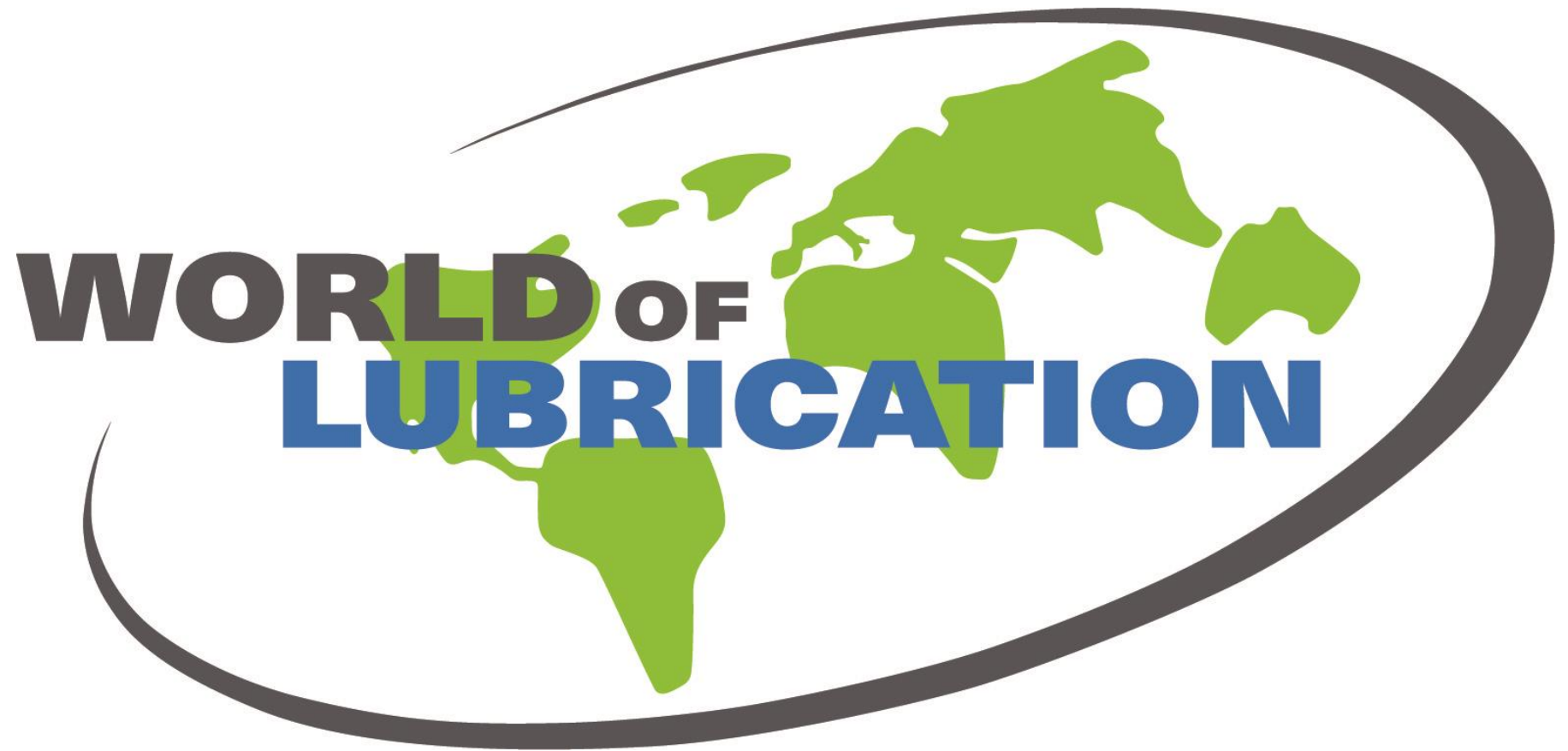


# GROENEVELD-BEKA

 Corporate Presentation



# TIMKEN

Part of the Mechanical Power Transmission division



- Lubrication Systems • Fluid Control • Safety Support Systems

# Organisation

- Experts in lubrication since 1927
- Worldwide sales, distribution and service network
- Over 40 company-owned branches on all continents
- Company owned production facilities in Italy, Germany, UK, Israel, China and USA
- Product Development Centers in Italy, Germany, the Netherlands and Israel
- First Tier OEM Supplier



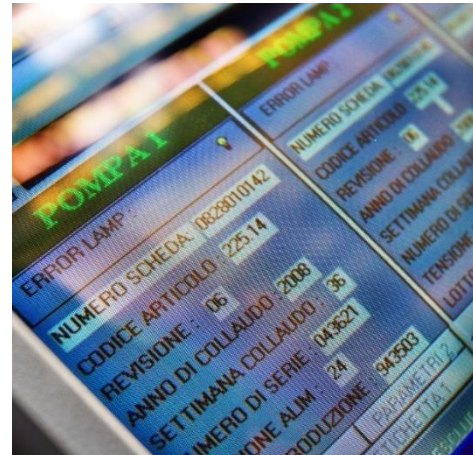
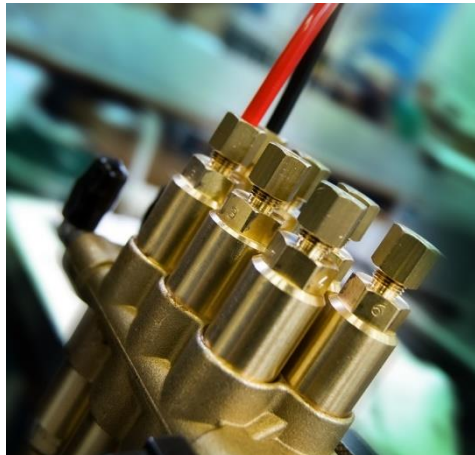


# Production Footprint



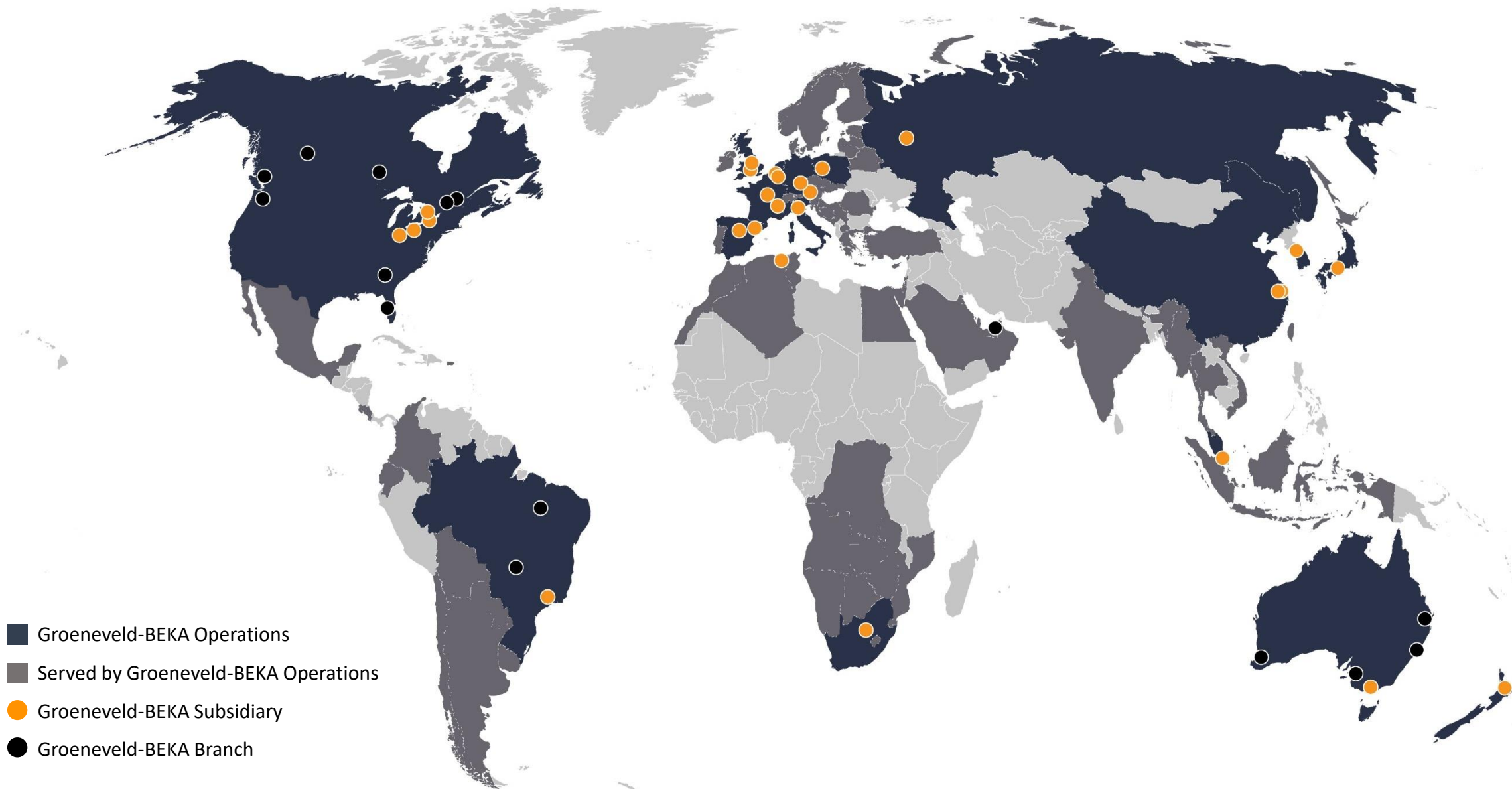
# Groeneveld-BEKA Production

- State of the art production facility
- In house R&D departments
- World Class Manufacturing Principles
- Direct deliveries to OEMs, subsidiaries and importers





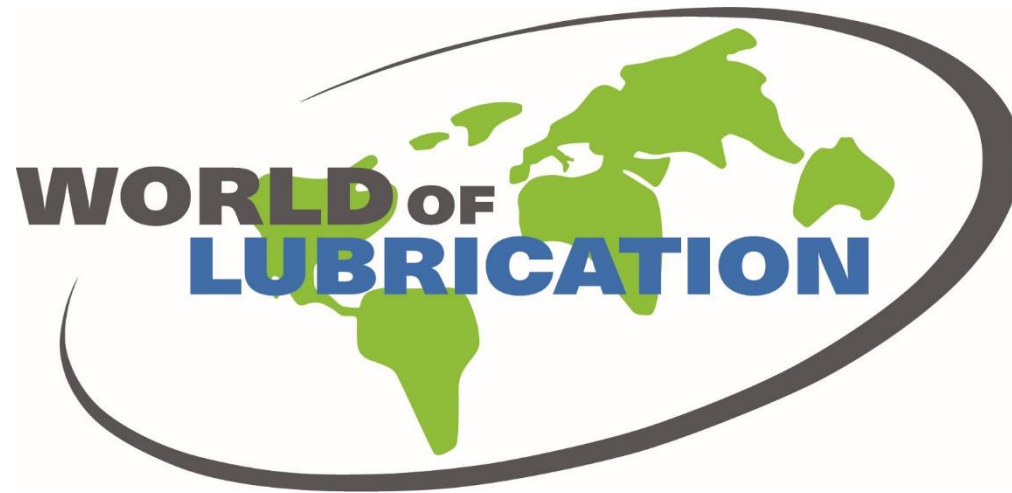
# Commercial Footprint



# Our mission

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**“Groeneveld-BEKA provides total solutions to reduce costs and to increase uptime, productivity, efficiency and safety ”**



# Product groups



Automatic Lubrication



Fluid control



Safety Support



Greases

*Groeneveld-BEKA sells a complete product offering!*



# Segmentation Mobile

## Transport & Logistics



Pico	MultiLine
Zepto	SingleLine
EP-1	TriPlus

## Bus & Coach



Pico	MultiLine
	SingleLine

## Earthmoving & Construction



Pico	MultiLine
Zepto	Twin
EP-1	TriPlus
GIGA	
Stream	
HAMAX	
FKGGM	

## Mining



Stream	Twin
GIGA	

## Port Equipment



Pico	MultiLine
Zepto	SingleLine
EP-1	TriPlus
GIGA	
HPM 2-S	
AZU	

## Forestry



EP-1	Twin
GIGA	TriPlus

## Agricultural



PICO	MultiLine
EP-1	Twin
GIGA	
AZU	
AFG-M	

## Internal Transport



MultiLine

## Rail



FluiLub

# Segmentation Industry

## Wind Turbines



 **BEKA**WIND

BEKA ONE  
FKGGM  
Pico  
GIGA

## Industry



 **BEKA**INDUSTRIAL

Custom made solution  
depending on application

## Wood Processing



 **BEKA**WOOD

Custom made solution  
depending on application

## Mining Processing



 **BEKA**MINING

Custom made solution  
depending on application

## Food & Beverage



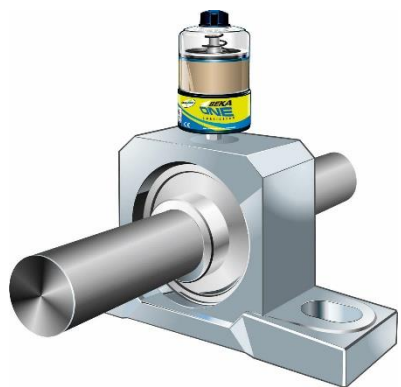
 **BEKA**FOODLINE

Custom made solution  
depending on application

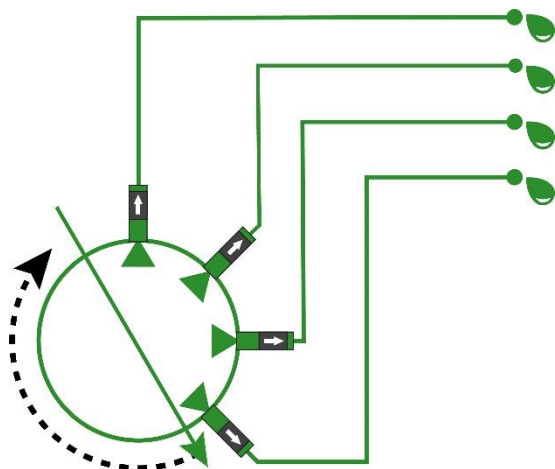
# **AUTOMATIC LUBRICATION SYSTEMS**

Single Point, Multi line, Single line, Dual line and Progressive

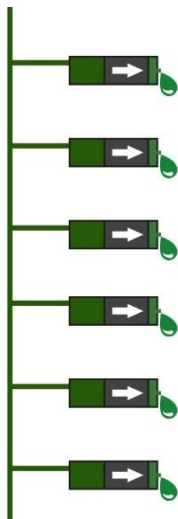
# Automatic lubrication systems



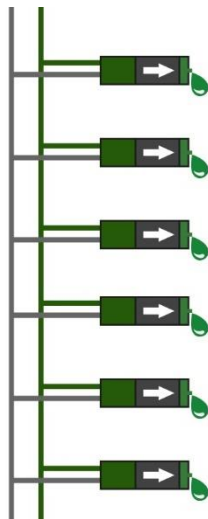
Single point lubrication



Multi line lubrication

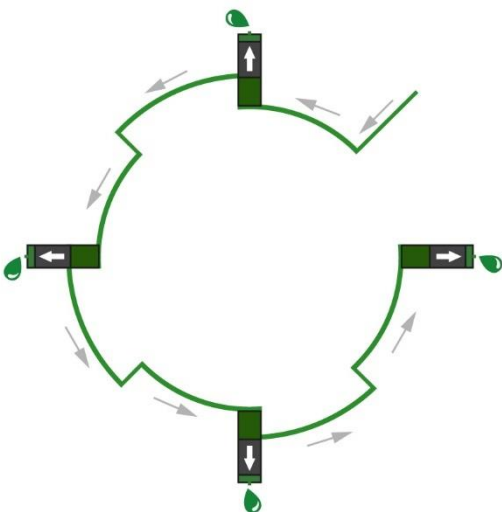


Single line lubrication



Dual line lubrication

Parallel lubrication



Progressive lubrication



# Automatic lubrication systems – Mobile

Single Point  
Lubrication



Multi Line  
Lubrication



Parallel  
Lubrication



Progressive  
Lubrication



# Automatic lubrication systems – Industrial

Single Point  
Lubrication



Multi Line  
Lubrication



Parallel  
Lubrication



Progressive  
Lubrication



# The benefits of automatic lubrication systems

- Dynamically and frequently lubrication reduces wear and tear and saves time and money
  - Enhanced lifetime of pivots, bearings, pins and bushes (up to 3 times)
  - Reduced repair and maintenance cost
  - Reduced grease consumption
  - Enhanced uptime and machine availability
  - Higher machine and vehicle residual value

*Lower cost . . . higher efficiency!*



# The benefits of automatic lubrication systems

*In a study conducted by a major component manufacturer, improper lubrication accounts for 53% of all bearing failures, a major cause of equipment downtime and significant maintenance costs . . . .*

*The majority of failures are caused by:*

- *contamination of bushings by dust, dirt and moisture;*
- *inadequate amounts of lubricant applied to bearings;*
- *over-lubrication of key pivot points.*

Source: 'Trucknews'





# Why Choose Automatic Lubrication

## Increased efficiency

- Reduced man hours required to lubricate
- Reduced lubricant consumption of automatic system optimizes grease application
- Reduced lubricant spillage that occurs with manual lubrication

+

## Higher equipment productivity

- Reduced equipment downtime by c. 15% resulting from:
  - Lubrication takes place during normal machine operation
  - Better and uniform greasing of all critical components because bearing is turning when lubrication takes place, resulting in less wear and tear of machinery

+

## Decreased maintenance

- Optimized lubrication as the greasing takes place during operation
- Reduced replacement rate of components and bearings up to 50%
- Decreased machine maintenance labour costs by ~55%

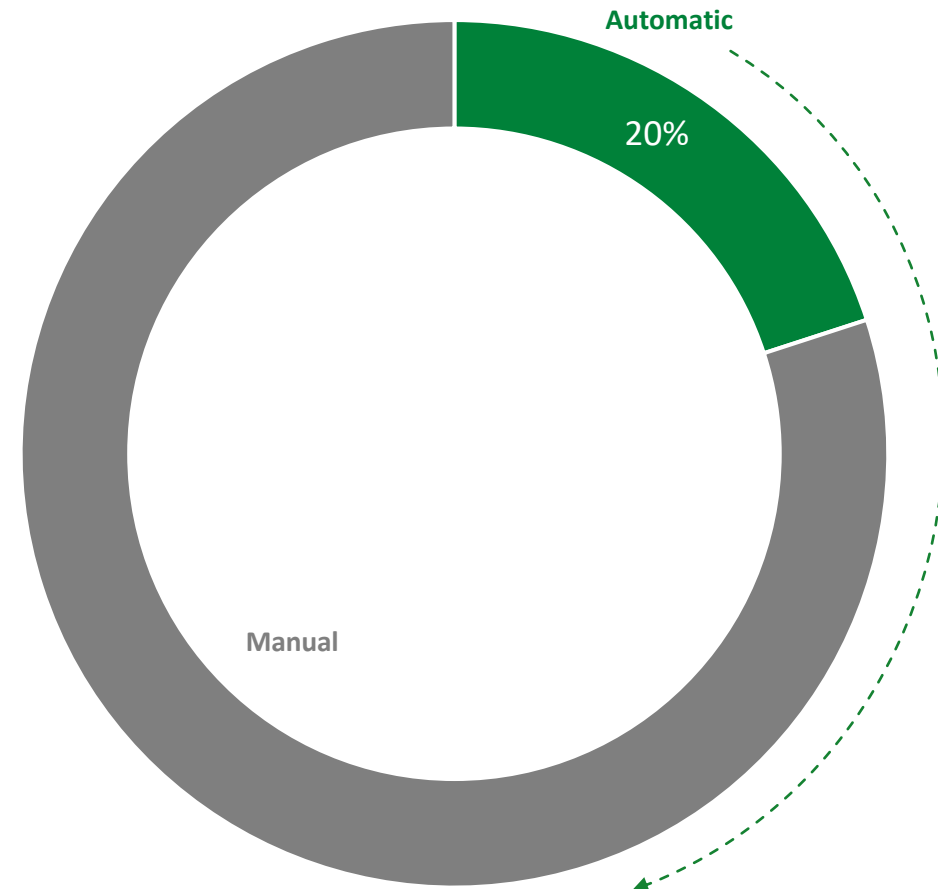
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## Improved safety

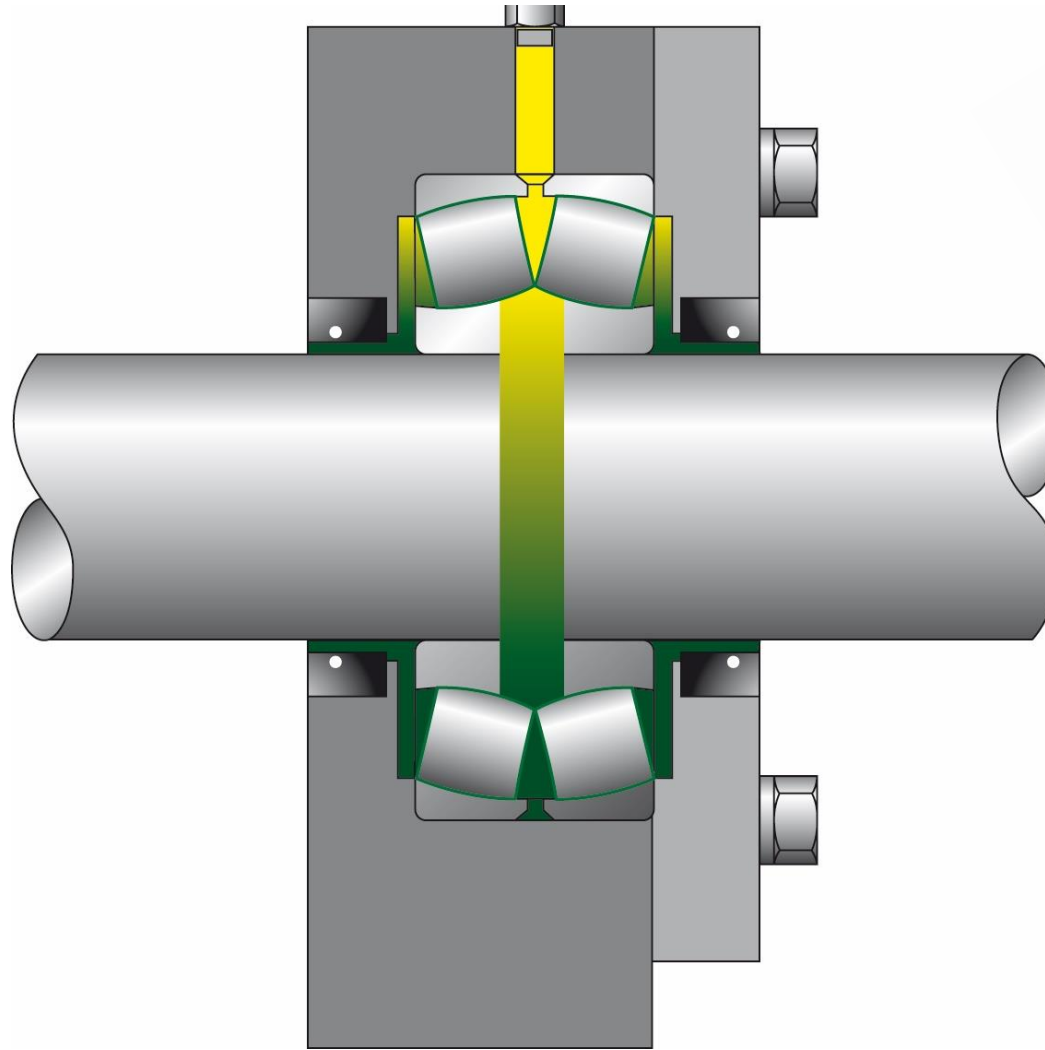
- Increased safety (no need to climb on, under and around the equipment)
- No exposure to toxic lubricants

**Attractive return on investment**

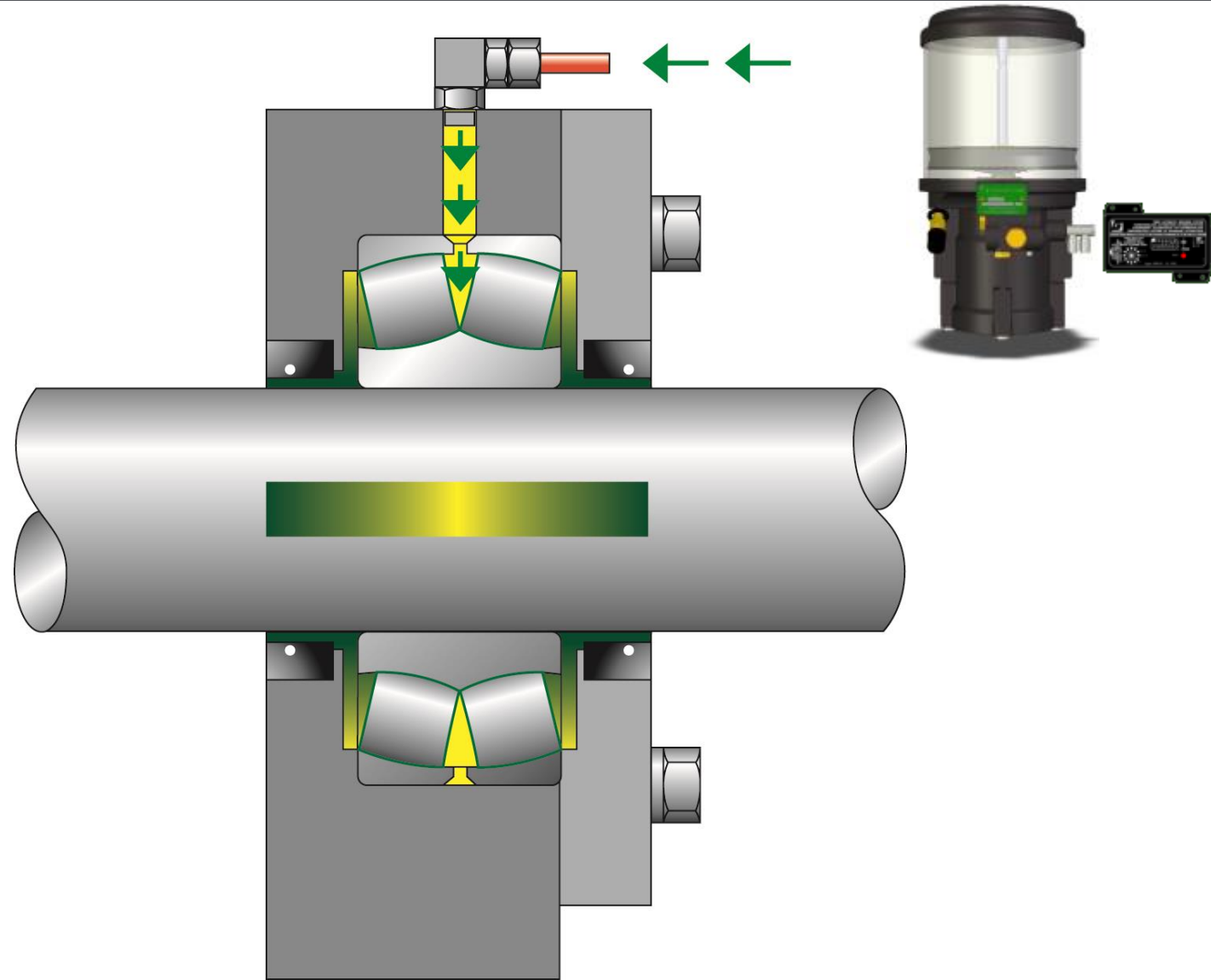
**80%**  
*of all greasing points in the world  
are still greased manually*



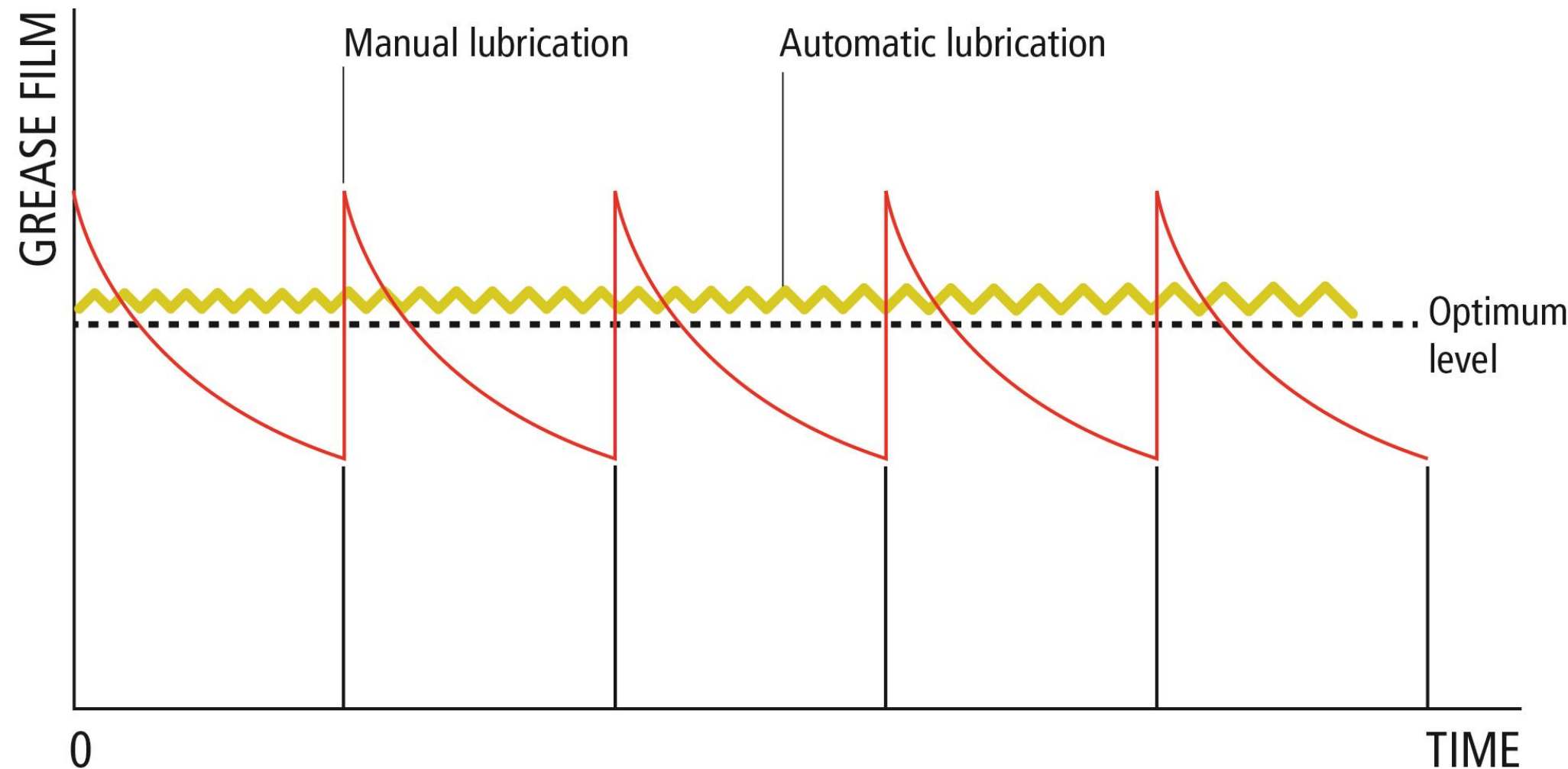
# Manual greasing



# Automatic greasing



# Automatic lubrication versus manual greasing





# Greenlube greases



- Several grease types developed following own recipes
  - Universal greases
  - Heavy Duty greases
  - Biodegradable greases
  - Low temperature greases
  - Food Industry
- Available from 0,4 cartridges to 180 kg drums

# FLUID CONTROL

Oilmaster, Filtakleen & Tecreel

# Oilmaster oil management system



- Ensures the right oil level
- Ensures right oil specification
- No waste of oil
- Reduces risk of damaging the exhaust after treatment system
- Avoids extra fuel consumption as result of over-filling (up to 2%)

# Filtakleen



- Enhances oil performance
- Ultra fine particle removal to ISO 17/15/12 - NAS6
- Prevents corrosion by 100% removal of water from emulsified oil
- Prevents acidity in oil
- Improves reliability
- Reduces component wear, increasing machine life
- Available for hydraulic & engine oil





- Self-retracting hydraulic hose reel
- Transfers hydraulic fluid power
  - For delivering hydraulic power to the end of a moving mast or boom
  - To actuate attachments
- Robust all steel construction
- Available in 3 different models
  - Type 375 – Twin reel
  - 4-port – 2x Twin reel
  - Multi-function – Hydraulics plus electric wiring

# Applications



Trucks



Bus & Coach



Wheel loaders



Dozers



Excavators



Refuse trucks



Reach stackers



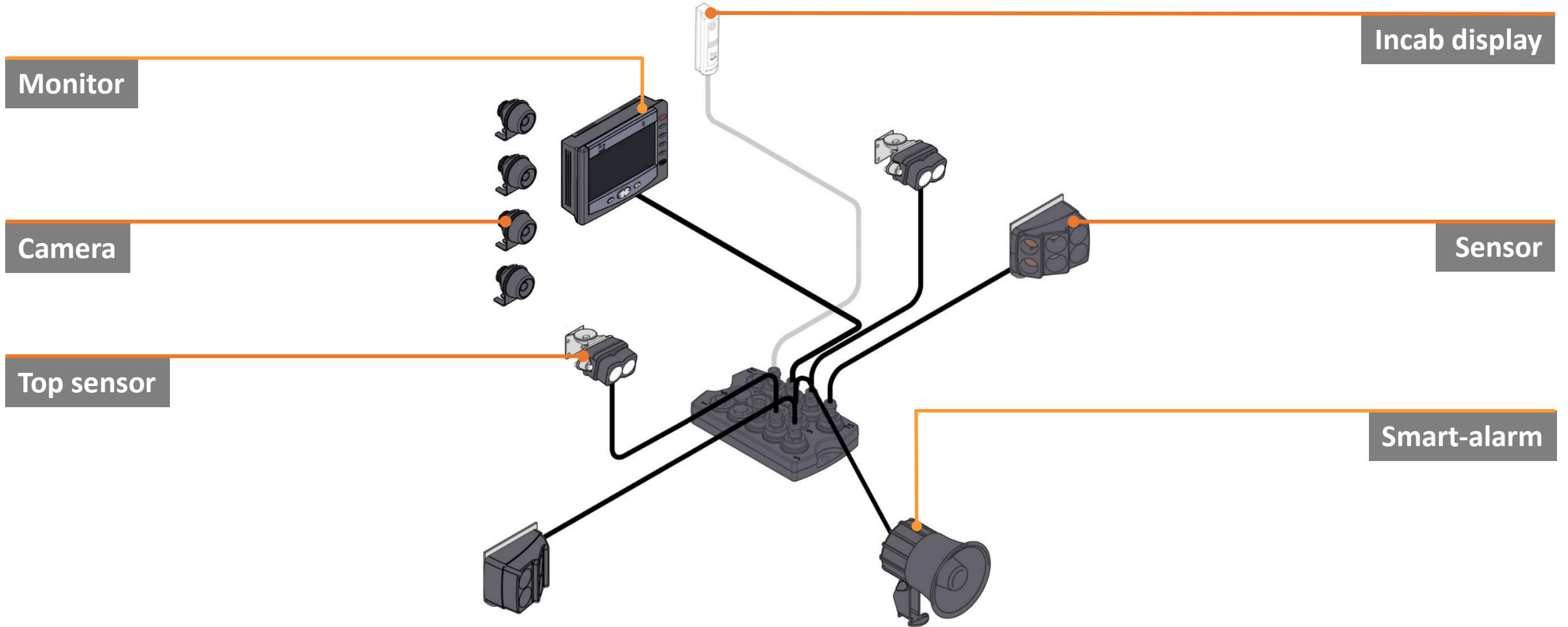
Generator sets

# SAFETY SUPPORT SYSTEMS

Greensight & SpeedLimiter

# Greensight safety support system

Modular vehicle system combining acoustic ultrasonic object detection with visual information



# Speedlimiter



Two different versions:

- The fully electrical Groeneveld ESL (for vehicles without a mechanical connection with the accelerator pedal)
- The electrical/mechanical Groeneveld SL

Standard functions:

- Speed limiting
- Engine speed limiting (RPM) \*
- Speed hold (temp. maximum speed)

Optional:

- Cruise control / Power Take Off
- Second maximum speed

\* Optional for forklifts



# Applications



Trucks & Trailers



Bus & Coach



Refuse trucks



Railway maintenance



Wheel loaders



Excavators



Reach stackers



Forklift trucks



# GROENEVELD-BEKA

LUBRICATION SYSTEMS BY TIMKEN



**SAFETY SUPPORT**



**AUTOMATIC LUBRICATION**



**FLUID CONTROL**



**GREASES**