

# Application Forklift Trucks



Presentation only for internal use

# Why Bar code Identification?

**Warehousing (Warehousing logistics)**

**Product traceability (for product recall, etc.)**

Traceability for food products: EU directive 178/2002

With the EU directive 178/2002 all companies of European Union member countries, who are involved in the supply chain for food products, are obliged to:

- ⇒ provide traceability of their products,
- ⇒ take immediate action to recall a food product from the market, if the food product does not comply to the requirements of the food product laws (a suspect for non-compliance is sufficient),
- ⇒ inform the authorities about such an incident

**Data for insurance purposes (Goods transitions)**

# Market potential food & beverage

**30 % of all food & beverage manufacturers ordered equipment for product identification**

**20% have the equipment already installed**

**Conclusion:**

**70 % of the market is still seeking for solutions**

Source: Bluhm GmbH

# Why fixed mounted scanners?

[1]

## Benefits:

### **Reduce the risk for accidents**

The driver of the forklift truck is not distracted by the use of the hand scanner.

Avoidance of personal or material damage

### **High Efficiency**

Reliable bar code reading, i.e. in high rack storage

# Why fixed mounted scanners?

[2]

## Benefits:

### Time savings

Reading „on the fly“

### Reliability

Difficult to manipulate (falsify)

In case of auto-trigger --> fully-automatic reading

### Convenient reading in cold storage areas

The driver does not need to open the window to scan codes (also avoid foggy windows).

# There are two types of applications:

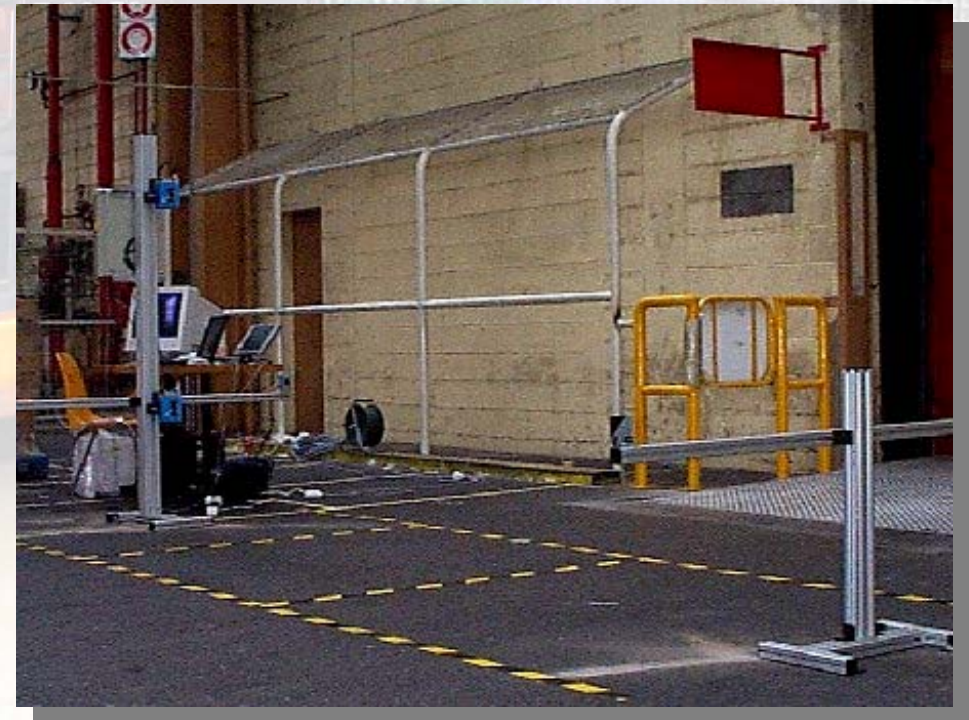
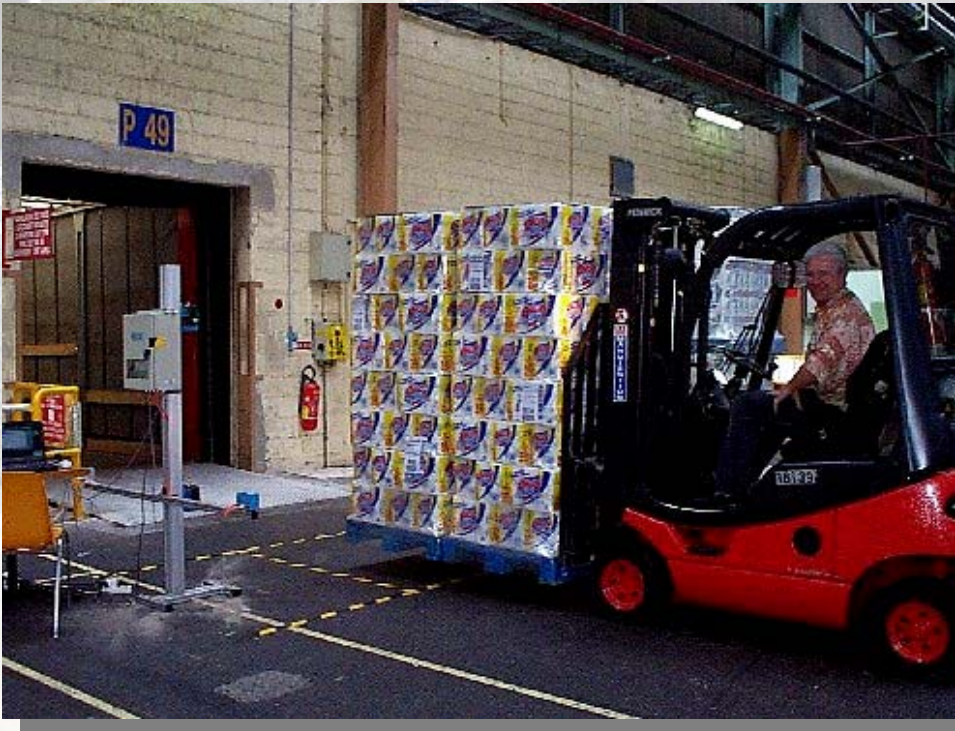
## Identification of objects which are transported by the forklift

- ⇒ Forklift passes a gate with stationary mounted scanners.

## Identification of objects before the transport by a forklift

- ⇒ CLV is mounted on the forklift

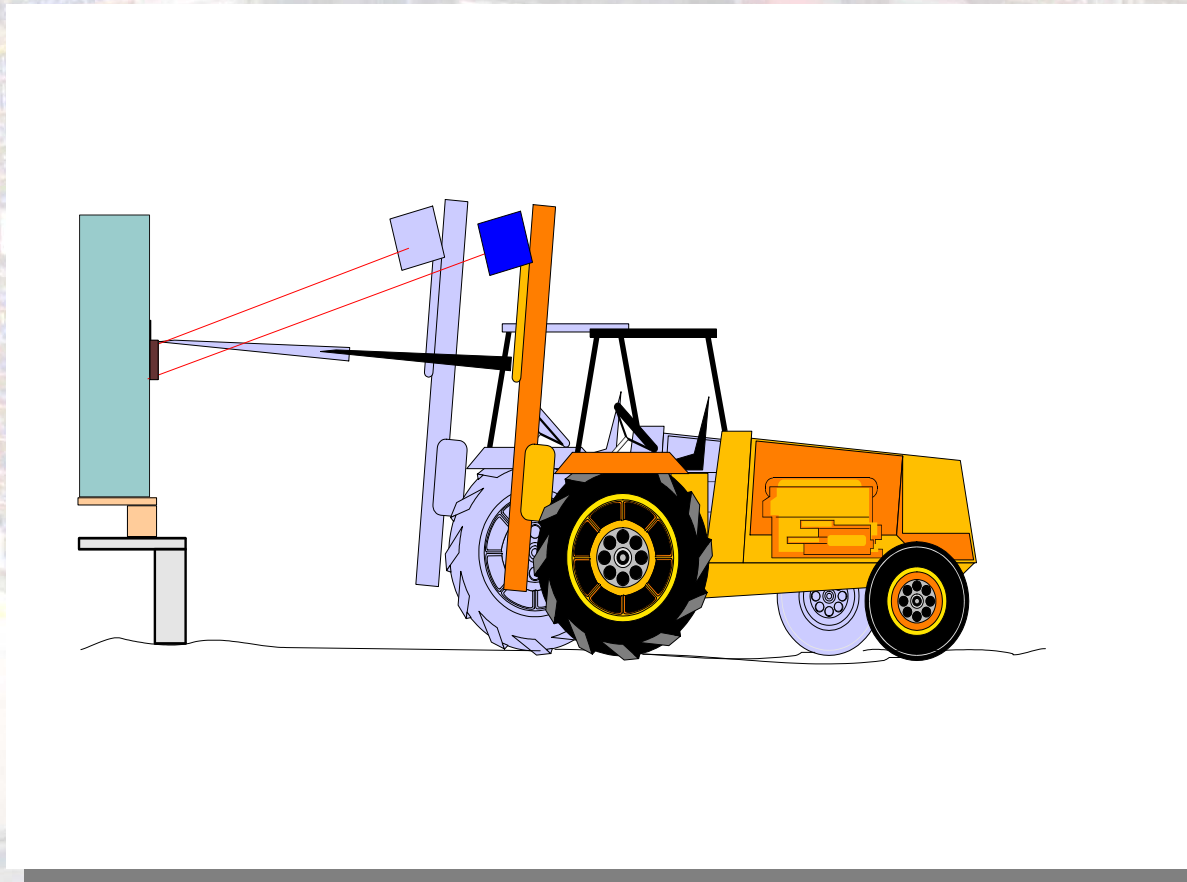
## CLV is mounted stationary as a gate



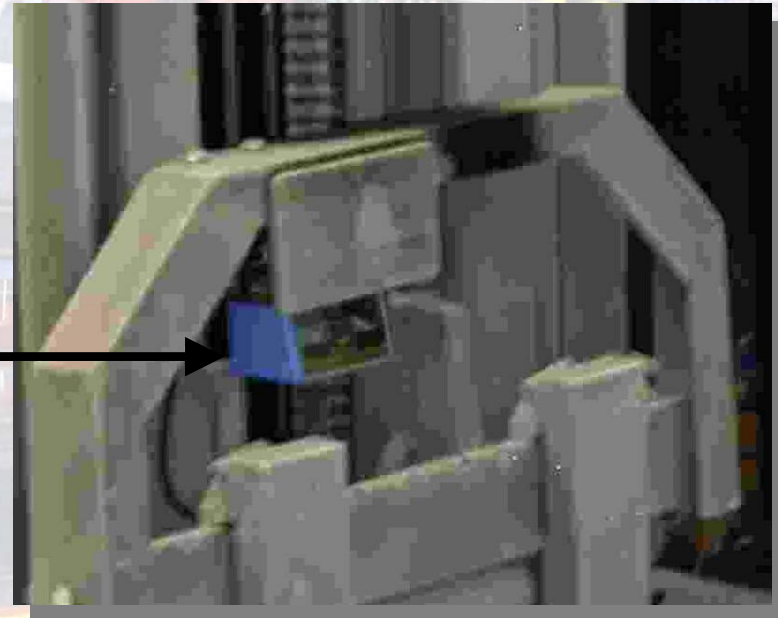
# CLV is mounted stationary as a gate

- ⇒ **Depending on orientation of bar code -  
Usage of Line- or oscillating mirror scanners**
  
- ⇒ **+/- Skew positioning required in case of reading of irregular objects, reading under plastic film or reading in or after curves**
  
- ⇒ **Triggering is difficult**
  - ⇒ **False triggers initiated by persons must be avoided**
  - ⇒ **Detection of travel direction**
  - ⇒ **No false trigger through shape of forklift / object**
  - ⇒ **Space conditions**

# CLV is mounted on the forklift



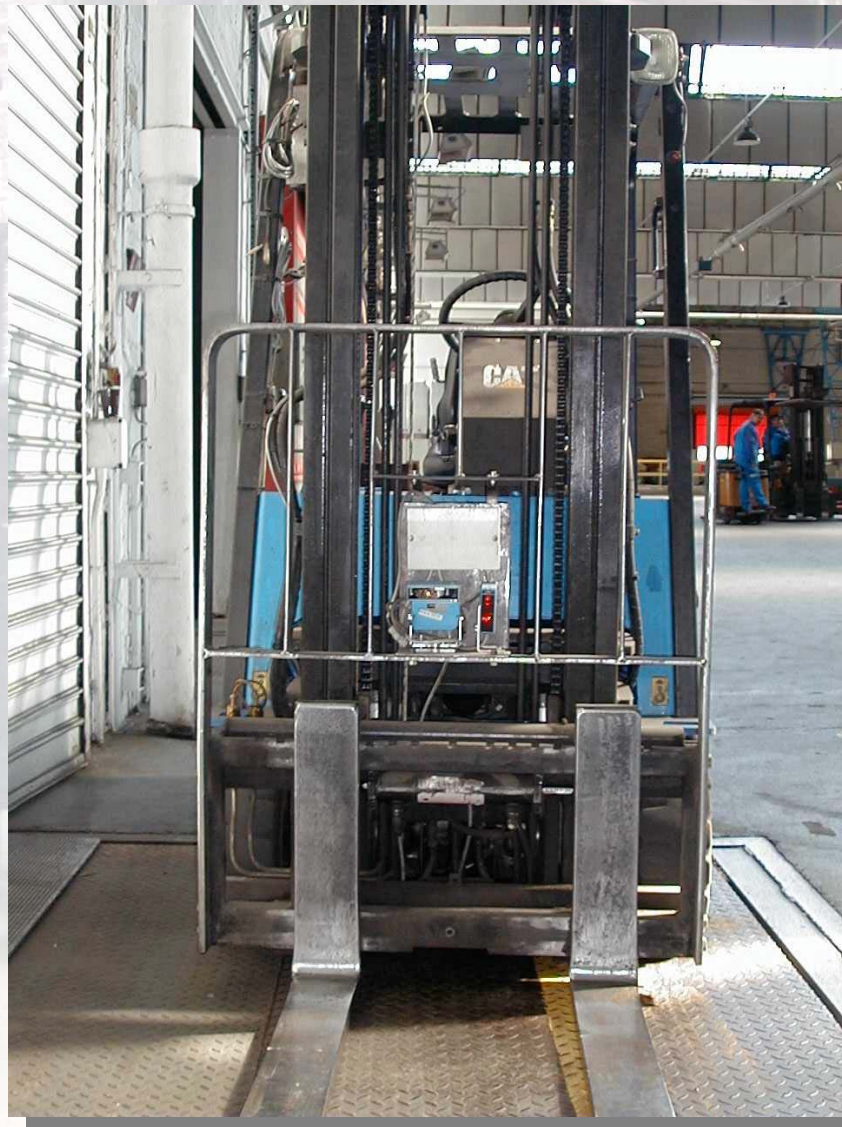
# Application CLV 490



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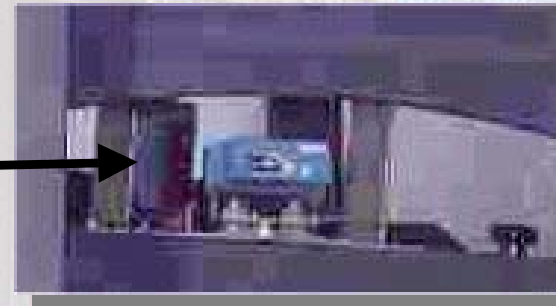
# Application CLV 450



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# Application CLV 450

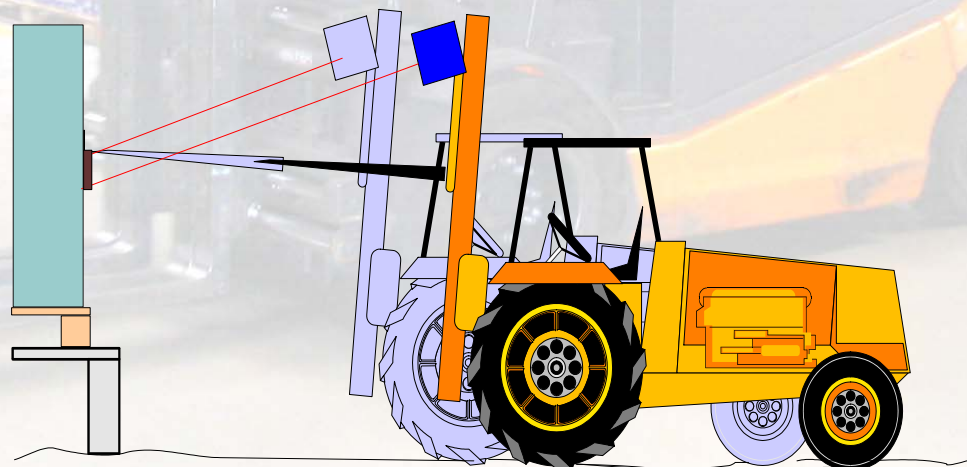


# Application CLV 450



# CLV is mounted in the forklift

- ⇒ Bar code in picket - fence orientation
- ⇒ Position in height does not vary much
  - ⇒ Usage of a line scanner
  - ⇒ Line scanner is mounted with suitable skew angle



# CLV is mounted in the forklift

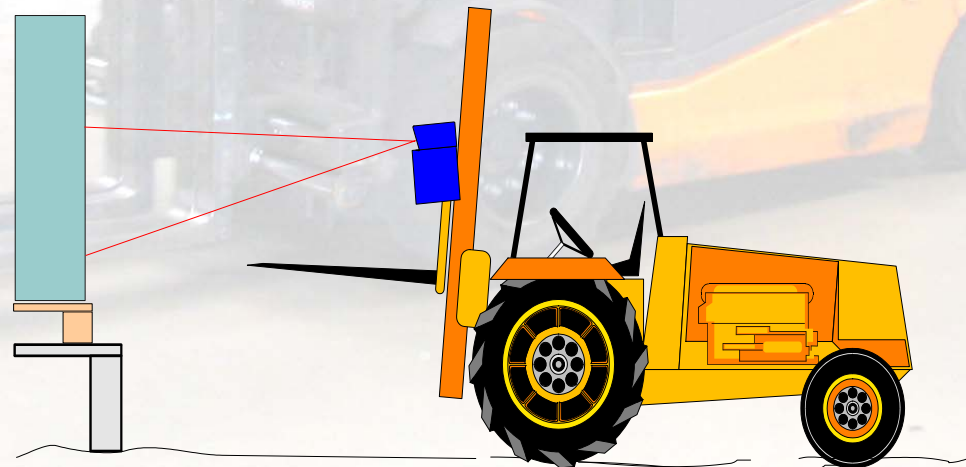
⇒ Bar code in picket-fence orientation

⇒ Position in height varies much

or

**Code is read directly before pick-up**

⇒ **Usage of an oscillating mirror scanner**



# CLV is mounted in the forklift

⇒ Bar code in ladder orientation  
(Orientation not according to EAN specification)

⇒ Usage of a line scanner  
(optional oscillating mirror scanner)

⇒ Line scanner is mounted with  
suitable skew angle



# Application Details

- ➔ CLV Mounting
- ➔ CLV Power Supply
- ➔ CLV Data Transmission
- ➔ CLV Trigger
- ➔ Commissioning of cables
- ➔ Heating option

# Installation CLV 450/480/490

- ⇒ **Due to the mechanical shocks and vibrations, the CLV must be mounted in a special shock-absorber bracket**

# Installation CLV 480/490

**Shock absorber CLV 480/ 490**



**# 2 017 628**

# Installation CLV 450

[1]

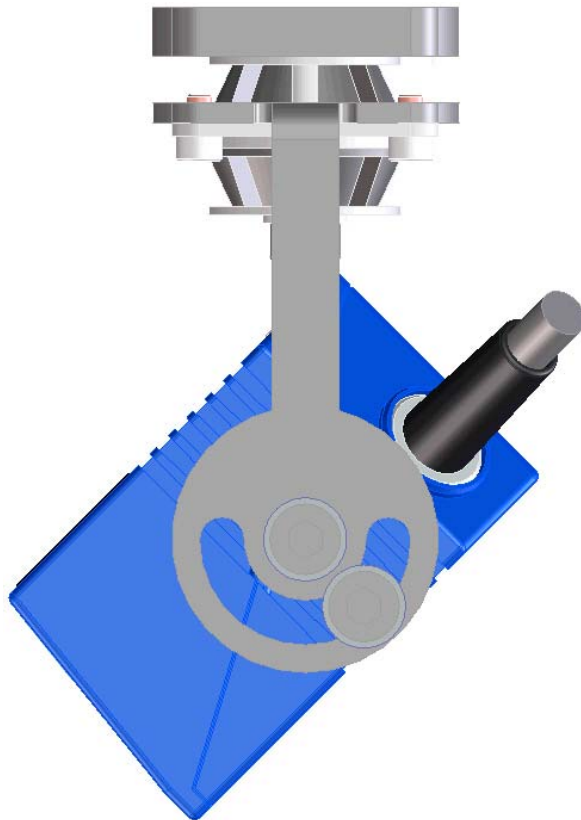
**Shock absorber CLV 450**



**# 2 021 342**

# Installation CLV 450

[2]

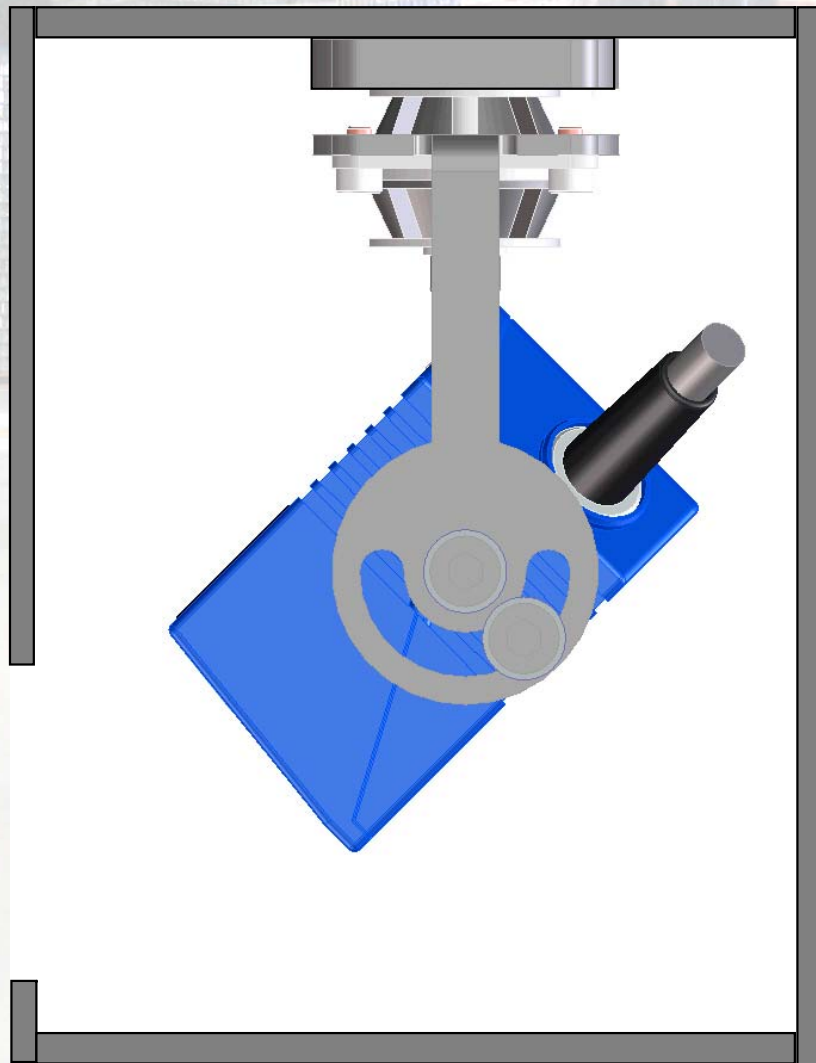


Note:

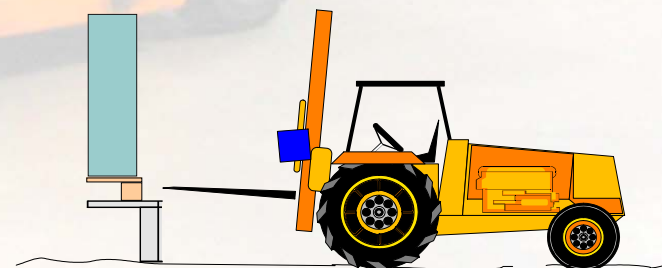
It is important that the scanner has enough space for swinging in both horizontal directions.

## Installation CLV 450

[3]

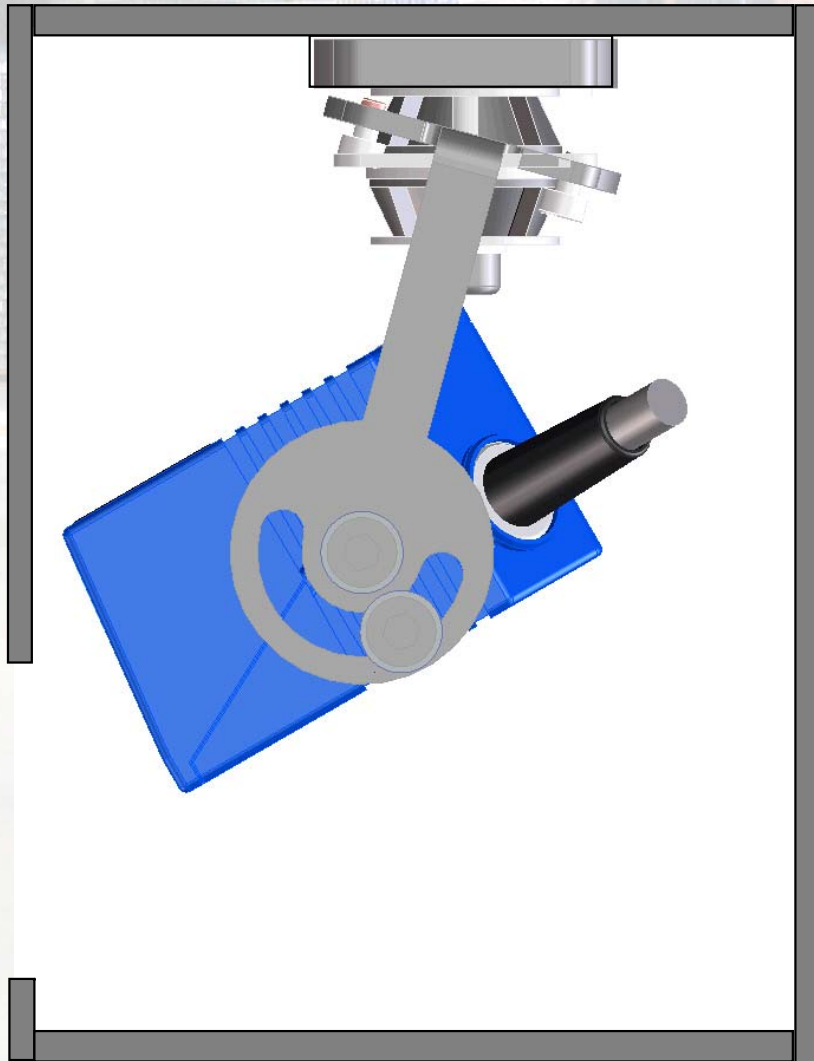


This is also important if the scanner is mounted in a protection housing.



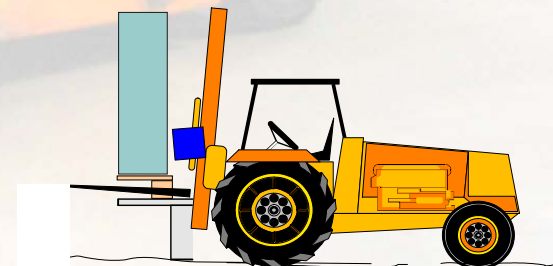
## Installation CLV 450

[4]



The biggest shock occurs when the forklift runs into the pallet (small crash).

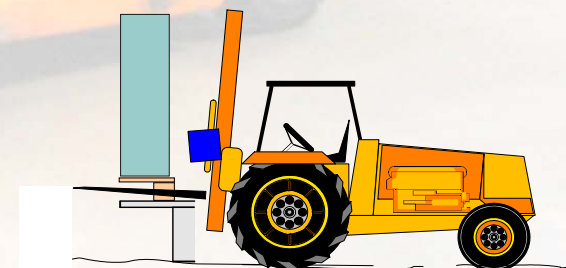
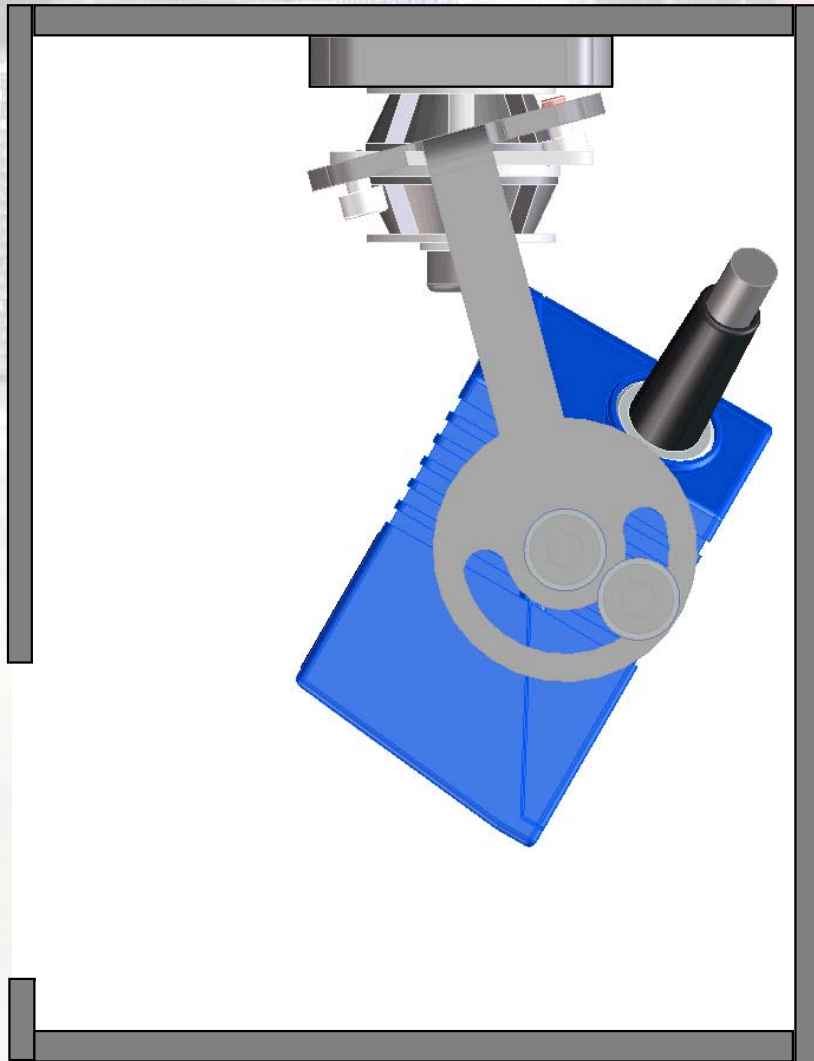
The scanner swings forward...



## Installation CLV 450

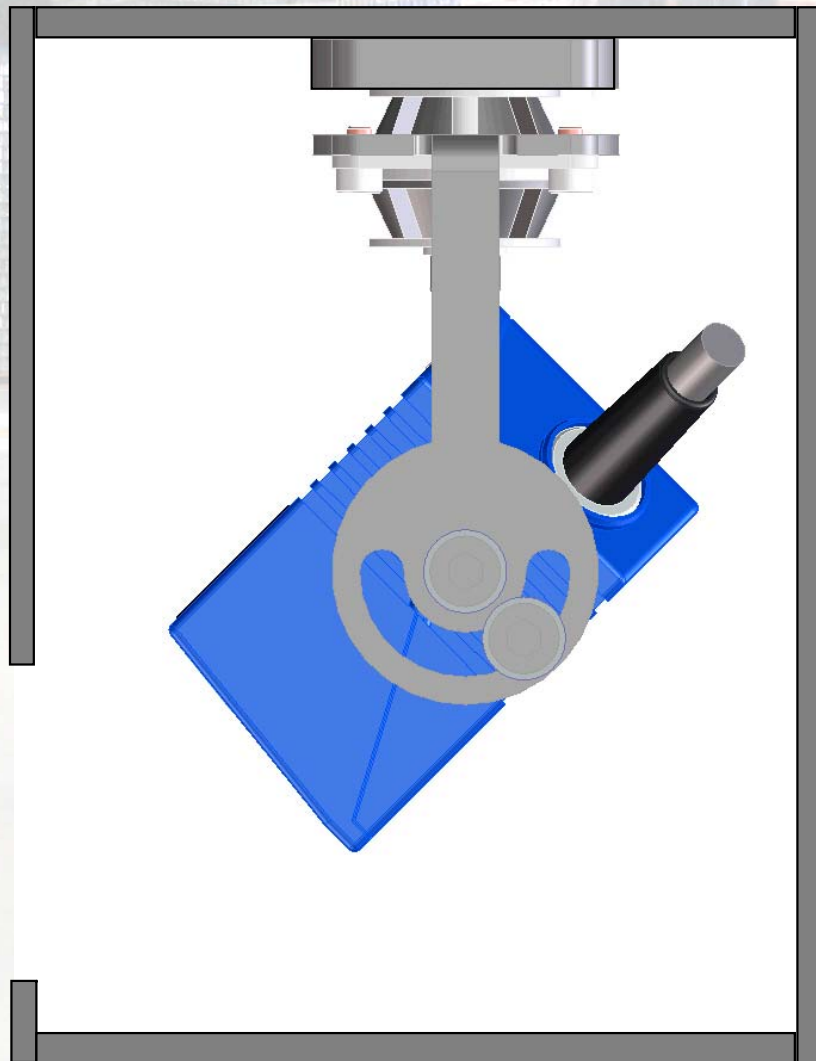
[5]

...and then backward..

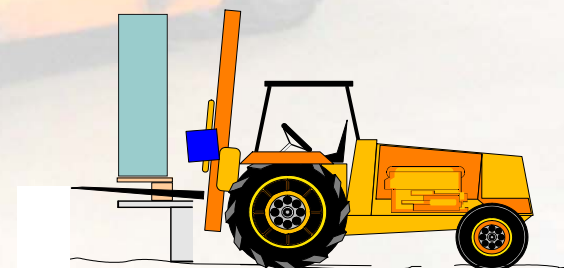


## Installation CLV 450

[6]

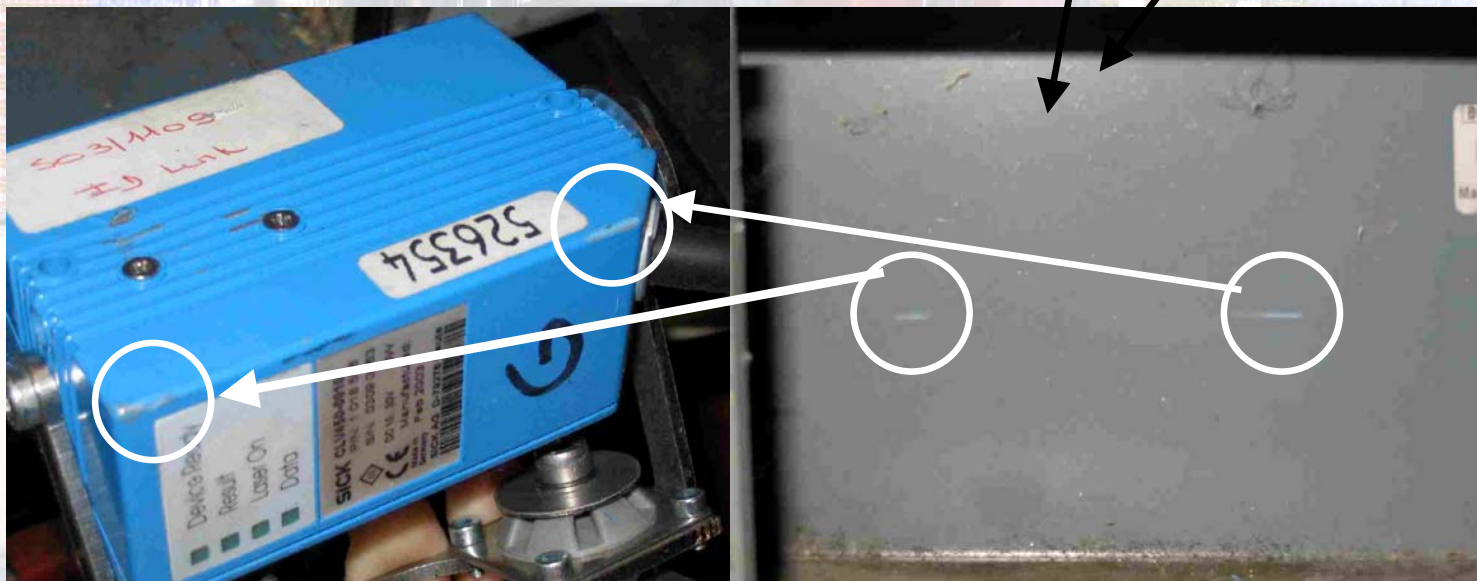


...and then the scanner swings to the middle position.



Example: Not enough space for the swinging area of the scanner.

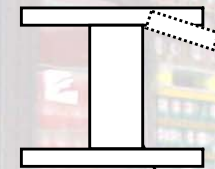
Inside of forklift scanner housing



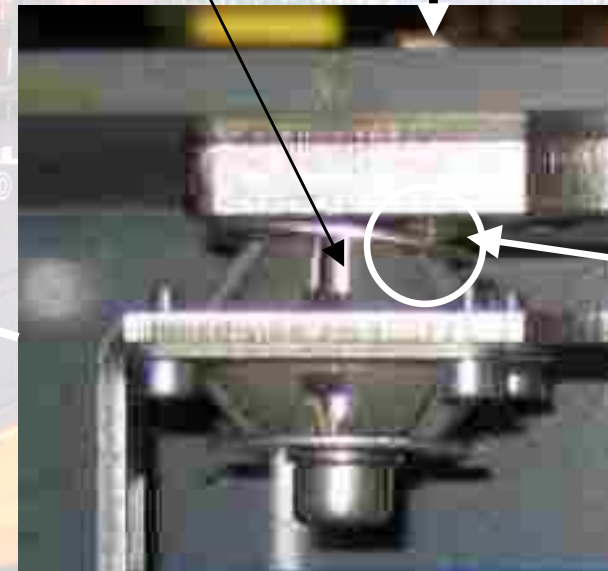
The blue “lines” on the backside inside the housing are the crash points from the scanner.

## Example: Length of the mounting screw is too long

Washers are solidly interconnected via central tube.



Screw



Screw

The screw deformed the washer between the bracket and shock absorber. This influences the efficiency of the shock absorption.

# CLV Operation

- ⇒ **Protection class IP 65 required**
  - ⇒ **Cleaning of the forklift**
  - ⇒ **Outdoor usage**
  
- ⇒ **End user must be advised that cleaning with high-pressure jets is not allowed**
  
- ⇒ **Integrator or end customer is responsible for mechanical mounting**

# CLV Power Supply

- ⇒ **Direct supply via forklift truck battery is critical**
  - ⇒ **Separate supply must be provided**
  - ⇒ **Usage of a DC/ DC converters for voltage stabilisation**
  - ⇒ **For heater version CLV480/ 490 4A/ 24V**

# CLV Data Transmission

- ⇒ **Data transmission from forklift terminal to mainframe control PC is within the responsibility of the integrator or end customer (Wireless or infrared)**
- ⇒ **Interface between CLV and forklift terminal: RS 232**

# CLV Trigger

- ➔ **Free running**
- ➔ **Push-button**
  - Manual trigger initiated by the driver**
- ➔ **Light switch**
- ➔ **When code is read directly prior to the pick-up**

# Commissioning Cables

- ➔ **Flexible cables (in the drag line of the vehicle) are not part of SICKs supply**
- ➔ **Consider temperature ranges for cable selection**

# Delivery and services by SICK

- ⇒ **SICK defines the reading configuration  
CLV450, CLV480 or CLV490**
- ⇒ **Line- or oscillating mirror units**
- ⇒ **Optional heating unit (CLV480 or CLV490)**
- ⇒ **SICK supplies the shock absorber bracket**
- ⇒ **SICK supplies the connection module (CDB or CDM)  
and additional trigger light barriers**

**SICK is not responsible for the following services:**

- ➔ **Installation of the scanners**
- ➔ **Power supply**
- ➔ **Data transmission**
- ➔ **Commissioning and mounting of supply cables**

# Heating option

- ⇒ **There are no special heating versions for the CLV450. For cold storage applications, only the CLV480 and CLV490 are recommended**
- ⇒ **Operation at environment temperature up to -5 °C is possible even for non heated scanners for a short time, if the scanner has got the operating temperature.**

# References

		CLV280	CLV450	CLV490*	OPS
Heineken	France	60x			
Danone Group (Badoit, Evian, Volvic)	France		86x	68x	
Nestle Group (Vittel, Contrex)	France		22x		
Coca- Cola	France			12x	
OTOR	France				5x OPS490
Fricoscandia	Sweden			42x	
Volvo	Sweden			24x	
Carlsberg	Sweden			42x	
Interbrew	Belgium		100x		
Claus Sorensen	Denmark	10x	10x		
Neusiedler AG	Austria		6x		

\* oder CLV290/ 295

# Performance features CLV scanners

	CLV450	CLV480	CLV490
Depth-of-field	+	+	+++
Max. reading distance	+	++	+++
Width/Height coverage	+	++	++
Aperture angle	+	++	++
Tilt range	+	++	+++
Housing dimension	+++	+	+
Heating option	0	+++	+++
Pricing	+++	++	+

# Application Hand held IT5800



If the solution with the fix mounted scanner is too expensive, then we can realise the application with a suitable handheld scanner IT5800.

**Thank you for your  
attention**