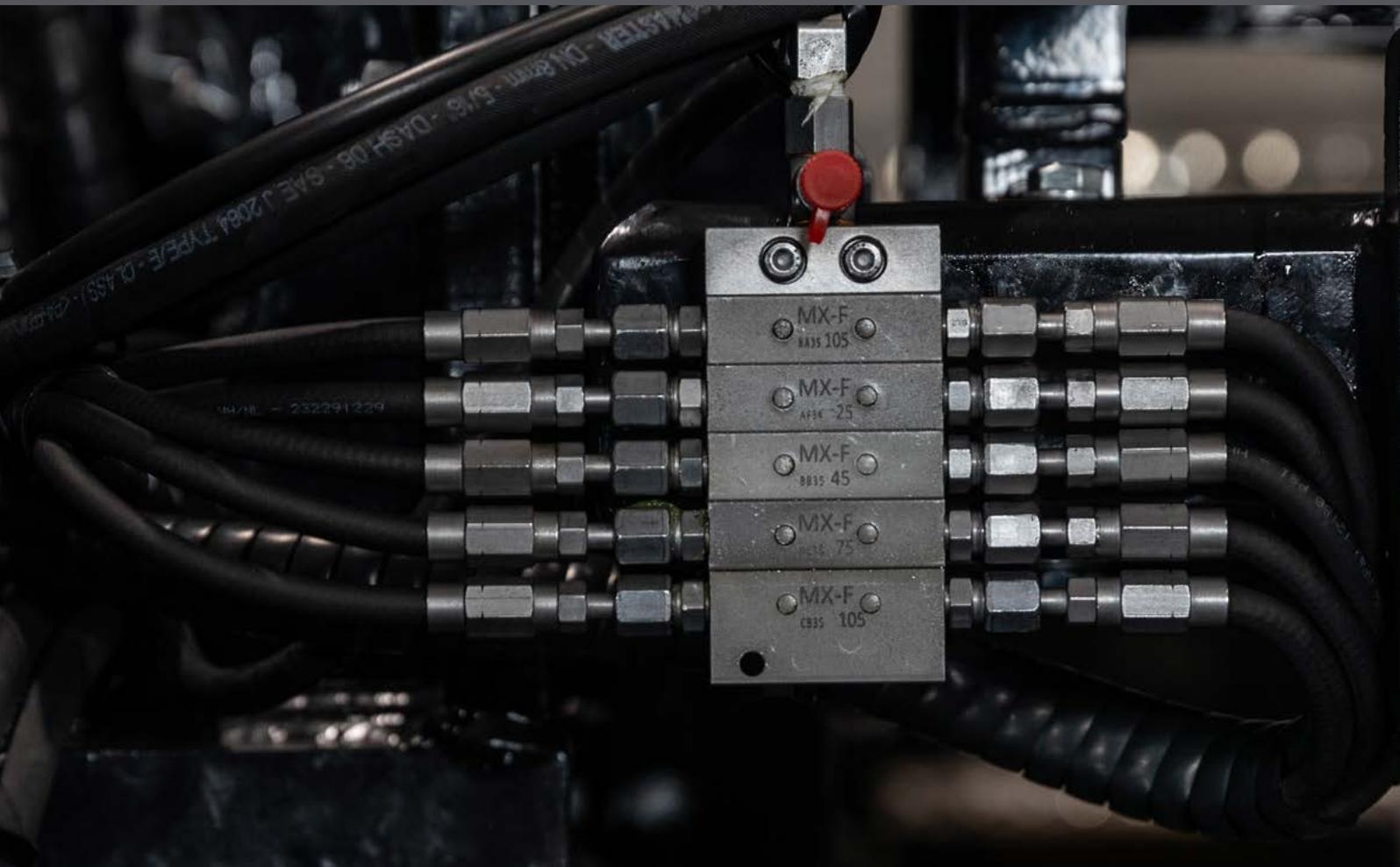


# PRODUCT CATALOG

Lubrication solutions for mobile applications





**GROENEVELD-BEKA**  
LUBRICATION SYSTEMS BY TIMKEN

Groeneveld-BEKA systems and services reduce operational costs for customers, while increasing equipment uptime, productivity, efficiency and safety. This is what it is all about at Groeneveld-BEKA.

[www.groeneveld-beka.com](http://www.groeneveld-beka.com)

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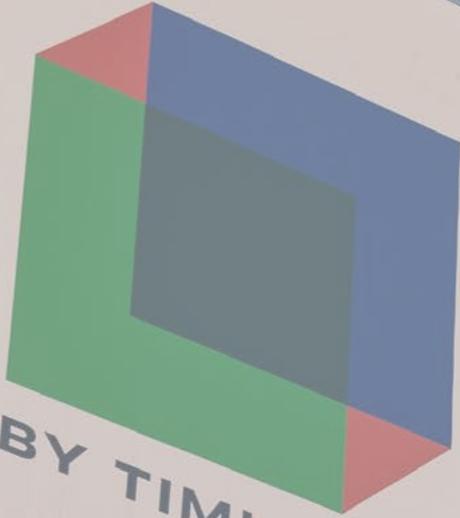
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**01**

**Introduction**

**GROENEVELD  
BEKA**



**BY TIMKEN**

# Introduction

## About Groeneveld-BEKA

Imagine a world in which your equipment runs flawlessly, breakdowns become a thing of the past, and you squeeze every ounce of productivity out of your operation. That's the power of Groeneveld-BEKA, a global leader in automatic lubrication systems, lubricants, and fluid management solutions.

We're not just the world's second-largest in our field – we're a trusted partner to industry giants across the globe. From trucks and trailers to wind turbines and industrial applications, our innovative solutions keep your machines in motion.

Groeneveld-BEKA is the result of a powerful merger, combining the rich heritage of Groeneveld and BEKA, both acquired by The Timken Company. This fusion of expertise allows us to draw on over a century of experience, ensuring we deliver cutting-edge technology with unmatched reliability.

Here's a glimpse into what sets us apart:

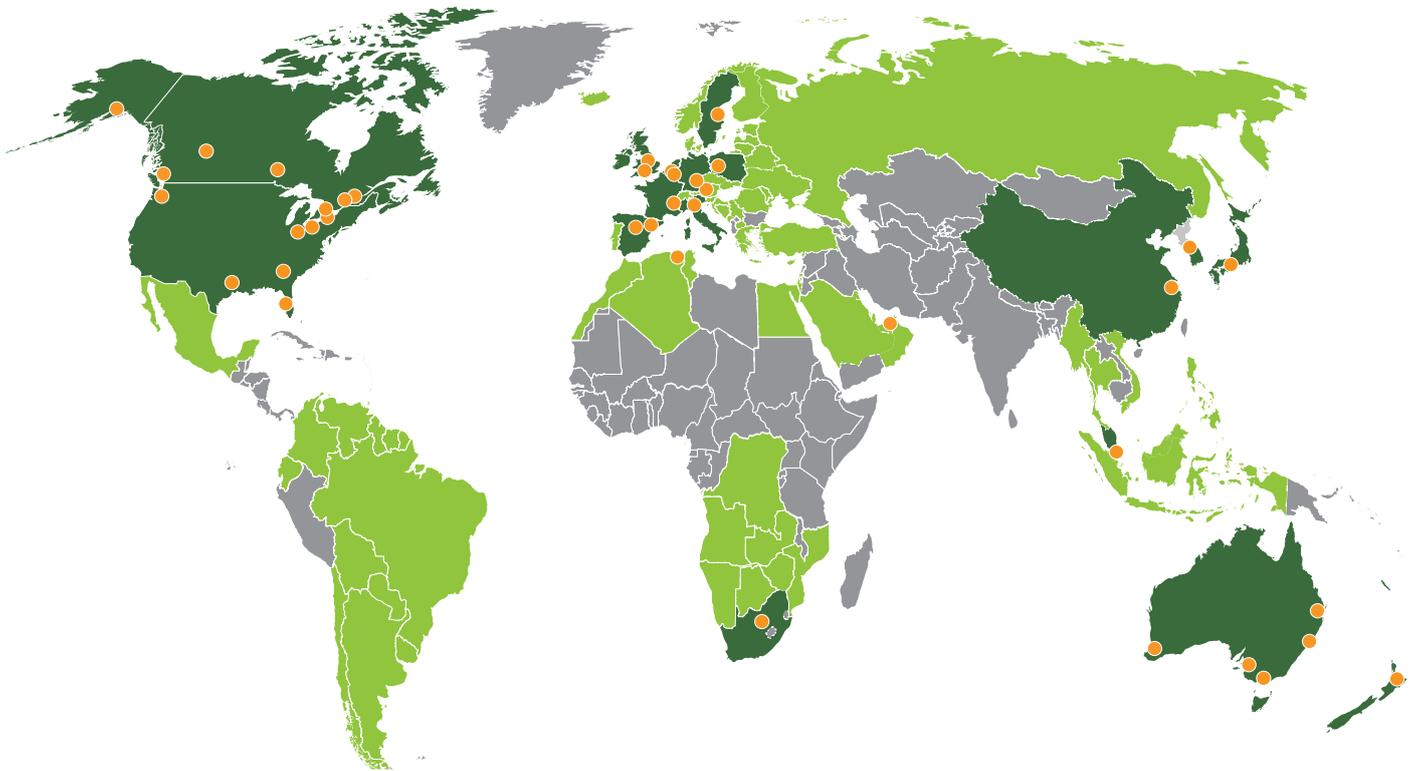
- **Automatic Lubrication Systems:** We offer a comprehensive range of lubrication solutions, from single-point lubricators to sophisticated large-scale systems. Our systems cater to a diverse range of applications, from keeping your construction equipment running smoothly to ensuring the longevity of massive industrial machinery. The result? Reduced wear and tear, extended equipment life, less downtime, and significant cost savings. Safety is also a priority, as our automatic systems eliminate the need for manual greasing, keeping your operators safe from harm.
- **Lubricants:** Because lubrication is about more than just systems, we offer a premium line of greases meticulously formulated for optimal performance with our systems. Our lubricants ensure years of trouble-free operation and safeguard your valuable equipment.
- **Fluid Management Systems:** Groeneveld-BEKA goes beyond lubrication. Our fluid management systems streamline daily maintenance by automatically controlling engine oil levels or removing contaminants. We also offer innovative solutions for effortlessly conveying hydraulic power.

## A global network working for you

With a presence in 58 countries, including 38 company-owned subsidiaries, Groeneveld-BEKA is closer than you think. Our extensive network of dealers and distributors ensures you receive the support you need, wherever you are in the world.

At Groeneveld-BEKA, we're passionate about keeping your machines running flawlessly. With our comprehensive solutions and global reach, we're the partner you can trust to maximize your productivity and minimize downtime.

Let's keep your world moving forward.



# Introduction



## The importance of lubrication

Lubrication is the most important factor for ensuring that your equipment is functioning efficiently and without breakdowns, it's vital to the performance of rotating equipment. It's no secret that lubrication is often neglected. Poor lubrication is responsible for up to 40% of maintenance costs. Even if you don't see it firsthand, it definitely affects your bottom line - and your ability to meet your customers' needs.

Lubrication basically is the application of a lubricant in order to reduce friction and allowing moving machine parts to smoothly slide past each other. The lubricant forms a film between metal surfaces of machine parts to avoid metal-to-metal contact and keep a machine run efficiently.

When lubrication points don't receive the right amount of lubricant at the right time, you can create the situation of under- and over-lubrication. Applying the insufficient amount of grease, under-lubrication, will increase component wear, premature failure, higher energy usage and increased operating- and maintenance costs. Applying too much grease however will result in over-lubrication. Over-lubrication leads to excess heat build-up, puts stress on lubrication points, increases downtime and wastes lubricant.

Avoid under- and over-lubrication by installing an automatic lubrication system. An automatic lubrication system provides your equipment with the right amount of lubricant at the right time and in the right place.

No matter where in the lubrication management journey you are, with Groeneveld-BEKA you can boost the performance that matters most. You've invested in a top-quality machine - now protect your investment by using an automatic lubrication system.

Trust the task to an experienced and reliable service provider who knows how to handle all your needs, from small machines to large-scale industrial applications.

## Benefits of automatic lubrication

### Reduce machine downtime

Unlike with manual lubrication, automatic lubrication systems don't require a machine to be shut down in order to apply lubrication. Since lubrication will be done during normal machine operation, machine downtime is reduced by ca. 15%.

### Extend equipment life

Better and uniform greasing of all critical components, because bearings, pins and bushings are in motion when lubrication takes place, results in less wear and tear of machinery.

When lubricating while equipment is in motion, the lubricant will create a more even film around the lubrication point to avoid metal-to-metal contact. Protecting these components will increase their lifetime and the life span of your equipment.

### Reduce maintenance costs

Because components are protected against wear you won't have to replace them as often, which will save you on spare parts. And since you don't need a technician to manually lubricate all the lubrication points, you can also add this to the reduction in maintenance costs.

In addition, the reduction in lubricant consumption by providing small amounts of lubricant at more frequent intervals, will lower your costs for oil or grease.

### Improve environmental footprint

Automatic systems measure the exact amount of lubricant required. Waste, product contamination and housekeeping issues are substantially reduced. Improved lubrication for bearings, gears and chains translates to lower friction and lower energy consumption.

### Improve safety

Prevent your technicians from accessing dangerous areas or having to climb on machines, sometimes when it's still running, to manually lubricate those lubrication points.

Automatic lubrication avoids these safety risks. It also avoids the human contact with lubricants and avoids spilling on the floor, reducing the risk of accidents and injuries from slipping.

# Introduction

## The different kind of lubrication systems

An centralized lubrication system consists of a few basic components; a lubrication pump and a reservoir, a controller, metering devices, hoses, fittings and accessories. All lubrication systems have a similar set-up, but can differ in the type of lubrication system.

### Centralized lubrication



A centralized lubrication system is like having a multi-outlet grease gun. It lets you pump grease from a central reservoir or distribution block to multiple lubrication points on your machine with a single action.

Think of it as a time-saving and cleaner upgrade to manual greasing. It's still manual in that you initiate the lubrication, but it saves you from going point-to-point with a grease gun.

### Single point lubrication



Single point lubricators apply lubricant to a single lubrication point. They are most commonly used to lubricate bearings, but can also be used to lubricate pumps, electric motors, fans, chains, linear guides, open gears and conveyors, amongst other applications.

Especially when lubrication points are difficult to access for safety reasons or their location, single point lubricators can offer the solution.

### Single-line lubrication systems



A single-line system consists of a central pump and delivers lubricant through a single line to the metering devices. Each metering device serves a single lubrication point, operates independently and can be individually adjusted to deliver the desired amount of lubricant.

For applications with long line lengths and a large number of lubrication points that must be greased with grease or oil, a single line system is the ultimate system.

A single-line parallel system can service a single machine, different zones on a single machine or even several separate machines, and is ideal when the volume of lubricant varies for each point.

## Dual-line lubrication systems

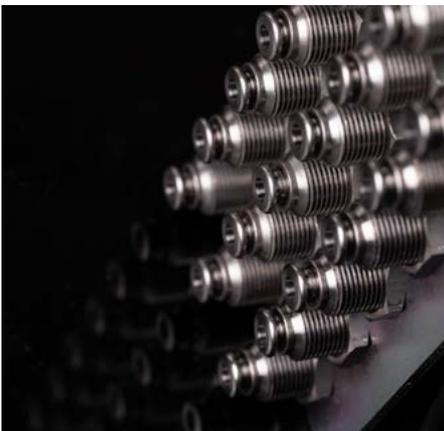


A dual-line system consists of a central pump and delivers lubricant through two main lines to the metering devices. Each metering device serves a single lubrication point, operates independently and can be individually adjusted to deliver the desired amount of lubricant.

The advantage of a dual line system is that it can handle hundreds of lubrication points from a single pump station over longer line lengths using significantly smaller tubing or lines.

A dual-line system is similar to the single-line system in that it uses pressure to cycle adjustable valves to dispense measured shots of lubricant. The two main lines are alternatively used as pressure / vent lines.

## Multi-line lubrication systems



Multi-line systems are commonly called "pump to point" systems as lubricant is fed directly from each of the pumping elements in the pump body to the lubrication point. No additional metering devices are necessary.

The advantage of multi-line system is the flexibility to configure the system for the lubrication points required, simply reduce the number of outputs or adjust the output by replacing the injectors.

## Progressive lubrication systems



A progressive system consists of a pump and delivers lubricant via a main line to a progressive metering devices. The progressive metering device supplies the lubricant to the lubrication points in inevitable order.

The progressive metering devices split the lubricant into even or predefined amounts of lubricant, depending on the metering device. Once a lubrication point is blocked, a progressive system will stop working as a means of control and forces personnel to service the system.

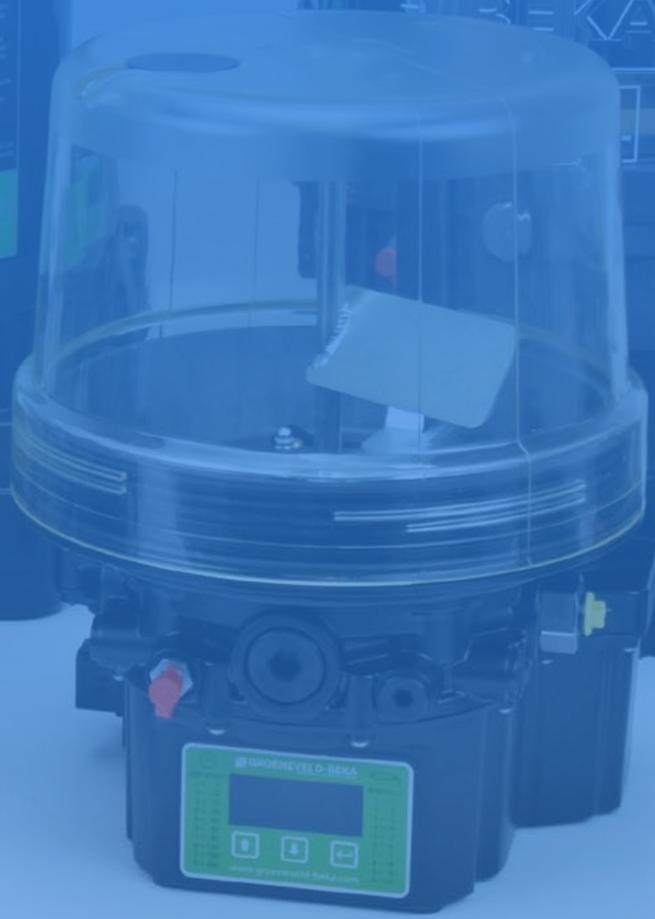
A progressive system uses lubricant flow to cycle individual metering valves and valve assemblies. The valves consist of dispensing pistons moving back and forth in a specific bore. Each piston depends on flow from the previous piston to shift and displace lubricant. This ensures that each lubrication point is supplied with the correct and defined amount of grease.

Some progressive systems can be set-up as a sectional lubrication system where the pump feeds different sections at their demand. Every section will be lubricated independently from each other by solenoid valves who open and close the lines to these sections.

# 02

## Lubrication pump units





# Lubrication pump units



## Keeping your machines running smoothly: Our diverse lubrication systems

Ensuring the efficient operation of your machinery requires a reliable lubrication system. We understand that a one-size-fits-all approach doesn't work. That's why we offer a comprehensive range of lubrication systems to cater to your specific needs.

Following this introduction, you'll find a detailed overview of our lubrication systems. This overview will outline:

- Drive mechanism: Discover the available drive options for each system, including electric, pneumatic, hydraulic or mechanical-powered solutions.
- Lubricant compatibility: Learn whether a particular system works with oil or grease, ensuring compatibility with your chosen lubricant.
- Recommended pump type: We'll advise on the most suitable pump type for various market segments upon experience.

Remember, this is just a starting point. We leverage our extensive experience to recommend the optimal lubrication system for your situation. Our lubrication systems can be customized to your specific requirements and the working environment, guaranteeing the most effective lubrication experience for your machinery.

Let's explore the world of lubrication systems and find the perfect fit for your needs!

| Pump unit                   | Electric drive | Pneumatic drive | Hydraulic drive | Mechanical drive | Suitable for grease |                  | Transport & Logistics |             |              |        |          |      |      |   |  |   |
|-----------------------------|----------------|-----------------|-----------------|------------------|---------------------|------------------|-----------------------|-------------|--------------|--------|----------|------|------|---|--|---|
|                             |                |                 |                 |                  | Suitable for grease | Suitable for oil | Busses                | Agriculture | Construction | Mining | Forestry | Port | Rail |   |  |   |
| Groeneveld CompAlube        | •              | •               |                 |                  | •                   |                  | •                     |             |              |        |          |      |      |   |  |   |
| Groeneveld SingleLine       | •              | •               |                 |                  | •                   |                  | •                     | •           |              |        |          |      |      |   |  |   |
| BEKA STREAM                 | •              |                 | •               |                  | •                   |                  |                       |             |              |        | •        |      |      |   |  |   |
| BEKA HFP-3U                 |                |                 | •               |                  | •                   |                  |                       |             |              |        | •        |      |      |   |  |   |
| Groeneveld Twin             | •              |                 |                 |                  | •                   |                  | •                     |             | •            | •      |          |      |      | • |  |   |
| Groeneveld Twin XL          | •              |                 |                 |                  | •                   |                  |                       |             | •            | •      |          |      |      | • |  |   |
| Groeneveld Twin barrel pump | •              |                 |                 |                  | •                   |                  |                       |             |              | •      |          |      |      |   |  |   |
| BEKA A-Series               | •              |                 |                 | •                |                     | •                |                       |             | •            |        |          |      |      | • |  |   |
| BEKA TDM-Series             | •              |                 |                 | •                |                     | •                |                       |             | •            |        |          |      |      |   |  |   |
| Groeneveld-BEKA GM          | •              |                 |                 |                  | •                   | •                |                       | •           |              |        |          | •    |      |   |  |   |
| BEKA ZEPTO                  | •              |                 |                 |                  | •                   |                  |                       | •           | •            |        |          |      |      |   |  |   |
| BEKA PICO                   | •              |                 |                 |                  | •                   |                  |                       | •           | •            | •      |          |      |      | • |  |   |
| Groeneveld EcoPlus          | •              |                 |                 |                  | •                   |                  |                       |             | •            |        |          |      |      |   |  |   |
| Groeneveld OnePlus          | •              |                 |                 |                  | •                   |                  |                       |             | •            |        |          |      |      | • |  |   |
| BEKA EP-1                   | •              |                 |                 |                  | •                   |                  |                       | •           | •            | •      | •        | •    | •    | • |  |   |
| Groeneveld TriPlus          | •              |                 |                 |                  | •                   |                  |                       | •           |              |        |          |      |      | • |  |   |
| Groeneveld-BEKA GP          | •              |                 |                 |                  | •                   |                  |                       | •           | •            | •      | •        | •    | •    | • |  |   |
| BEKA GIGA                   | •              |                 |                 |                  | •                   |                  |                       |             | •            | •      |          |      |      | • |  |   |
| BEKA FKGM-HP                |                |                 | •               |                  | •                   |                  |                       |             | •            |        |          |      |      |   |  |   |
| BEKA HAMAX                  |                |                 | •               |                  | •                   |                  |                       |             | •            |        |          | •    |      |   |  |   |
| BEKA HP-Series              |                |                 | •               |                  | •                   |                  |                       |             | •            |        |          | •    |      |   |  |   |
| BEKA Fluilub                |                | •               |                 |                  |                     | •                |                       |             |              |        |          |      |      |   |  | • |

# Lubrication pump units

## Groeneveld CompAlube

## Single-line system for grease



The CompAlube is a compact all-in-one single-line lubrication system designed to meet the lubrication needs of modern vehicles and machines with a lower grease demand. The CompAlube is the ideal solution to lubricate machines with up to 19 lubrication points with 0-grease.

This all-in-one system contains the pump, the control unit, the distribution block, metering units and a 1.8 kg grease cartridge. The CompAlube is available with an electric or pneumatic driven pump. Due to its compact size and all-in-one concept, there is always room to be found to install it on a vehicle or machine.

The distribution block and metering units are located in the pump housing. Due to the wide range of available metering units, it is possible to adjust the grease delivery for each specific lubrication point. The output can be set from 0.025 up to 0.1 cm<sup>3</sup> per outlet.

The greasing cycles are controlled via the control unit. Depending on the application the CompAlube can be controlled by a pneumatic brake counter or an electronic timer.

Thanks to the cartridge concept, refilling the reservoir is a thing of the past. Replacing the cartridge when it's empty will be a quick, easy and clean task. No additional tools are necessary to replace the cartridge. Another benefit of the cartridge system, you can be sure that the right grease is being used and no contamination is pumped into the system when replacing the cartridge.

### Applications

- Trucks
- Tail lift
- Compact construction machinery
- Compact agricultural machinery

### Features and benefits

- + Compact all-in-one system
- + Quick, easy and clean replacement of the grease cartridge
- + Integrated easy-to-operate timer

|                       |  |
|-----------------------|--|
| Operating principle   | Electric gear pump or pneumatic plunger pump |
| Outlets               | 1  |
| Delivery volume       | 20 cm <sup>3</sup> per stroke                |
| Lubricant             | NLGI-0                                       |
| Operating temperature | -25°C to +80°C (-13°F to +160°F)             |
| Operating pressure    | max. 250 bar (3625 psi)                      |
| Reservoir             | 1.8 kg cartridge                             |
| Power supply          | 12 or 24 V                                   |
| Protection class      | IP 67  |

## Groeneveld SingleLine

## Single-line system for grease



The Groeneveld SingleLine is the ultimate lubrication system for lubricating transport and industrial applications with NLGI-00 or 0-grease. Long lines and large numbers of lubrication points do not pose a problem for this high quality system, available in both an electrical and pneumatic version.

The SingleLine is available with different reservoir sizes, each featuring a follower plate as a standard. This follower plate ensures complete grease usage, visible grease levels, and prevents grease degradation due to oxidation, preserving the lubricant's integrity. It also enables the use of biodegradable greases or pump installation on rotating surfaces. The system can optionally be equipped with a low level indicator with active warning signal.

The SingleLine's patented metering units offer unparalleled control over grease distribution. These units can be customized to perfectly match the lubrication needs of each point, ensuring consistent and efficient lubrication throughout your entire system. The metering units are seamlessly integrated into distribution blocks, available in configurations ranging from 1 to 18 outputs. Both metering units and distribution blocks are offered in corrosion-resistant brass or stainless steel, ensuring long-lasting performance.

Extending the lubrication system to attachments isn't a problem for this system. By adding a quick connect coupling the system can easily be extended for lubricating additional components.

The combination of a robust pump and a comprehensive range of metering units makes it perfectly suitable for a wide spectrum of applications, including heavy transport equipment, buses, garbage trucks, and various industrial machinery. Its adaptability and precision make it an invaluable asset for maintaining equipment integrity and optimizing performance across diverse industries.

### Applications

- Trucks and trailers
- Busses
- Garbage trucks
- Heavy transport vehicles
- Industrial applications

### Features and benefits

- + Easy to install
- + Extendable system with use of quick coupling
- + Optionally equipped with a level indicator in the grease reservoir with an active warning

|                       |  |
|-----------------------|--|
| Operating principle   | Pneumatic piston pump, electrical piston, plunger or gear pump   |
| Outlets               | 1  |
| Delivery volume       | Pneumatic pump: 30, 42 or 60 cm <sup>3</sup> /stroke.<br>Electric pumps: 25, 50 or 120 cm <sup>3</sup> /minute |
| Ratio                 | 9:1  |
| Lubricant             | Fluid grease NLGI-00, Grease NLGI-0  |
| Operating temperature | -25 up to +80 °C (-13 up to 176 °F)  |
| Operating pressure    | max. 100 bar (1450 psi)  |
| Reservoir             | 2.7 l. (only electric version); 4; 6 and 8 l   |
| Power supply          | 12 VDC; 24 VDC   |
| Protection class      | IP 54  |

# Lubrication pump units

## BEKA STREAM

Single-line systems for grease



The powerful BEKA Stream is the ultimate solution for large applications requesting a larger amount of lubricant and is suitable for EP greases up to NLGI-2. The stream is not only powerful, it's also very versatile, it can also be used for dual-line or progressive lubrication systems.

The Stream is available in both an electrical and hydraulic version and can be ordered together with different container sizes or a barrel for an even higher capacity. A follower plate with an intelligent follower piston contour ensures that no air is sucked into the container. It also ensures that all the grease in the reservoir is used and prevents oxidation of the grease. Optional fill level monitors ensure that refilling with lubricant can be perfectly planned.

When using the Stream as a progressive system it is possible to control the pump with the external control unit Tronic-E. This multifunctional external control unit is equipped with a database, and stores the settings and statistic values of the system.

The use of wear-resistant materials makes the seals uniquely resistant like no other on the market. This pump is not only the perfect partner in the mining sector, where tough and rough operating conditions prevail. Even when operating with lubricants containing solids, the maintenance effort remains low and simple thanks to the user-oriented design.

The BEKA Stream is characterized by easy installation, operation and maintenance and can be extended as required. It is tried-and-tested in large numbers all over the world.

### Applications

- Construction equipment
- Mining equipment
- Mining industry
- Paper industry
- Recycling industry
- Steel industry

### Features and benefits

- + Robust construction ensures reliable use in mining and outdoor applications
- + High delivery capacity, perfectly suitable for large applications
- + Constructive separation of hydraulic circuit and pump
- + Available as container version or barrel pump
- + Also suitable for use as an dual-line or progressive lubrication system

|                             |  |
|-----------------------------|--|
| Operating principle         | Electric or hydraulic pump   |
| Outlets                     | 1  |
| Delivery volume             | 120 cm <sup>3</sup> /min   |
| Lubricant                   | Grease up to NLGI-2  |
| Operating temperature       | -40 up to +65 °C (-40 up to 149 °F)  |
| Operating pressure          | Max. 350 bar (5076 psi), pressure limiting valve set to 240 bar (3480 psi) |
| Reservoir                   | 41; 54 and 68 l container. 213 l barrel                                    |
| Power supply (Stream E)     | 24 VDC   |
| Drive medium (Stream H)     | Hydraulic oil ISO VG 46-100  |
| Driving pressure (Stream H) | 20 - 250 bar (290 – 3625 psi)  |
| Return pressure (Stream H)  | Max. 3 bar (43 psi)  |
| Protection class            | IP 65  |



The BEKA HFP-3U is a versatile hydraulic barrel pump which offers all features needed to lubricate larger machines. The HFP-3U is used as a single-line system for grease up to NLGI-2.

The HFP-3U has a high delivery capacity of 26 cm<sup>3</sup> per double stroke which makes it the perfect system for large application with a higher grease demand. To suit this higher grease demand, the HFP-3U pump is available for use with 20, 25, 50 and 200 liter barrels. The HFP-3UCS is the container version of the system and available with a 41, 54 or 68 liter reservoir.

As a standard the system is equipped with a pressure limiting valve, a visual or mechanical level sensor, and an internal follower plate. The level sensor measures the length from the cover to the follower plate, allowing a permanently monitored level. A valve plate with sealing prevents that sucked lubricant is pressed back into the barrel via the suction drilling. A non-return valve avoids that lubricant is sucked back and lubricant is forwarded through the supply pipe to the pressure outlet. Additionally, the HFP-3UCS is equipped with a valve block which contains all components necessary to control a lubrication cycle as a standard.

The barrel pump is fixed to the ground with connection rods with star handles for stability of the system. Different connection rod lengths are available for the different barrel sizes. For the HFP-3UCS this is optional since the barrel can be fixed to the ground directly.

**Applications**

- Mining machines
- Tunneling equipment
- Cement rotary kiln

**Features and benefits**

- + Robust construction for reliable use in mining and outdoor applications
- + High delivery capacity
- + Available for a wide range of standard barrel sizes or as a container version

|                       |  |  |
|-----------------------|--|--|
| Operating principle   | Hydraulic barrel pump                              |  |
| Outlets               | 1  |  |
| Delivery volume       | 26 cm <sup>3</sup> / double stroke                 |  |
| Lubricant             | Greases up to NLGI-2 without solid contents        |  |
| Operating temperature | HFP-3U: -10 up to +70 °C (14 up to 158 °F)         | HFP-3UCS: -40 up to +70 °C (-40 up to 158 °F)  |
| Operating pressure    | HFP-3U: Max 350 bar (5076 psi)                     | HFP-3UCS: Max 275 bar (3988 psi),<br>Pressure limiting valve set to 240 bar (3480 psi) |
| Reservoir             | HFP-3U: Suitable for barrels 20, 25, 50 and 200 kg | HFP-3UCS: 41; 54 and 68 liter  |
| Drive medium          | Hydraulic oil, 50 up to 500 mm <sup>2</sup> /s     |  |
| Drive pressure        | HFP-3U: 35-60 bar (507-870 psi)                    | HFP-3UCS: 26-55 bar (377-797 psi)  |

# Lubrication pump units

## Groeneveld Twin

## Dual-line systems for grease



The Groeneveld Twin, a dual-line parallel automatic lubrication system, is developed specifically for the most demanding applications. Installations with many lubrication points or large line lengths, extremely low or high ambient temperatures and where the reliability of the system is crucial.

The Twin system consists of a heavy duty pump, an internal control unit with CAN-Bus connection, a real-time clock, internal memory, and a minimum level switch. The two main lines are delivering the grease to high quality metering devices. A wide range of metering units are available to ensure that all lubrication points are optimally lubricated. These metering units can be mounted in any required combination on distribution blocks and are available in brass or stainless steel.

Extending the system to detachable equipment pieces is no challenge with this system. By adding a quick connect coupling the system can easily be extended for lubricating additional components. The pump is available with different reservoir sizes, each featuring a follower plate. This follower plate ensures complete grease usage, visible grease levels, and prevents grease degradation due to oxidation, preserving the lubricant's integrity. It also enables the use of biodegradable greases or pump installation on rotating surfaces.

The system is being delivered with a separate display for visible control of the functioning of the system, low level warnings and easy and fast diagnosis of the system.

### Applications

- Construction machinery
- Mining machinery
- Agricultural machinery
- Forestry machinery
- Container handling equipment
- Wind turbines
- Paper industry
- Industrial applications

### Features and benefits

- + Modern pump with real-time clock, memory, CAN-Bus connection and follower plate
- + Suitable for biodegradable grease
- + Easy to install, maintain and to extend

|                       |                                    |
|-----------------------|------------------------------------|
| Operating principle   | Electric piston pump               |
| Outlets               | 2                                  |
| Delivery volume       | 12 cm <sup>3</sup> /min            |
| Lubricant             | Grease NLGI-0 up to NLGI-2         |
| Operating temperature | -20 up to +70 °C (-4 up to 158 °F) |
| Operating pressure    | max. 250 bar (3625 psi)            |
| Reservoir (reservoir) | 3; 4; 6 and 8 l                    |
| Power supply          | 12; 24 VDC                         |
| Protection class      | IP 67                              |



The Groeneveld Twin XL, a dual-line parallel automatic lubrication system, is developed specifically for the most demanding applications with a higher grease demand. Installations with many lubrication points or large line lengths, extremely low or high ambient temperatures and where the reliability of the system is crucial.

The Twin system consists of a heavy duty pump, an internal control unit with CAN-Bus connection, a real-time clock, internal memory, a pressure relief valve and a minimum level switch. For vehicles controlled by a PLC, the Twin XL can be supplied without a control unit for the PLC to take over control.

The two main lines are delivering the grease to high quality metering devices. A wide range of metering units are available to ensure that all lubrication points are optimally lubricated. These metering units can be mounted in any required combination on distribution blocks and are available in brass or stainless steel.

Extending the system to detachable equipment pieces is no challenge with this system. By adding a quick connect coupling the system can easily be extended for lubricating additional components. The pump is installed directly on top of a robust, extra-large 18 liter grease reservoir. The reservoir is equipped with a follower plate to ensure complete grease usage and to prevent ingress of air and condensation in order to preserve the lubricant's integrity. It also enables the use of biodegradable greases.

#### Applications

- Large construction machinery
- Mining machinery
- Mining process industry
- Wind turbines
- Paper industry
- Metal industry

#### Features and benefits

- + Robust construction ensures reliable use in mining and outdoor applications
- + Suitable for biodegradable grease
- + Easy to install, maintain and to extend

|                       |                                    |
|-----------------------|------------------------------------|
| Operating principle   | Electric drum pump                 |
| Outlets               | 2                                  |
| Delivery volume       | 20 cm <sup>3</sup> /min            |
| Lubricant             | Grease NLGI-0 up to NLGI-2         |
| Operating temperature | -20 up to +70 °C (-4 up to 158 °F) |
| Operating pressure    | max. 250 bar (3625 psi)            |
| Reservoir (reservoir) | 18 l                               |
| Power supply          | 24 VDC                             |
| Protection class      | IP 67                              |
| Power supply          | 12 VDC; 24 VDC                     |
| Protection class      | IP 67                              |

# Lubrication pump units

## Groeneveld Twin barrel pump

## Dual-line systems for grease



The Groeneveld Twin pump, a dual-line parallel automatic lubrication system, is developed specifically for the most demanding applications with a higher grease demand. Installations with many lubrication points or large line lengths, extremely low or high ambient temperatures and where the reliability of the system is crucial.

The Twin system consists of a heavy duty pump, an external control unit with CAN-Bus connection, a real-time clock, internal memory, a pressure relief valve and a minimum level switch. For machines controlled by a PLC, the Twin barrel pump can be supplied without a control unit for the PLC to take over control.

The two main lines are delivering the grease to high quality metering devices. A wide range of metering units are available to ensure that all lubrication points are optimally lubricated. These metering units can be mounted in any required combination on distribution blocks and are available in brass or stainless steel.

Extending the system to detachable equipment pieces is no challenge with this system. By adding a quick connect coupling the system can easily be extended for lubricating additional components.

The pump can be installed directly on top of a robust, extra-large 40 liter refillable grease reservoir or into a grease drum. The pump is equipped with a follower plate to ensure complete grease usage and to prevent ingress of air and condensation in order to preserve the lubricant's integrity. It also enables the use of biodegradable greases.

### Applications

- Large construction machinestrucks
- Mining machinery
- Mining process industry
- Wind turbines
- Paper industry
- Metal industry

### Features and benefits

- + Modern pump with real-time clock, memory, CAN-Bus connection and follower plate
- + Suitable for biodegradable grease
- + Easy to install, maintain and to extend

|                       |                                    |
|-----------------------|------------------------------------|
| Operating principle   | Electric barrel pump               |
| Outlets               | 2                                  |
| Delivery volume       | 60 cm <sup>3</sup> /min            |
| Lubricant             | Grease NLGI-0 up to NLGI-2         |
| Operating temperature | -20 up to +70 °C (-4 up to 158 °F) |
| Operating pressure    | max. 250 bar (3625 psi)            |
| Reservoir (reservoir) | 40 l                               |
| Barrel sizes          | 18 – 200 l                         |
| Power supply          | 24 VDC                             |
| Protection class      | IP 67                              |



Drive chains are subject to high wear and tear. They need intensive care to reduce breakdown and replacement costs. The BEKA A-Series multi-line system is the perfect solution for chain lubrication, improving the lifetime of drive chains.

In comparison to conventional chain lubrication systems, with the A-Series pumps chains are lubricated whilst being in motion. This, in combination with a precise lubrication per lubrication point, is the benefit of this compact oil lubrication system.

The BEKA A-Series pump is a compact pump with up to 6 individual outlets or 12 outlets if they are paired. Due to its compact design a little mounting space is needed. The pump is connected to an external oil reservoir and pumps the oil to the different lubrication points. The lubricant is applied onto the chains via brushes or felts, making sure the lubricant ends up on the chain and doesn't drip off.

The piston stroke, and with that the feed rate of the different lubrication points, can be adjusted individually with easy to adjust set-screws. The device can also be equipped with a hand crank for prefilling long lubrication lines with lubricant before the pump starts.

The A-Series pumps are available with a mechanical or electric drive and therefore suitable for many applications. It's a robust pump with a long lifetime and low operating costs.

**Applications**

- Balers
- Machine tools
- Wood processing industry
- Textile industry
- Paper industry

**Features and benefits**

- + Compact and robust design
- + Long lifetime and low operating costs
- + Available with mechanical or electrical drive and therefore suitable for many applications
- + Available as a plug and play kit according to customer specifications

|                       |   |
|-----------------------|---|
| Operating principle   | Mechanically or electrically operated piston pump |
| Outlets               | Up to 12  |
| Delivery volume       | Max. 0.6 or 0.15 cm <sup>3</sup> stroke/outlet    |
| Lubricant             | Oil, viscosity range 100 – 1500 cSt               |
| Operating temperature | 0 up to +40 °C (32 up to 104 °F)                  |
| Operating pressure    | max. 10 bar (145 psi) <sup>1</sup>                |
| Power supply          | 12 VDC; 24 VDC; 200/240 VDC or 346/420 VDC        |
| Protection class      | IP 55   |

<sup>1</sup> Depending on the model

# Lubrication pump units

## BEKA TDM-Series

## Multi-line system for oil



The BEKA TDM-Series is a range of multi-line systems for oil lubrication with up to 8 lubrication points. The systems is mainly used to lubricate drive chains and gears in agricultural applications or in mechanical engineering.

Within the TDM-Series there are 2 types of pumps available, the TDM and the TDM-FS range. The TDM-FS range has a higher output rate and lower drive speed as the normal TDM pumps. The piston stroke, and with that the output rate of the pump, can be adjusted with the set screw in the delivery piston under the pump lid. The volume can be reduced down to 30% of the max. output rate without affecting the pump's function.

All pump types are available with different hose connection sizes and types. Push to fit connectors provide an easy installation of the lubrication lines.

The pumps are connected to a dedicated oil reservoir. These oil reservoirs are available in two different sizes with different connections.

### Applications

- Balers
- Combustion engines
- Small diesel engines
- Compressors
- Vacuum pumps
- Tool machines
- Textile machines
- Wood processing machines

### Features and benefits

- + Compact design and therefore just a little mounting space needed
- + Robust pump with long lifetime and low operating costs
- + Available with mechanical or electrical drive and therefore suitable for many applications

|                       |   |
|-----------------------|---|
| Operating principle   | Mechanically or electrically operated piston pump |
| Outlets               | Up to 8   |
| Delivery volume       | Max. 0.088 cm <sup>3</sup> stroke/outlet          |
| Lubricant             | Oil, viscosity range 20 – 800 cSt                 |
| Operating temperature | 0 up to +70 °C (32 up to 158 °F)                  |
| Operating pressure    | max. 5 bar (72.5 psi)                             |
| Power supply          | 230 VAC; 400 VAC or 460 VAC                       |
| Protection class      | IP 55   |



The Groeneveld-BEKA GM is the latest development in multi-line technology and designed for self-install on mobile applications like trucks and trailers, small construction machinery and agricultural machines. Because of the possibility to use oil or grease in the system, light industrial applications can be equipped with the GM as well.

The Groeneveld GM has been designed for easy service and exchange of sealed for life components. Adjusting the system to the lubrication needs, upgrading the system as well as servicing the system is easy due to the modular concept.

The GM comes with 2 version of the top cover, the GMA and the GMA+. The GMA is delivered without a control unit, where the GMA+ has an integrated control unit. The control unit allows the user to set the lubrication interval and check the system status. The top cover also contains the systems' gear motor, available in a 12V or 24V version.

The GM is available with 3 different reservoir sizes; 2, 3 or 5 liters, all equipped with a paddle blade. When in need of a different size of reservoir, the reservoir can be easily be exchanged for one of the other reservoir sizes. Each reservoir has an integrated low level indicator.

The bottom of the pump holds the pumping elements housing, available in 5 different sizes. The housing has room for either 12, 18, 36, 72 or 90 pumping elements. There are 6 different pumping elements with push to fit connectors available with varying outputs. The push to fit connection provides an easy installation of the lubrication lines which go directly to the lubrication point. The maximum output pressure of each pump element is 120 bar.

#### Applications

- Trucks & Trailers
- Busses
- Small construction machines
- Small agricultural machines
- Light industrial applications

#### Features and benefits

- + Modularity enables to meet customer specific requirements, from basic to high-end
- + Interchangeable components make it easy to service and adjust
- + OEM quality standards, compliant with IATF & SPICE regulations
- + Suitable for oil SAE 80/90 up to NLGI-2 grease

|                       |   |
|-----------------------|---|
| Operating principle   | Electrical piston pump                                    |
| Outlets               | Max. 90   |
| Delivery volume       | 0.01 up to max. 0.10 cm <sup>3</sup> stroke/outlet        |
| Lubricant             | Oil, viscosity range 20 – 800 cSt<br>Grease up to NLGI-2  |
| Operating temperature | -20 up to +70 °C (-4 – 158 °F) with use of Greenlube EP-2 |
| Operating pressure    | Max. 120 bar (1740 psi)                                   |
| Reservoir             | 2; 3 or 5 l   |
| Power supply          | 12 VDC; 24 VDC  |
| Protection class      | Reservoir: IP 54<br>Electronics: IP 69K                   |

# Lubrication pump units

## BEKA ZEPTO

## Progressive systems for grease



The BEKA ZEPTO is an electric cartridge pump designed to provide lubricant within a central lubrication system or to single lubrication points. With its compact and rugged design, the ZEPTO is the perfect lubrication solution of smaller machines and systems with up to 30 lubrication points.

The ZEPTO can be used with various types of screw cartridges. It's equipped with a type S cartridge connection thread as a standard. Type F and L cartridges can be used with a corresponding adapter. Just screw in the cartridge, and the pump is ready to go. When the cartridge is almost empty, a low level warning is triggered automatically. Due to the cartridge concept, replacing the cartridge when it's empty will be a quick, easy and clean task.

The pump is equipped with a pump element including a pressure limiting valve and has a constant output of 0.9 cm<sup>3</sup> per minute. The innovative revolution control ensures constant delivery rates, regardless the supply voltage. Optionally the pump element can be equipped with an adjustable T-fitting with additional bleeding valve for easy service.

ZEPTO has an integrated control unit to set up time or pulse controlled lubrication or continuous operation. Setting up the system is simple with the easy to access control keys behind the inspection glass. No optional tools are necessary.

### Applications

- Mini wheel loaders
- Mini excavators
- Telehandlers
- Material handling equipment
- Forklift trucks
- Truck mounted cranes
- Robots
- CNC manufacturing machines
- Small printing machines

### Features and benefits

- + Rugged and compact design
- + Simple replacement of lubrication cartridge without tools
- + Suitable for various screw cartridge types available on the market
- + High-strength glass fiber plastics withstand the most adverse conditions
- + Unique: dust tightness (6K) and safe cleaning through high pressure/steam jet cleaning (9K)

|                            |  |
|----------------------------|--|
| Pump type                  | Electric gear pump   |
| Outlets                    | 1  |
| Delivery volume            | Constant 0.9 cm <sup>3</sup> /min.   |
| Lubricant                  | NLGI-000 up to NLGI-2  |
| Operating temperature      | -25 up to +70 °C (-13 up to 158 °F) depending on lubricant   |
| Operating pressure         | Max. 290 bar (4200 psi)  |
| Reservoir capacity         | Standard cartridges  |
| Compatible cartridge types | Type S (Lube-Shuttle®), Type F (System REINER) or Type L (Ritter grease cartridge 400 ml) with corresponding adapter |
| Power supply               | 12 and 24 VDC  |
| Protection class           | IP6K9K   |

## BEKA PICO

## Progressive systems for grease



The BEKA PICO combines power and flexibility with a compact design. The PICO system offers the unique combination of progressive- and multi-line technology in one system, with 2 progressive outlets and up to 8 outlets for point to point lubrication. The PICO is ideal for small machines with approximately 20 lubrication points.

The compact pump comes with a 1.2 kg reservoir with either a paddle blade or a follower plate. The follower plate version has an integrated low level sensor in the reservoir, which is not available for the paddle blade versions. Both reservoir versions have an integrated overflow safety device in the reservoir to prevent overfilling of the reservoir.

The grease output of the PICO is controlled by the pump elements. Two different elements are available when the system is used as a progressive pump with a max. of 0.12 cm<sup>3</sup> per stroke. For the multi-line system we offer five different pump elements which offer an output of max. 0.05 cm<sup>3</sup> per stroke. The system pressure is limited to 290 bar.

The PICO is available without control or with an integrated control unit. The control unit has several options, like 3 control functions: time, stroke or revolutions. It also gives you insight in the grease level, pump and distributor function, line rupture and lubricant feeding. It also comes with an integrated data logger for the DiSys diagnosis module.

### Applications

- Trucks
- Construction machinery
- Agricultural machinery
- Compressors
- Machine tools
- Wood working machines
- Printing machines
- Wind turbines

### Features and benefits

- + Unique combination of progressive- and multi-line technology
- + Suitable for all common lubricants from NLGI-000 up to NLGI-2
- + Flexible extension possibilities

|                       |   |
|-----------------------|---|
| Operating principle   | Electrical piston pump  |
| Outlets               | Max. 10; 2 progressive and 8 multi-line   |
| Delivery volume       | Max. 0.12 cm <sup>3</sup> stroke/outlet   |
| Lubricant             | Grease up to NLGI-2   |
| Operating temperature | -25 up to +70 °C / (-31 up to 158 °F)   |
| Operating pressure    | 200 bar (2900 psi) at multi line system<br>280 bar (4000 psi) at progressive system |
| Reservoir             | 1.2 l   |
| Power supply          | 12 VDC; 24 VDC  |
| Protection class      | IP 65   |

# Lubrication pump units

## Groeneveld EcoPlus

## Progressive systems for grease



The Groeneveld EcoPlus combines the tested concept of progressive lubrication with a modern pump that has extensive possibilities for settings and diagnosing via a user-friendly display. The EcoPlus lubrication system is perfectly suited for smaller earth-moving and construction equipment.

The EcoPlus is compact and yet offers sufficient grease capacity. Due to its compact size, there is always room to be found to install it on the machine. The 1.7-litre cartridge offers the right grease volume to meet lubrication needs and service intervals of modern compact machines. The unique cartridge concept makes exchanging easy and ensures that the correct quality of grease is always used. However, it is also possible to refill the EcoPlus.

The EcoPlus is available with a 12 or 24 Volt electric motor and features an 8-mm pump element as a standard, providing 0.26 cm<sup>3</sup> of grease metering per cycle. A second pump element is available as an option, offering the possibility of creating an independent second lubrication circuit. The EcoPlus can be equipped with a low-level indicator or a manometer for pressure indication.

The easy to program timer with integrated LCD display and intuitive touch pads makes setting the system extremely easy. Lubrication intervals can be set for 1 to 300 minutes, while the grease volume is defined by the number of revolutions of the pump. The number of pump revolutions can be programmed from 1 to 99 revolutions per grease cycle, which together with the forced stroke of the pumping elements results in an incomparable reliability and accuracy under all conditions.

### Applications

- Small wheel loaders
- Mini excavators
- Skid steer loaders
- Loader cranes
- Agricultural machinery
- Onroad applications

### Features and benefits

- + Integrated easy-to-operate timer
- + Fully closed system, insensitive for moisture, sand and dust
- + No need for extra refilling tools due to the grease cartridge concept

|                       |   |
|-----------------------|---|
| Operating principle   | Electrical piston pump  |
| Outlets               | 1 or 2  |
| Delivery volume       | 0.15 cm <sup>3</sup> ; 0.20 cm <sup>3</sup> or 0.25 cm <sup>3</sup> per stroke per outlet |
| Lubricant             | NLGI-2  |
| Operating temperature | -20 up to +70 °C / (-4 up to 158 °F)  |
| Operating pressure    | 275 bar (3988 psi)  |
| Reservoir             | 1.7 kg  |
| Power supply          | 12 VDC; 24 VDC  |
| Protection class      | IP 67   |



The Groeneveld OnePlus is a progressive lubrication system, well-suited for smaller machines with less complex lubrication systems. The system combines the proven concept of progressive lubricating with a modern pump that can easily be programmed, suitable for NLGI-2 grease.

The OnePlus has a reservoir capacity of 2 or 3 liters. It features a solid, compact design with a follower plate. The follower plate assures that the grease in the reservoir does not come into contact with the outside air, preventing ageing of the grease as a result of oxidation. It also keeps the reservoir walls clean so the grease level always remains visible. Another benefit from the follower plate, it makes the pump suitable for mounting on rotating surfaces and use of biodegradable greases.

OnePlus systems are mainly installed on machines with a fixed number or lubrication points that require a fixed amount of grease at fixed intervals. The quantity of grease distributed and the lubrication interval can be programmed easily using two, small rotary switches located behind a waterproof screw cap at the front of the pump housing.

The quantity of grease is determined by the set lubrication duration, the number of revolutions of the pump, and is thereby insensitive to viscosity and temperature. Once programmed, in principle, the setting no longer needs to be changed, but the system can always be adjusted to meet changing needs for grease.

#### Applications

- Mini-excavators
- Loaders
- Terminal tractors
- Agricultural machinery

#### Features and benefits

- + Easy to program with 2 rotary switches
- + Suitable for mounting on rotating surfaces
- + Suitable for use of biodegradable greases

|                       |                             |
|-----------------------|-----------------------------|
| Operating principle   | Electrical plunger pump     |
| Outlets               | 1                           |
| Delivery volume       | 0.1 cm <sup>3</sup> /stroke |
| Lubricant             | NLGI-2                      |
| Operating temperature | -25 up to +70 °C            |
| Operating pressure    | 275 bar (3988 psi)          |
| Reservoir             | 2 and 3 l                   |
| Power supply          | 10 – 32 VDC                 |
| Protection class      | IP67                        |

# Lubrication pump units

## BEKA EP-1

## Progressive systems for grease



The BEKA EP-1 is an electrically actuated pump for progressive lubrication with up to 3 independently operating lubrication outlets. Because the pump is suitable for pumping NLGI-000 to NLGI-2 grease, the EP-1 is a system suitable for a wide range of applications.

The EP-1 series pumps are available with different reservoir sizes, from 1.9 up to 16 liter. All reservoirs contain an agitator blade that facilitates product flow and pushes the lubricant towards the pump elements. The pumps can be equipped with an electronic grease level controller for low level indication.

Three pump elements with different flow rates are available for the EP-1, as well as a flow-adjustable pump element. This gives you the possibility to adjust the grease quantity to the requirement of the individual progressive distributor circuits. All pump elements of the EP-1 can be equipped with a pressure relieve valve adjusted to 290 bar.

The pumps can be controlled externally or with an integrated control unit. The control unit has several options, like the 2 different control functions: time or stroke. It also gives insight in the grease level, pump and distributor function, line rupture and lubricant feeding. It also comes with an integrated data logger for the DiSys diagnosis module.

### Applications

- Low loaders
- Refuse trucks
- Construction machinery
- Agricultural machinery
- Container handling equipment

### Features and benefits

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

|                       |   |
|-----------------------|---|
| Operating principle   | Electric gear pump                      |
| Outlets               | Max. 3                                  |
| Delivery volume       | Max. 0.17 cm <sup>3</sup> stroke/outlet |
| Lubricant             | Grease up to NLGI-2                     |
| Operating temperature | -20 up to +70 °C / (-4 up to 158 °F)    |
| Operating pressure    | 350 bar (5100 psi)                      |
| Reservoir             | 1.9; 2.5; 4; 8 and 16 l                 |
| Power supply          | 12 VDC; 24 VDC                          |
| Protection class      | IP65                                    |



The Groeneveld TriPlus is a progressive lubrication system that offers three circuits that can be programmed and operated independently. It is the ultimate solution for machines that have different components requiring different amounts of lubrication, such as excavators, cement pumps or mixers and backhoe loaders. Prevent unnecessary lubrication of components that are not moving with TriPlus.

The TriPlus system is available in different reservoir shapes and sizes. Where the reservoirs in 1.5, 3 and 4 liter are shaped in a rectangle to save mounting space, the 6 and 8 liter reservoir come in a round shape to decrease the height of the pumps.

All reservoirs are equipped with a minimum level switch and a follower plate. This follower plate assures that the grease in the reservoir does not come into contact with the outside air, preventing ageing of the grease as a result of oxidation. It also keeps the reservoir walls clean so the grease level always remains visible. Another benefit from the follower plate, it makes the pump suitable for mounting on rotating surfaces and use of biodegradable greases.

The controller is the core of the TriPlus. This electronic controller, with a real-time clock and memory, ensures that each lubrication circuit receives the exact amount of grease that has been programmed. These settings can always be adjusted to changing working conditions. The external signal light allows the operator or driver to easily check the system's operation.

The comprehensive diagnosis indications make maintenance simple and allow remote assistance. The memory makes it very easy to assess the system's past functioning, such as the timely refilling of the grease reservoir.

#### Applications

- Low loaders
- Tippers
- Refuse trucks
- Construction equipment
- Agricultural equipment

#### Features and benefits

- + Three lubrication circuits that can be programmed and operated independently
- + Suitable for mounting on rotating surfaces
- + Suitable for use of biodegradable greases

|                       |                                      |
|-----------------------|--------------------------------------|
| Operating principle   | Electric plunger pump                |
| Outlets               | Max. 3                               |
| Delivery volume       | 2.5 cm <sup>3</sup> /min             |
| Lubricant             | NLGI-2                               |
| Operating temperature | -20 up to +85 °C / (-4 up to 185 °F) |
| Operating pressure    | 250 bar (3625 psi)                   |
| Reservoir             | 1.5; 3; 4; 6 and 8 l                 |
| Power supply          | 12 VDC; 24 VDC                       |
| Protection class      | IP67                                 |

# Lubrication pump units

## Groeneveld-BEKA GP

## Progressive systems for grease



The Groeneveld-BEKA GP series is a newly developed modular progressive lubrication system, combining a single pump concept with different reservoir types and sizes. The GP series is designed for progressive lubrication on a diversity of mobile applications with use of grease up to NLGI-2.

The GP has been designed for easy service and exchange of sealed for life components. Adjusting the system to the lubrication needs and thus upgrading the system, as well as servicing the system, will be easy due to the modular concept.

The GP is available with 3 different kind of reservoirs and different volumes. All reservoirs are interchangeable and can easily be placed on the central module. Whether you want a reservoir with a paddle blade, a follower plate or a cartridge, it's all possible. A low level switch is standard for the follower plate and cartridge reservoirs.

The GP series has a maximum of 3 grease outlets with each a separate piston with direct delivery to the main line. Two outlets are plugged as a standard. The option for 3 different outlets makes it easier to lubricate different greasing points on complex machinery. The standard piston has an output of 2.5 cm<sup>3</sup>/min. Optionally a larger piston with an adjustable output from 2 up to 4 cm<sup>3</sup>/min can be installed. The pistons are easily exchangeable.

The lower module of the pump is the bottom housing of the pump. This module is available in the GPA version, without a control unit, or the GPA+ module with an integrated control unit. The control unit is easy to program. Alarms and warning messages are also shown on the display. The co-molded gasket and self-holding screws in the bottom cover make the GP series easy to assemble and service without the risk of parts getting lost.

### Applications

- Low loaders
- Tippers
- Refuse trucks
- Construction equipment
- Agricultural equipment
- Wind turbines

### Features and benefits

- + Interchangeable components make it easy to service and adjust
- + Suitable for greases up to NLGI-2, including biodegradable greases
- + OEM quality standards, compliant with IATF & SPICE regulations

|                       |  |
|-----------------------|--|
| Operating principle   | Electrical piston pump   |
| Outlets               | Max. 3, 2 plugged as a standard  |
| Delivery volume       | Standard: 2 cm <sup>3</sup> /min ø6, optional: 2-4 cm <sup>3</sup> /min ø8 adjustable outlet                                       |
| Lubricant             | Up to NLGI-2   |
| Operating temperature | -20 up to 70 °C / (-4 up to 158 °F)  |
| Operating pressure    | Max. 250 bar (3625 psi)  |
| Reservoir             | Standard: Paddle version, 2.5, 5 or 8 liter<br>Optional: Follower version, 3, 5 or 8 liter<br>Optional: Cartridge version, 3 liter |
| Power supply          | 12 VDC; 24 VDC   |
| Protection class      | IP54 (reservoir)<br>IP69K (electronic compartment)   |



The BEKA GIGA 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. In the GIGA PLUS all channels are connected to each other to one lubrication circle with a higher delivery rate.

The GIGA PLUS pump is moreover equipped with solenoid valves, pressure switches and internal pressure limiting valves, depending on the lubrication system. These features make the pumps suitable for sectional, single line and dual line systems.

The GIGA has a maximum delivery of 0.25 cm<sup>3</sup> per stroke and outlet and has a working pressure of max. 300 bar. The optional pressure limiting valve can reduce this to max. 280 bar.

Pumps in the GIGA series are available with reservoir volumes of 4, 8 and 16 liter. All reservoirs contain an agitator blade that facilitates product flow and pushes the lubricant towards the pump elements. On customer request, the pumps can also be equipped with an electronic level control for minimum level. All pumps can be delivered with or without an integrated control unit.

#### Applications

- Dump trucks
- Tracked excavators
- Harvesters
- Container handling equipment
- Wind turbines
- Machining industry
- Marine
- Mining industry
- Recycling industry
- Power plants

#### Features and benefits

- + Suitable for all lubrication systems: single line, dual line, progressive and sectional
- + Three lubrication circuits that can be operated independently
- + Available in different reservoir sizes; 4, 8 or 16 liter

|                         |  |
|-------------------------|--|
| Function principle      | Electric piston pump                         |
| Outlets                 | Max. 3                                       |
| Delivery volume         | Max. 0.25 cm <sup>3</sup> /stroke and outlet |
| Lubricant               | Grease class NLGI-2                          |
| Operation temperature   | -30 up to +70 °C (-22 up to 158 °F)          |
| Operating pressure      | Max. 300 bar (4351 psi)                      |
| Pressure limiting valve | Adjusted to max. 280 bar (4061 psi)          |
| Number of revolutions   | 17 min <sup>-1</sup>                         |
| Reservoir               | 4; 8 or 16 l                                 |
| Supply voltage          | 12; 24 V DC or 100 up to 250 V AC            |
| Protection class        | IP67   |

# Lubrication pump units

## BEKA FKGM-HP

## Progressive systems for grease



The BEKA FKGM-HP is a hydraulic actuated pump and used for lubrication of an hydraulic hammer, installed on the machine itself. This way the pump can also be used to lubricate other parts of the machine simultaneous.

The system is available with reservoir sizes ranging from 1.9 up to 8 liter, in transparent plastic or steel. All reservoirs are equipped with an agitator blade. The agitator blade facilitates product flow and pushes the lubricant towards the pump elements.

The FKGM-HP is suitable to work with standard greases up to NLGI-2, but also chisel pastes with solids are no issue for this system. The pump can be used with a maximum of six outputs, each with its own pump element. The pump elements differ in flow rate up to max. 0.17 cm<sup>3</sup> per stroke. Special pump elements are available for the use of grease with solid contents.

The gear motor of the pump is hydraulically driven and regulated via the flow of the drive medium. The number of revolutions of the motor can be adjusted between 800 and 1800 RPM.

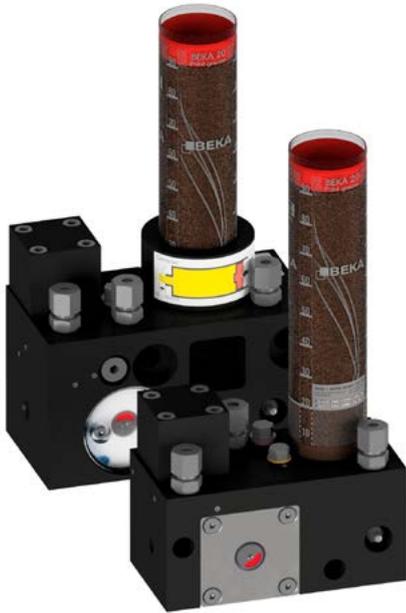
### Applications

- Hydraulic hammers

### Features and benefits

- + Installation directly at the excavator to protect the pump
- + Suitable for greases up to NLGI-2 and chisel paste
- + Available in different reservoir sizes, transparent plastic or steel

|                       |   |
|-----------------------|---|
| Function principle    | Hydraulic piston pump                                     |
| Outlets               | Max. 6  |
| Delivery volume       | Max. 0.1 cm <sup>3</sup> /stroke                          |
| Lubricant             | Chisel paste with solids and standard grease up to NLGI-2 |
| Operation temperature | -20 up to +70 °C (-22 up to 158 °F)                       |
| Operating pressure    | Max. 350 bar  |
| Reservoir             | 1.9; 2.5; 4 and 8 l plastic, 2 or 4 l steel               |
| Protection class      | IP65  |



Hydraulic breakers are highly-stressed add-on tools for construction machines and need to be supplied with special lubricants to reduce wear and tear of the chisel. The HAMAX range offers a lubrication system for hydraulic breakers or other construction machinery attachments. They are designed to mount directly on the attachment, compact but made of sturdy material to resist the many forces they have to endure.

The HAMAX-2 pumps are designed to work with different grease cartridges for EP-greases up to NLGI-2, even with high solid additives like copper. All HAMAX cartridge pumps are equipped with a type S cartridge connection thread as a standard. Other cartridge types can be used with a corresponding adapter. Due to the cartridge concept, replacing the cartridge when it's empty will be a quick, easy and clean task. A grease zerk is integrated in the pump housing for manual lubrication in case of a failure of the hydraulic system.

The HAMAX-2 pumps have an output of 0.12 cm<sup>3</sup>/stroke, which is adjustable to suit the individual requirement of the lubrications points. When a higher output is requested, we offer the HAMAX-11 with a delivery rate of 0.25 up to 1 cm<sup>3</sup>/stroke. The output can be adjusted via an adjustment screw on the pump.

The HAMAX-11 is equipped with a refillable reservoir of 0.1, 0.2 or 0.4 liter. The HAMAX 11 is designed that with each hydraulic pulse one lubricant stroke is carried out. The delivery rate is adjustable with a setscrew. Three different types of reservoir sizes are available. The grease level control is carried out visually by the level indicator pin.

**Applications**

- Hydraulic hammer

**Features and benefits**

- + Trouble free operation with heavy duty components
- + Reliable even with low temperatures
- + Suitable for special lubricants
- + Installation at the breaker - ideal for the use with different machines

|                          |   |
|--------------------------|---|
| Function principle       | Hydraulic piston pump   |
| Outlets                  | Max. 2 <sup>1</sup>   |
| Delivery volume HAMAX-2  | Max. 0.12 cm <sup>3</sup> /stroke   |
| Delivery volume HAMAX-11 | Max. 1 cm <sup>3</sup> /stroke  |
| Lubricant                | Chisel paste with solids and standard grease up to NLGI-2   |
| Operation temperature    | -20 up to +70 °C (-22 up to 158 °F)   |
| Operating pressure       | Max. 280 bar (4061 psi)   |
| Reservoir HAMAX-2        | Grease cartridge Type S as a standard. Suitable for type F, L, R, Ra in combination with an adapter |
| Reservoir HAMAX-11       | 0.1; 0.2 and 0.4 liter  |
| Supply voltage           | Hydraulic breaker circuit, 60 - 320 bar (870 - 4641 psi)  |
| Protection class         | IP67  |

<sup>1</sup> Only HAMAX-2 Twin has 2 outlets and thus 2 lubrication points

# Lubrication pump units

## BEKA HP-Series

## Progressive systems for grease



The hydraulic driven BEKA HP-Series pumps are particularly suitable for use as a progressive lubrication systems for attachments such as plowing, harrowing, drilling or sowing machines, balers, front loaders and other hydraulic equipment with NLGI-1 and -2 grease. The pumps in the HP-Series are robust and have a compact design and require ample space to install.

The HPM pumps should be connected to an progressive divider block by a main line. Delivery rate of the pump can be set between 0.2 and 2 cm<sup>3</sup> per stroke. Both HPM-pumps are suitable to use with 400 gram grease cartridges, where the HPM pump has a sleeve where the cartridge is entered into. The HPM-2S works with standard grease cartridges type S, which are screwed directly into the pump housing.

The HPG-2 is already equipped with a MX-2 type progressive distributor directly on the pump. This pump also has a separate lubrication outlet in case a lubrication point needs a higher dosage by connecting metering to the pump's separate lubrication outlet instead of the progressive divider.

Next to the type S cartridge, the HPG-2 can also be used with other cartridge types by using an adapter. The use of cartridges enables quick and clean refilling of the system without the use of additional tools.

With both pumps the number of distributor elements and the metering volume can be adjusted to the application

### Applications

- Attachments construction equipment
- Attachments agricultural equipment

### Features and benefits

- + Robust and compact design
- + Greater versatility with a built-in progressive distributor
- + Separate lubrication outlet for customized high-dosage applications

|                       |  |
|-----------------------|--|
| Function principle    | Hydraulic piston pump                                      |
| Outlets               | 1  |
| Delivery volume       | 0.2 - 2 cm <sup>3</sup> /stroke                            |
| Lubricant             | NLGI-2 without solids                                      |
| Operation temperature | 0 °C up to +50 °C (-4 up to 158 °F)                        |
| Operating pressure    | Max. 220 bar (3190 psi)                                    |
| Reservoir             | 400 gr cartridges, HPM-2S cartridge type S                 |
| Supply voltage        | Hydraulic breaker circuit, 130 - 250 bar (1885 - 3625 psi) |



### Applications

- Light railway vehicles
- Heavy railway vehicles
- Underground trains
- Rail maintenance vehicles
- Two way vehicles

For all rail vehicles, from freight trains to streetcars, wear on the wheels and the rail is a major maintenance and cost factor. The noise generated by wheels on tracks, especially in curves, adds environmental problems to the service needs of rail equipment. The FluiLub systems bring an end to the squealing noise of rails in narrow curves and efficiently reduce the wear of wheels and rails.

The FluiLub system is developed for using thixotropic lubricants with high solid contents, achieving an ideal combination of adhesion and flow-ability in a spray lubricant for high-stress applications. The system is installed mainly on the leading vehicle axle. Due to the lubricants used, the lubricant is transferred to the following rail heads or wheel flanges.

The system works with a special mixing distributor which divides the lubricant/air mixture precisely between the connected spray nozzles. The nozzles spray the lubricant onto the wheel flange or rail during a set spray time on both sides simultaneously.

The FluiLub pump is available in two versions, the Flui I and the Flui II. The Flui II is equipped with an internal pump for a space saving installation and comes in a pre-set output rate, where the output rate of the Flui I is adjustable.

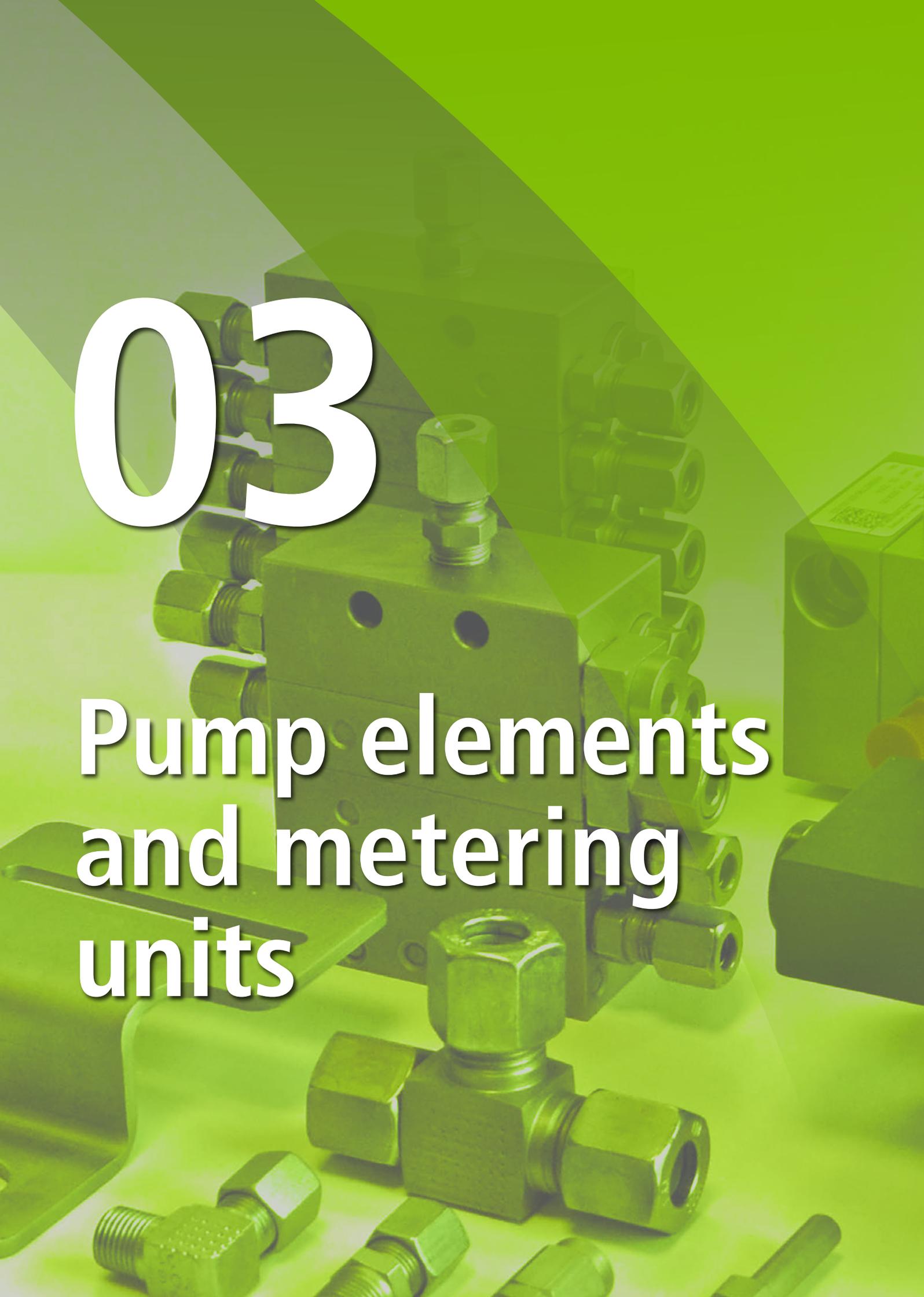
The reservoir is available in different capacities, ranging from 5.8 up to 13 liter. Additionally, the FluiLub pumps can be ordered without a filling plug, with an external filling plug or with different couplers at the front or the side of the cover and with different delivery rates. As an option an electrical min. or max. level switch is possible.

The FluiLub system is controlled by an electronic control unit which allows you to optimally adapt the system to the operating conditions. The optional curve sensor allows the curve-dependent activation of the system.

### Features and benefits

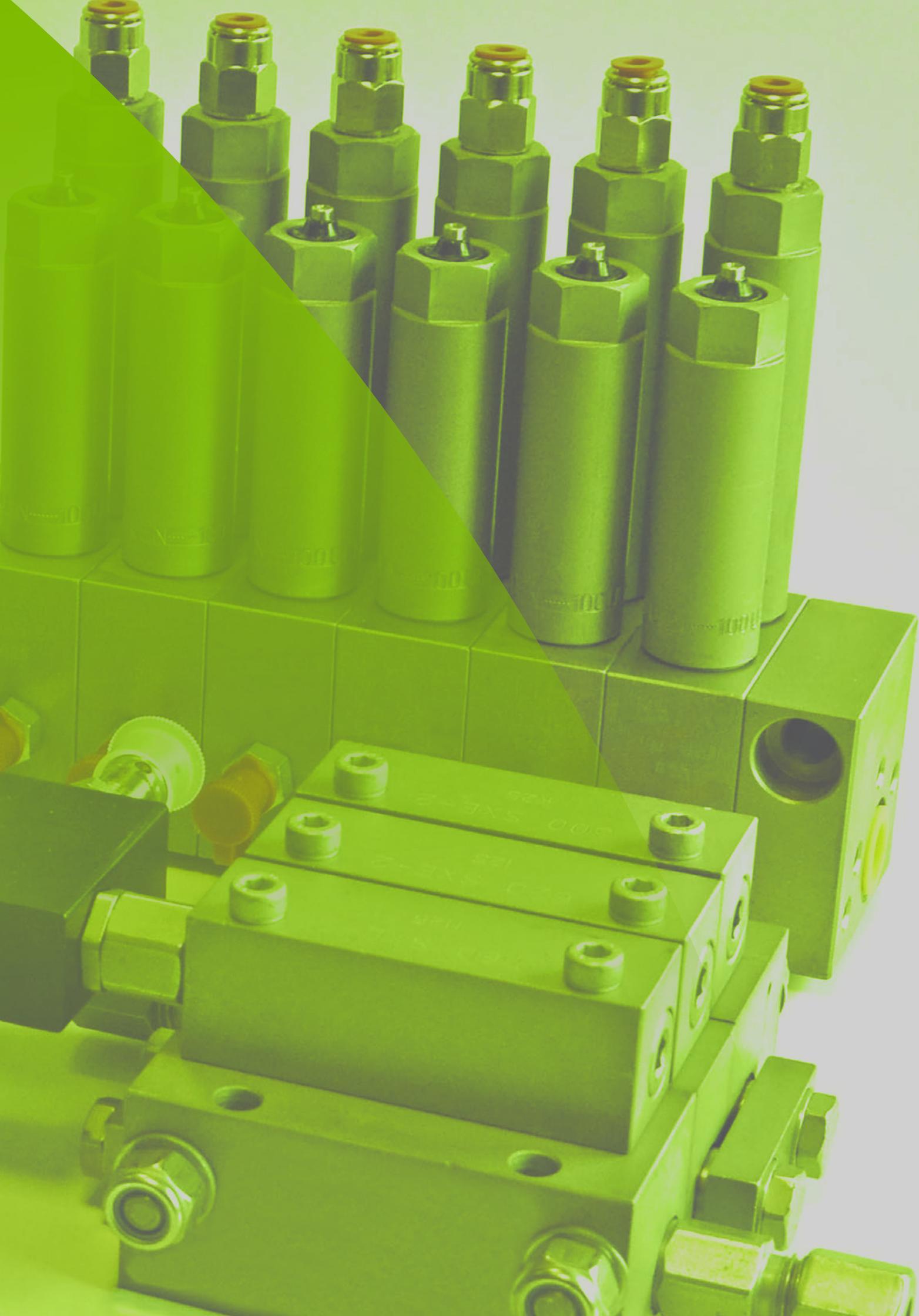
- + Extremely rugged pneumatic pump
- + Special design possible
- + Lubrication depending on time, distance or curves
- + Steady mixing of the lubricant
- + Spray nozzle with only one feed line

|                         |  |
|-------------------------|--|
| Function principle      | Pneumatic pump   |
| Outlets                 | 1  |
| Delivery volume Flui I  | 0,1 to 1 cm <sup>3</sup> /stroke                                     |
| Delivery volume Flui II | 0,1, 0,2 or 0,4 cm <sup>3</sup> /stroke                              |
| Lubricant               | Oil  |
| Operation temperature   | -30 up to +70 °C   |
| Reservoir sizes         | 5.8, 8, 10 and 13 l. Customized reservoir sizes available on request |
| Material                | Aluminium. Steel version upon request                                |
| Protection class        |  |



03

Pump elements  
and metering  
units



# Pump elements and metering units

## BEKA pump elements



The BEKA piston pumps need to be equipped with a pump element. These pump elements pass the lubricant volume to a distributor. They are suitable to work with oil and grease up to NLGI-2 and available with different line connections and dimensions.

The range PE 60 to PE 560 V elements supply the lubricant directly to the lubrication points or pass the volume to a distributor. Most of these elements have a maximum output pressure of max. 350 bar and are available with a pressure limiting valve, except for the 560 V which has 400 bar and isn't equipped with a pressure limiting valve.

| Pump Element | Output per stroke         |
|--------------|---------------------------|
| PE 60 PLV    | 0.06 cm <sup>3</sup>      |
| PE 120 PLV   | 0.12 cm <sup>3</sup>      |
| PE 120 V PLV | Max. 0.12 cm <sup>3</sup> |
| PE 170 PLV   | 0.17 cm <sup>3</sup>      |
| PE 250G PLV  | 0.25 cm <sup>3</sup>      |
| PE 560 V     | Max. 0,65 cm <sup>3</sup> |

|                         |  |
|-------------------------|--|
| Operating pressure      | Max. 200, 350 or 400 bar, depending on element |
| Pressure limiting valve | limited to 280 bar                             |
| Temperature range       | -35 up to 70 °C (-31 up to 158 °F)             |
| Lubricant               | Oil and grease up to NLGI-2                    |
| Material                | Steel  |

## Groeneveld-BEKA multi-line elements



For the Groeneveld-BEKA GM-series a selection of pumping elements is available to suit almost any need. Each pumping element has a push fit connector to provide an easy installation of the lubrication lines.

| Pump element color | Output per stroke      |
|--------------------|------------------------|
| Red                | 0.010 cm <sup>3</sup>  |
| Green              | 0.015 cm <sup>3</sup>  |
| Yellow             | 0.025 cm <sup>3</sup>  |
| Blue               | 0.040 cm <sup>3</sup>  |
| Grey               | 0.060 cm <sup>3</sup>  |
| Black              | 0.100 ccm <sup>3</sup> |

|                    |  |
|--------------------|--|
| Operating pressure | Max. 120 bar (1740 psi)                                  |
| Temperature range  | -20 up to +70 °C ( up to 158 °F), depending on lubricant |
| Lubricant          | Oil SEA80/90 up to NLGI-2 grease                         |
| Material           | Steel  |

## Groeneveld SingleLine metering units



Metering units developed to be used in combination with the Groeneveld SingleLine system, but also suitable to combine with other single-line lubrication systems for NLGI-0 grease.

The metering units are available with different outputs. If the largest dosing rate does not deliver sufficient grease to a grease point then it is possible to connect metering units together. The metering units are available in brass and stainless steel for 5mm lines, and brass for 6mm lines.

All metering units are to be combined with a distribution block.

| Metering unit | Output per cycle      |
|---------------|-----------------------|
| 0             | 0.025 cm <sup>3</sup> |
| 1             | 0.050 cm <sup>3</sup> |
| 2             | 0.100 cm <sup>3</sup> |
| 3             | 0.150 cm <sup>3</sup> |
| 4             | 0.200 cm <sup>3</sup> |

| Metering unit | Output per cycle      |
|---------------|-----------------------|
| 5             | 0.250 cm <sup>3</sup> |
| 6             | 0.300 cm <sup>3</sup> |
| 8             | 0.400 cm <sup>3</sup> |
| 8.5           | 0.700 cm <sup>3</sup> |
| 9             | 1.000 cm <sup>3</sup> |

|                       |   |
|-----------------------|---|
| Operating pressure    | Max. 100 bar  |
| Relief pressure       | According to relief pressure valve in the pump unit |
| Operating temperature | -25 up to +80 °C (-13 up to 176 °F)                 |
| Lubricant             | Fluid grease NLGI-00, Grease NLGI-0                 |
| Material              | Brass or stainless steel                            |

## BEKA BL-1 metering units



The BEKA BL-1 metering units for single line systems can be combined with up to 6 metering valves per manifold. Metering can be adjusted for each lubrication point at each distributor. The BL-1 has an adjustable metering volume of 0.2 up to 1.2 cm<sup>3</sup> per stroke and outlet. Up to 3 valves of the BL-1 can be bridges to get a higher output.

The injectors are equipped with a filling nipple which can be used to manually lubricate the connected points without a controlled metering quantity when there is no pressure connection. This would be an option for the first filling of the metering unit or hoses, for example after replacement.

A protective cap for the set screw as well as metering sleeves for quicker metering volume adjustment can be ordered optionally for both injector types.

|                    |  |
|--------------------|--|
| Operating pressure | 140 - 240 bar (3480 psi)                                   |
| Relief pressure    | As from < 50 bar (725 psi)                                 |
| Temperature range  | -26 up to 90 °C (-14 up to 194 °F), depending on lubricant |
| Lubricant          | Oil, fluid grease, grease up to NLGI-2                     |
| Material           | Steel, corrosion protected                                 |

# Pump elements and metering units

## Groeneveld Twin metering units



Various types of distribution blocks and metering units are available for the Groeneveld Twin lubrication systems. Each grease point can receive the correct dose of grease per greasing cycle by a careful choice of the type of metering unit.

The metering units are available with different grease outputs and are distinguished from each other using numbers. If the largest dosing rate does not deliver sufficient grease to a grease point then it is possible to connect metering units together.

All metering units are to be combined with a distribution block. There are two kinds of distribution blocks available, a flat distribution block with the metering units in one line made out of brass or stainless steel or a distribution block with threaded studs, fitted with a double row of metering units made out of brass or stainless steel. The distribution blocks are deliverable with 2 up to 22 ports.

| Metering unit | Output per cycle      |
|---------------|-----------------------|
| 0             | 0.025 cm <sup>3</sup> |
| 1             | 0.050 cm <sup>3</sup> |
| 2             | 0.100 cm <sup>3</sup> |
| 3             | 0.150 cm <sup>3</sup> |
| 4             | 0.200 cm <sup>3</sup> |
| 5             | 0.250 cm <sup>3</sup> |
| 6             | 0.300 cm <sup>3</sup> |

| Metering unit | Output per cycle      |
|---------------|-----------------------|
| 7             | 0.350 cm <sup>3</sup> |
| 8             | 0.400 cm <sup>3</sup> |
| 8.5           | 0.700 cm <sup>3</sup> |
| 9             | 1.000 cm <sup>3</sup> |
| 10            | 2.000 cm <sup>3</sup> |
| 11            | 4.000 cm <sup>3</sup> |

|                       |   |
|-----------------------|---|
| Operating pressure    | max. 250 bar (3625 psi)                             |
| Relief pressure       | According to relief pressure valve in the pump unit |
| Operating temperature | -20 up to +70 °C (-4 up to 158 °F)                  |
| Lubricant             | Grease NLGI-0 up to NLGI-2                          |
| Material              | Brass or stainless steel                            |

## Groeneveld progressive dividers

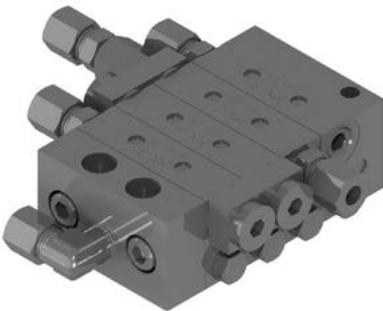


The Groeneveld progressive distributors are a modular type progressive metering device and suitable to be used as a main or secondary distributor. The metering outlets cover a metering volume of 0.025 up to 0.105 cm<sup>3</sup> per outlet. The combination of up to 4 outlets is possible.

| Type element             | Output per outlet                                  | Output per element    |
|--------------------------|--|-----------------------|
| Type 1                   | 0.045 cm <sup>3</sup>                              | 0.09 cm <sup>3</sup>  |
| Type 2                   | 0.075 cm <sup>3</sup>                              | 0.150 cm <sup>3</sup> |
| Type 3                   | 0.125 cm <sup>3</sup>                              | 0.250 cm <sup>3</sup> |
| Type 4                   | 0.200 cm <sup>3</sup>                              | 0.400 cm <sup>3</sup> |
| Type 6                   | 0.300 cm <sup>3</sup>                              | 0.600 cm <sup>3</sup> |
| No. of metering elements | Min. 3, max. 12<br>Excluding start and end element |                       |

|                    |  |
|--------------------|--|
| Operating pressure | 250 bar (725 PSI)                      |
| Revolutions        | Max. 180 revolutions/min               |
| Temperature range  | -20 up to 70 °C (-31 up to 176 °F)     |
| Lubricant          | Oil, fluid grease, grease up to NLGI-2 |
| Material           | Galvanized steel, zinc-nickel coated   |

## BEKA MX-F progressive distributor



The MX-F distributor is a modular type progressive metering device and is suitable to be used as a main or secondary distributor. The number and feed rate or the lubrication points can easily be changed as required at any time. The combination of up to 4 outlets is possible.

- + Available with proximity switch, pin detector for stroke monitoring, pressure indicator or line rupture monitoring.

| Type element             | Output per outlet                                | Output per element   |
|--------------------------|--|----------------------|
| MX-F 25                  | 0.025 cm <sup>3</sup>                            | 0.05 cm <sup>3</sup> |
| MX-F 45                  | 0.045 cm <sup>3</sup>                            | 0.09 cm <sup>3</sup> |
| MX-F 75                  | 0.075 cm <sup>3</sup>                            | 0.15 cm <sup>3</sup> |
| MX-F 105                 | 0.105 cm <sup>3</sup>                            | 0.21 cm <sup>3</sup> |
| No. of metering elements | Min. 3, max. 12. Excluding start and end element |                      |

|                    |  |
|--------------------|--|
| Operating pressure | Max. 300 bar                           |
| Revolutions        | Max. 180 revolutions/min               |
| Temperature range  | -30 up to 80 °C (-22 up to 176 °F)     |
| Lubricant          | Oil, fluid grease, grease up to NLGI-2 |
| Material           | Steel, zinc-nickel coated              |

# Pump elements and metering units

## BEKA LX-4 progressive distributor



The LX-4 distributor is a modular type progressive metering device and is suitable to be used as a main or secondary distributor. The number and feed rate or the lubrication points can easily be changed as required at any time. The combination of up to 4 outlets is possible. The LX-4 distributors are the alternative for the MX-F with a high metering flexibility.

+ Available with proximity switch.

| Type element             | Output per outlet                                | Output per element   |
|--------------------------|--|----------------------|
| LX-4 50                  | 0.05 cm <sup>3</sup>                             | 0.10 cm <sup>3</sup> |
| LX-4 100                 | 0.10 cm <sup>3</sup>                             | 0.20 cm <sup>3</sup> |
| LX-4 150                 | 0.15 cm <sup>3</sup>                             | 0.30 cm <sup>3</sup> |
| LX-4 200                 | 0.20 cm <sup>3</sup>                             | 0.40 cm <sup>3</sup> |
| No. of metering elements | Min. 3, max. 12. Excluding start and end element |                      |

|                    |  |
|--------------------|--|
| Operating pressure | Max. 300 bar                           |
| Revolutions        | Max. 180 revolutions/min               |
| Temperature range  | -30 up to 80 °C (-22 up to 176 °F)     |
| Lubricant          | Oil, fluid grease, grease up to NLGI-2 |
| Material           | Steel, zinc-nickel coated              |

## BEKA SXE progressive distributor



The SXE distributors are progressive metering devices build in a variable disk design. They are ideal to use as a main distributor. The number and feed rate or the lubrication points can easily be changed as required at any time by the use of dummy elements. Dummy elements can be replaced by metering elements if necessary without disassembling the whole distributor and lines. The metering outlets cover a metering volume of 0.10 up to 0.76 cm<sup>3</sup> per outlet. The combination of up to 4 outlets is possible.

Withing the SXE-range, the SXE-2R is delivered with a pressure makeup valve for return. This allows adding or removing secondary distributors to the SXE-2R without any reconstructions.

- + The SXE-2 is available with proximity switch, pin detector for stroke monitoring, solenoid valve and a pressure indicator.
- + The SXE-2R is available proximity switch, pin detector for stroke monitoring and solenoid valve.
- + The SXE-3 is available with proximity switch and pin detector for stroke monitoring and suitable for larger line diameters (G 3/8 inlet)

| Type element             | Output per outlet                                | Output per element   |
|--------------------------|--|----------------------|
| 000 SXE-2/3              | Dummy element                                    |                      |
| 100 SXE-2 (SXE-2/3)      | 0.10 cm <sup>3</sup>                             | 0.20 cm <sup>3</sup> |
| 150 SXE-2 (SXE-2/3)      | 0.15 cm <sup>3</sup>                             | 0.30 cm <sup>3</sup> |
| 220 SXE-2 (SXE-2/3)      | 0.22 cm <sup>3</sup>                             | 0.44 cm <sup>3</sup> |
| 300 SXE-2 (SXE-2/3)      | 0.30 cm <sup>3</sup>                             | 0.60 cm <sup>3</sup> |
| 400 SXE-2 (SXE-2/3)      | 0.40 cm <sup>3</sup>                             | 0.80 cm <sup>3</sup> |
| 500 SXE-2 (SXE-2/3)      | 0.50 cm <sup>3</sup>                             | 1.00 cm <sup>3</sup> |
| 620 SXE-2 (SXE-2/3)      | 0.62 cm <sup>3</sup>                             | 1.24 cm <sup>3</sup> |
| 760 SXE-2 (SXE-2/3)      | 0.76 cm <sup>3</sup>                             | 1.52 cm <sup>3</sup> |
| No. of metering elements | Min. 3, max. 12. Excluding start and end element |                      |

|                    |  |
|--------------------|--|
| Operating pressure | Max. 300 bar                           |
| Revolutions        | Max. 180 revolutions/min               |
| Temperature range  | -30 up to 80 °C (-22 up to 176 °F)     |
| Lubricant          | Oil, fluid grease, grease up to NLGI-2 |
| Material           | Steel, zinc-nickel coated              |



**04**

**Accessories**



# Accessories

## Lubrication brushes and felts



Different types of brushes are available to meet the different requirements of applications as lubrication systems for chains or surface wetting. Brushes do not only lubricate the contact points of the links, but rather the entire chain. Brushes are available in different sizes to suit different chain dimensions.

Additionally lubrication felts can be used to lubricate chains, especially short-link chains. Chains and sprockets will remain in top condition due to a perfectly controlled lubrication process. Lubricant is applied to the chain with a felt pad. The applicator felt pad can be replaced separately.

## Oil reservoirs



Our multi-line oil lubrication systems offer a variety of high-strength polyethylene reservoirs for extended uptime. Available in 4.2 and 7.2 liter capacities, these reservoirs ensure a perfect fit for your application's lubrication needs.

An integrated sieve effectively filters contaminants from the oil, protecting your equipment. Each reservoir includes a mounting bracket for simple installation and comes with different hose connections for easy integration with your lubrication system. Manufactured from durable polyethylene, these reservoirs resist cracking, corrosion, and harsh environments.

## Grease guns



Whether you're maintaining a single machine or overseeing a complex lubrication network, our selection of grease guns provides the perfect tool for the job.

For direct application, we offer both manual and battery-powered grease guns, allowing you to choose the option that best suits your needs and working environment.

All our grease guns are compatible with various types of grease, so you can be sure to find one that works seamlessly with your chosen lubricant.

## Filler pumps



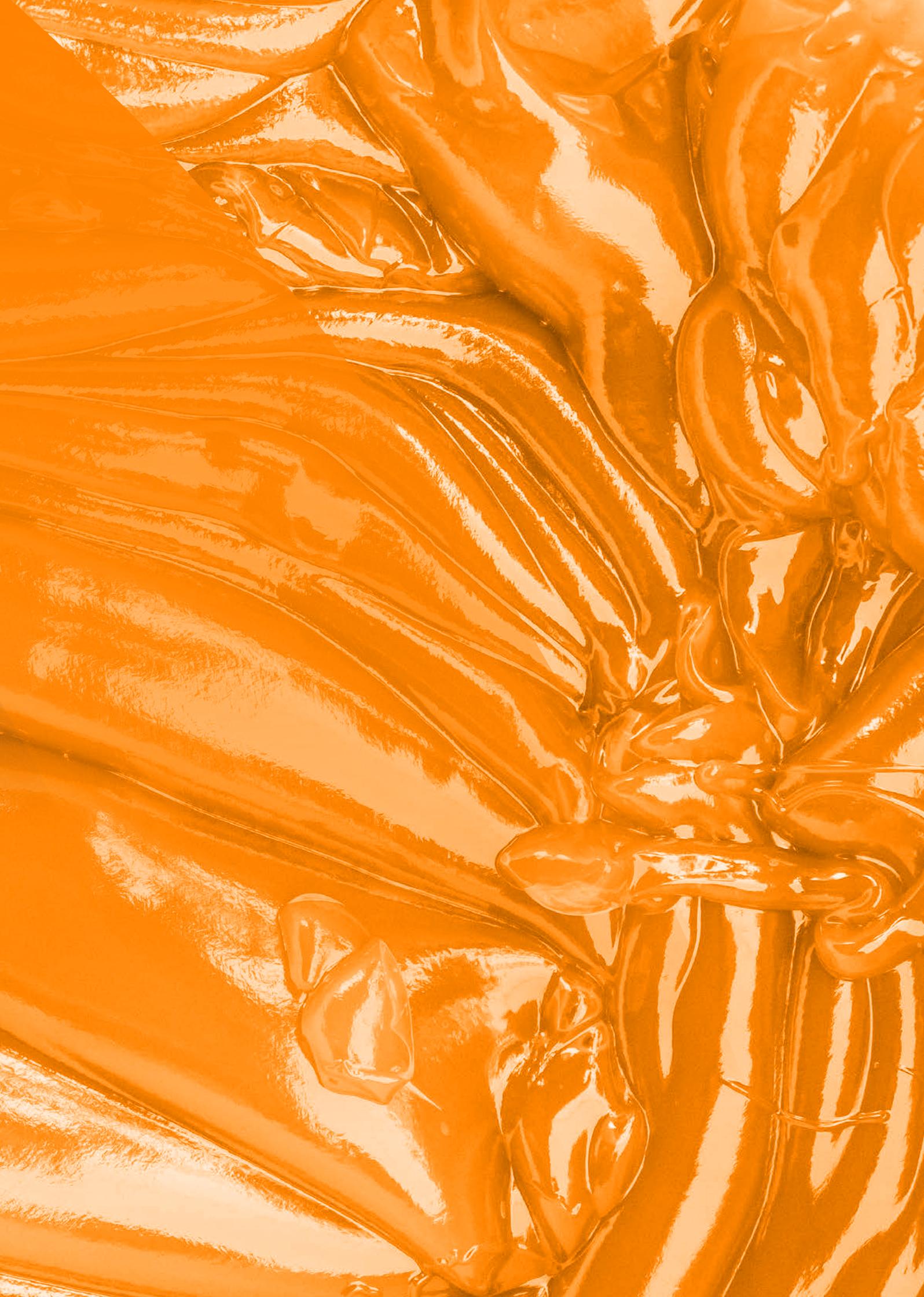
Keeping your automatic lubrication system running smoothly requires occasional refilling of the reservoir. Our high-capacity filler pumps offer a convenient and mess-free solution.

Designed to work seamlessly with standard grease barrels, these pumps allow you to quickly and efficiently replenish your lubrication system's reservoir. This eliminates the need for manual scooping or messy transfers, saving you time and ensuring a clean work environment. With compatible fittings for easy connection, the filler pump integrates effortlessly into your lubrication maintenance routine.

The background is a vibrant orange color with a dynamic, liquid-like splash effect. A darker, semi-transparent orange diagonal shape cuts across the upper left portion of the frame. The overall aesthetic is clean and modern, typical of a technical or industrial presentation.

# 05

# Lubricants



# Lubricants

## GREENLUBE EP-0



GreenLube EP-0 is a high quality multipurpose grease that can be used in a variety of applications, including industrial and automotive. It is made from lithium thickened mineral oil and contains antioxidants, corrosion inhibitors and EP/AW additives. This makes it a versatile product that can handle a variety of conditions.

- + Mechanical stability
- + Load carrying capacity
- + Corrosion protection

|                           |                        |                        |                  |
|---------------------------|------------------------|------------------------|------------------|
| NLGI Grade                | NLGI-0                 | Operating temperatures | -30 °C to 110 °C |
| Thickener                 | Lithium                | Dropping point         | > 190 °C         |
| Base fluid                | Mineral oil            | Available in           | 1.7 kg cartridge |
| Base Oil Viscosity (40°C) | 200 mm <sup>2</sup> /s |                        |                  |

## GREENLUBE EP-0 LI-FREE



GreenLube EP-0 Li-Free is a lithium-free grease that is made from mineral oil and contains antioxidants, corrosion inhibitors, and EP/AW additives. The grease is designed for light and medium-loaded bearings in wet and corrosive environments. It has excellent water resistance and adhesion, making it suitable for a wide range of industrial and automotive applications. The product is also suitable for use in gearboxes.

- + Enhanced functionality under wet conditions
- + Excellent lubricity at low temperatures
- + Thickener approved for food grade and eco greases

|                            |                        |                   |   |
|----------------------------|------------------------|-------------------|---|
| NLGI Grade                 | NLGI-0                 | Temperature range | -30 °C to +120 °C                                 |
| Thickener                  | Anhydrous Calcium      | Dropping point    | > 140 °C  |
| Base fluid                 | Mineral oil            | Available in      | 18 kg plastic or steel, 50 and 180 kg steel drums |
| Base oil viscosity at 40°C | 220 mm <sup>2</sup> /s |                   |   |

## GREENLUBE EP-2



GreenLube EP-2 is a high quality grease that is made from lithium thickened mineral oil. It contains antioxidants, corrosion inhibitors, and EP/AW additives which make it ideal for use in heavily loaded bearings and wet environments. It can be used in a variety of industrial and automotive applications and is suitable for a wide range of plain and rolling bearings.

- + Mechanical stability
- + Load carrying capacity
- + Corrosion protection

|                           |                        |                        |                                  |
|---------------------------|------------------------|------------------------|----------------------------------|
| NLGI Grade                | NLGI-2                 | Operating temperatures | -25 °C to 120 °C                 |
| Thickener                 | Lithium                | Dropping point         | > 200 °C                         |
| Base fluid                | Mineral oil            | Available in           | 120 ml, 1.7 and 2.7 kg cartridge |
| Base Oil Viscosity (40°C) | 200 mm <sup>2</sup> /s |                        |                                  |

## GREENLUBE EP-2 LI-FREE



GreenLube EP-2 Li-Free is a lithium-free grease that is made from mineral oil and contains antioxidants, corrosion inhibitors, and EP/AW additives. The grease is designed for medium-loaded bearings in wet and corrosive environments. It has excellent water resistance and adhesion, making it suitable for a wide range of industrial and automotive applications.

- + Enhanced functionality under wet conditions
- + Excellent lubricity at low temperatures
- + Thickener approved for food grade and eco greases

|                            |                        |                   |  |
|----------------------------|------------------------|-------------------|--|
| NLGI Grade                 | NLGI-2                 | Temperature range | -30 °C to +130 °C  |
| Thickener                  | Anhydrous Calcium      | Dropping point    | > 140 °C   |
| Base fluid                 | Mineral oil            | Available in      | 400 gr. cartridge, 18 kg plastic or steel, 50 and 180 kg steel drums |
| Base oil viscosity at 40°C | 220 mm <sup>2</sup> /s |                   |  |

# Lubricants

## BEKA 10 BIO GREASE



BEKA 10 BIO grease is a high-performance biodegradable grease made from synthetic ester base oils. It is perfectly suitable for the lubrication of roller and slide bearings at normal to increased bearing temperatures and for use in loss lube points, where excess grease and grease displaced during relubrication can get into the environment. BEKA 10 BIO grease has excellent lubricating properties, including strong adhesion, oxidation resistance, work stability, and very good corrosion protection at a good water resistance.

- + Biodegradable
- + 2013 VGP compliant

|                           |                        |                        |                            |
|---------------------------|------------------------|------------------------|----------------------------|
| NLGI Grade                | NLGI-2                 | Operating temperatures | -35°C to 120 °C            |
| Thickener                 | Lithium                | Dropping point         | > 185 °C                   |
| Base fluid                | Ester                  | Available in           | 400 gr. cartridge – Type S |
| Base Oil Viscosity (40°C) | 100 mm <sup>2</sup> /s |                        |                            |

## BEKA 20 UNI GREASE



BEKA 20 UNI grease is a high-performance grease suitable for lubrication of roller and slide bearings, gear racks, couplings, slideways, ball and cross joints, and chains. It is particularly suitable for complete lubrication of construction machines. BEKA 20 UNI grease is compatible with most sealing materials and is waterproof. It offers excellent wear protection, reducing machine downtime. It also provides corrosion protection even in the presence of water.

- + Good delivery characteristics
- + Water resistance

|                           |                        |                        |                            |
|---------------------------|------------------------|------------------------|----------------------------|
| NLGI Grade                | NLGI-2                 | Operating temperatures | -30°C to 150 °C            |
| Thickener                 | Lithium                | Dropping point         | > 170 °C                   |
| Base fluid                | Mineral oil            | Available in           | 400 gr. cartridge – Type S |
| Base Oil Viscosity (40°C) | 200 mm <sup>2</sup> /s |                        |                            |

## BEKA CHISEL PASTE



BEKA Chisel paste is a copper-colored special paste based on mineral oil with aluminum complex soap and solid lubricants. The BEKA Chisel paste excels in its high pressure absorption capacity, good corrosion protection, water resistance, wear protection and stability to ageing. It is highly recommended for lubrication of hydraulic hammers.

- + Dry lubricant up to 1100°C
- + High pressure absorption capacity
- + Stable to ageing

|                           |                        |                        |                            |
|---------------------------|------------------------|------------------------|----------------------------|
| NLGI Grade                | NLGI-2                 | Operating temperatures | -20°C to 1100 °C           |
| Thickener                 | Aluminum complex       | Dropping point         | > 250 °C                   |
| Base fluid                | Mineral oil            | Available in           | 400 gr. cartridge – Type S |
| Base Oil Viscosity (40°C) | 350 mm <sup>2</sup> /s |                        |                            |

## BEKA 30 LT GREASE



BEKA 30 LT grease is a high-performance grease made from synthetic base oil with lithium complex soap. It is perfect for lubrication of high-pressure roller and slide bearings in extreme cold environments. BEKA 30 LT grease excels in providing friction reduction, wear protection, work stability, oxidation resistance, water resistance, and good corrosion protection. It is highly recommended for use in central lubrication systems at low temperatures.

- + Very wide temperature range, especially low temperatures
- + Suitable for high pressure applications

|                           |                       |                        |                            |
|---------------------------|-----------------------|------------------------|----------------------------|
| NLGI Grade                | NLGI-00               | Operating temperatures | -50°C to 150 °C            |
| Thickener                 | Lithium complex       | Dropping point         | > 250 °C                   |
| Base fluid                | Synthetic oil         | Available in           | 400 gr. cartridge – Type S |
| Base Oil Viscosity (40°C) | 30 mm <sup>2</sup> /s |                        |                            |

# Lubricants

## GreenLube ZW-0



GreenLube ZW-0 is a high performance grease that is ideal for use in heavily loaded industrial applications where water wash is a concern. The grease is made from lithium-calcium thickened mineral oil and contains antioxidants, corrosion inhibitors, and EP additives, which make it suitable for lubrication of slow moving and heavily loaded bearings. It is also suitable for heavy-duty vehicles working outdoors in wet and dirty conditions.

- + Water wash resistance
- + Very suitable for use in outdoors, wet and dirty conditions

|                           |                        |                        |   |
|---------------------------|------------------------|------------------------|---|
| NLGI Grade                | NLGI-0                 | Operating temperatures | -20°C to 120 °C   |
| Thickener                 | Lithium calcium        | Dropping point         | > 170 °C  |
| Base fluid                | Mineral oil            | Available in           | 1.7 kg cartridge, 18 kg plastic or steel, 50 and 180 kg steel drums |
| Base Oil Viscosity (40°C) | 650 mm <sup>2</sup> /s |                        |   |

## GreenLube HT-OT-0



GreenLube HT-OT-0 is a high performance grease made from mineral oil with antioxidants and corrosion inhibitors. It is specially designed for heavily loaded applications and extreme environments, making it ideal for use in open gears and slow-moving applications. The Alassca complex thickened structure of the grease provides superior wear protection and reduces friction, ensuring the long-term performance and reliability of your machinery.

- + Water resistance
- + Very good adhesion
- + Good corrosion protection

|                           |                        |                        |   |
|---------------------------|------------------------|------------------------|---|
| NLGI Grade                | NLGI-0                 | Operating temperatures | -20°C to 140 °C                                   |
| Thickener                 | Alassca complex        | Dropping point         | > 230 °C  |
| Base fluid                | Mineral oil            | Available in           | 18 kg plastic or steel, 50 and 180 kg steel drums |
| Base Oil Viscosity (40°C) | 850 mm <sup>2</sup> /s |                        |   |

## GreenLube FM-0



GreenLube FM-0 is a high performance universal grease for all food industry applications. The grease is made from synthetic oil and anhydrous calcium thickener, and it contains corrosion inhibitors and polymers. This makes it suitable for lubrication in applications where there is the possibility of incidental or accidental food contact.

- + Very good adhesion
- + Water resistance
- + Suitable for incidental food contact
- + NSF Certified

|                           |                        |                        |                            |
|---------------------------|------------------------|------------------------|----------------------------|
| NLGI Grade                | NLGI-0                 | Operating temperatures | -35°C to 90 °C             |
| Thickener                 | Anhydrous Calcium      | Dropping point         | > 130 °C                   |
| Base fluid                | Synthetic oil          | Available in           | 18 kg plastic, 50 kg steel |
| Base Oil Viscosity (40°C) | 610 mm <sup>2</sup> /s |                        |                            |

## BEKA FluiTrack WFL27 PLUS



BEKA FluiTrack WFL27PLUS is a high-performance semi-synthetic grease specially formulated for wheel flange lubrication systems. It is biodegradable and free of harmful substances. It is suitable for lubricating wheel flanges of rail vehicles and other applications. It can be pumped through automatic lubrication systems even at temperatures as low as -30°C. Its excellent viscosity index ensures minimal viscosity changes at temperature fluctuations. It has high temperature resistance to prevent leakage from lubrication nozzles.

- + Especially constructed for wheel flange lubrication
- + Biodegradable

|                           |                         |                        |                                |
|---------------------------|-------------------------|------------------------|--------------------------------|
| NLGI Grade                | NLGI-00                 | Operating temperatures | -30°C to 130 °C                |
| Thickener                 | Hydroxystearate lithium | Dropping point         | > 300 °C                       |
| Base fluid                | Ester                   | Available in           | 4.6, 18 and 180 kg steel drums |
| Base Oil Viscosity (40°C) | 50 mm <sup>2</sup> /s   |                        |                                |

The background features a golden liquid splash on the right side, with several droplets falling and creating concentric ripples on a light yellow surface. A grey diagonal stripe runs from the top-left corner towards the bottom-right, partially overlapping the text.

06

Fluid Control  
Systems



# Fluid Control Systems

## Fluid control systems

The modern mobile machinery landscape is characterized by 24/7 operations, placing intense operational pressure on vehicles and machinery. Companies are constantly striving for maximum reliability and utilization of their fleets. This includes managing an increasing brand mix with diverse technical specifications, even within a single fleet.

Automated fluid control systems offer a solution to these challenges, ensuring optimal performance and efficiency in your fleet.

Fluid control systems offer a range of benefits for both engine and hydraulic oil, ensuring optimal performance and efficiency in your vehicles, whether they're powerful reach trucks or heavy-duty machinery.

Benefits of Fluid Control Systems:

- **Automatically top up engine oil:** Eliminate the risk of under-lubrication and engine damage with automatic oil top-up. These systems monitor oil levels electronically and add fresh oil as needed, ensuring consistent lubrication and extending engine life – critical for 24/7 operations.
- **Improved oil cleanliness:** Fluid control systems can integrate filtration units, removing contaminants and keeping your engine or hydraulic oil clean. This reduces wear and tear on critical components, leading to smoother operation and extended equipment lifespan, even under intense operational pressure. Clean oil also leads to better energy transfer and reduced friction within the engine and hydraulic systems. This translates to improved fuel economy and overall operational efficiency, a major benefit in today's cost-conscious environment.
- **Efficient hydraulic power transfer:** hydraulic hose reels ensure a consistent and reliable supply of hydraulic power from a fixed point to moving parts on machinery, such as those found on reach trucks or truck mounted cranes. This optimized performance is essential for smooth operation and precise control.

## Groeneveld Oilmaster



The Groeneveld Oilmaster is an innovative, automatic oil management system designed to simplify engine maintenance and ensure optimal oil levels at all times. This intelligent system automatically checks your engine's oil level based on its specific needs and seamlessly tops it up from its integrated reservoir whenever necessary. The result? Always the perfect oil level, every time.

The intelligent control unit acts as the brain of the system, monitoring all actions and triggering oil top-ups when necessary. Highly accurate sensors detect low oil levels in the engine sump, prompting the control unit to initiate a pump cycle. The tilt sensor guarantees accurate oil level measurements only when the engine is level and oil has settled.

During each cycle, a precisely measured 0.5 liter of oil is transferred from the main reservoir to the engine. This consistent dosage ensures accurate oil level correction, preventing both underfilling and overfilling.

Oilmaster comes in a range of main reservoir sizes of 6, 12, 15 and 19 liters to accommodate various vehicle needs. For heavy-duty applications, a robust 15-liter aluminum tank is also available. Customization to meet specific OEM requirements is possible as well.

The CAN-BUS Interface enables seamless integration with your vehicle's existing data network. To top it up, the USB diagnosis connector allows for easy system diagnostics and configuration updates.

### Applications

- Buses
- Trucks
- Construction machinery
- Container handling equipment
- Stationary Engines

Oilmaster is not only convenient, it's also designed for safety. Our systems can be seamlessly integrated with hybrid vehicles and machines to ensure the safety of technicians working with high-voltage applications.

### Features and benefits

- + Eliminate manual oil checks and top-ups, freeing up your team for more critical tasks.
- + Maintain the perfect oil level, preventing engine damage and extending its lifespan.
- + Minimize unexpected repairs and maintenance caused by incorrect oil levels, saving time and money.
- + Reduce oil consumption, waste, and the risk of leaks for a smaller environmental footprint.
- + Maintain optimal oil levels to meet increasingly strict emission regulations.

|                       |                                       |
|-----------------------|---------------------------------------|
| Function principle    |                                       |
| Outlets               | 1                                     |
| Delivery volume       | 0.5 liter                             |
| Lubricant             | Oil                                   |
| Operation temperature | -25°C up to +80 °C (-13 up to 176 °F) |
| Operating pressure    |                                       |
| Reservoir             | 6; 12; 15 or 19 liter                 |
| Supply voltage        | 12 or 24 Vdc                          |
| Protection class      | IP67 (pump unit)                      |
| Supply voltage        | 12; 24 V DC or 100 up to 250 V AC     |
| Protection class      | IP67                                  |

# Fluid Control Systems

## Groeneveld Filtakleen



The Filtakleen is a revolutionary bypass filtration system designed to safeguard your valuable equipment. This innovative system works alongside your existing full-flow filter, capturing even the finest particles that can cause wear, oil degradation, and corrosion.

Filtakleen continuously filters a portion of your system's oil (typically 10%), providing significantly finer filtration than the main filter. This not only protects your equipment but also extends the life of both the oil and your primary filter.

The Filtakleen system features a durable, one-piece anodized aluminum housing with a powder coat finish for exceptional corrosion resistance in any environment. The single high-tensile bolt lid ensures quick and easy filter changes, while the quad-ring seal guarantees leak-proof operation. They come in different sizes, varying from 8 to 72 liter for engines and 900 or 2000 liters for hydraulics.

The filter cartridge, constructed from pure cellulose fiber and housed in a nylon stocking, effectively filters a wide range of oils with viscosities ranging from 9 to 220 cSt. Additionally, Filtakleen is compatible with biofuels and dielectric fluids.

For hydraulic oil applications, Filtakleen utilizes a pressure-reducing manifold that adjusts pressure to the optimal level for filtration. This manifold also features a factory-set pressure relief valve and a test point for fluid monitoring equipment.

### Applications

- Buses
- Trucks
- Construction machinery
- Container handling equipment
- Industrial applications

Engine oil systems operate at lower pressures, eliminating the need for the pressure-reducing manifold. The standard operating pressure of the Filtakleen filter for engine oil applications is approximately 5 bar (72.52 psi).

### Features and benefits

- + Enhanced Oil Performance
- + Superior Filtration
- + Prevents Corrosion
- + Reduced Wear
- + Neutralizes Acidity

| Product                           | Engines                |                         |                         |                         | Hydraulics              |                         |
|-----------------------------------|------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                   | Bantam                 | Light                   | Heavy                   | Maxi                    | Heavy                   | Maxi                    |
| Sump/Tank capacity                | 8 litre                | 14 litre                | 36 litre                | 72 litre                | 900 litre               | 2000 litre              |
| Flow rate                         | 1.5 l/min              | 3 l/min                 | 4.5 l/min               | 6 l/min                 | 4.5 l/min               | 6 l/min                 |
| Inlet pressure                    | 4.45 bar (65 psi)      |                         |                         |                         | 350 bar (5000 psi)      |                         |
| Internal pressure                 | 4.45 bar (65 psi)      |                         |                         |                         |                         |                         |
| Surface area filtration cartridge | 80,000 cm <sup>2</sup> | 130,000 cm <sup>2</sup> | 490,000 cm <sup>2</sup> | 524,000 cm <sup>2</sup> | 490,000 cm <sup>2</sup> | 524,000 cm <sup>2</sup> |
| Max oil temperature <sup>1</sup>  | 79 °C (174 °F)         |                         |                         |                         |                         |                         |
| Viscosity range                   | 9-220 cSt              |                         |                         |                         |                         |                         |

<sup>1</sup> Recommended maximum operating temperature. Filter can operate at higher temperatures but filter life may be affected

## Groeneveld Tecreel



Groeneveld-BEKA's Tecreel reels are built tough for smooth hydraulic power delivery in applications that require constant hose adjustments. These self-retracting reels keep hoses taut and organized, eliminating clutter and improving safety for cranes, telehandlers, lift trucks, and more.

An automatic rewind spring ensures effortless operation by keeping hoses neatly coiled when not in use. Choose from various Tecreel models with 2 or 4 ports, or opt for a multi-function option. All reels feature 2 or 4 port swivels for a complete 180° range of motion, simplifying even the most complex maneuvers.

Crafted from sturdy steel and protected by a wear-resistant epoxy powder coat, Tecreel reels are built to withstand demanding environments. They require minimal maintenance, keeping your operation running smoothly.

Groeneveld-BEKA offers Tecreel reels with or without hoses, allowing you to choose the configuration that best suits your needs. Select from various hose sizes and lengths for optimal performance. Tecreel reels can be mounted on either the left or right-hand side, and swivels come in 2-port or 4-port options with a variety of adapter configurations. Standard colors include red and orange, but custom colors and marine-grade protection are available upon request.

Three Tecreel types are available in six sizes, ranging from 31.8 cm to 60 cm in diameter. All models offer left- or right-hand mounting and come in various configurations for flange diameters, hose bores, and pull-off lengths.

### Applications

- Forklifts
- Counterbalance trucks
- Reach stackers
- Cranes (hydraulic attachments)
- Truck-mounted cranes
- Telehandlers
- Container cranes
- Above-ground mining

### Features and benefits

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

|                         | 375 Twin-port  | 4-port   | Multi-function                                   |
|-------------------------|--|--|--|
| Max. operating pressure | 300 bar (4351 psi)   | 210 bar (3045 psi)   | 300 bar (4351 psi)                               |
| Hoses                   | Twin bore 1/4", 5/16", 3/8" or 1/2" siamese hose with various end fittings | Twin bore 1/4" or 5/16" Siamese hose with various end fittings | Available with 2 hoses 3/8" or 5/16" and 6 wires |
| Inlet Ports             | 3/8" BSP   | 1/4" BSP   | 3/8" BSP   |
| Hose length             | 2.7 to 11 meter  | 3.5 to 6 meter   | 2.7 to 9.3 meter                                 |
| Temp. range             | -30 °C to +60 °C (-22 up to 140 °F)  |  |  |
| Max. voltage            | -  | -  | 80V, max. 4.5A                                   |

**07**

**Sales and Service**



# Sales and service

Experience peace of mind with our comprehensive approach to supporting your needs. We don't just sell quality products – we ensure you get the most out of them. Groeneveld-BEKA has facilities across the globe to provide you with the products and services you need, dedicated field service technicians in all areas of the world and dedicated distributors to support the products we sell.

- **Expert local sales team:** Our team of knowledgeable professionals understand your specific needs and recommend the perfect product for your applications.
- **Knowledgeable distributors:** Our network of authorized distributors puts our expert salespeople right in your backyard. They understand your local market and applications, offering personalized guidance for product selection.
- **Dedicated customer service:** Our friendly and knowledgeable customer service team is available to answer your questions, from initial product inquiries to ongoing application support.

## Peace of mind with quality and warranty

We stand behind the quality of our products. Every item is meticulously crafted and rigorously tested to ensure exceptional performance and durability. For added peace of mind, your purchase is backed by a comprehensive warranty. Should you require replacement parts or have any warranty-related concerns, our customer service team and authorized distributors are readily available to assist you.

## Your trusted partner for long-term success

With Groeneveld-BEKA, you're not just buying a product, you're gaining a trusted partner. Our commitment extends beyond the initial sale. We offer ongoing support to ensure you have everything you need to thrive.

Contact us today and experience the difference – quality products, exceptional service, and unwavering support, every step of the way.

