

# ASO CUSTOMISED SAFETY SOLUTIONS FOR AVIATION GROUND SUPPORT EQUIPMENT





# AVIATION GROUND SUPPORT EQUIPMENT



## APPLICATIONS

The constant dangers surrounding aircraft ground operations can cause huge problems for health & safety requirements in all types of airfield operations around the world. From personal injury protection of persons using ground support vehicles through to potential damage to aircraft, ASO's range of contact sensors and electronics provides the complete solution.

Our range of customisable **SENTIR contact edges** and **bumpers** can be easily retro-fitted to the full range of ground support equipment to provide a highly cushioning bumper solution protecting aircraft from impact damage. Requirements in the latest IATA ground handling standards, state that equipment that comes in to contact with aircraft be fitted with bumpers that are compressible to avoid damage.

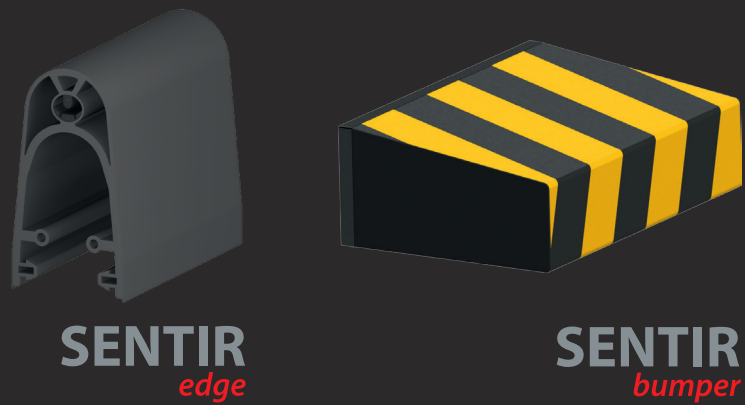
Personal injury protection for all types of GSE can also be provided through use of our tactile sensors, mats, or light curtaining products.



K-loader impact points can be protected with **SENTIR bumpers** and scissor lift crushing area with **SENTIR contact edges**



Belt Loaders for luggage can be fitted with **SENTIR bumpers** to protect aircraft to protect the hull



## OTHER + APPLICATIONS

- ▶ Belt loaders
- ▶ Tow tractors and TUGS
- ▶ Passenger staircases
- ▶ Catering trucks
- ▶ Bag carts and ULD trailers
- ▶ Forklifts and scissor lifts



Catering truck impact points can be protected with **SENTIR bumpers** and scissor lift crushing area with **SENTIR contact edges**



Mobile gangways fitted with **SENTIR bumpers** protect the aircraft from impact damage



# CARGO LOADER VEHICLES - AIRCRAFT DAMAGE PREVENTION

Costly damage can easily occur when all types of container loaders come in to contact with Aircraft. The **SENTIR bumper** range of contact buffers allows fast, efficient detection of impacts providing a last line of defence against expensive repairs.

In this example, we can see a loader outfitted with the latest **SENTIR bumper 100/120** Outdoor IP65 rated buffer system. The bumpers are connected in series to an ASO **Elmon rail 41-322** safety relay which interfaces with the control systems of the Loader. An additional enclosure laser etched with the manufacturers details and safety information has been supplied with a supervisor controlled reset switch, flashing light and siren.

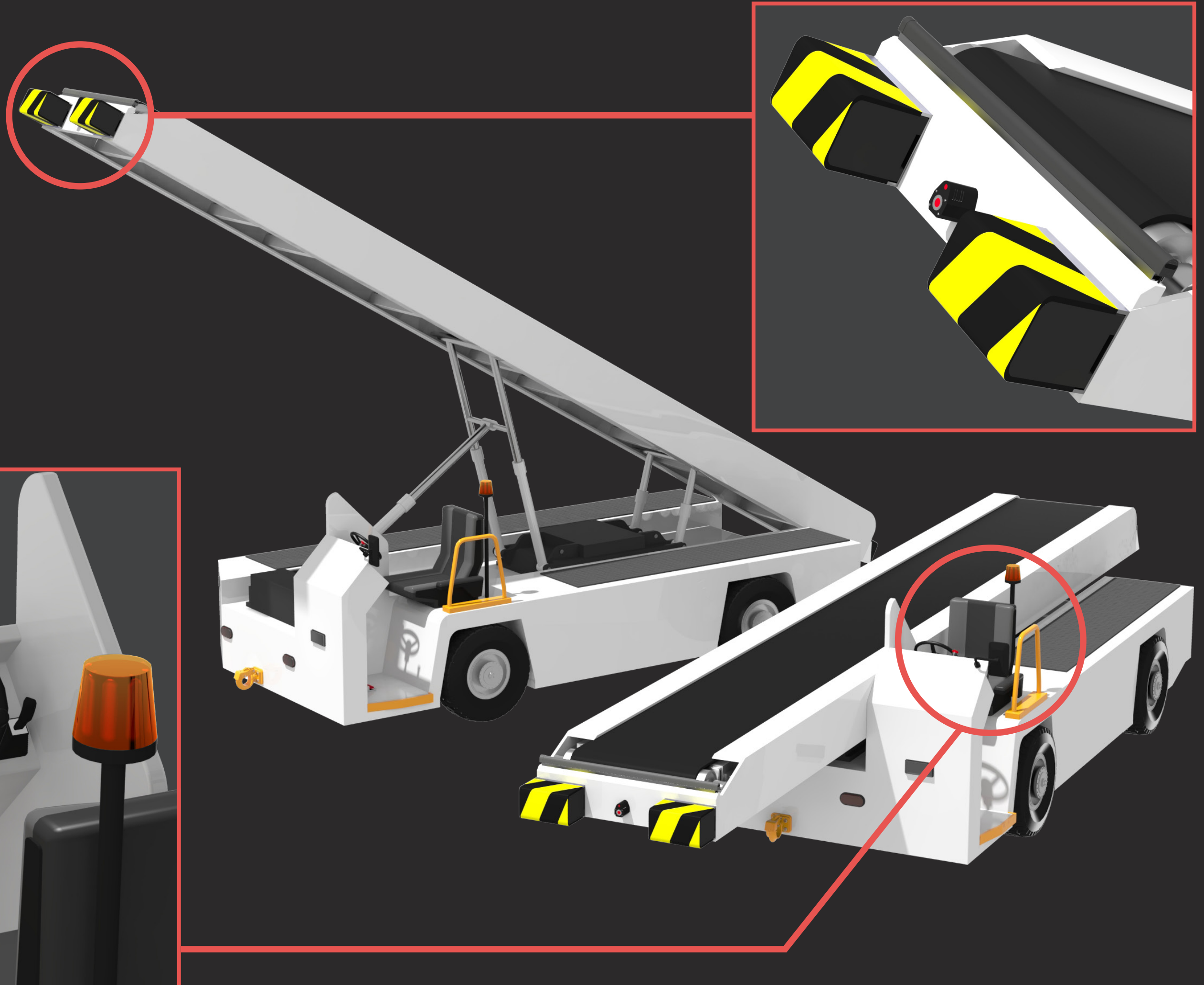




# BELT LOADER VEHICLES - AIRCRAFT/BAGGAGE DAMAGE PREVENTION

Belt loader vehicles of all kinds, and shapes can benefit from several different safety features including contact **SENTIR edge/bumper** and non-contact laser scanner solutions.

In this example, we have 3 separate safety measures deployed. Firstly, a laser range scanner is fitted to detect and slow the loader upon approach to the aircraft. Secondly, two SENTIR bumpers are fitted to the outer leading edges of the boom to sense impact with the aircraft. Finally, a **SENTIR edge 25.30TT** is fitted along the lip of the loading belt preventing and detecting any baggage jams or personal injury to operators.

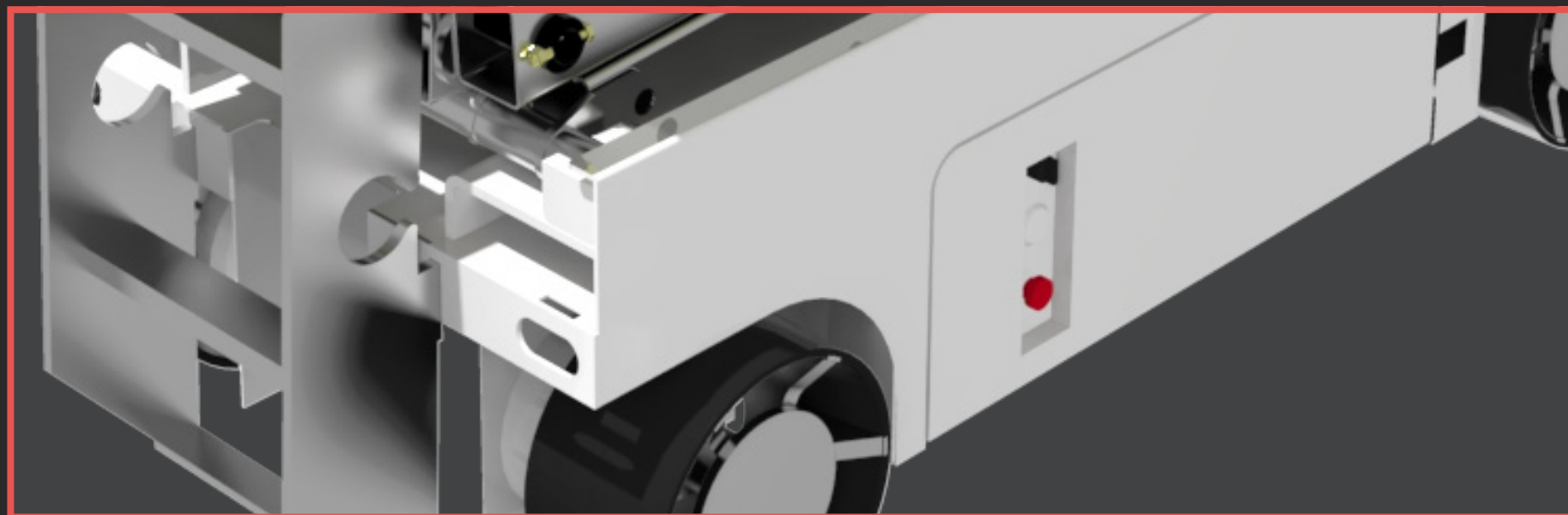
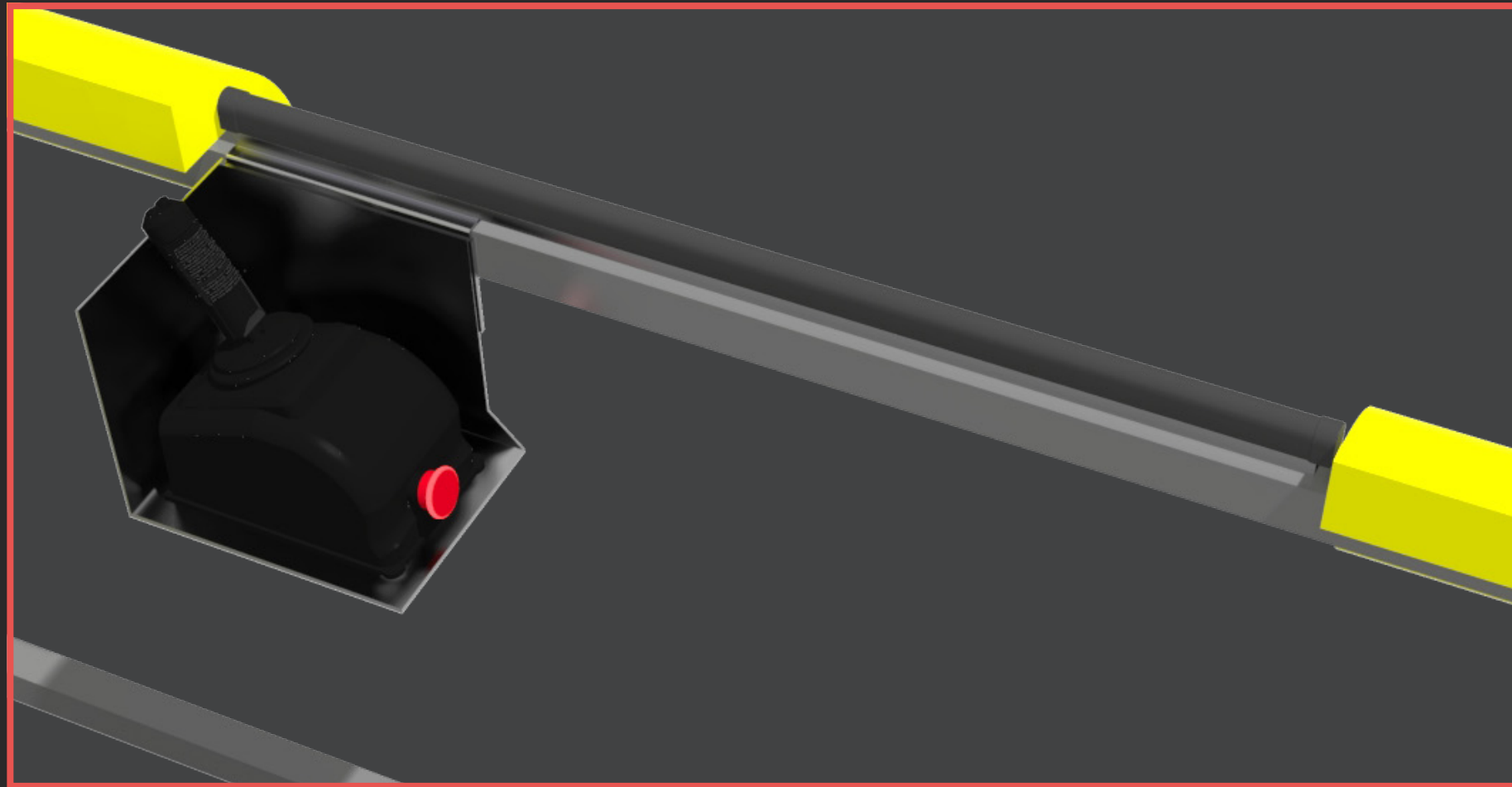




# MAINTENANCE PLATFORMS & LIFTS – AIRCRAFT DAMAGE PREVENTION

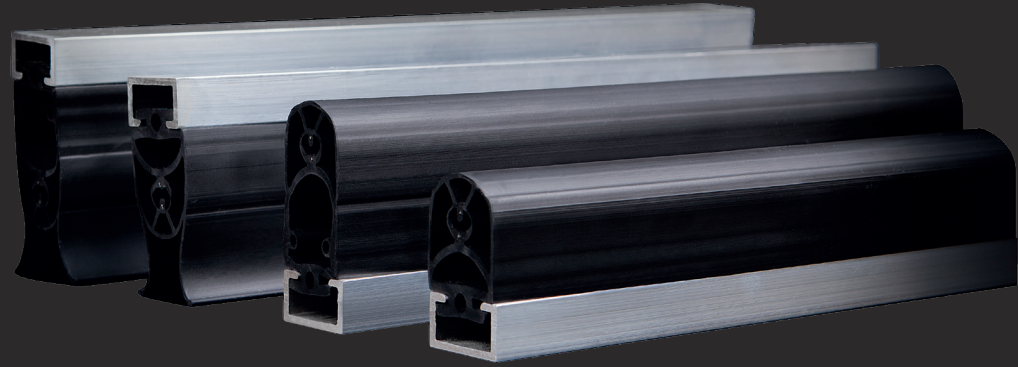
Maintenance platforms, scissor lifts and MEWP equipment types present both personal injury and aircraft damage risks.

In this example, we have a scissor lift used for aircraft maintenance outfitted with our custom made **SENTIR bumper system** covering all potential impact points with the aircraft. This highly adaptable solution contains ultrasonic sensors to slow the platform upon approach to an obstacle. Secondly, a **SENTIR edge 25.30TT** is fitted to the operator control panel to detect operator injury. Finally, all components are integrated to the control system of the platform enabling quick shut off and reverse of the MEWP from a dangerous situation.



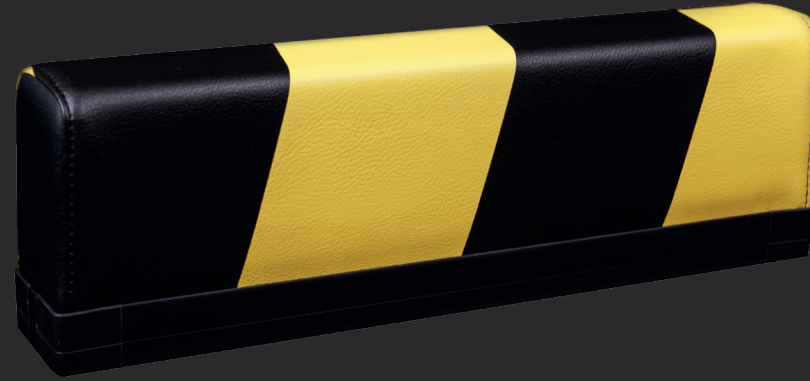


# SAFETY, SENSORS & CONTROL SYSTEMS



## SENTIR *edge* – SAFETY CONTACT EDGES

Crushing and shearing points on automated equipment and vehicles have a high risk potential for people and material. The **SENTIR *edge*** safety contact edges provide reliable protection. The pressure sensitive sensors act as closing edge safety devices and guarantee optimum overtravel and fast switching characteristics.



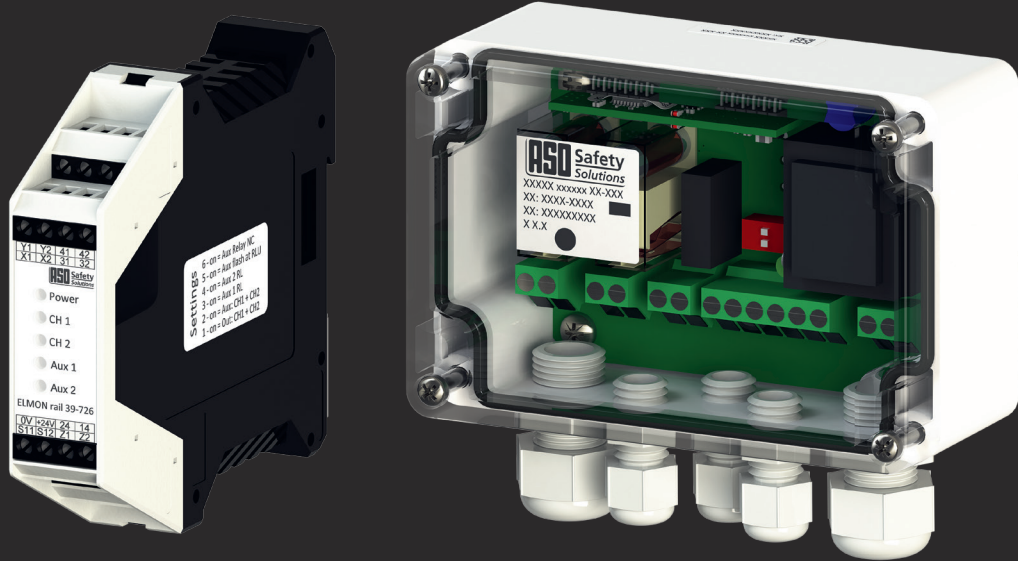
## SENTIR *bumper* – SAFETY CONTACT BUMPERS

The **SENTIR *bumper*** safety contact bumpers offer adaptability reliability and versatility. They are valued as safety guaranties on AGV's and forklift trucks, high-bay storage systems, machine lines, free-floating systems and wherever flexibility is required from a safety device.



## SENTIR *mat* – SAFETY CONTACT MATS

Equipped with a structural surface and laminated section sensors, the **SENTIR *mat*** safety contact mat protects and detects. Easily integrated into any environment to protect from danger or injury.



## ELMON – SAFETY RELAYS

**ELMON** relays from ASO provide permanent monitoring of contact edges, mats and bumpers. It acts as a link between tactile sensors and the system vehicle control.



## ELECTRONICS AND CONTROLS

All of our safety solutions need to be integrated carefully with your GSE, our pre-sales team are available to build your custom configuration with you from start to finish. From enclosures through to sirens, flashing lights, key switches, voltage converters and other essential devices we offer the complete package for your needs.

