



**SPILLARD**  
vehicle safety systems



# **Vehicle Collision Avoidance System**

VCAS 200 Manual



An aerial photograph of a construction site. A chain-link fence runs diagonally from the bottom left towards the center. Inside the fenced area, there are several stacks of materials, including red and blue pipes or conduits, and some wooden framing. A yellow excavator is visible near the center. The ground is dirt and gravel, with some tire tracks. The text "VCAS 200 Manual" is overlaid in large, bold, black letters across the middle of the image.

# VCAS 200 Manual





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# Vehicle Collision Avoidance System

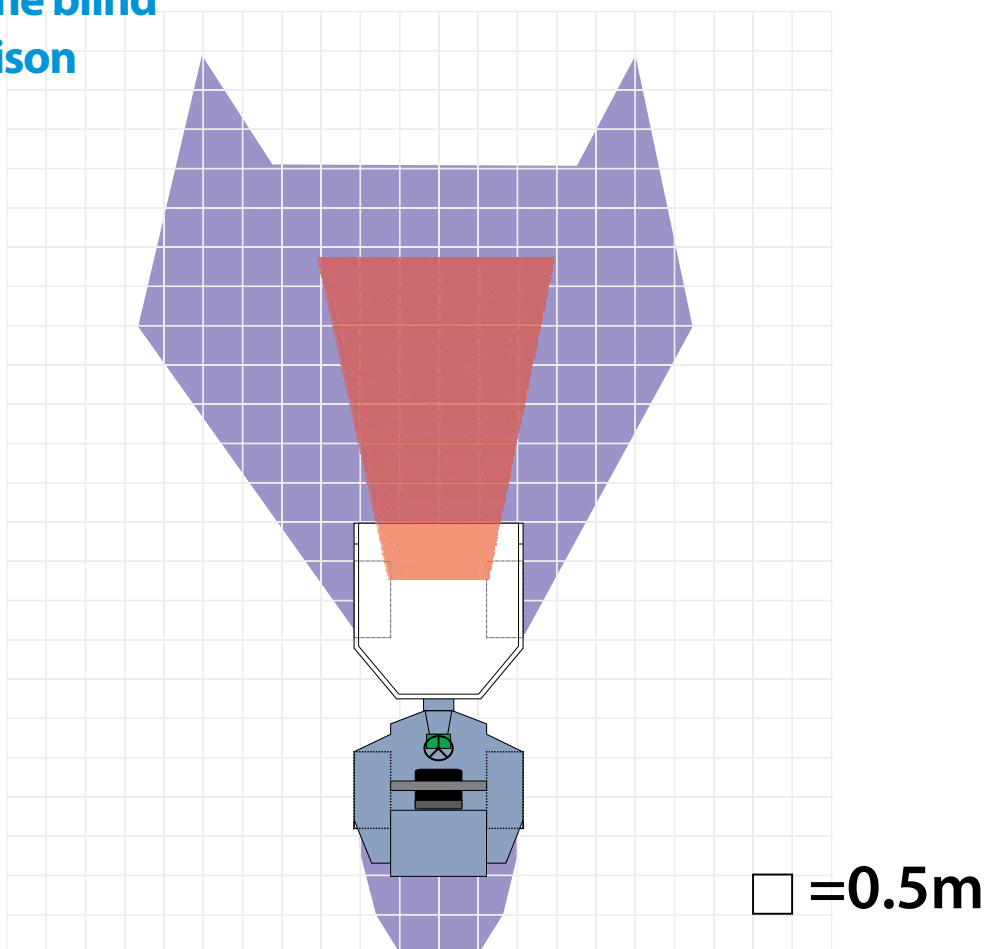
An aerial view of a yellow site dumper with a raised bed on a construction site. The dumper is positioned on a dark, wet surface, possibly asphalt or mud. Its bed is raised, and it appears to be dumping or has just dumped a load of light-colored material. To the right of the dumper, there are several yellow and blue corrugated pipes lying on the ground. The background shows a mix of dark and light patches, suggesting a construction area with varying ground conditions.

**VCAS 200** - a vehicle safety enhancement system that warns operators of immediate dangers within a predetermined range. The system provides the assurance of safety when a site dumper's operation commences, and cannot be turned off or ignored by operators unfamiliar with its features.





## Detection zone blind spot comparison



Area of detection at 1m high



### VCAS 200 Three sensor warning system

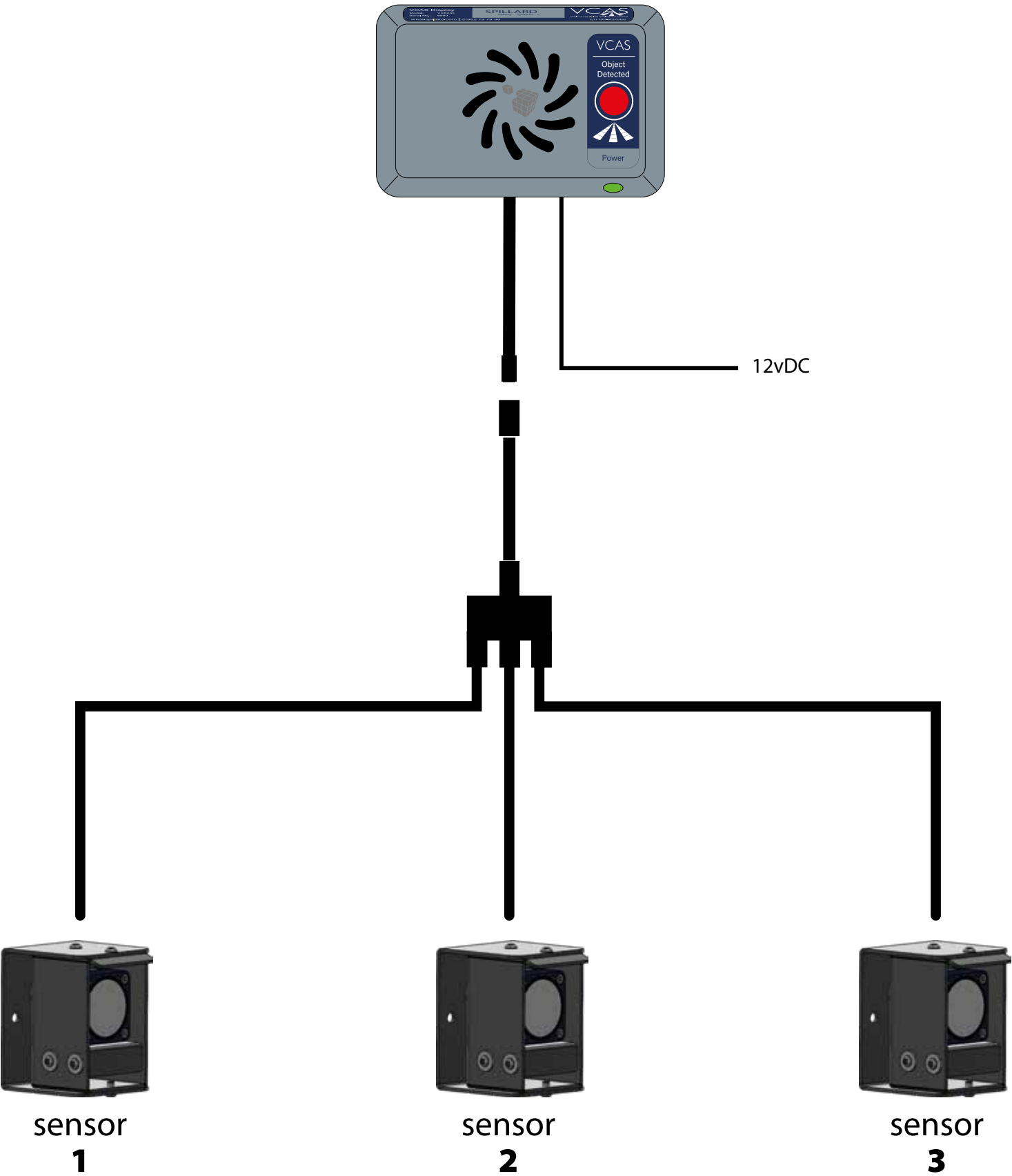
An industrialised object detection system monitoring to a maximum of 4 metres from any sensor at any one time. When mounted on a vehicle in a predetermined configuration, a 4 metre primary sensing zone can be achieved, providing effective visual and audible warnings to the vehicle's operator, alerting them of immediate dangers.

- Powerful non-contact sonic sensing technology - max range = 6 metres.
- Speech alert, 85db tone sounder and high intensity LED warnings.
- 'Always on' transparent operation, eliminates operator interaction.
- Low maintenance – protected against dust, humidity and air turbulence.

### Dash Display

- High intensity status lights
  - Object detected
- Audible warning - speech alarm
  - Caution Object Detected
- IP68 Waterproof

# Product overview



# Parts & Limitations



## Parts list

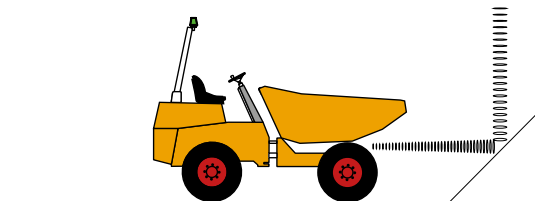
1 x VCB201 - Display  
3 x BVC305 - Sensor Housing  
+ VMS601 Sensor  
1 x VFY222 - Cable Assembly  
1 x 24mm Grommet  
2 x M6 x 15mm set screws  
6 x M6 x 25 mm set screws  
6 x M6 Nyloc Nuts  
12 x M6 washers  
1 x 2 amp auto fuse and holder

## VCAS limitations

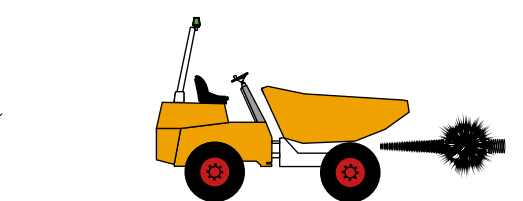
VCAS is an aid to safety, and should be used in addition to your safe system of work.

- The operator should be aware of the benefits and limitations of this system. The daily check procedure must be followed to determine the operation state of the system before starting their daily shift.
- All sensors will not work if an obstruction is covering the sensing face e.g. mud or concrete.
- Sensors detect 4 metres in front of the vehicle. The area covered is dependent upon the mounting position/angle of each sensor. Dead zones may be created due to sensing shape.
- The response times from sensors and the operator are reduced when speed is increased.
- Damage to a sensor will start to deteriorate the sensing capabilities of the system.
- The speaker will not be heard if obstructed or covered.
- All faults or damage must be reported immediately.

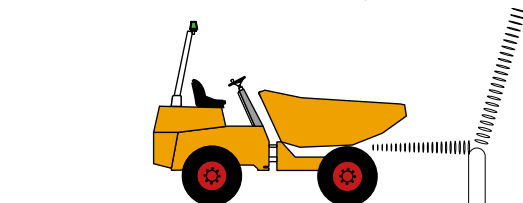
Smooth sloping surface



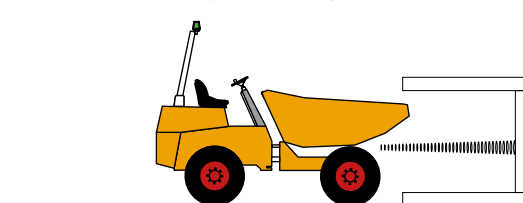
Sound absorbing material



Smooth round object



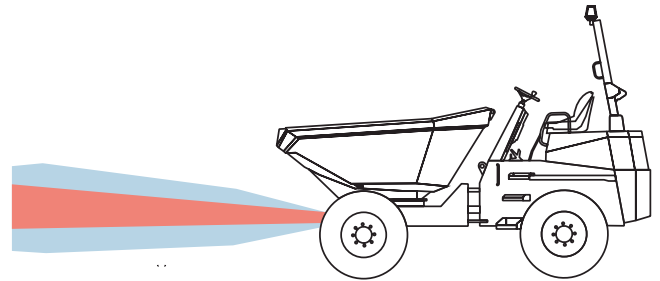
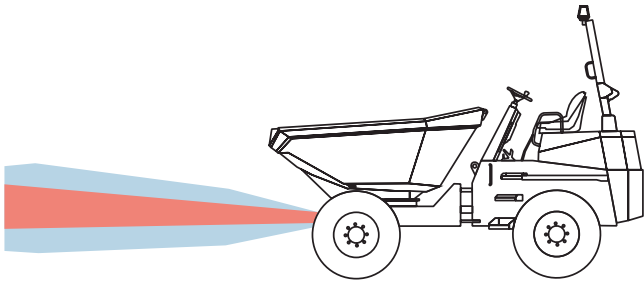
High/low objects



## Active detection zones

■ High accuracy round bar Ø27mm

■ Low accuracy flat plate 500mm x 500mm parallel with sensor



## Incorrect installation and alignment







# Instructions

## Display

The display must be mounted in front of the operator, facing towards them. When detection is made, the red light on the display will illuminate and "caution, object detected" will be sounded.

- Connect the main loom cable to the display and run the main loom cable along the chassis to the front of the machine. Connect the cables from the sensors to the 3 way block and apply the heat shrink.
- Connect the power cable blue wire to a suitable earth and brown positive wire to fuse holder, and then to an ignition feed.
- Bolt the display to the top of the steering column/ dashboard.



*"The display must be mounted in front of the operator, facing towards them."*

## The sensors

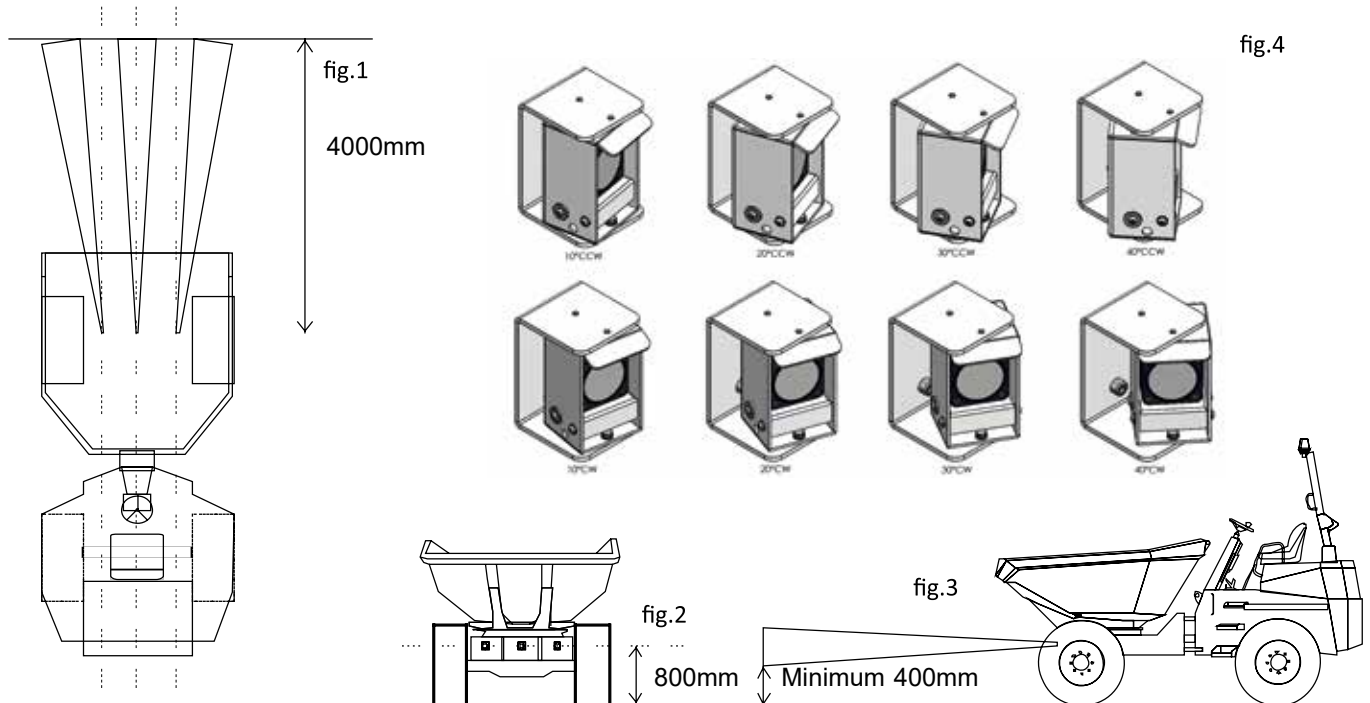
The sensors are pre-installed in a protective housing suitable for your application.





## Installation

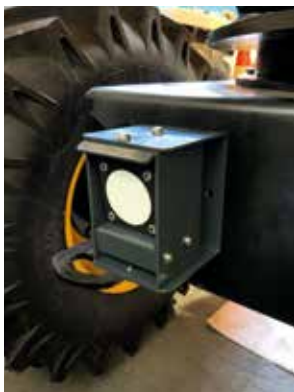
The 3 Sensors are to be mounted onto the front of the dumper at even distances apart, to create a forward-facing detection zone. The sensors are adjustable to ensure no detection is made with raised iron works or objects wider than the machine.



### Mounting

Mount the hanging brackets to the chassis of the machine with the centre of the brackets 800mm from ground level. (Fig.2)

- The centre bracket must be mounted in the centre of the vehicle and will only be adjusted on the vertical plane.
- The outer brackets should be mounted as wide as possible.

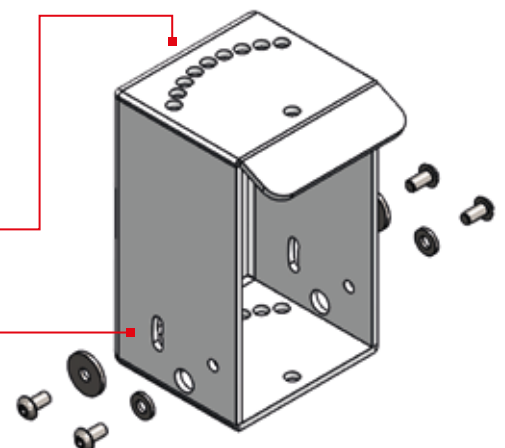


### Attach and adjust

Attach the sensor housing to the outer bracket.

Adjust the top bolt for Left Right toe in to stop detecting wider than the machine. (fig.1) (fig.4)

Adjust the rear bolt to angle the sensor face upwards slightly to detect approx 400mm off the ground @ 4 metres (fig.3)

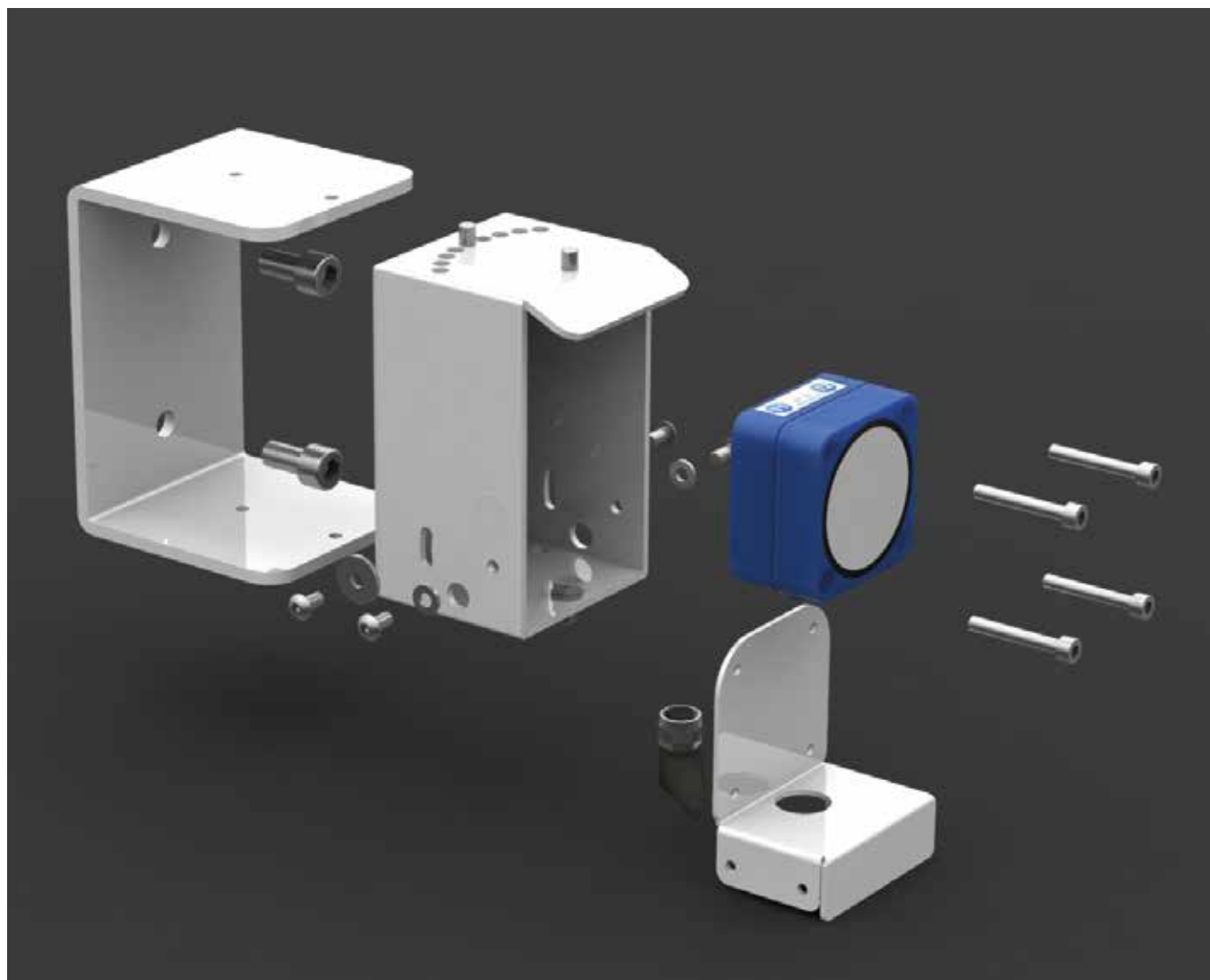






## Sensor removal

If the sensor is to be removed or replaced, to ensure the sensor is mounted in the correct position within the housing, please follow the image guidance below.

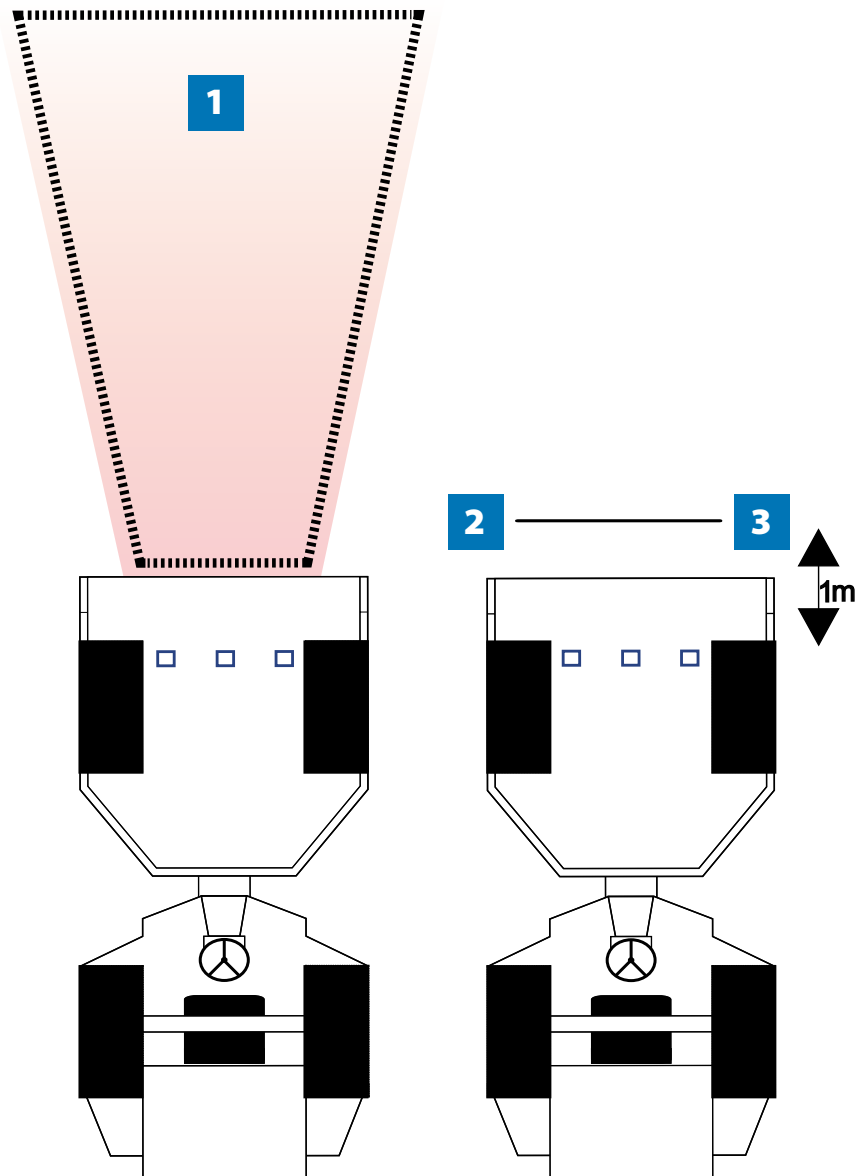
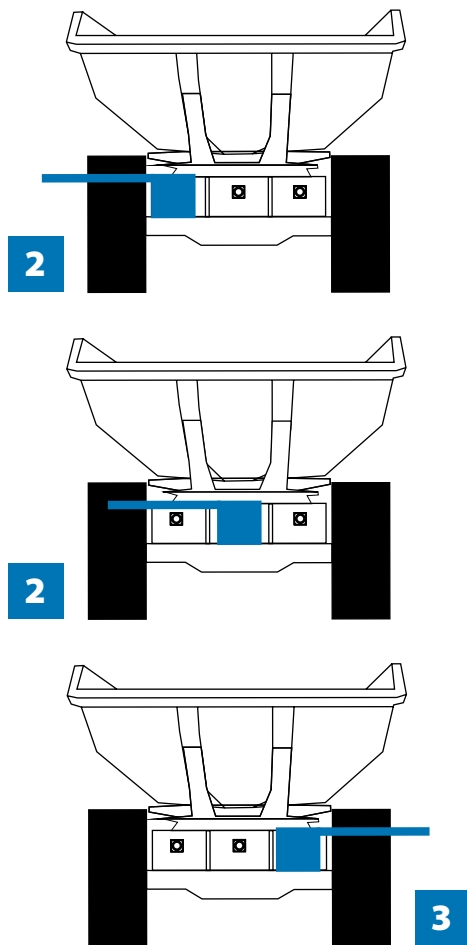


### IMPORTANT

The sensor cable must only be finger tightened to the sensor and cable tied to the bracket once looped back with a minimum bend radius of 25mm.



## Daily test procedure



*Ensure there's an audible alert from ALL SENSORS.*

### Dashboard

1. Place a cone or similar object at the position, approximately 2 metres away from the front of the skip.
2. Turn the dump truck ignition on - **DO NOT START**.
3. Ensure the **red light is illuminated** and the speech alarm can be heard.

### Sensors

Leaving the ignition on and **NOT STARTED**, remove the cone.

Standing at position 2, hold the test target in front of the first sensor, then hold the target in front of the second sensor. Repeat the steps standing in position 3, ensuring there is an audible alert from all sensors.









**A smart construction site  
is a safe construction site.**





## Disclaimers and warnings

**This manual contains important information required for the proper installation of the Spillard Safety Systems equipment. Please read the manual thoroughly before installation and/or operation of the system. Spillard Safety Systems cannot assume responsibility for the improper installation of the system.**

Although Spillard Safety Systems exercises all reasonable efforts to ensure its products perform properly in aftermarket and OEM applications, Spillard Safety Systems assumes no responsibility for deficiencies in their installation. It is the installer's responsibility to consider and avoid possibly hazardous conditions that could result from the installation of the system. It is the responsibility of the installer to carry out the installation in accordance with recommended practices outlined in this manual. Spillard Safety Systems cannot assume responsibility for installations that are performed by end customers or dealers.

Spillard Safety Systems cannot assume responsibility for either the training of operators or for their proper use of this system. It is the responsibility of the end users to ensure all operators are fully trained regarding the proper use of the system.

### Avoidance of hazards

The suggestions provided in this guide regarding avoidance of hazardous conditions apply to all applications and are necessarily of general nature since only the installer is familiar with the details of his/her installation. The suggestions provided in this guide should be considered general examples only and are in no way intended to cover every possible hazard in every installation.

Improper operation, maintenance or repair of this product can be dangerous and could result in injury or death. Do not operate or perform any maintenance or repair on this product, until you have read and understood the operation, maintenance and repair information.

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognising potentially hazardous situations before an accident occurs. A person must be alert to potential hazards. This person should also have the necessary training, skills and tools to perform these functions properly.

### NOTE:

Spillard Safety Systems cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all-inclusive. If a tool, procedure, work method or operating technique that is not specifically recommended by Spillard Safety Systems is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the product will not be damaged or be made unsafe by the operation, maintenance or repair procedures that you choose.

The information, specifications, and illustrations in this publication are on the basis of information that was available at the time that the publication was written. The specifications, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. Consult Spillard Safety Systems for the most current information available.

When replacement parts are required for this product, Spillard Safety Systems recommends using its own replacement parts or parts with equivalent specifications including, but not limited to, physical dimensions, type, strength and material. Failure to heed this warning can lead to premature failures, product damage, personal injury or death.

### Installation precautions

Spillard Safety Systems recommends the system should only be installed by a competent person.

Spillard Safety Systems recommends the installer seeks advice from the machine manufacturer before commencing installation, specifically in regard to all electrical connections.

Each system installation might have unique safety considerations that may or may not relate to items addressed in this document. Installers should use this and all other resources that may be relevant to their particular application to determine whether all reasonably foreseeable hazards have been adequately addressed.

The system should be installed in compliance with any applicable standards for the application.

Spillard Safety Systems shall not be liable to the buyer for any loss which may be suffered by the buyer should the system fail. The buyer's attention is specifically drawn to the limitations on liability contained within clauses 6 and 7 within our Standard Terms and Conditions of Sale. Copy available on request or at [www.spillard.com/terms](http://www.spillard.com/terms)

### Applies to seat belt:

**THE ROLL OVER PROTECTION STRUCTURE (ROPS)  
MUST NOT BE DRILLED.**

The lap belt should only be used in conjunction with the suggested electronic buckle. Even if the belt may appear to lock into another buckle, it may fail in the event of an incident.

### Operational precautions\*

The system is designed to supplement the machine's safety during its operation

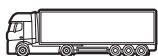
\*Prior to operating the machine, always confirm the system is operating correctly by using the daily test procedure provided.



# Mobile safety solutions that increase awareness and reduce incidents



Construction



Heavy Goods



Mining



Public Transport



Refuse



Light Goods