



*Safety
by any means*

SAFETY IMPROVEMENT SYSTEMS



**COLLISION AVOIDANCE SYSTEM
FOR INDUSTRIAL VEHICLES**



Each year in Europe

3 millions
workplace
injuries

540,000
injuries involving employees
and vehicles

of which 1,308 are related to serious
accidents and deaths

a fatal injury carries
an average cost of
about

€ 900,000*

* Eurostat data

Forklifts are the most dangerous means of transport in the **workplace**: recent studies show that **57% of accidents** caused by these machines have caused fatalities or serious injuries.

2/3 of forklift accidents result in the death or injury of people who are not driving the vehicle.

Most common causes of lift truck accidents:

- ✓ human error
- ✓ inadequate training of lift truck drivers
- ✓ lack of safety systems, either active or passive ones

All these causes could
be averted by **collision
avoidance systems**

Our Responsibility

For over 10 years **SIS Safety** has been committed to the **prevention of accidents** in the workplace with forklifts, with over **6,000 active installations**, numerous lives saved and a commitment that continues and is also amplified for the future.

Solid foundations in the development of sensors and electronic design, a close-knit team of highly qualified engineers and the use of the most advanced technologies, have allowed the rapid growth of the company, which has established itself as a **reliable partner** for international companies and brands, bringing a significant **contribution of innovation** in the professional field of prevention and safety.

They choose us as partner

JUNGHEINRICH

STILL

and others...

SIS systems may be used in any industrial sector where logistic operations are carried out as well as where handling of goods is an issue. Our collision avoidance systems provide an effective aid to any company adding value to reach higher safety standards by preventing the risk of accidents and damages to people, good, structure.

Application fields



Pharmaceutical sector



Metallurgical sector



Textile



Food & Beverage



Logistics



Printing



Soft Drink



Handling and warehousing



Packaging



Chemicals



Plastic and rubber sector

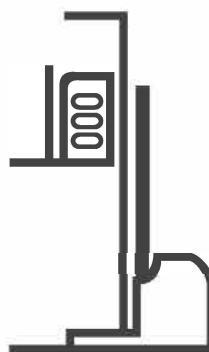


Automotive

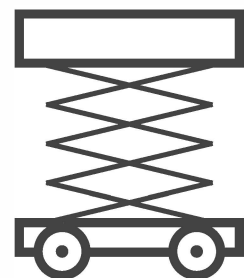
Type of veichles



Counterbalanced forklift trucks



VNA trucks



Special applications on industrial vehicles

SIS systems are specifically designed for installation on forklift trucks with the aim of preventing the risk of accidents in any situation and environment. Thanks to their sturdiness and versatility, SIS safety systems may be installed and effectively perform on major forklift trucks brands such as: STILL, Jungheinrich, Linde, Toyota, Caterpillar - CAT, Manitou, Nissan, Mitsubishi, Yale, Hyster, Cesab, Baoli, Carer, Clark, Daewoo, Doosan, Mariotti, etc.



Whenever safety is an issue, nothing can be left to chance or entirely relied on man. Our advanced technology gives appropriate aid and assistance to the operator in hazardous situations thus ensuring a promptness of intervention that can prevent accidents and save human lives.

Active SIS systems are designed to take action when the human response is not sufficient thus preventing the risk of collisions.

Safe&Stop

Each time **Safe&Stop**, through the ultrasonic sensor installed on the rear part of the vehicle, detects an obstacle in the maneuvering area, the operator gets alerted by acoustic and visual signals, automatic slowing down and blocking are activated, thus avoiding risk of collision.

- ✓ **ULTRASONIC SENSOR**
- ✓ **OBJECTS DETECTION UP TO 4 METERS DISTANCE (UP TO 3 METERS AT SIDES)**
- ✓ **MINIMIND ADVANCED DISPLAY**
- ✓ **STURDY COMPACT DESIGN**
- ✓ **PARAMETERS CAN BE ADJUSTED ACCORDING TO APPLICATIONS REQUIREMENTS**



Kit:
CySens ultrasonic sensor,
Minimind advanced display,
brackets kit, cable, connectors kit.

Safe&Stop+

In case of vehicles exceeding 1.5 meter width, **Safe&Stop+** is provided: active anti-collision system consisting of two synchronized ultrasonic sensors designed to monitor a broader area. The system warns the operator and, in case of imminent collision, it automatically slows down and blocks the vehicle.

- ✓ **TWO ULTRASONIC SENSORS**
- ✓ **OBJECTS DETECTION UP TO 4 METERS DISTANCE (UP TO 4 METERS AT SIDES)**
- ✓ **MINIMIND ADVANCED DISPLAY**
- ✓ **STURDY COMPACT DESIGN**
- ✓ **PARAMETERS CAN BE ADJUSTED ACCORDING TO APPLICATIONS REQUIREMENTS**



Kit:
two CySens ultrasonic sensors,
Minimind advanced display,
brackets kit, cable, connectors kit.

Safe&StopVNA

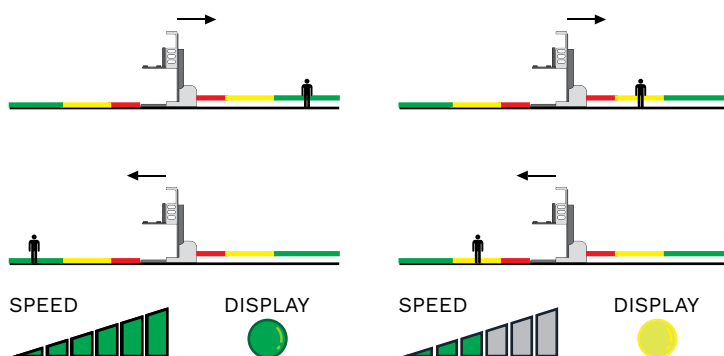
The anti-collision system for VNA Trucks, providing optimized installation and maintenance costs, which you can manage independently with different intervention modes* (stop, slowdown, alarm) and which also works out of aisle*, **with Instant Detection Solid State LiDAR technology.**

- ✓ WORKS OUT OF AISLE
- ✓ SOLID STATE LIDAR TECHNOLOGY
- ✓ SUITABLE FOR MOST MODELS ON THE MARKET



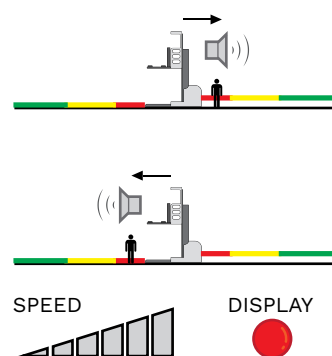
ACTIVE SYSTEM WITH OPTIONALS*

Adaptive system, able **to recognize the environment in and out of the aisle**. VNA trucks are designed to work in narrow aisle, but in the event that they have to leave the aisle, **the system automatically adapts to the new environment, applying a different detection range.**



ACTIVE SYSTEM*

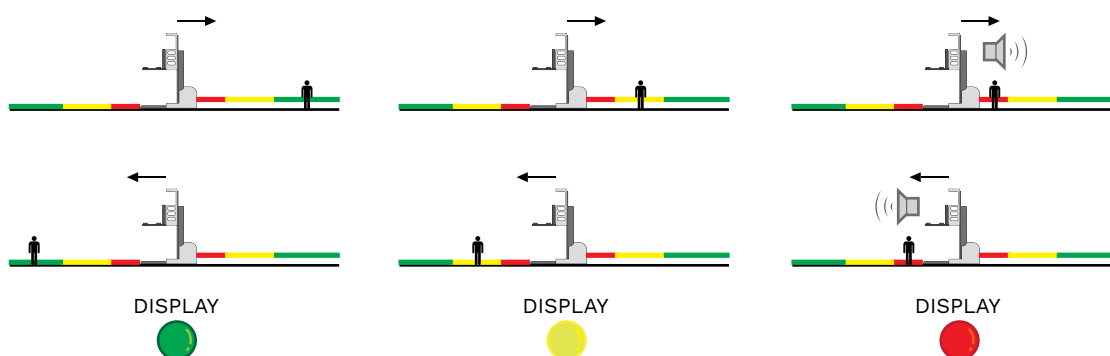
Progressive slowing down of VNA truck as approaching to the obstacle.



* Subject to technical verification

PASSIVE SYSTEM

Only visual and acoustic alert.



SafeViewAI

SafeViewAI applies deep learning technology to the detection and **recognition of pedestrians and/or forklifts and vehicles** around the host machine.

Cameras can be installed on the rear side of the vehicle as well as on the front and sides, allowing the indication of the possible risk of collision.

It is also possible to implement **active functions**, slowing down the vehicle up to a complete stop (*).

SafeViewAI offers a wide range of **customizable parameters** accessible through **Web App**.



Detection area is divided into **3 distinct zones** (No alarms/First alert, Pre-Alert, Alarm), totally configurable both in terms of shape, distance and logic of intervention on the vehicle.

No alarms/First alert



Pre-Alert



Alarm



(* Subject to technical verification)

3 OPERATING OPTIONS

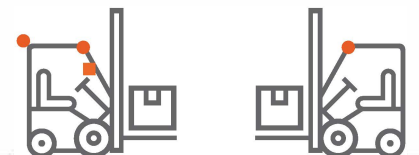
1 CAMERA + MONITOR



2 CAMERAS + MONITOR



3 CAMERAS + MONITOR



right view

left view

SafeViewAI can also be used on excavators, dumpers, wheel loaders and telehandlers.





Maneuvering is a particularly difficult task: hidden obstacles, approaching pedestrians as well as incoming vehicles are major risk factors.

Passive SIS systems are designed to prevent collisions by monitoring the maneuvering area and warning the driver.

Safe&Alert

Passive reverse maneuvering assistance system, **Safe&Alert** detects any obstacles in the operational area through an ultrasonic sensor, thus immediately warning the driver with increasing acoustic and visual signals as it approaches the obstacle.

- ✓ **DETECTING PEOPLE, GOODS AND STRUCTURES**
- ✓ **THREE PRE-CONFIGURED SETUPS**
- ✓ **OBJECTS DETECTION UP TO 3.5 METERS (1.5 METERS MAXIMUM WIDTH)**
- ✓ **EASY TO INSTALL**



Kit:
CySens ultrasonic sensor, Minimind advanced display, brackets kit, cable, connectors kit.

Safe&Alert+

Safe&Alert+ specifically designed for application on medium-sized industrial vehicles which require a broader detection. In case of imminent collision due to the presence of people or objects during reverse maneuvering, the operator is promptly alerted by acoustic and visual signals as he approaches the obstacle.

- ✓ **DETECTING PEOPLE, GOODS AND STRUCTURES**
- ✓ **SIX PRE-CONFIGURED SETUPS**
- ✓ **OBJECTS DETECTION UP TO 3.5 METERS**
- ✓ **DETECTION AREA WIDTH UP TO 2.5 METERS**
- ✓ **EASY TO INSTALL**



Kit:
CySens ultrasonic sensor, Minimind advanced display, brackets kit, cable, connectors kit.

SafeEdge

Leveraging the power of UWB technology, **SafeEdge** can measure the distance between forklifts or, depending on specific needs, between trucks and pedestrians, up to 100 times per second. Distance measurement, which is carried out by on-board tag radar and/or wearable tags assigned to staff, allows to mitigate collision risks in the working area enabling actions helping to prevent collisions.



- ✓ **UWB TECHNOLOGY (Ultra Wideband)**
- ✓ **UP TO 25M DETECTION AREA**
- ✓ **DESIGNED FOR THE INDUSTRIAL ENVIRONMENT**
- ✓ **CONFIGURABLE VIA SMARTPHONE APP**
- ✓ **ZONING AND AUTOMATIC SLOWDOWN**
- ✓ **EASY TO INSTALL**



ENTERING IN THE "ALERT AREA"

An electric signal is automatically activated on the forklift providing a **warning** (e.g. visual/ acoustic activation of alarm devices). The tags worn by pedestrians also warn users about imminent risk through **sounds, lights and vibrations**.



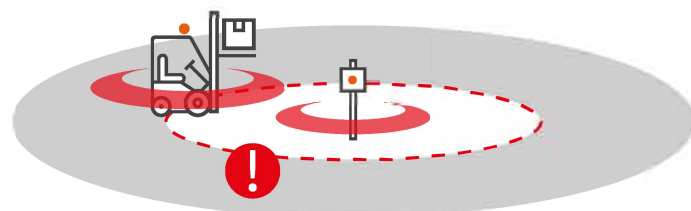
ENTERING IN THE "ALARM AREA"

SafeEdge, thanks to its integration system with the forklift, allows intelligent actions such as **slowing it down* or activating acoustic/visual warnings**. Truck drivers in the work area are alerted by sounds or vibrations.

ENTERING THE DESIGNATED AREA "ZONING"

The forklift can be automatically slowed down* within specific critical areas.

SafeEdge, installed as fixed element, extends the alarm functions to **pre-defined areas**.



SafeViewAI can also be used on excavators, dumpers, wheel loaders and telehandlers.



SafeView

Double channel monitor/camera kit for monitoring of blind spots. It offers high resolution panoramic view of the whole area behind the vehicle while maneuvering.

Kit:
monitor 5", IR ball camera, splitter with built-in DC/ CD converter (48VDC), cable set and connectors.



✓ **HIGH QUALITY AND SHARPNESS OF IMAGES**

✓ **IDEAL FOR A WIDE RANGE OF INDUSTRIAL VEHICLES**

✓ **WATERPROOF COMPACT CAMERA**

SafeTraffic

Workplace monitoring system: a microwave sensor installed next to an intersection or crossing detects any moving vehicles and warns employees as well as other forklift trucks' drivers crossing the area by acoustic signals (sound alarm) and visual signals (flashing light).

Kit:
microwave sensor, acoustic-visual signals device (64 continuous tones available, adjustable up to 105 dB), central control unit that can be integrated with up to 4 sensors, remote control.



✓ **NO INSTALLATION ON VEHICLE REQUIRED**

✓ **EASILY ADAPTED TO ANY LAYOUT**

✓ **TRAFFIC LIGHT AND AUTOMATIC DOORS INTEGRATED**

SafeLed

LED technology optical warning device helping pedestrians to avoid collision. A focused beam of light on the ground warns pedestrians of an approaching vehicle, any pedestrian is alerted in advance of a potential danger.

Kit:
high intensity LED light with connection cables, mounting kit.



✓ **IDEAL FOR NOISY WORKPLACES**

✓ **WIDE VOLTAGE RANGE (9-110V)**

✓ **CAN ALSO BE USED OUTDOOR**

SafeLight

High intensity light beaming a light band along the sides of the vehicle, in order to define the operating area of the vehicle and to signal pedestrians minimum safety distance.

Kit:
high intensity LED light with connection cables, mounting kit.



✓ **WIDE VOLTAGE RANGE (9-110V)**

✓ **LED TECHNOLOGY**

✓ **EASY INSTALLATION**



The history of a partnership

Since 2003, Philip Morris International (PMI) has invested more than \$800 million in its Serbian subsidiary, making it one of the country's largest and most invested-on company.

The installation of SIS Safe&Stop

Philip Morris-Serbia **has installed SIS Safe&Stop on all forklifts** for a total of 25 STILL RX20 model machines. The model RX20 is a latest-generation forklift, belonging to the top category of the STILL's best-selling electric ones.

Whenever **Safe&Stop detects an obstacle within the range of action, thanks to the ultrasonic sensor positioned on the vehicle's rear mirror, it immediately alerts the operator** via light and acoustic signals on the cab's installed display, while also activating the automatic slowing system until the forklift's full stop, so avoiding any type of collision.

It is possible to personalize the device's settings and to customize the slowdown and blocking distances and even choosing to activate/not the side sensors.

Our partner from STILL interviewed Mr. Dejan Janicijevic, PMI's Deputy Director of Logistics.

Q: What problem were you having before using SIS Safe&Stop?

A: Due to the intense traffic of forklifts in our company's warehouses, it is extremely tough to have large production capacities. In order to solve the traffic issue, new measures were necessary to protect either employee and the trucks themselves from accidents.

Q: When did you decide to try SIS Safe&Stop and what brought you to this choice?

A: Lift Truck Co. has been our trustworthy forklift supplier for nearly two decades and as soon as we were offered to install an SIS Safe&Stop system on one of our vehicles to boost security, we immediately accepted.

We have witnessed and confirmed, through daily usage and practice, how SIS Safe&Stop is the best solution for us as it proved especially efficient in warehouses where sensitive goods are handled.

Q: Would you consider your initial goal with the SIS Safe&Stop system achieved?

A: Our main goal was to add value to our logistics processes while also improving safety. Yes, thanks to SIS Safe&Stop we have succeeded. We believe we have made the work environment better and safer and even increased our employees' satisfaction as a result.

Q: Can you give us some statistics on the improvements you have achieved using the SIS Safe&Stop system?

A: Since the implementation of SIS Safe&Stop we have had no workplace injuries and forklift damage repair costs have decreased by 20-25%.

**"ON-THE-WORKPLACE ACCIDENTS HAVE BEEN ELIMINATED
AND A 20-25% DECREASE IN FORKLIFTS' REPAIR COSTS WAS OBTAINED"**

Mr. Janicijevic, **Philip Morris Operation plant's deputy director of logistics** in Niš, Serbia





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