b>	<b>4873</b>
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<b>MDR-400-GS01</b>	<b>External G-sensor</b>	<b>4871</b>
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<b>MDR-03GSC</b>	<b>3m (12') G-sensor cable</b>	<b>4874</b>
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<b>MDR-404-500-MDU</b>	<b>4 channel caddy with 500GB HDD</b>	<b>4888</b>
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<b>SD-32GB-IND</b>	<b>32GB industrial grade Class 10 SD card</b>	<b>4875</b>
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<b>SD-64GB-IND</b>	<b>64GB industrial grade Class 10 SD card</b>	<b>4876</b>
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<b>MDR-400-FPB-32</b>	<b>External SD Mirror-recorder in fireproof housing with 32GB industrial grade Class 10 SD card</b>	<b>4896</b>
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**Model**

**Part No:**

## EVENT DATA RECORDER

**EDR-101-008 - Event Data Recorder**

**4505**



- 12-24Vdc
- 1 in-built camera
- 1 external camera input
- 1 video output
- Fast, easily downloadable recordings and data
- Size (WxHxD)  
85 x 49.5 x 25.5mm  
3.3 x 1.9 x 1 inches
- 1 year warranty

**Contents:**

- 1x Recorder
- 1x GPS Antenna
- 1x Power cable
- 1x Mounting Bracket & adhesive pad
- 1x 8Gb Micro SD card
- 1x Micro SD to SD adapter

**Features**

- High definition video capture for clear incident recording
- 112° wide-angle camera lens
- 4 recording modes:
  - Normal
  - Event - shock sensor enables 10 seconds before and after an event to be recorded
  - Parking - movement engages event recording as above
  - Emergency - driver presses the function button
- Up to 4 hours recording on supplied micro SD card (supports up to 32Gb)
- Simultaneous normal and event recording
- Continuous recording with automatic overwriting of oldest data

- Audio function for additional event information
- GPS module for locating tracking
- Viewing software allows two cameras to be viewed, alongside speed, G-force levels and location
- Software allows still images (jpeg) to be created with embedded date and time

**Picture Quality**

- CMOS sensor
- Video resolution: HD + VGA 1280 x 720 pixels
- MPEG4 image compression allows high quality image resolution
- Choice of recorded image quality – low to high resolution
- Fast frame rate, 30 frames per second, for smooth images

**Durability & Standards**

- Mechanical vibration: 2.5G
- Operating temperature: -10 to +50°C / 14 to +122°F
- CE self DoC



## OPTIONAL EXTRAS

<b>EDR-101-LOCK</b>	<b>SD card security lock</b>	<b>4517</b>
<b>EDR-142C</b>	<b>Micro camera (5m / 16.4' built-in cable)</b>	<b>4514</b>
<b>EDR-101-VC</b>	<b>Video out cable</b>	<b>4511</b>
<b>EDR-101-CPC</b>	<b>Cigar lighter power cable</b>	<b>4510</b>

Sensor systems to inform driver of obstacles within close proximity, whether moving or stationary. Perfect for road going commercial vehicles regularly operating in confined spaces or manoeuvring at low speeds.

## Which system is for you?

**Sidescan®** - 4 sensor system fitted to side of vehicle increasing safety when turning or low speed maneuvering. Particularly relevant for near side blind spot where cyclists or pedestrians can otherwise go undetected.

**Backscan®** - 4 sensor system fitted to rear of vehicle as an invaluable aid to safe reversing. Gives greater protection to pedestrians and workers, while minimizing damage to vehicle and other objects.

**Cornerscan™** - 3 sensor system fitted to near side corner of vehicle cab detects objects in front near side blind spot. Minimizes the risk of damage to the vehicle cab while maneuvering at low speed.

**Frontscan®** - 4 sensor system fitted to front of vehicle improving safety when maneuvering at low speed. Particularly relevant for front blind spot on high cabs where low objects or pedestrians can be hidden.

**Stepscan™** - 2 sensor system fitted to near side cab step giving awareness to the driver of objects to the side when turning and reversing. Minimizes the risk of damage to the vehicle cab from otherwise unseen objects.



# Ultrasonic obstacle detection

**Model**

**Part No:**

## BACKSCAN® ULTRASONIC DETECTION SYSTEM

**BS-4000W - Rear reversing sensor system**

**3744**



- 4 sensor system
- 12-24Vdc
- 2.5m (8.2') detection range - outer sensors 2.5m/0.6m (8.2/2') (selectable via dip switch)
- Graduated visual and audible distance warning display
- Underslung and flush-mount fixings included
- 50cm (1.2') compensation range for sensors fitted inboard of vehicle rear (selectable via dip switch)
- 2 year warranty

**Contents**

- 4 x sensors
- Visual and audible display
- 4 x 0° flush mount fixings
- 4 x 11° flush mount fixings
- 4 x underslung fixings
- Waterproof control box
- 15m (49') display cable
- 4 x 2.5m (8.2') sensor cables

**Features**

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from tow-hooks and other ancillary equipment that intrudes in the first 100cm (3.3') of the detection zone
- Self-diagnostic function
- 1 x Trigger output

**Durability & Standards**

- Operating temperature: -30 to +80°C -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- EMC approved: E

**Power**

- Power consumption: 2.4 Watts
- Current: 200mA
- 1.5m (4.9') detection range model also available - Please contact us for details

### REQUIRED ADDITIONS FOR ARTICULATED VEHICLES

SK-15-04	Truck/trailer camera/sensor cable kit - see p25	3997
SK-UDS-05	Truck/trailer sensor only cable kit	4219
UDS-10BC	10m (33') Buzzer/display cable	3716

### OPTIONAL EXTRA

UDS-RELAY-24	Trigger-out diode protected relay 24Vdc	4215
UDS-RELAY-12	Trigger-out diode protected relay 12Vdc	4216

## CORNERSCAN® ULTRASONIC DETECTION SYSTEM

**CS-3000 - Corner sensor system**

**3712**



- 3 sensor system
- 12-24Vdc
- 0.6/1.0m (2/4') detection range - (selectable via dip switch)
- Audible distance warning
- Flush-mount
- 2 levels of sensitivity - (selectable via dip switch)
- 2 year warranty

**Contents**

- 3 x sensors
- Buzzer
- 3 x 11° flush mount fixings
- 3 x 18° flush mount fixings
- 3 x 26° flush mount fixings
- Waterproof control box
- 2.5m (8.2') buzzer cable
- 3 x 2.5m (8.2') sensor cables

**Features**

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from ancillary equipment that

intrudes in the first 100cm (3') of the detection zone

- Self-diagnostic function

**Durability & Standards**

- Operating temperature: -30 to +80°C -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- EMC approved: E

### RECOMMENDED EXTRA

LS-60-A	Low speed trigger module (enables sensors below designated speed)	4851
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**Model**

**Part No:**

**SIDESCAN® ULTRASONIC DETECTION SYSTEM**

<b>SS-4000W - Side sensor system</b>	<b>3711</b>
<b>SS-4000W-000 - Side sensor system low speed trigger module and turn indicator sensor kit</b>	<b>4321</b>
Includes LS-60-A low speed trigger module and TS-001ECU turn indicator sensor	



- 4 sensor system
- 12-24Vdc
- 1.0/1.5m (3.2/4.9') detection range - (selectable via dip switch)
- Audible distance warning
- Underslung and flush-mount fixings included
- 2 levels of sensitivity - (selectable via dip switch)
- 2 year warranty

**Contents**

- 4 x sensors
- Buzzer
- 4 x 0° flush mount fixings
- 4 x 11° flush mount fixings
- 4 x underslung fixings
- Waterproof control box
- 10m (3.2') buzzer cable
- 4 x 4.5m (14.7') sensor cables
- 2 x 2.5m (8.2') extension cables

**Features**

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from ancillary equipment that

intrudes in the first 100cm (3.2') of the detection zone

- Self-diagnostic function

**Durability & Standards**

- Operating temperature: -30 to +80°C -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- EMC approved: E

**Power**

- Power consumption: 2.4 Watts
- Current: 200mA

**ADDITIONS FOR ARTICULATED VEHICLES**

<b>SK-15-04</b>	<b>Truck/trailer camera/sensor cable kit - see p25</b>	<b>3997</b>
<b>SK-UDS-05</b>	<b>Truck/trailer sensor only cable kit (required)</b>	<b>4219</b>
<b>UDS-10BC</b>	<b>10m (33') display cable (required)</b>	<b>3716</b>
<b>SS-4000W</b>	<b>Additional Sidescan sensor system for cab (optional)</b>	<b>3711</b>

**RECOMMENDED EXTRA**

<b>LS-60-A</b>	<b>Low speed trigger module</b> enables sensors below designated speed	<b>4851</b>
<b>TS-001ECU</b>	<b>Turn indicator trigger for system activation</b>	<b>1362</b>

**OPTIONAL EXTRA**

<b>BC-01(B)</b>	<b>Bespoke single message speaking alarm warning for cyclists/pedestrians</b> Note: TS-001ECU Turn indicator trigger is required	<b>0079</b>
<b>TCO-47-01</b>	<b>Latched auto-reset Backalarm cut-out (dash mount)</b>	<b>4752</b>



**EXTENSION CABLES**

<b>UDS-2.5BC - Buzzer/display extension cable 2.5m/8.2'</b>	<b>3717</b>
<b>UDS-10BC - Buzzer/display extension cable 10m/33'</b>	<b>3716</b>
<b>UDS-15BC - Buzzer/display extension cable 15m/49'</b>	<b>3746</b>
<b>UDS-2.5SC - Sensor extension cable 2.5m/8.2'</b>	<b>3719</b>
<b>UDS-4.5SC - Sensor extension cable 4.5m/14.7'</b>	<b>3720</b>

# Ultrasonic obstacle detection

Model

Part No:

## FRONTSCAN® ULTRASONIC DETECTION SYSTEM

FS-4000W - Front sensor system

3747



- 4 sensor system
- 12-24Vdc
- 2.1m/1.0m (6.8'/3.2') detection range - outer sensors can be reduced to 0.6m (2') (selectable via dip switches)
- Audible distance warning
- Flush-mount
- 2 year warranty

### Contents

- 4 x sensors
- Buzzer
- 4 x 11° flush mount fixings
- 4 x 18° flush mount fixings
- 4 x 26° flush mount fixings
- Waterproof control box
- 2.5m (8.2') buzzer cable
- 4 x 2.5m (8.2') sensor cables

- (3') of the detection zone
- Self-diagnostic function
- 1 x Trigger output

### Durability & Standards

- Operating temperature: -30 to +80°C
- -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- EMC approved: E

### Power

- Power consumption: 2.4 Watts
- Current: 200mA

### Features

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from tow-hooks and other ancillary equipment that intrudes in the first 100cm

## RECOMMENDED EXTRA



LS-60-A

Low speed trigger module

(enables sensors below designated speed)

4851

## OPTIONAL EXTRA

UDS-RELAY-24

Trigger-out diode protected relay 24Vdc

4215

UDS-RELAY-12

Trigger-out diode protected relay 12Vdc

4216

## STEPSCAN™ ULTRASONIC DETECTION SYSTEM

ST-2000 -

Step sensor system

3742

ST-2000-20-A - Step sensor system and low speed trigger module

4231

Includes UDS-4.5SC 4.5m extension cable



- 2 sensor system
- 12-24Vdc
- 0.6/1.0m (2/3.2') detection range - (selectable via dip switch)
- Audible distance warning
- Flush-mount
- 2 levels of sensitivity - (selectable via dip switch)
- 2 year warranty

### Contents

- 2 x sensors
- Buzzer
- 2 x 11° flush mount fixings
- 2 x 18° flush mount fixings
- 2 x 26° flush mount fixings
- Waterproof control box
- 2.5m (8.2') buzzer cable
- 2 x 2.5m (8.2') sensor cables

- Self-diagnostic function

### Durability & Standards

- Operating temperature: -30 to +80°C
- -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- EMC approved: E

### Power

- Power consumption: 2.4 Watts
- Current: 200mA

### Features

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from ancillary equipment that intrudes in the first 100cm (3.2') of the detection zone

## RECOMMENDED EXTRA



LS-60-A

Low speed trigger module

enables sensors below designated speed

4851

Informs driver of distance between vehicle and obstacles, whether moving or stationary.

## Which model is for you?

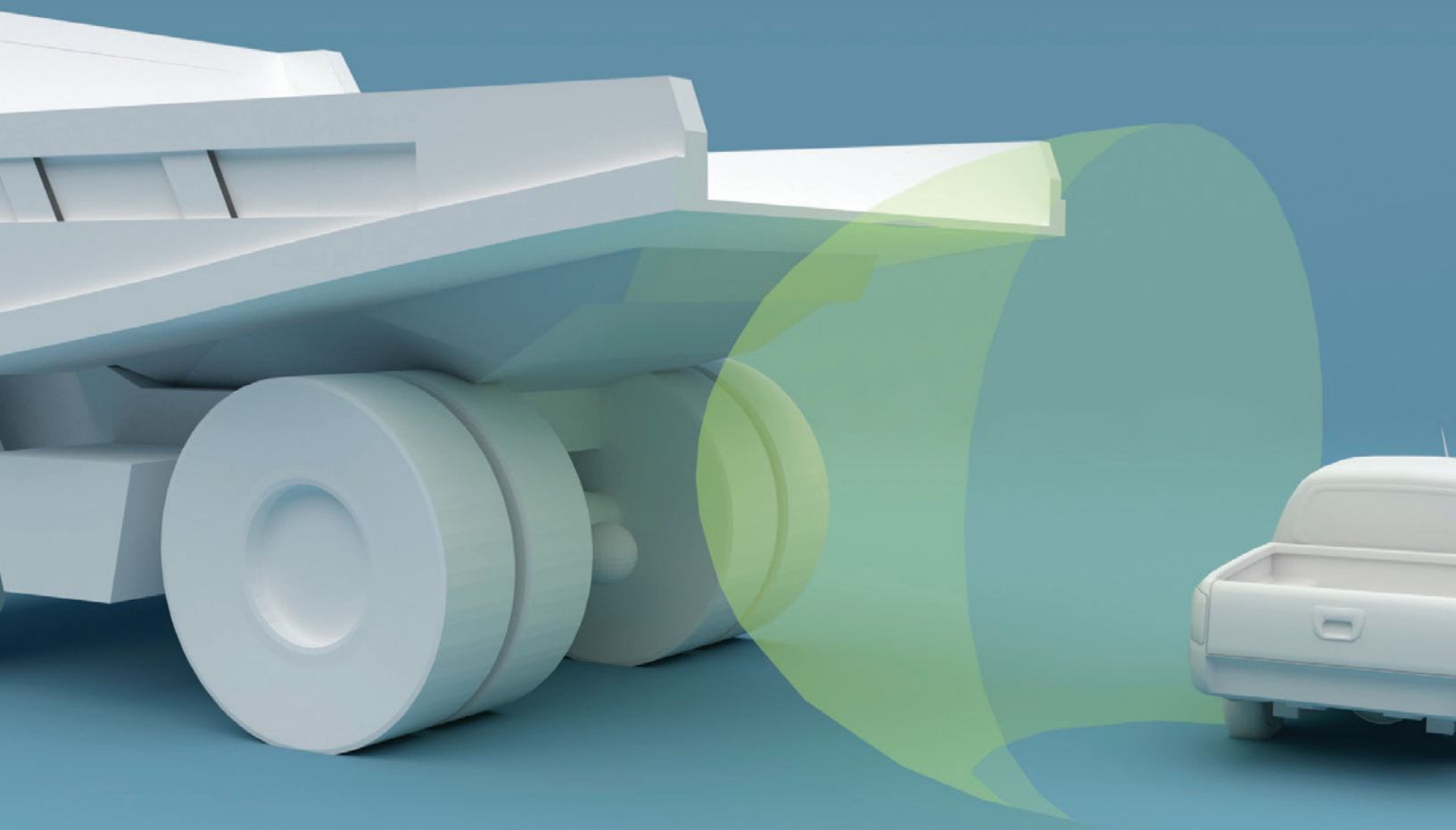
### Programmable

Top of the range programmable system allowing bespoke detection areas up to 30m in length and 10m in width, with the ability to calibrate out fixed objects or bodywork.



### Fixed

Fixed detection length and width. Ideal on machines where no calibration is required. Detection range of up to 6 metres.



**Model**

**Part No:**

## PROGRAMMABLE BACKSENSE® OBSTACLE DETECTION

**BS-8000 - Programmable detection range**

**4530**

Sensor, AV display, 9m /29.5' cable



In-cab display

- 12-24Vdc
- **Detection length:**  
3 to 30m / 10 to 98'
- **Detection width:**  
2 to 10m / 6.5 to 33'
- **Rugged design for harsh environmental conditions**
- **Sensor size (WxHxD)**  
217 x 129 x 50mm  
8.5 x 5 x 1.9 inches
- IP69K sensor
- 2 year warranty

**Features**

- Frequency modulated continuous wave (FMCW) radar technology
- Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output
- Programmable:  
Detection area  
Blind zones - system ignores fixed objects  
Trigger activation  
Buzzer
- 5 stage audible and visual distance warning display
- Resistant to water, moisture, dust, vibration, heat, cold, mud and glare

**Power**

- Current: 0.8 Amps
- Power consumption: 8 Watts

**Durability & Standards**

- Mechanical shock: 100G
- Mechanical vibration: 8.3G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: E
- BS EN 13309: 2010
- ISO13766: 2006

## FIXED BACKSENSE® OBSTACLE DETECTION

**BS-7030 - 3m/10' detection range, 2.5m/8' width**

**4527**

Sensor, AV display, 9m / 29.5' cable

**BS-7045 - 4.5m/15' detection range, 3.5m/11' width**

**4528**

Sensor, AV display, 9m/29.5' cable

**BS-7060 - 6m/20' detection range, 4.5m/15' width**

**4529**

Sensor, AV display, 9m / 29.5' cable



In-cab display

- 12-24Vdc
- **Maximum detection range of 6m /19.6**
- **Rugged design for harsh environmental conditions**
- **Sensor size (WxHxD)**  
217 x 129 x 50mm  
8.5 x 5 x 1.9 inches
- IP69K sensor
- 2 year warranty

**Features**

- Frequency modulated continuous wave (FMCW) radar technology
- Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output
- 5 stage audible and visual distance warning display
- Resistant to water, moisture, dust, vibration, heat, cold, mud and glare

**Power**

- Current: 0.8 Amps
- Power consumption: 8 Watts

**Durability & Standards**

- Mechanical shock: 100G
- Mechanical vibration: 8.3G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: E
- BS EN 13309: 2010
- ISO13766: 2006

## EXTENSION CABLES

**BS-05DCX - 5m/16' extension cable**

**4550**

**BS-09DCX - 9m/30' extension cable**

**4551**

**BS-25DCX - 25m/82' extension cable ( Display end connector supplied loose)**

**4975**

## OPTIONAL EXTRAS

**BKT-017 - Adjustable radar bracket**

with 105mm / 4.1" depth bracket mounting arms

**4676**

**BKT-018 - Low-profile adjustable radar bracket**

**4758**





Vital safety devices needed to warn workers and pedestrians that a vehicle is maneuvering. Our range includes bbs-tek® white sound® alarms; smart alarms which adjust to the ambient noise level; and speaking alarms, which provide a real speech warning of imminent danger.

## Which alarm is for you?

### Heavy duty

For plant, quarry and construction machines or environments with high ambient noise.



### Medium duty

Ideal for commercial road going vehicles and environments with mid-level ambient noise.



### bbs-tek® white sound®

The safest alarms in the world due to their instant locatability and directional sound. The multi-frequency alarms are only heard in the danger zone, thus eliminating noise nuisance for local residents.



**Model**

**Part No:**

## WHITE SOUND® SMART BACK-UP ALARM



**SA-BBS-107 - Self-adjusting heavy-duty - 87-107 Decibels**

**1400**

- 12-24Vdc
- IP68
- Size (WxHxD)  
172 x 79 x 95mm  
6.7 x 3.1 x 3.7 inches
- Lifetime warranty

**Features**

- Alarm continually adjusts to 5-10dB above ambient
- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Driver
- Hole centres: 153mm / 6"

**Power**

- Current: Max 1 Amp

**Durability & standards**

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: E
- SAE J994

## WHITE SOUND® SMART BACK-UP ALARM



**SA-BBS-97 - Self adjusting - medium duty - 77-97 Decibels**

**1399**

**SA-BBS-97HV - Self adjusting - electric forklift - 77-97 Decibels**

**1398**

- 12-24Vdc
- 36-80Vdc (HV)
- IP68
- Size (WxHxD)  
127 x 76 x 65mm  
5 x 3 x 2.5 inches
- Lifetime warranty

**Features**

- Alarm continually adjusts to 5-10dB above ambient
- Multi-frequency white sound alarm
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Driver
- Hole centres: 98-108mm / 3.8-4.2"

**Power**

- Current: Max 1 Amp

**Durability & standards**

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: E
- SAE J994
- NAS/PIEK approved for night-time delivery

## WHITE SOUND® BACK-UP ALARM



**BBS-107 - Heavy duty - 107 Decibels**

**0899**

**BBS-102 - Heavy duty - 102 Decibels**

**0898**

- 12-24Vdc
- IP68
- Size (WxHxD)  
172 x 79 x 95mm  
6.8 x 3.1 x 3.7"
- Lifetime warranty

**Features**

- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Driver
- Hole centres: 153mm / 6"

**Power**

- Current: Max 1 Amps

**Durability & standards**

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: E
- SAE J994

**Model**

**Part No:**



ADR version



**WHITE SOUND® BACK-UP ALARM**

<b>BBS-92HV - Electric forklift - 92 Decibels</b>	<b>1402</b>
<b>BBS-82HV - Electric forklift - 82 Decibels</b>	<b>1322</b>
<b>BBS-92ADR - Fuel tanker - 92 Decibels</b>	<b>2165</b>

- 12-24Vdc
- 36-80Vdc (HV)
- IP68
- Size (WxHxD)  
127 x 76 x 65mm  
5 x 3 x 2.5 inches
- Lifetime warranty

**Features**

- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Speaker
- Hole centres: 98-108mm / 3.8-4.2"

**Power**

- Current: Max 0.3 Amps

**Durability & standards**

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: e
- SAE J994

**WHITE SOUND® BACK-UP ALARM**



<b>BBS-97 - Medium duty - 97 Decibels</b>	<b>0935</b>
<b>BBS-92 - Medium duty - 92 Decibels</b>	<b>0934</b>
<b>BBS-87 - Medium duty - 87 Decibels</b>	<b>0897</b>
<b>BBS-82 - Medium duty - 82 Decibels</b>	<b>0896</b>

- 12-24Vdc
- IP68
- Size (WxHxD)  
(BBS-97/92)  
105 x 65 x 37mm  
4.1 x 2.5 x 1.5 inches  
(BBS-87/82)  
105 x 65 x 32mm  
4.1 x 2.5 x 1.3 inches
- Lifetime warranty

**Features**

- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Speaker
- Hole centres: 76mm / 3"

**Power**

- Current: Max 0.5 Amps

**Durability & standards**

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- EMC approved: E
- SAE J994
- NAS/PIEK approved for night-time delivery (BBS-82)



**bbs® alarms are covered by the following patents:**

- AU2007200517
- EP1289798B2
- CN100488807C
- JP4798474B2
- NZ522190
- GB2345392C
- USRE44912

Model

Part No:

## SPEAKING ALARM



**BC-01HP(B) - Bespoke single message - 110 Decibels**

**1199**

- 12-24Vdc
- IP68
- Size (WxHxD)  
116 x 115 x 117.5mm  
4.5 x 4.5 x 4.7 inches
- 2 year warranty

### Features

- Real speech alarm
- \* BC-01HP message "Ssh! Stand well clear, vehicle reversing..."
- Bespoke message up to 8 seconds, under 4 seconds for best speech quality
- Sounder unit: Speaker
- Hole centres: 102mm / 4"

### Power

- Current: 0.5 Amps

### Durability & standards

- CE marked
- EMC approved: E

## NIGHTSHIFT® SPEAKING ALARM



**BC-01(NS-B) - Bespoke single message - Nightshift - 90 or 0 Decibels**

**1198**

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

### Features

- Real speech alarm
- \* BC-01(NS) message "Ssh! Stand well clear, vehicle reversing..."
- Bespoke message up to 8 seconds, under 4 seconds for best speech quality
- Double engage reverse to cut-out or reduce sound
- Sounder unit: Speaker
- Hole centres: 102mm / 4"

### Power

- Current: 0.5 Amps

### Durability & standards

- CE marked
- EMC approved: E

**Model**

**Part No:**

**SPEAKING ALARM**



**BC-01(B) - Bespoke single message - 90 Decibels**  
**BC-02(B) - Bespoke dual message - 90 Decibels**

**0079**  
**0083**

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

**Features**

- Real speech alarm
- \* BC-01 message "Ssh! Stand well clear, vehicle reversing..."
- Bespoke message up to 8 seconds, under 4 seconds for best speech quality
- Sounder unit: Speaker
- Hole centres: 102mm / 4"

**Power**

- Current: 0.5 Amps

**Durability & standards**

- CE marked
- EMC approved: E

**SPEAKING ATTACK ALARM**



**BC-AA(B) - Single bespoke message - 110 Decibels**

**1465**

- 12-24Vdc
- IP68
- Size (WxHxD)  
116 x 115 x 117.5mm  
4.5 x 4.5 x 4.7 inches
- 2 year warranty

**Features**

- Real speech alarm
- Activated by panic button, repeats continuously until deactivated by hidden switch
- Sounder unit: Speaker
- Hole centres: 48mm / 1.9"

**Power**

- Current: 0.5 Amps

**Durability & standards**

- CE marked
- EMC approved: E

**Model**

**Part No:**

## VEHICLE INTERCOM



**BC-VI - Normally open channel rear to cab; button press cab to rear**

**0815**

**BC-VI-2 - Normally closed channel; button press communication**

**0875**

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

**Features**

- Two-way communication system
- Master unit volume control: 80-95dB
- Includes master unit, slave unit and 25m cable
- Sounder unit: Speaker
- Hole centres: 102mm / 4"

**Power**

- Current: 0.5 Amps

**Durability & standards**

- CE marked

## ALARM ANCILLARIES



**TCO-47 - Timed auto-reset Backalarm cut-out (dash mount)**

**0663**

- 12-24Vdc
- 2 year warranty

**Features**

- Single touch timed relay
- Allows driver to cut-out alarm if reversing between the hours of 11.30pm-7.00am
- Auto-resets after 3-4 mins delay

**Durability and Standards**

- CE marked
- EMC approved

## ALARM ANCILLARIES



**TCO-47-01 - Latched Side-turn alarm cut-out (dash mount)**

**4752**

- 12-24Vdc
- 2 year warranty

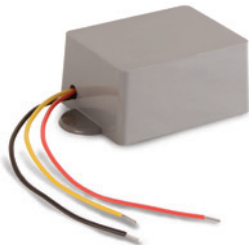
**Features**

- Single touch timed relay
- Allows driver to cut-out alarm between the hours of 11.30pm-7.00am
- Resets by switch or ignition

**Durability and Standards**

- CE marked
- EMC approved

## ALARM ANCILLARIES



**NS-2 - Nightshift Backalarm cut-out switch**

**0334**

**NS-3 - Nightshift Backalarm cut-out switch (auto gearbox)**

**0974**

- 12-24Vdc
- IP68
- 2 year warranty

**Features**

- Double engage reverse to cut-out alarm
- Resets when reverse gear disengaged (longer time delay for NS-3)
- No wiring necessary to cab

**Durability and Standards**

- CE marked
- EMC approved

## Peace of mind from Brigade

The quality of our product range is the cornerstone on which the continuing relationship with our customers is built. To reflect our confidence in the reliability of our products, some have a lifetime warranty. Many others have a 3 year warranty and the rest have a 2 or 1 year warranty. The following quick reference chart indicates the warranty available on Brigade products.



### Lifetime Warranty (covers product for the life of vehicle)

bbs-tek® reversing alarms (all models featured in this catalogue)  
Self-adjusting Backalarms (SA-range)



### 5 Year Warranty

Selected Elite camera monitor products are eligible for a free extended warranty of an additional two years, taking the total warranty to five years.

In order to take advantage of the additional two year warranty, each qualifying Elite CMS product will need to be registered on the Brigade website:

[brigade-electronics.com/extendedwarranty](http://brigade-electronics.com/extendedwarranty)

Offer excludes onsite warranty and is an extension of the standard three year warranty on selected Elite products.

Exclusions apply; see T&C for further details.



### 3 Year Warranty

Elite CMS range (all monitors and cameras with a BE prefix)  
MDR digital recorders



### 2 Year Warranty

All products aside those specifically listed



### 1 Year Warranty

Essential camera monitor range  
EDR digital recorder

## Warranty Terms and Conditions

Brigade warrants all goods to be free from defect in material and workmanship in normal use provided that they have been installed and operated in accordance with the instructions supplied. The commencement date of all warranties is the date of delivery to the purchaser unless otherwise agreed in writing by Brigade. The period during which the warranty applies is stated above. Brigade make no other warranty, express or implied, with respect to the goods, their marketability, quality or fitness for any particular use or purpose. In particular, but without prejudice to the general provisions of the conditions of sale, no responsibility is assumed for incidental or consequential loss by reason of any warranty express or implied.

Full details of Brigade's Terms and Conditions are contained in the Price List.

Brigade Electronics Group Plc reserves the right to change terms, conditions and specifications shown in this catalogue at any time.

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# Glossary

## **Amp**

Unit of electric current.

## **Approved for indirect vision**

Product meets directives (e.g. 2003/97/EC, 2007/38/EU) or standards (e.g. Regulation 46) with regard to its use on vehicles for indirect vision e.g. giving visibility in otherwise blind spots.

## **Auto-trigger**

Enables automatic triggering of an action i.e. display of rear camera view when reverse gear engaged.

## **A/V input/output**

Communication connection between electronic devices.

### **Input**

Receives audio/visual signals such as from DVD or satellite navigation.

### **Output**

Sends audio/visual signals to other devices such as to mobile digital recorder.

## **Brightness**

Brightness of the picture displayed on a monitor, measured in candelas per square metre ( $\text{cd}/\text{m}^2$ ). Higher the measure the brighter the picture.

## **CCD (Charged-Coupled Device)**

A tiny photocell used in cameras to convert light into a digital signal.

## **Contrast**

Light intensity ratio of a display device between darkest and lightest colour produced.

## **CE mark**

Confirmation that a product is in conformity with the essential requirements of any applicable directives e.g. 2004/108/EC (relating to Electromagnetic Compatibility).

## **Decibel (dB)**

Unit of measure of the pressure (intensity) of sound. The higher the rating the more intense the sound.

## **EMC (Electro-magnetic compatibility)**

A test to determine the unwanted effects of electromagnetic interference.

### **E**

Complies to United Nations Commission for Europe (UN ECE) standards e.g. ECE 10.03

### **e**

Complies to Council of the European Union standards e.g. 2006/28/EC, 2009/19/EC

## **FCC mark**

Certification for electromagnetic interference on products manufactured or sold in the United States which comply with the Federal Communications Commission.

## **Frequency**

Number of times a sound source vibrates per unit of time, measured in hertz (Hz). The higher the rating the higher the pitch.

## **GPS (Global Positioning System)**

Global satellite system providing positioning and timing services to worldwide users on a continuous basis.

## **HALT (Highly Accelerated Life Test)**

A comprehensive stress test applied to electronic equipment to identify design weakness.

## **IC (Industry Canada)**

Certification for electromagnetic interference on products manufactured or sold in Canada which comply with the Bureau of Innovation, Science & Economic Development

## **Illumination distance (camera)**

Distance a camera with infrared LEDs can see in ultra-low light conditions, measured in metres.

## **IP## (Ingress Protection)**

An international classification for the sealing of electrical equipment against the intrusion of solid objects (digit 1) and liquids (digit 2). Higher the rating the better protection in each case.

## **ISO 13766:2006**

Specific standard for earthmoving equipment, includes requirements for some additional tests that are not covered in the tests for 'E' or 'e' under EMC.

## **ISO 15008:2003**

Standard relating to the specifications and compliance procedures for in-vehicle visual presentation i.e. in relation to monitors.

## **ISO 16750**

Standard providing guidance regarding environmental conditions commonly encountered by electrical and electronic systems installed in vehicles.

## **LCD (Liquid Crystal Display)**

Thin, flat display device made up of any number of colour or monochrome pixels i.e. monitor screen.

## **LED (Light Emitting Diode (camera))**

Emits infrared light for high efficiency and performance in ultra-low light.

## **LED (Light Emitting Diode (monitor))**

Used to backlight the monitor display for crisp images and superior image quality.

## **Mechanical shock**

Level of sudden acceleration or deceleration, such as impact or being dropped, to which product will still perform. Measured in gravitational force (G).

## **Mechanical vibration**

Level of continuous or repetitive motion, such as engine vibration, to which product will still perform. Measured in gravitational force (G).

## **NTSC (National Television Systems Committee)**

TV colour encoding standard.

## **PAL (Phase Alternating Line)**

TV colour encoding standard.

## **Resolution (RGB)**

Number of pixels used to display an image. Measured in Width x 3 channels (Red, Green, Blue) x Height.

## **SAE J994**

Performance testing for electrically operated reversing alarms primarily intended for use on off-road, self-propelled construction and industrial machines.

## **SD Card**

Small portable memory card to store digital data.

## **Sounder unit**

Unit which produces the sound of an alarm.

## **TV Lines**

Number of horizontal lines used to create an image.

## **USB port**

Communication connection between electronic devices i.e. to download data from mobile digital recorder.

## **Viewing angles (camera)**

The maximum angle of vision.

## **Viewing angles (monitor)**

The maximum angle at which an image can be successfully viewed. Measured from the centre point on the monitor.

## **Watt**

A measure of the electrical power needed to drive a product.

## **WiFi**

A facility allowing devices to communicate wirelessly. A wireless network creates a small, localised area within which your devices can receive signal.

## **3G**

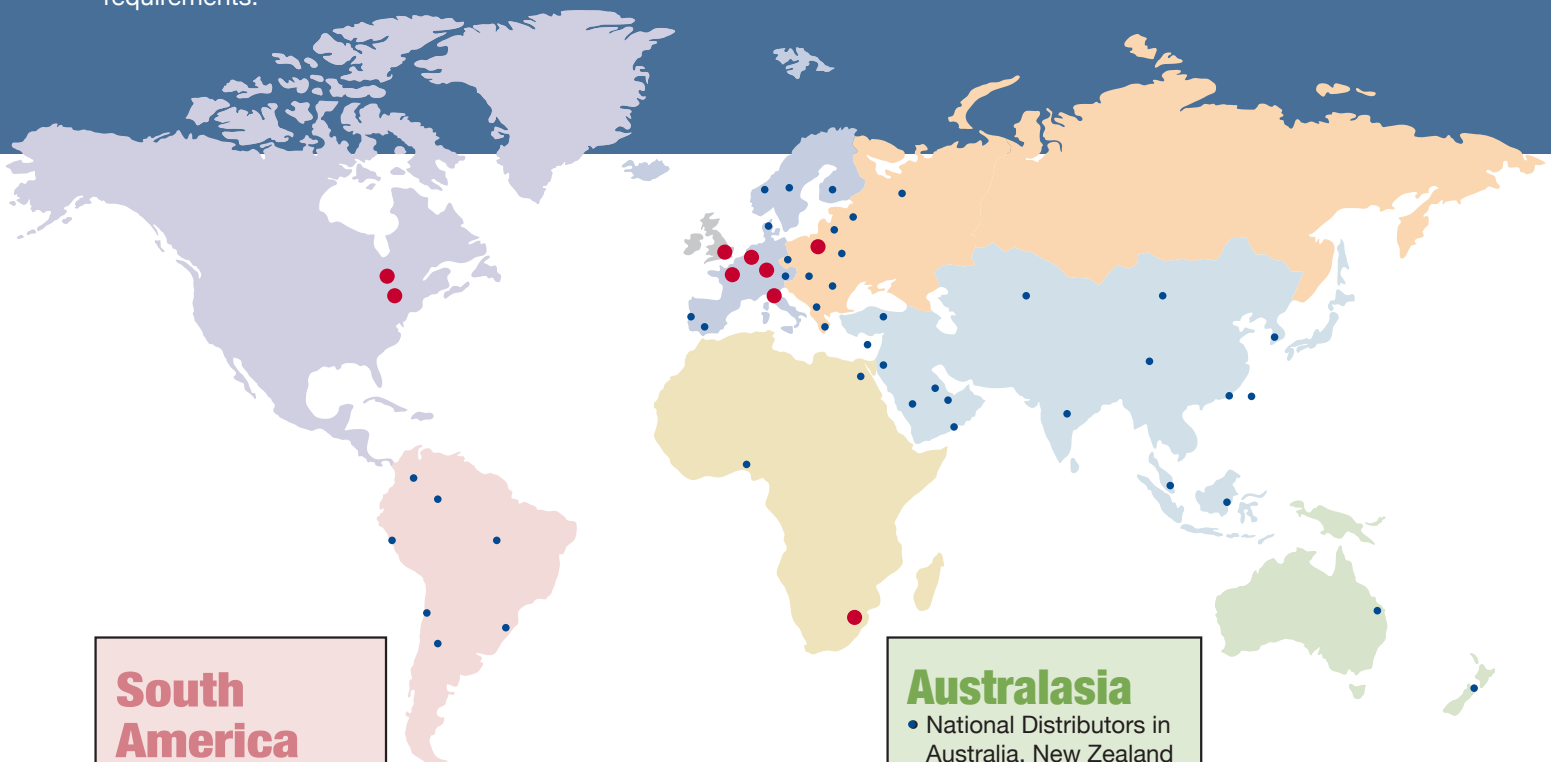
A cellular data service available from mobile network providers.

Brigade is committed to making roads and worksites safer for all. From our humble beginnings in the UK, we now have a network of overseas subsidiaries, joint venture companies and partnerships with over 80 approved international distributors, all chosen for their high level of service and expertise in vehicle safety.

Whether you operate an international, multi-vehicle fleet or a small business in a remote corner of the globe, Brigade has a local specialist to help with your safety requirements.

We can provide a solution for a specific problem or offer friendly advice and support if you are new to vehicle safety systems.

Wherever you are in the world, large road-going vehicles and mobile plant continue to be a danger. Thankfully, Health & Safety culture is gradually improving to help combat these dangers, but whatever the local obligation, there is no excuse for compromising on safety. Stay safe, fit Brigade.



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- National Distributors in Brazil, Chile, Argentina, Peru, Bolivia, Colombia

**Australasia**

- National Distributors in Australia, New Zealand

**North America**

- Subsidiaries in USA and Canada
- National Distributors in Mexico.

**West Europe**

- Subsidiaries in Germany, Italy France and Benelux
- National Distributors in Austria, Denmark, Finland, Norway, Portugal, Spain, Sweden

**East Europe**

- Subsidiary in Poland
- National Distributors in Bulgaria, Czech Republic, Greece, Hungary, Baltic States, Romania, Russia, Serbia, Slovenia, Turkey, Kazakhstan

**Asia**

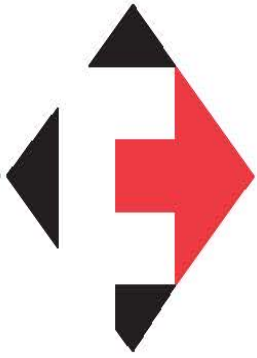
- National Distributors in India, Pakistan, Mongolia, Hong Kong/China, Indonesia

**Africa**

- Joint venture company in South Africa that also covers Congo, Zimbabwe, Angola and Zambia
- National Distributors in Egypt, UAE, Oman, Israel

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- Brigade Electronics Group Plc
- Subsidiary in UK
- Brigade Service Partners: These are experienced, accredited technicians who provide service and support for anyone who has purchased our products. Operating from over 20 regional sites nationwide, each with fully equipped workshops and a team of engineers providing extensive parts availability, support and advice.
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