

Agricultural equipment
Automatic maintenance and safety





Agricultural equipment

Groeneveld-BEKA

Reducing customers' operational costs and at the same time increasing uptime, productivity, efficiency and safety of their vehicles and machines. That is what it's all about at Groeneveld-BEKA. We accomplish this by developing, producing, supplying and servicing industry-leading automatic lubrication, fluid control and safety support systems.

Groeneveld-BEKA, part of The Timken Company, is the world's second largest producer of automatic lubrication systems, fluid management and safety support systems. Groeneveld-BEKA products improve equipment life and reliability, while reducing the total cost of ownership.

Groeneveld-BEKA was formed through the merger of two well-established companies: Groeneveld and BEKA. Groeneveld was founded in 1971 and acquired by Timken in 2017. BEKA was founded in 1927 and acquired by Timken in late 2019. Groeneveld has also incorporated Interlube into their brand. Interlube was acquired by Timken in 2013. Groeneveld-BEKA operates in more than 40 countries worldwide and is represented by a growing number of independent distributors in many countries around the globe.

Groeneveld-BEKA products are supplied for ex-factory installs to leading manufacturers of trucks, trailers, buses, wind turbines, industrial applications, mining and construction equipment. In addition Groeneveld-BEKA systems are installed in the after-market for a wide variety of transport, construction, agricultural, port equipment and industrial applications. Groeneveld-BEKA strives to develop and manufacture all of its products in-house according to World Class Manufacturing principles.

Automatic Lubrication Systems

Groeneveld-BEKA offers dedicated automatic lubrication systems for all kind of equipment in a wide variety of market segments, from the smallest excavator to the largest trucks and industrial applications. The application of our high-end systems leads to decreased wear and tear of critical components resulting in extended life time, less downtime and reduced repair and maintenance costs. In short: higher productivity and lower operational costs. As operators no longer have to climb on or crawl under the equipment, Groeneveld-BEKA's automatic lubrication systems also contribute to safety.

For optimal greasing in all circumstances Groeneveld-BEKA has the right type of grease for every application and every system. This is your guarantee for many years of trouble-free operation of your system and perfect lubrication of your valuable equipment.

Fluid Control Systems

Groeneveld-BEKA's fluid management systems reduce daily maintenance and minimize the risk of unexpected downtime by controlling engine oil levels or removing contamination. Next to the oil management systems, Groeneveld-BEKA also offers systems which easily convey hydraulic power from a fixed point to a moving point.

Safety Support Systems

For many years, Groeneveld-BEKA supplies safety support systems for a wide range of applications. Speedlimiters as well as obstacle detection and camera systems by Groeneveld-BEKA increase safety in many segments from road transport to construction, port, terminal and internal transport.

The World of Lubrication

Groeneveld-BEKA, part of The Timken Company, is a global enterprise with a worldwide coverage. In many countries, the company is also represented by independent distributors and dealers – all just as driven as our own organisation to offer added value to the customer's company.

With decades of experience providing reliability services to a range of industries, Groeneveld-BEKA offers complete automated maintenance solutions for all your needs. Groeneveld-BEKA's reliability products maintain your equipment, helping you increase uptime and improve profitability.

Visit the Groeneveld-BEKA website for contact details of our subsidiaries, distributors and service dealers.



Automatic maintenance and safety systems for all kind of applications

Indoor or outdoor, extreme high or low temperatures, many or few lubrication points; Groeneveld-BEKA has the perfect lubrication system for every application. Whether it comes to automatic lubrication systems, automatic oil management or safety support systems, Groeneveld-BEKA offers a customised solution for any application in the field of agriculture.



Telehandlers



Tractors



Combines



Harvesters



Planting equipment



Baling equipment



Sprayers



Cultivators



Plows

Less maintenance, improved efficiency and lower costs

Manual lubrication of pins and bushings, for example, is not only dirty and unpleasant work, it also takes time. Time during which the machine should be in operation to make money. Because in the end it is all about profitability.

Groeneveld-BEKA's systems have been proven to extend component life compared with manual greasing, dramatically cutting the cost of component replacements, reducing machine downtime and improving efficiency and safety.

The benefits

The benefits of automatic lubrication are clear: a better greasing of critical components, no time wasted on manual lubrication and the certainty that machines will always be greased independent of weather conditions, time schedules or operators. All resulting in significant cost savings.

Reduced man-hours required to lubricate

- Improved availability of maintenance personnel for other technical activities.
- Reduced lubricant spillage that occurs with manual lubrication.

Higher equipment productivity

Reduced vehicle downtime by ca. 15% resulting from:

- Lubrication taking place during normal vehicle operation.
- Better and uniform greasing of all critical components because bearings and pins and bushings are in motion when lubrication takes place, resulting in less wear and tear.

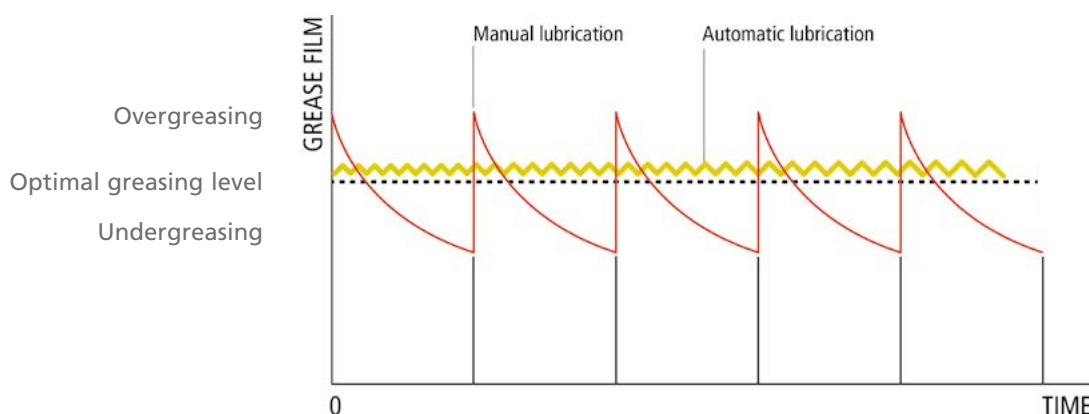
Decreased maintenance

- With manual lubrication, grease will follow the path of least resistance due to the fact that greasing has to take place under static conditions. So, the grease is not equally distributed around the lubrication point. Automatic greasing avoids this, as lubrication will take place during operation, reducing wear of critical components.
- Reduced replacement rate of components and bearings up to 50%.
- Decreased machine labour costs by ~ 50%.

Improved safety

- No climbing on or crawling under machines or inaccessible areas.

Effectiveness of Automatic Lubrication





Automatic Lubrication Systems

Less maintenance, improved efficiency



Groeneveld MultiLine

The Groeneveld MultiLine is a range of automatic lubrication systems mainly designed for self-install. It enables the use of automatic lubrication on applications where return on investment is challenging.

The MultiLine self install kits are ready to be installed by your own technicians. You can select a reservoir of 1.25 and 2 liter. With all of the greasing points lubricated automatically, the service interval and lifetime of the application are extended significantly. This makes the MultiLine a smart investment in operational efficiency.

- Suitable for oil SAE 80/90 up to NLGI-2 grease
- All fittings are standard with push-fit connectors
- Lines are numbered, pre-cut and grouped
- Reduces operational costs and increases efficiency
- Waterproof and corrosion resistant

System overview



Fill cap

The MultiLine oil pumps are fitted with a bulk fill cap which is suitable for oil fill.

Reservoir with paddle blade

The reservoir is equipped with a paddle blade which pushes the lubricant into the pumping chamber and provides a visual indication of the pumps operation.

The MultiLine is available in 1.25 or 2 litre reservoir.

Pumping elements

MultiLine AC is available with up to 60 pumping elements. The MultiLine AC pumps are pre-calibrated with yellow 0.025 cc pumping units.

If a lubrication distribution line is not required simply remove the line and replace it with a blanking plug.

Filler coupling

At the bottom, the pump is equipped with a grease nipple for filling with grease. Using the grease nipple adaptor for grease fill avoids the possibility of air entrapment and cavitation.

Push fit connectors

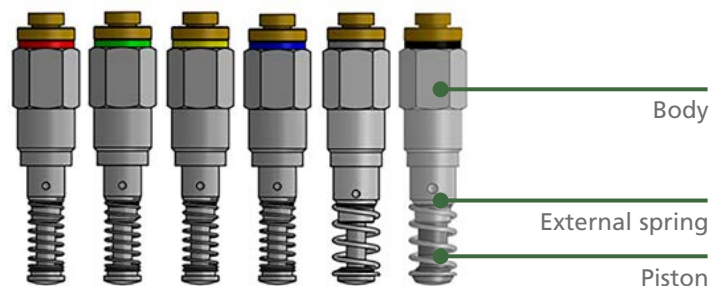
The push fit connectors provide an easy installation of the lubrication lines.

Pumping elements

A selection of pumping elements with varying outputs are available to suit almost any need. Each pumping element has a push fit connector to provide an easy installation of the lubrication lines.

The maximum output pressure of each pump element is 120 bar (1740 PSI).

Color	Output/stroke	Outlet size
Red	0.010 cc	4 mm OD Push type
Green	0.015 cc	
Yellow	0.025 cc	
Blue	0.040 cc	
Grey	0.060 cc	
Black	0.100 cc	



Groeneveld Twin

Unique product features make the Twin the best solution for larger machines that are often used under extreme conditions. The system works under relatively low pressure, which means that the structure – and therefore the quality – of the grease is preserved.

The dual-line system with its patented metering units ensures that all lubrication points are always optimally lubricated. This is made possible due to precise metering and lubrication intervals, also in case of extremely low or high ambient temperatures and large distances between pump and lubrication points. In addition, it is easy to expand the system to detachable equipment pieces. This makes the system extremely suitable for larger machines such as large wheel loaders and dump trucks, but also for spreaders and heavy haulage trailers.

- Grease output and grease delivery independently of ambient temperature and grease viscosity
- Thanks to the relatively low work pressure, the quality of the grease is preserved
- Modern pump with real-time clock, memory, CAN-Bus connection and follower plate
- Suitable for biodegradable grease
- High quality metering units and distribution blocks
- Standard with in-cab display
- Available with reservoir volumes ranging from 2 to 200 litres
- Easy to programme, install and extend
- The filling coupling with filter prevents contamination during filling
- Easily extended to grippers, excavation buckets and other equipment pieces through quick couplers

System overview



Follower plate

The follower plate ensures that all the grease in the reservoir is used. This means that the reservoir wall remains clean, allowing you to check the grease level visually. Ageing of the grease as a result of oxidation is also prevented.

Reservoir

Twin is available with reservoir volumes of 3, 4, 6 and 8 litres.

Filler coupling with filter

The filling coupling with grease filter prevents contamination during filling.

Pump housing

The pump is made of hard anodised aluminium and nylon reinforced - containing the control unit, memory database and minimum level indicator.



Twin XL

Twin XL & Twin barrel pump

Specifically for larger applications, the Groeneveld range includes the Twin XL with an extra large reservoir of 20 litres. An automatic lubrication system with a higher grease delivery and an extra large reservoir, made of sturdy and coated material.

For machines and vehicles with an extremely high grease demand, such as mining equipment, Groeneveld supplies reservoir volumes from 40 to 200 litres.

Major benefit will be that the user rarely needs to refill the reservoir.

BEKAMAX PICO

The PICO system combines power and flexibility in perfect conditions with a compact design. The PICO system is the unique combination of progressive- and multi line technology and suitable for compact machines like bailing or planting equipment and tillage tools.

The basic version of the PICO pump is delivered with a progressive distributor which supplies lubricant to the lube points via one or more progressive distributors. In addition up to 8 lubrication points can be supplied directly via the multi line principle. If necessary the system can be enlarged by a second progressive cycle.

- Very compact design for applications with little number of lubrication points
- Unique combination of two lubrication systems:
- Progressive- and multi line technology
- Suitable for all common lubricants from NLGI-000 up to NLGI-2
- Flexible extension possibilities

System overview



Reservoir

The 1,2 litre reservoir is available with agitator blade or follower plate. The system with a follower plate can be installed in each direction, also upside down.

Follower plate

The follower plate ensures that all the grease in the reservoir is used. This means that the reservoir wall remains clean, allowing you to check the grease level visually. Ageing of the grease as a result of oxidation is also prevented.

Multi line outputs

The PICO has got 8 multi line outputs for different pump elements.

Progressive outputs

The PICO has got 2 progressive outputs for different pump elements.

Filling zerk

The pump can be filled with a standard filling gun. The filling zerk can be replaced by a filling connection to refill using a filling pump.

Control unit

The PICO can be delivered with an integrated control unit with:

- 3 control functions: time, stroke or revolutions
- Electronic monitoring of grease level, pump function, distributor function, line rupture, lubricant feeding
- Selection of operating conditions: easy, medium or heavy
- Integrated data logger with diagnosis module DiSys

The protective housing is equipped with a bayonet or Hirschmann plug-type connection.

Pump elements

Two different construction types of pump elements can be installed into the device, depending on for which lubrication system or for which lubrication system combination the device is used.

System	Pump elements	Metering volume
Multi line	PE 5	0.005 cc/stroke
	PE 10	0.010 cc/stroke
	PE 15	0.015 cc/stroke
	PE 25	0.025 cc/stroke
	PE 50	0.050 cc/stroke
Progressive	PE 120 F	0.120 cc/stroke
	PE 120 FV	0.04 up to max. 0.12 cc/stroke (adjustable)

BEKAMAX EP-1

The EP-1 is an electrically actuated pump with up to 3 independently operating lubrication outlets. The EP-1 is able to deliver commercial lubricants from NLGI-000 up to NLGI-2 at a working pressure of maximum 280 bar. Therefore this system is the ultimate solution for different agricultural applications.

- A versatile solution for most mobile and stationary equipment
- Suitable for all common lubricants
- Springless pump with desmodromic drive for highest reliability

System overview



Level monitor

The EP-1 can be equipped with an electronic grease level controller to control the minimum grease level.

Reservoir

The EP-1 reservoir is made of transparent plastic and contains an agitator blade. The agitator blade enables a visual check of the lubricant volume in the reservoir.

EP-1 is available with different reservoir capacities.

Pressure relief valve

Pump element

The EP-1 has up to a maximum of 3 lubricant outlets. A separate pump element is required for each outlet. Three pump elements with different flow rates are available, as well as a flow-adjustable pump element.

Filling zerk

The pump can be filled with a standard filling gun. The filling zerk can be replaced by a filler coupling.

Control unit

The EP-1 series differ in control type. EP-1 can be controlled externally or with an integrated control unit with:

- 3 control functions: time, stroke or revolutions
- Electronic monitoring of grease level, pump function, distributor function, line rupture, lubricant feeding
- Selection of operating conditions: easy, medium or heavy
- Integrated data logger with diagnosis module DiSys

Pump elements

Three pump elements with different flow rates are available, as well as a flow-adjustable pump element. All pump elements are marked either with a groove or with a notch for a better differentiation.



PE 60 PLV
0.06 cc/stroke



PE 120 PLV
0.12 cc/stroke



PE 120 V PLV
Max. 0.12 cc/stroke
Adjustable output



PE 170 PLV
0.17 cc/stroke

Pressure: Max. 350 bar
Pressure limiting valve: adjusted to 280 bar

BEKAMAX GIGA

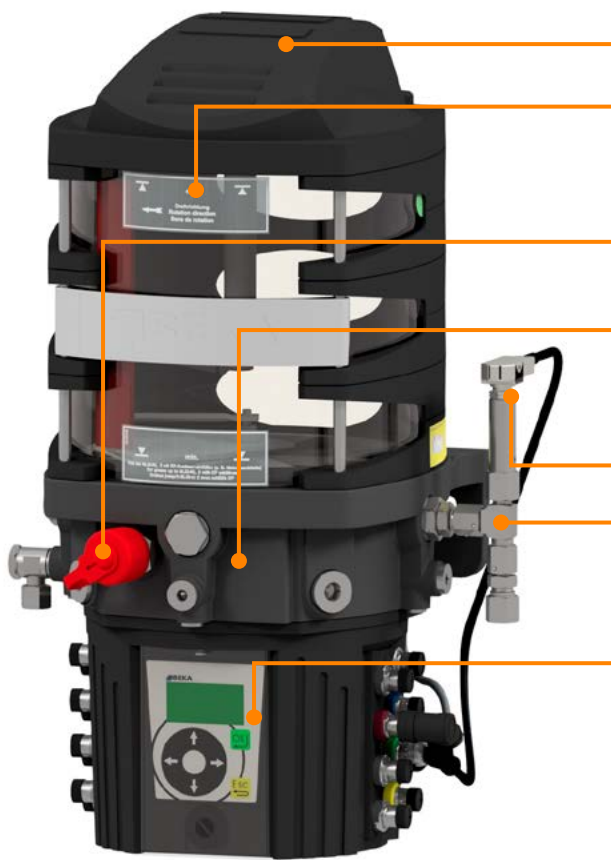
The BEKA GIGA range is like having four pumps in one! It serves the full range of automatic lubrication systems and can be used as a progressive as well as a single line, dual line or sectional system. The progressive system is the most commonly used layout.

The GIGA has three independent outlets for lubricant supply that are tied together by internal channels within the pump housing. Each channel can be used for a different section (with its own pump element) and set to a unique cycle, or they can all be combined to one lubrication circle with a higher delivery rate.

The optional GIGAmultitronic control unit can control and monitor up to four modes of lubrication.

- Suitable for all lubrication systems: single line, dual line, progressive and sectional
- Three lubrication circuits that can be operated independently
- Grease metering regardless of the ambient temperature
- Available in different reservoir sizes; 4, 8 or 16 litre
-

System overview



Reservoir cover

Reservoir

The GIGA is available with reservoir volumes of 4, 8 and 16 litre. All reservoirs contain a agitator blade which enables a visual check of the lubricant volume in the reservoir.

Filling port

The pump can be filled with a standard filling gun.

Pump housing

The delivery volume of the GIGA can be varied by combining the outlets to one due to the special pump body with integrated channels.

Pressure relief valve

Pump element

The GIGA has up to a maximum of 3 independently operating lubricant outlets. A separate pump element is required for each outlet. Two pump elements with different flow rates are available.

Controller with motor housing

There are 3 different housings available:

- A version without control
- A version with the GIGA-tronic
- A version with the GIGA-multitronic control unit.

Pump elements

Two pump elements with different flow rates are available for the GIGA range. Both elements are available with or without a pressure limiting valve.



PE 120G PLV
0.12 cc/stroke and outlet



PE 250G PLV
0.25 cc/stroke and outlet

BEKA HPM-2S

The BEKA HPM-2S grease hydraulic pump is a centralized lubrication pump which, thanks to its robust and compact design, is particularly suitable for use in progressive centralized lubrication systems on attachments such as plowing, harrowing, drilling or sowing machines, balers, front loaders and other hydraulic equipment.

The HPM-2S hydraulic grease pump is designed for pumping NLGI-2 multi-purpose greases. The use of standard grease cartridges type S, which are screwed directly into the pump housing, enable quick and clean refilling.

The HPM-2S hydraulic grease pump can be combined with progressive distributors.

- Delivers lubricant dose with each impulse of the hydraulic system
- Adjustable output rates to suit equipment and application
- Suitable for NLGI-2 grease cartridge type S
- Output from 0.2 up to 2.0 cc/stroke

System overview



Grease cartridge

The HPM-2S is suitable for NLGI-2 grease cartridge type S without solids.

Lubricant connection

Ventilation screw hydraulic oil

Hydraulic connection

Set screw

The delivery rate can be set progressively via the setscrew for the delivery rate within a range from 0.2 to 2.0 cc/stroke.



BEKA AZU & AZU-L

Drive chains are subject to a very high wear and tear. They need intensive care to reduce replacement rates. BEKA's AZU and AZU-L chain lubrication systems considerably improve the lifetime of drive chains and even protect the environment.

Conventional chain lubrication systems have one big disadvantage: in most cases, the lubricant is applied while the chains are standing still. Besides that, the metering of the lubricant is not very precise in many cases. Some parts of the chains receive far too much lubricant while others stay dry. Constant over-lubrication will lead to lubricant leakage and dripping.

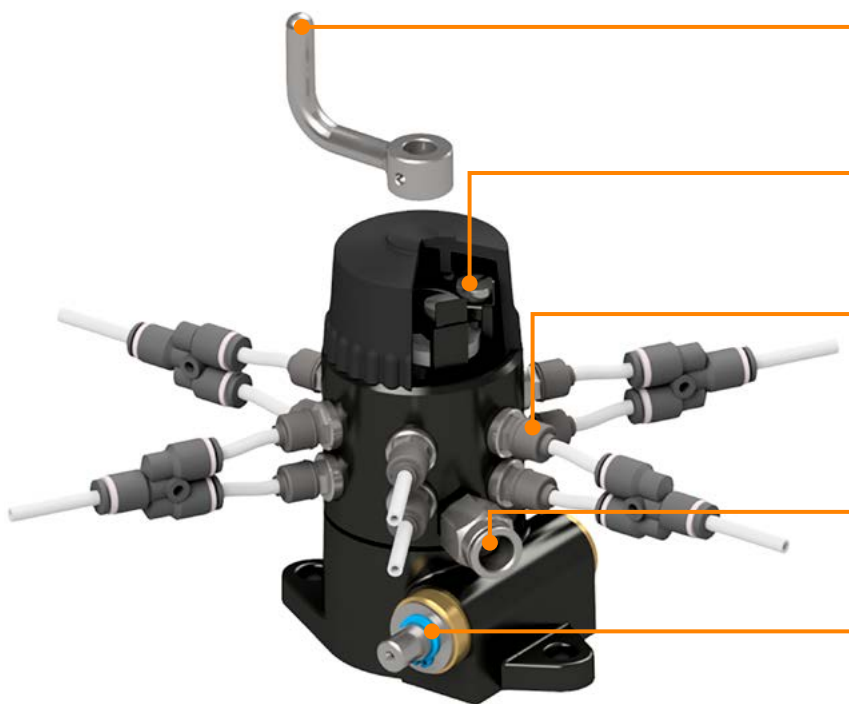
The BEKA AZU operating principle is different from the conventional chain lubrication systems. The chains are supplied steadily with very small oil quantities while they are running and nothing drips off.

The AZU has not only economic, but also ecologic advantages: it increases the lifetime of drive chains and protects the environment.

The advantages:

- Compact design and therefore just a little mounting space needed
- Robust pump with long lifetime and low operating costs
- Available with mechanical, hydraulic or electrical drive and therefore suitable for many applications
- Up to 12 outlets with pairwise adjustable output
- The pump can be delivered completely pre-assembled according to customer specifications with predefined lines and line lengths (plug and play)
- Retrofitting kits in OE-quality

System overview



Hand crank

The device can be equipped with a hand crank for prefilling long lines with lubricant before the device starts up

Set screws for output rate

The piston stroke, and with that the output rate, can be adjusted with the set screw in the delivery piston (underneath the cap)

Outlets

The pump can be configured with up to 12 outlets with different hose connection types.

Push to fit connectors provide an easy installation of the lubrication lines.

Oil inlet

The oil inlet is connected to an oil container via a hose. Different oil container sizes are available.

Drive shaft

The drive shaft puts the centrally positioned pump shaft and the cam disk with a gear into a rotating movement. This carries out the strokes of the delivery pistons.



Advised lubrication systems per application

Application	Multi Line System	Dual Line System	Progressive systems				Chain lubrication	
	MultiLine	Twin	PICO	EP-1	GIGA	HPM2-S	AZU/AZU-L	AFG-M
Telehandlers		●		●		●		
Combines		●		●	●			
Harvesters		●		●	●			
Bailing equipment Grease (bearings)	●		●	●				
Bailing equipment Oil (chains)	●						●	●
Planting equipment	●		●	●				
Tillage tools	●		●	●				

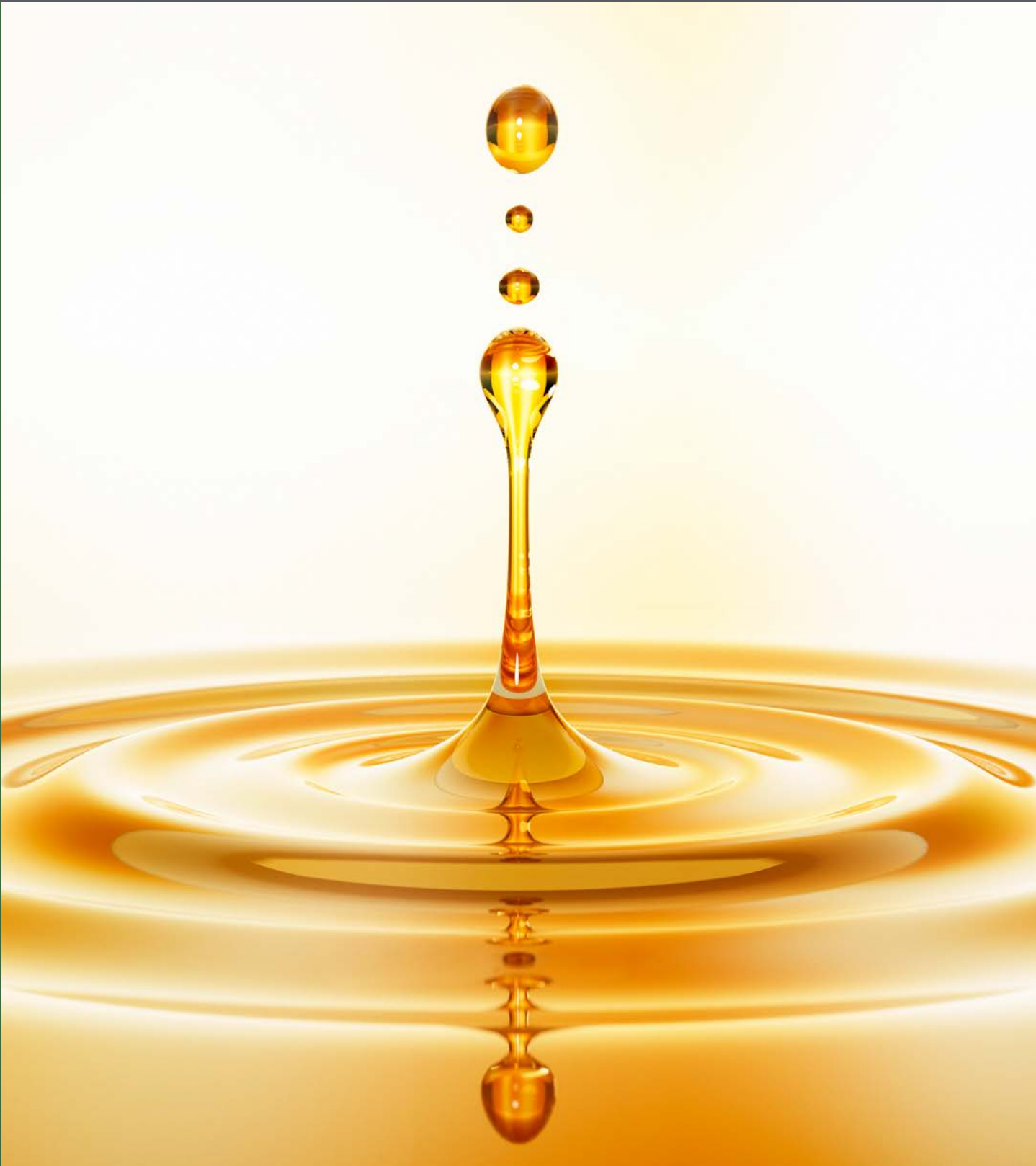
- Advised system
- Alternative system





Fluid Control Systems

Enhancing performance



Groeneveld Tecreel

The Tecreel range of self-retracting hose reels provides an efficient way of conveying hydraulic power from fixed to moving points on cranes, truck mounted cranes, telehandlers, lift trucks and container handling equipment. An integral coil spring ensures that the hoses remain constant under tension.

Reels are available as 2 port, 4 port and multi function models; each complemented by a choice of 2 or 4 port swivels providing 180° of free hose movement.

Tecreel eliminates slack or trailing hydraulic hoses where continuous variation of hose length is required, while transferring hydraulic oil to moving, rotating and swivelling parts.

The main benefits at a glance:

- Robust all steel construction
- Epoxy powder coated for increased wear resistance
- Reliable operation and maintenance free
- Available as reel only or with hoses

Efficiently conveying hydraulic power

Tecreel is a non-locking, spring retractable hydraulic hose reel assembly, designed for use where movements occur requiring continuous variations in hose length. The Tecreel automatically rewinds the surplus hose under constant spring tension.

The Tecreel is suitable for almost all situations in which hydraulic power needs to be transferred from a fixed point to a moving point. Applications include forklifts, counter balance trucks, reachstackers, cranes with hydraulically controlled attachments, truck mounted cranes, telehandlers, container cranes and above ground mining applications.

System overview

Powder coated

Tecreel hose reels are supplied with red or orange powder coat as a standard. Other colours are available upon request. Marine grade reels with additional corrosion protection are also available upon request.

Shaft inlet

There are various shaft inlet adaptors available.

Oilways

There are two separate oilways running through the hub & shaft assembly to allow oil to flow into the hub. They are separated by rotary seals.

Left-hand or right-hand mounting

All models can be supplied in both left-hand or right-hand mounting.

Hoses

Tecreel is available with and without hoses. Hoses are available in different hose bores and various hose lengths.

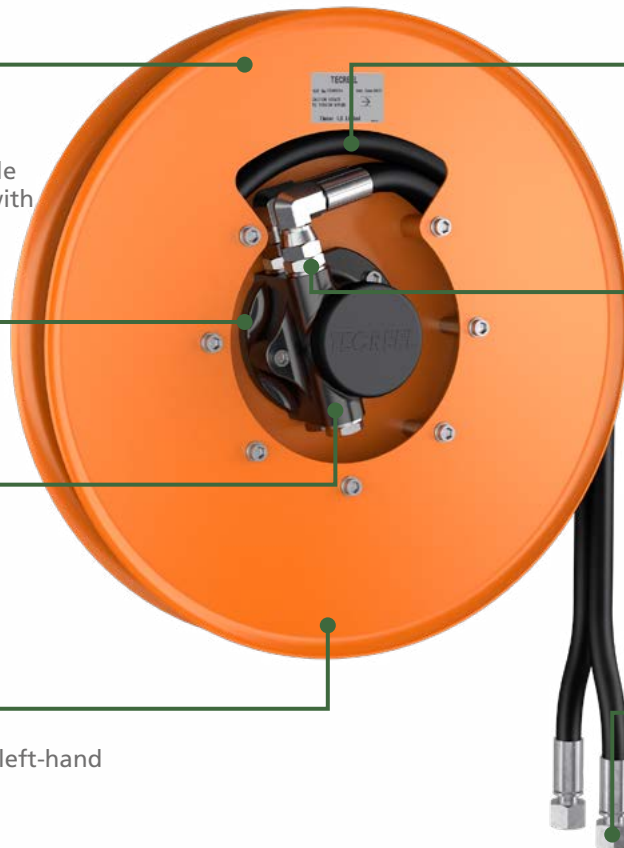
Connection ports

The hose connection ports on hose reel hub are 3/8" BSP. Adaptors fitted as standard are 3/8" male to 3/8" male.

Standard hose fitting is 3/8" BSP female compact 90° elbow. Other adaptors for different hose fittings are available on request.

Hose free-end fittings

Free ends of hose connected to attachment to be actuated.



Groeneveld-BEKA delivers three different types of hose reels in six different sizes with a reel diameter from 31.8 cm up to 60 cm. All models can be supplied in both left-hand or right-hand mounting, in various diameters, hose bore and pull-off lengths.

Type 375 twin port



- Max. operating pressure 300 bar
- Twin bore 1/4", 5/16", 3/8" or 1/2" siamese hose with various end fittings
- Inlet Ports 3/8" BSP
- Hose length: 2.7 to 11 meter
- Temp. range: -30 °C to +60 °C

4-port



- Max. operating pressure 210 bar
- Twin bore 1/4" or 5/16" Siamese hose with various end fittings
- Inlet Ports 1/4" BSP
- Hose length: 3.5 to 6 meter
- Temp. range: -30 °C to +60 °C

Multi-function electro-hydraulic



- Max. operating pressure 300 bar
- Available with 2 hoses 3/8" or 5/16" and 6 wires
- Inlet Ports 3/8" BSP
- Max. voltage 80V, max. 4.5A
- Hose length: 2.7 to 9.3 meter
- Temp. range: -30 °C to +60 °C

All versions are available as reel only or with hoses. If supplied with hose fitted, SAE100R7 hose is supplied as standard. Other type of hoses are available upon request.

Swivels

Swivels are used to connect Tecreel hoses to moving parts. They allow a full 180° movement repeated and are predominantly used on vertical applications like forklift masts. Groeneveld-BEKA offers two types of swivels, a 2-port and a 4-port, both available with various adapters fitted in the inlet and outlet ports.

2 port swivel



- Suitable for use with Type 375, Type 4 and Multifunction reels
- Available with or without check valves
- Max. pressure with check valves: 210 bar

4 port swivel



- Suitable for use with 4 port Tecreels
- Provides 4-in-line connection with hose outlet at 180° to each other
- Comes with check valves



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