



You're safer with us

Safety Systems for Waste & Refuse Vehicles





Safety in the Waste Industry.

Driving a waste and refuse vehicle can involve several risks and potential dangers. These vehicles can be challenging due to the size and weight of the vehicle and the substantial blind spots this includes. Waste and refuse drivers have to manoeuvre with limited room in tight residential streets, along with the added pressures of impatient drivers and working under tight schedules.

Some of the most common problems associated with operating these vehicles include:



Complaints about noisy reversing alarms



Collisions with people and objects



Reversing accidents due to the rear blind spot



False accusations of damage to vehicles or property



How Brigade can help you

By working in partnership to understand your safety concerns, Brigade's team of engineers strive to bring innovative answers to the marketplace.

By making a small investment in Brigade's safety solutions you can achieve clearly defined and measurable benefits as shown below.

- All round vehicle visibility for safer, more efficient operation
- Reduced accidents
- Reduced insurance premiums
- Reduced vehicle downtime due to accidents
- Meet health and safety requirements
- Peace of mind for management and workers
- Strengthen your company's reputation

Why Brigade?

- Pioneers in Vehicle Safety since 1976
- Brigade is a partner with OEMs specialising in waste and refuse vehicles
- Brigade equipment is in use across waste industries across the world
- Rigorous and comprehensive testing ensure Brigade products are of a high standard
- 2, 3, 5 and lifetime warranties on Brigade products



Scan for more information

1 AI Cameras



2 Rear Camera



3 Side Camera



4 In-cab Monitor



5 Backeye®360
360° Camera



6 Ultrasonic
Detection Sensor



7 Ultrasonic
Detection Buzzer



8 Reversing
Alarm



9 Mobile Digital
Recorder







AI Intelligent Detection

AI cameras are a new generation of active blind-spot detection.

Using Artificial Intelligence, the cameras detect and recognise the human form within the pre-defined detection zone and reliably warn the driver visually and/or audibly before a possible collision occurs. Image processing is built-in to the camera, meaning no other hardware is required.



High Definition image

The 1080p camera delivers clear and sharp images, improving driver visibility.



Pedestrian Detection

Uses AI to Recognise and alert the driver to people in the front and rear blind-spots.



Image Overlay

Detected people are shown in a coloured box overlaid on the driver's monitor.



Plug and play

AI camera connects directly to the Brigade monitor and/or optional buzzer.



Brigade Compatible

Interfaces with all Brigade HD monitors and MDR recorders.

A



VBV-2220C AI-D04 Front-facing AI Camera – normal view

Part Number: 7321

- High Definition AHD 1080p
- Recognises and alerts the driver to people in the front blind-spot
- Front on road: Maximum 1.4m(L)x3.3m(W)

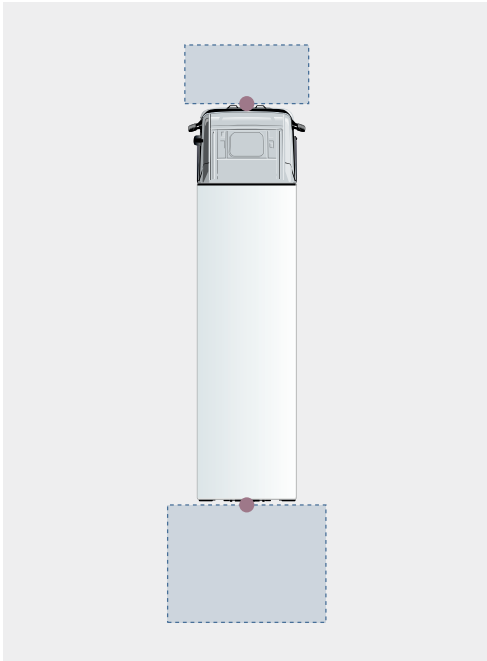
B



VBV-2230C AI-D04 Rear AI camera – mirror view

Part Number: 7396

- High Definition AHD 1080P
- Recognises and alerts the driver to people in the rear blind-spot
- Rear on road: Maximum 3m(L) x 4m(W)





Camera Monitor Systems

Camera systems are a vast improvement on the many mirrors needed to view waste and refuse vehicle blind spots. Mirrors themselves create further blind spots and 'information overload' for drivers who don't know where to look first. This is particularly difficult for waste and refuse truck drivers, as they need to be alert and aware of their surroundings at all times, especially when driving through busy urban areas where there are many pedestrians and vehicles on the road.

Backeye® monitors allow multiple camera images to be viewed on a single monitor with dedicated views triggered by, for example, reverse gear. Cameras provide a wider angle of view than mirrors and are less likely to be damaged, whilst built-in LED's offer superior visibility in low light conditions.

Vehicle CCTV systems are used in a wide range of on- and off-road applications to meet a host of health and safety and legislative requirements. They can eliminate blind spots to prevent costly vehicle damage and, more importantly, save lives.



Eliminate Blind Spots

Calibrated cameras capture all of the all areas including the blind spots.



Real-time Views

Live pictures shown on the monitor without time lag.



Wide Angle Views

Provides a wider angle of view than mirrors and are less likely to be damaged.



Recordable

Record individual camera feeds in high definition to a mobile recorder.

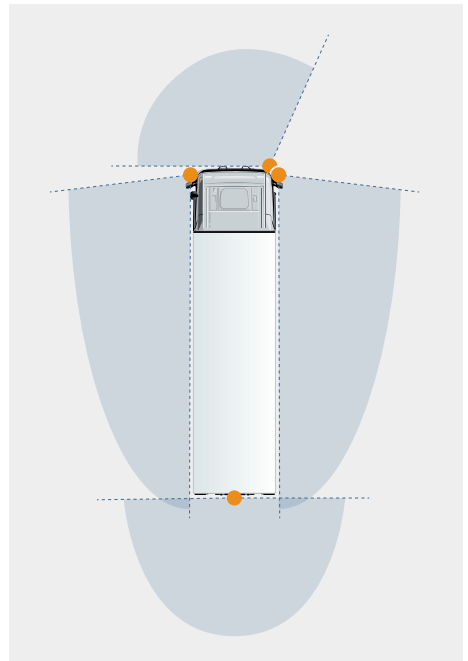
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VBV-7100C HD Camera (1080p-PAL)

Part Number: 5466

- 4 high power infrared LEDs for ultra low light performance
- Day/Night sensor
- Microphone
- Mirror View



B



VBV-3000C HD flush-mount eyeball camera (720p-PAL)

Part Number: 5454

- 5 high power infrared LEDs for ultra low light performance
- Day/Night sensor
- Microphone
- Mirror View

C



VBV-770HM 7" HD LCD monitor

Part Number: 5611

- AHD and CVBS compatible
- High-definition, high contrast, wide view angle
- 3 camera inputs
- 3 Auto-triggers





Backeye®360

An intelligent camera monitor system designed to assist low-speed manoeuvring by providing the driver with a complete surround view of the vehicle in real-time.

Backeye®360 technology works with four ultra-wide-angle cameras each covering one full side of the vehicle with a viewing angle of over 180°. High-mounted on the front, rear, and sides, the calibrated cameras capture all of the surrounding areas including the blind spots of the vehicle or machine.

The four live images are simultaneously sent to an electronic control unit (ECU) where they are instantly processed, combined, blended, and stitched. The distortion from the wide-angle camera lens is also corrected before delivering a clear, single, smooth, real-time image onto the driver's monitor.



Eliminate Blind Spots

Calibrated cameras capture all of the all areas including the blind spots.



Real-time Views

Live pictures shown on the monitor without time lag.



Custom Views

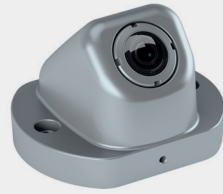
Monitor views can be tailored to the work environment of the vehicle.



Configurable Setup

Backeye®360 will work on most vehicles, large or small.

A



BN360-300 AHD 360° Camera System

Part Number: 5800A

- 4 camera system
- 720p HD 360° bird's eye image
- 15 different monitor view modes
- Compatible with Brigade's mobile recording systems

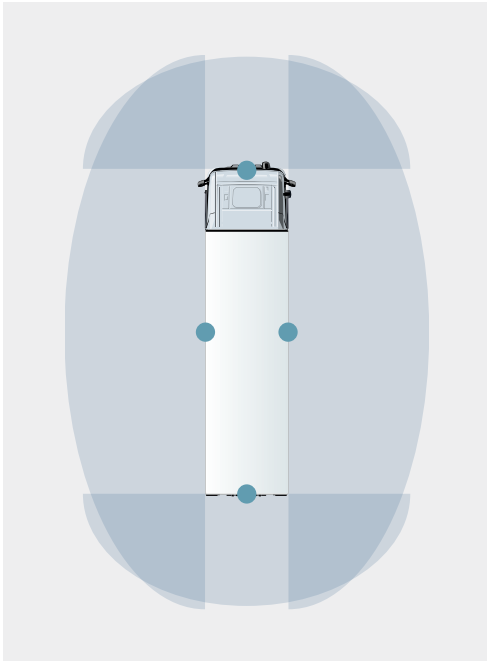
B



VBV-770HM 7" HD LCD monitor

Part Number: 5611A

- AHD and CVBS compatible
- High-definition, high contrast, wide view angle
- 3 camera inputs
- 3 Auto-triggers



“ Provincial Waste Systems

I have been doing this for 20 years and the Brigade system is by far the best equipment we have used. Brigade's products will be the only system in our vehicles going forward.



Ultrasonic Detection Systems

Brigade's ultrasonic proximity sensors minimise both vehicle damage and collisions with objects and pedestrians.

Perfect for waste trucks operating or manoeuvring in busy environments. The detection system alerts the driver of obstacles close to the vehicle, whether moving or stationary. An audible and/or visual in-cab warning informs of distance whilst an optional external speaking alarm can be added to alert pedestrians that the vehicle is turning.



Alerts Driver Of Hazards

Alerts the driver to an object within the detection area.



Driver Aid

Gives greater protection to drivers and airport workers around them.



Minimises Damages

Minimises damage to vehicle, property and other objects.



Customisable Setup

Variety of setups to tailor to all types of vehicles.

A



SS-4100W Ultrasonic Detection System

Part Number: 5257

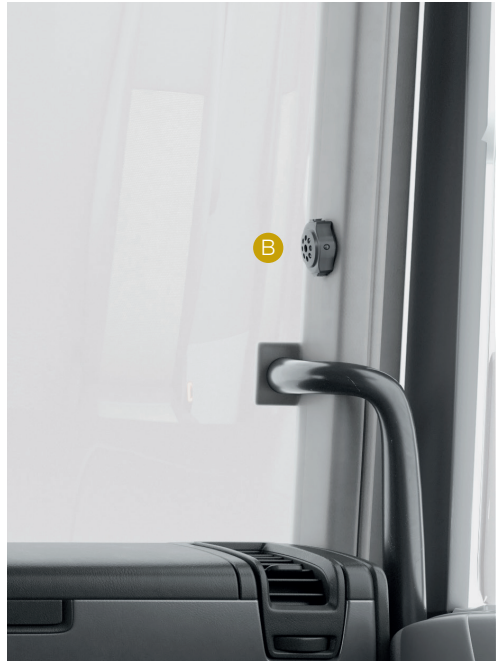
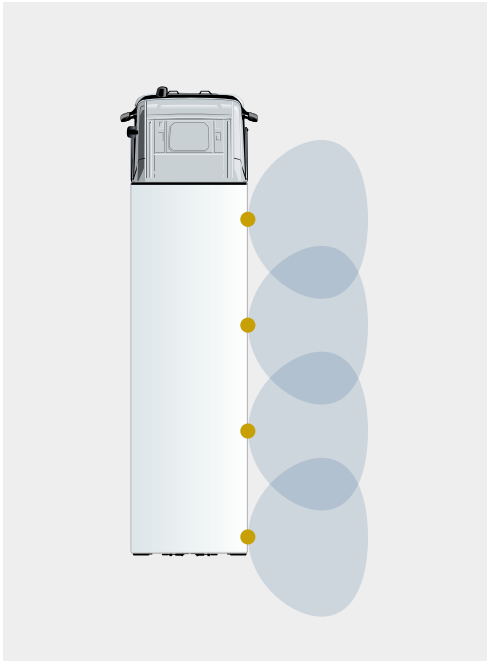
- 4 sensor side-detection system
- Obstacles detected in under 200 milliseconds
- Multiple mounting options included
- Also available for front, corner and rear installations

B



Ultrasonic Buzzer

- Included in SS-4100W ultrasonic detection system kit
- Audible distance warning when objects are detected
- Adjustable volume control





Reversing and Warning Alarms

Reversing and Warning Alarms are vital audible devices to warn pedestrians and workers that a vehicle is manoeuvring. bbs-tek® alarms are the safest and yet quietest on the market due to their instantly locatable and directional sound. Options include smart alarms, which adjust to the ambient noise level and speaking alarms.



Danger Zone

Sound quickly subsides outside of danger zone eliminating noise nuisance.



Five Decibels Quieter

Smart Alarms operate effectively 5dB lower than conventional alarms.



Lifetime Guarantee

All bbs-tek White Sound alarms are guaranteed for life.

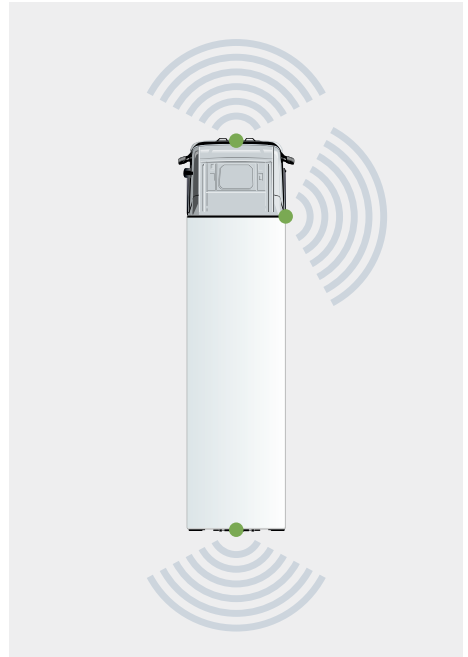
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SMART bbs-tek® Reversing Alarm 77-97 decibels

Part Number: 1399

- Continually adjusts to 5-10 decibels above ambient noise level
- Ideal for environments with varying levels of noise
- bbs technology
- Lifetime warranty





bbs-tek® White Sound Reversing Alarms

- A range of alarms from 77 to 107 decibels for all environments
- Instantly locatable sound
- Eliminates noise nuisance
- bbs-82 approved for night time use by Noise Abatement Society
- Lifetime warranty



Backchat® Speaking Alarms

- Clear spoken messages
- Warnings for reversing, turning and handbrake alarms
- Bespoke messages
- Night-time cut-out



Quiet Vehicle Sounder

- Designed for electric and hybrid-electric vehicles of all types
- Warns vulnerable road users that a quiet vehicle is approaching
- Front speaker system incorporating bbs-tek technology
- Pitch and volume increase with vehicle speed
- Sound cuts out at 20mph





Mobile Recording

Incidents involving vehicles are time-consuming issues to resolve. By having recorded footage where there are conflicting reports of actual events or by being able to prove a staged accident, companies can make major cost savings whilst, importantly, supporting their drivers who are often the subject of increased scrutiny after an incident.

Brigade's MDR-600 series MDRs are robust devices capable of recording video from up to 12 analogue AHD and 1080P IP cameras, along with other meta data such as location and speed. With 4G connectivity, live video or recordings can be accessed remotely while the vehicle is out on the road, along with its location.



Record Multiple Cameras

Records from up to twelve cameras simultaneously.



Location and Speed

Offers built-in GPS so that you can track a vehicle's speed and location.



G-Sensors

G-sensor provides impact data and accelerating and breaking.



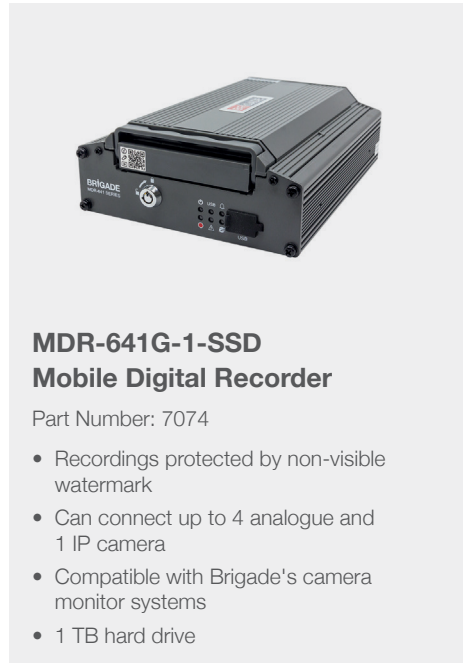
AHD and Recordable

AHD Compatible with Backeye®360 Recordable.



4G Connectivity

View live video, recordings and other data while the vehicle is on the road.



MDR-641G-1-SSD Mobile Digital Recorder

Part Number: 7074

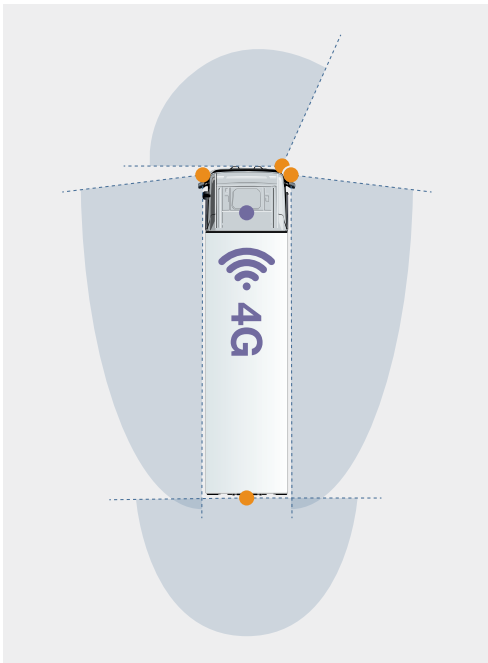
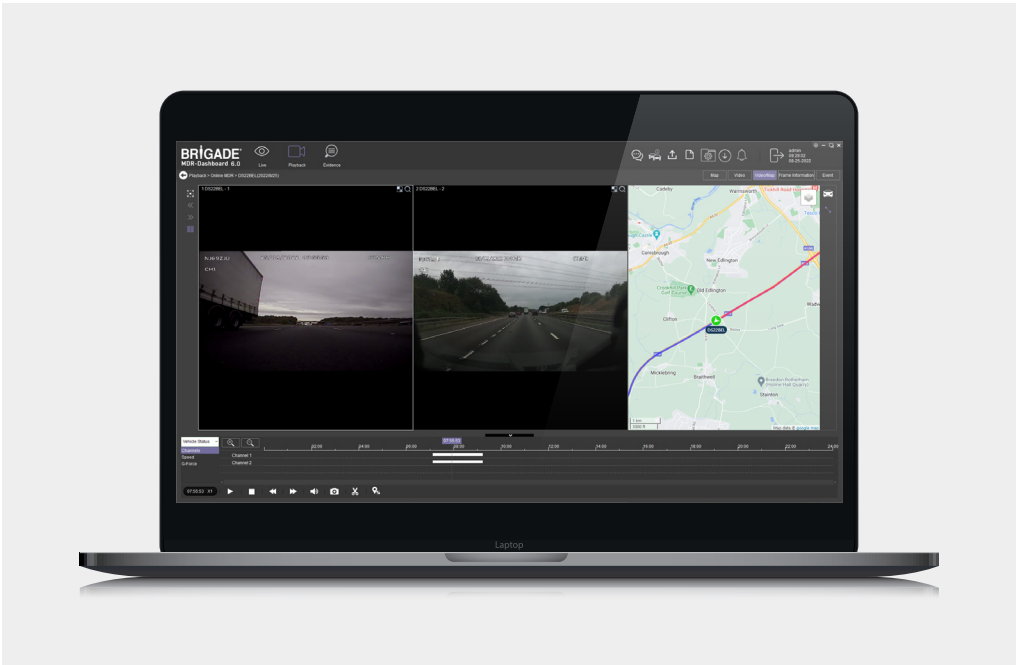
- Recordings protected by non-visible watermark
- Can connect up to 4 analogue and 1 IP camera
- Compatible with Brigade's camera monitor systems
- 1 TB hard drive



MDR-644G-1-CMR Mobile Digital Recorder

Part Number: 6571

- Records from up to 12 cameras simultaneously using external PON Switch
- Can connect up to 4 analogue and 4 IP cameras
- Mirror recording onto SD Card
- Built-in buzzer
- Anti-vibration mounting allows for installation at any angle





Brigade supports waste and recycling industry with high-quality safety solutions

Here at Brigade, we are proud to support a wide variety of industries across the globe with enhancing their on and off-road vehicle safety to prevent collisions and save lives. We recently helped two companies in Canada's waste and recycling industry by fitting a range of our high-quality, best-selling safety solutions to their waste trucks and recycling equipment.

Bluewater Recycling Association

Is a waste and recycling collection and processing company, which operates a fleet of 40 collection trucks that are out on the roads every day. The company serves communities across Huron, Perth, Lambton and Middlesex Counties in Southwestern Ontario and its drivers often have to operate in built-up, residential areas and manoeuvre in very small areas.

Drivers face numerous challenges and will regularly encounter pedestrians, other vehicles and wildlife, such as deer, on their daily rounds. This means they must be alert and fully focused at all times. Ensuring drivers can operate their large vehicles as safely as possible is hugely important to Bluewater Recycling Association, safety is their number one priority.

To enhance fleet safety and fully support their drivers, the company chose to fit Brigade's Mobile Digital Recorder (MDR) and flush mount cameras to its collection trucks. These products have provided numerous benefits and given drivers complete peace of mind that they can be confident when operating their vehicles.



Provincial Waste Systems

Supports small, local businesses and residents in Waterloo Region and Wellington County. The company operates a fleet of three front-end trucks and three residential trucks.

Drivers are out on the road daily, operating busy residential routes where they regularly encounter vulnerable road users. These include pedestrians, cyclists, pets and children, who are often trying to cross the street. Awareness of their surroundings is therefore critical – one incident could cost the company its survival.

Provincial Waste Systems is committed to keeping drivers and other road users safe at all times. Providing drivers with the very best equipment and supporting them fully in their day-to-day operations is a huge part of the company's commitment to safety.

The size and shape of waste trucks means there are numerous, complex blind spots. Provincial Waste Systems chose to fit Brigade's award-winning Backeye®360 to all six of its vehicles. The system eliminates blind spots by providing a complete bird's-eye view of the vehicle and its surrounds in real-time. This information is fed back to an in-cab monitor, which alerts drivers to people and objects in the vehicle's vicinity.



Bluewater Recycling Association needed to have a better solution for safety. This is where the Brigade product has done a great job. Brigade has the best solutions out there for vehicle safety.



I have been doing this for 20 years and the Brigade system is by far the best equipment we have used. Brigade's products will be the only system in our vehicles going forward.



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