GROENEVELD-BEKA
LUBRICATION SYSTEMS BY TIMKEN

Grease lubrication pump

BEKA-ONE

Article no. 10182139, 10176032

Issued 04/2023

Original operating and assembly manual

00-1025495OM01de

Contents

1. Technical data

General:

Lubricant volume: . . . . . 120 ml
Lubricant: . . . . . oil ISO VG = 32 - 680 mm²/s
. . . . . grease up to NLGI 2
. . . . . (also with solids content)
Lubricant reservoir . . . . . .follower plate reservoir
. . . . . .cartridge
Pump type: . . . . . .piston pump
Metered volume: . . . . . .0,24 ml/stroke)
No. of outlets: 1
Connection: . . . . . external thread R1/4
Runtime per filling: . . . . . .1-24 months
Operating pressure: . . . . . max. 20 bar
Temperature range: . . . . . -20°C to +60°C
Dimensions: . . . . . 86 x 179 mm (D x H)
Weight (without batteries): . . . . . version w follower plate reservoir, w/o lubricant filling. . . . ca. 520 g
. . . . . version for cartridge but w/o cartridge. . . . . ca. 470 g
Control type: . . . . . processor controlled
Pressure monitoring: . . . . . electronic + LED display
Operational voltage: . . . . . 3,0 V depending on the used batteries
. . . . . .(see chapter 9.4 Insert batteries)
Battery type: . . . . . .2x AA (not included in the scope of delivery)
Degree of protection: IP67
Sound pressure level: . . . . . < 70 db/A)
Supply of progressive distributors: . . . . . NO
Order no. w/o follow-up piston reservoir, w/o batteries 10182139
Order no. w/o cartridge, w/o batteries: 10176032

The BEKA-ONE grease lubrication pump is hereinafter referred to as the device.

2. Applicable documents

Safety data sheet of the lubricant: . . . . . (for all lubricants that
. . . . . .should be contained in the expansion bellow)

3. General safety instructions

All persons entrusted with assembly, commissioning , maintenance and operation must carefully read this operating manual before assembly and commissioning of the device on the machine! Furthermore this manual must always be available at the site of operation.

The following contains basic information that must be observed for operation and maintenance.

3.1 Safety instructions

Observe the general safety instructions in this main chapter but also the special safety instructions in other chapters of this operating and assembly manual.

Warning of electrical voltage.

Safety instructions which might cause hazards to persons in case of non-observance are marked with the general danger symbol.

This symbol warns of hot surfaces.

Warning of suspended loads.

Warning of material damage due to electrostatic discharge! Marks potential risks which may result in material damage if not avoided.

Attention! This heading is used when if improper or general non-observance of the operating manual, work instructions, specified workflows and the like might result in damage of the device.

Note! We use this term to point out particular details.

Strictly observe any instructions that are directly attached to the device and keep them in readable condition !

3.2 Personnnel qualification and training

The personnel for operation, maintenance, inspection and assembly must have the appropriate qualification for this work. The operator must clearly define competence, responsibilites and supervision of the personnel. In case the personnel does not have the necessary knowledge, they have to be trained and instructed accordingly. The operator is obliged to ensure that the personnel fully understands the contents of this user information.

3.3 Hazards in case of non-observance of the safety instructions

Non-observance of the safety instructions can result in hazards to persons, the environment, and the device. Non-observance of the safety instructions may further result in the loss of any liability claims. In detail, non-observance can entail the following hazards:

- Failure of important device functions.
- Failure of prescribed methods for maintenance and repair.
- Danger to persons by electrical, mechanical and chemical effects.
- Danger to the environment by leakage of hazardous substances.

3.4 Obligations of the operator / user

- If movable, rotating, hot or cold machine parts bear risks, the customer must protect these parts against contact. This protection must not be removed.
- Drain any leakages of hazardous substances in a way that no risks for persons or the environment arise. Please also observe the data sheets or safety data sheets of the respective manufacturers.
- Keep to all legal provisions.
- Exclude any hazards due to electrical energy.
- The examinations of pipes or hoses for safe provision, use, proper assembly and function have to be carried out according to regionally applicable directives. Inspection intervals must not be exceeded.
- Replace defective pipes and hoses immediately and professionally.
- Hydraulic hoses and polyamide pipes are subject to a natural aging process and thus have to be exchanged in regular intervals according to the manufacturer‘s specifications.
- Provide a safety data sheet of the currently used lubricant at the device.
- Observe the generally applicable Ordinance on Hazardous Substances in its latest version.

3.5 Safety instructions for maintenance, inspection and assembly

All **maintenance**, **inspection** and **assembly work** may **only** be carried out **by qualified personnel** who is sufficiently informed by thorough reading of the user information.

Generally any **work** at the device may only be done at **complete standstill** and in **pressureless and disconnected condition.** Use appropriate **personal protective equipment** (goggles among others). The shutdown procedure of the device as described in the operating manual must be strictly followed.

Secure the device against intentional or unintentional recommissioning during maintenance and repair. Put all safety and protection arrangements back in place again immediately when the work is finished.

Dispose of environmentally hazardous media professionally and in accordance to the relevant official provisions. Clean **polluted** and **contaminated surfaces** before maintenance. Wear protective equipment to that purpose. Observe the lubricant manufacturer's data sheets and safety data sheets, respectively the data sheets provided by the manufacturers of used auxiliaries and working materials.

Check the surface temperature of the device as a possible heat transfer bears the **risk of burns**. Wear heat-resistant protective gloves!

Open light and **fire** are strictly forbidden during any maintenance, inspection and repair **due to fire hazard**.

3.6 Unauthorized modification and production of spare parts

Modification, repair and alterations of the device are only accepted after consultation with the manufacturer. Original spare parts and authorized accessories from the manufacturer contribute to safety. The use of other parts can result in the loss of any liabilities for the resulting consequences. Groeneveld-BEKA will not assume liability for parts retrofit by the operator.

3.7 Inadmissible modes of operation

Operational safety of the device is only guaranteed for appropriate use as stated in the operating manual. Never exceed of fall below the limit values as stated in the technical data.

3.8 Electrostatic discharge

Avoid electrostatic discharge! There are electrical components integrated into the devices which you can destroy by electrostatic discharge when you touch them. Observe the safety precautions against electrostatic discharge acc. to DIN EN 61340-5-1/-3. Ensure that the environment (persons, workplace and packaging) is well grounded when handling the devices.

3.9 General hazard warning - Residual risk

All components of the device are designed according to valid regulations for the construction of technical systems regarding operational safety and accident prevention. Independently thereof the use can lead to hazards for the user or third parties and for other technical facilities. Therefore the device may only be used for its intended purpose in **technically faultless condition** and in compliance with the relevant safety regulations and the operting manual. **Inspect** the device and its attachment parts **regularly** and check them for possible **damage or leakages. Fluids** could **escape under high pressure** from pressurized components which have become **leaky**.

4. Intended use

Attention!

The device, as part of a central lubrication system serves to **convey lubricant for the lubrication** of machines as described in this operating manual. The device is approved for **industrial** and **commercial** use **only**.

The device may only be put into operation if it is installed in / attached to another machine and is operated together with it.

Only lubricant according to the specifications of the machine manufacturer may be conveyed.

The device may only be used as specified in the technical data (see chapter 1 „Technical data“). Never exceed or fall below these values. Never run the device without lubricant.

Unauthorized **structural modifications** of the device are **not permitted**. Groeneveld-BEKA will not assume liability for damage of persons or the machine resulting thereof.

The device has been manufactured in compliance with the Machinery Directive 2006/42/EG. The customer has to check whether further directives apply for the specific field of application and site of operation. The device may not be put into operation if it is not conformant with these directives.

Use as intended also includes:

- Observance of all chapters and instructions of the operating manual.
- Carrying out all maintenance work.
- Observance of all regulations concerning work safety and accident prevention during all life cycles of the device.
- Having the necessary professional training and authorization of your company to operate the device and to carry out the necessary work.

Another use or a use beyond this is deemed improper.

5. Scope of warranty

Warranties regarding operational safety, reliability and performance will only be granted by the manufacturer if the device is used as intended and under the following conditions:

- Assembly, connection and maintenance are carried out by authorized professional staff.
- The device is used according to the specifications in the operating manual.
- The limit values as stated in the technical data must never be exceeded or fallen below.
- Modifications and repairs of the device may only be done by Groeneveld-BEKA.

Guarantee and warranty for any damage at the device caused by improper lubricant (e.g. wear of pistons, piston jamming, blockades, brittled seals, etc.) will expire.

Attention!

Groeneveld-BEKA will generally not assume guaranty claims for any damage caused by lubricants, although those have been laboratory tested and released by Groeneveld-BEKA, as such damage (e.g. by over-stored or incorrectly stored lubricants, batch fluctuations, etc.).

6. Transport and storage

Use suitable lifting devices for transport.

Do not **throw** the device or impose it to shocks.

Secure the device against falling over or slipping during transport.

Observe all valid safety and accident prevention regulations for the transport. Wear suitable **protective equipment** if necessary! Keep a**dequate distance to suspended loads**. The transport help or the elevating device must have the **adequate carrying capacity**.

Note!

Store the device at a cool and dry location to avoid corrosion of individual parts of the device.

Mind also the storage properties of the lubricant in lubricant-filled devices. Replace the lubricant when it is overstored (separation of oil and soap).

7. Functional description

The BEKA ONE is an electromechanical lubricator for lubricating a single lube point.

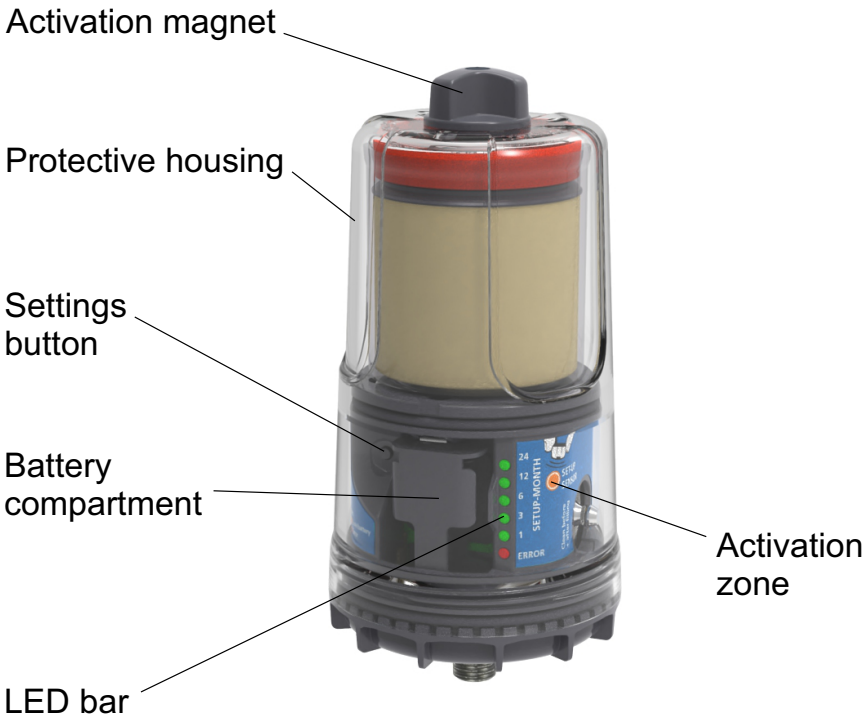
The device is designed to convey oil or grease up to NLGI 2.

The BEKA ONE lubricator is made for an independent operation. Power is supplied by exchangeable batteries.

The lubricant is optionally contained in a reservoir with follower plate or in a cartridge. The refillable follower plate reservoir has a filling volume of 120 ml. The cartridge with a filling volume of 120 ml is intended for single use and can be easily replaced.

Depending on the used lubricant or the type of battery, and the environmental conditions the follow-up piston reservoir or the cartridge can be emptied between 1 and 5 times with one set of batteries.

Fig.1:



The device is a piston pump, i.e. 0.24 ml lubricant are continuously conveyed per piston stroke. Setting of the lubricant quantity is done on a monthly basis (see chapter 9.6 Set the month setting).

Month setting	Lubricant qty per month (cm³)	Lubricant qty per week (cm³)
24	5	1.1
12	10	2.3
6	20	4.6
3	40	9.2
1	120	27.5

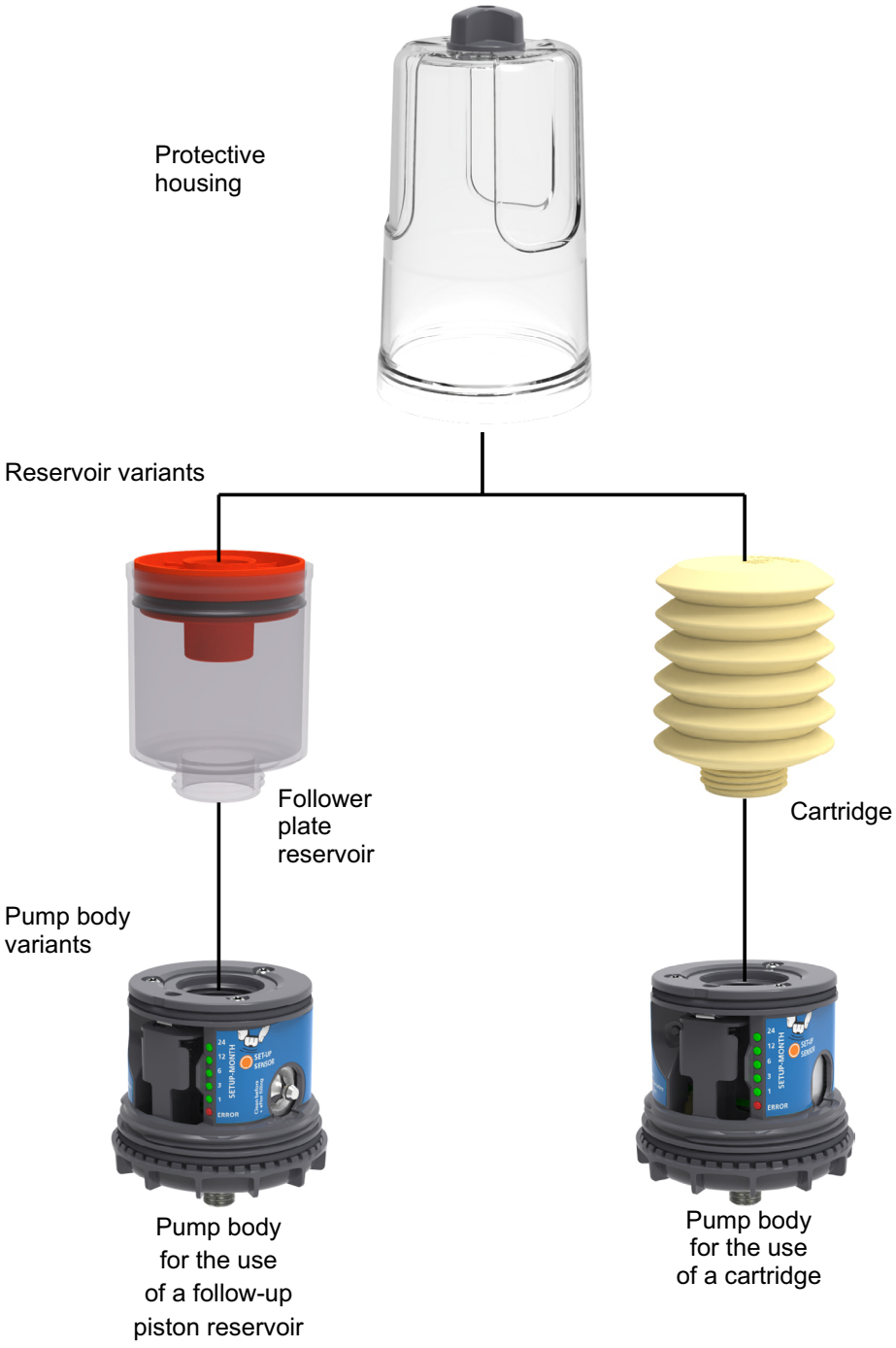
The month setting is done at the activation area with the Activation magnet (fig. 1) or with the Settings button (fig. 1) (see chapter 9.6 Set the month setting).

The current functional state of the device is displayed at the LED bar (see chapter 11.4).

8. Device structure

The device is basically made up of three modules:

Fig.2:



9. Commissioning

9.1 Filling the devices

9.1.1 Initial filling when using a reservoir with follow-up piston

Attention! **You have to fill the ducts of the device with lubricant before you install the follow-up piston reservoir.**

- Detach the protective housing by turning it counter-clockwise.

Note! Use a hand-operated grease gun for filling.

- Clean the device first, especially the filling fitting and its immediate surroundings in order to prevent contamination.
- Place the hose of the grease gun on the filling fitting (fig. 3 left) and press the lubricant into the device until it gets visible in the intake area (fig. 3 right).

Fig.3:

- Continue installation of the follower plate reservoir (see chapter 9.1.2 Installation of the follower plate reservoir).

9.1.2 Installation of the follower plate reservoir

You have received the reservoir in empty condition.

- Carefully screw the follow-up piston reservoir into the intake hole of the device.

Attention! Be careful not to overtighten the thread.

Fig.4:

9.1.3 Refilling the follower plate reservoir

- Clean the device first, especially the filling fitting and its immediate surroundings in order to prevent contamination.
- Fill the reservoir until the red piston is at al level with the upper edge.

Attention! Never fill the device above max. level to prevent possible damage.

- Observe the lubricant specifications of the machine manufacturer!

Note! Only use lubricants acc. to the specifications of the machine manufacturer!

- Collect any outcoming lubricant in a suitable receptacle and dispose of it professionally!
- Observe the safety data sheet of the lubricant manufacturer.
- Please mind that the lubricant viscosity changes with the operating temperature!
- Pay attention to utmost cleanliness when filling!

Fig.5:

- Actuate intermediate lubrication processes after each filling until the lubriant escapes at the device outlet free of air inclusions.
- Proceed as described under 11.5 Actuate an intermediate lubrication.
- Clean the filling fitting.
- Place the transparent protective housing on the device again and tighten it.

Attention! Be careful not to overtighten the cover!

9.2 Filling the device when using a cartridge

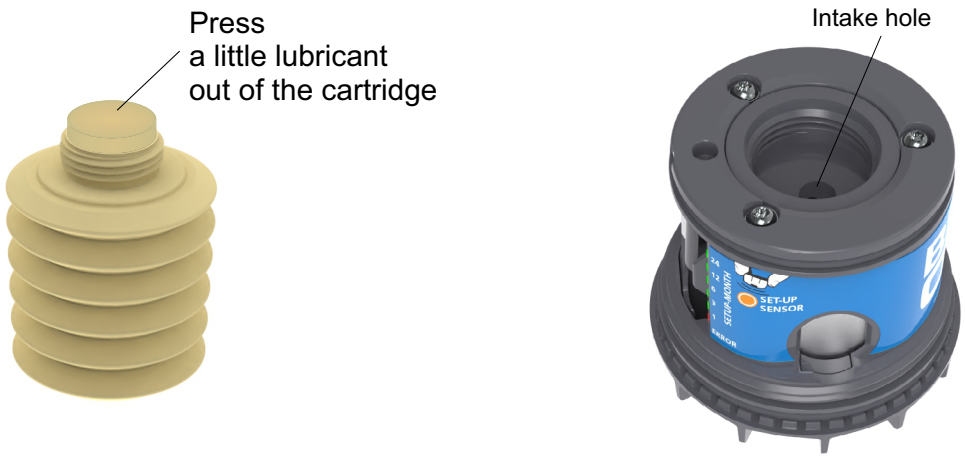
9.2.1 Insert the cartridge

- You receive the cartridge filled with lubricant.
- Detach the protective housing by turning it counter-clockwise.
- Unscrew the cover from the cartridge.
- Carefully press some lubricant out of the cartridge (see fig. 6 left).
- Place the cartridge on the intake hole of the device and tighten it.

Attention! Be careful not to overtighten the thread.

- Collect any outcoming lubricant in a suitable receptacle and dispose of it profssionally!
- Observe the safety data sheet of the manufacturer.
- Please mind that the lubricant viscosity changes with the operating temperature!
- Pay attention to utmost cleanliness when filling!

Fig.6:



- Place the protective housing on the device again and tighten it.

Attention! Be careful not to overtighten the cover!

- Actuate several intermdiate lubrication processes after each exchange of the cartridge until lubricant escapes at the device outlet free of air inclusions.
- Proceed as described under 11.5 Actuate an intermediate lubrication.

9.3 Proper filling interval

If your device is equipped with a reservoir with follower plate, you can always refill it.

Proceed as described under 9.1.3 Filling the follower plate reservoir.

Refill the device according to the table below to reach an optimum runtime.

If your device is equipped with a cartidge, exchange it as follows:

Month settings	24	12	6	3	1
Optimum filling interval (ca.)	20 months	10 months	5 months	10 weeks	4 weeks

The BEKA-ONE should not be emptied completely. The device is not damaged when emptied completely but will convey air. Thus the lube point might not be sufficiently provided with lubricant and you will have to vent the lines anew after refilling of the pump.

9.4 Insert the batteries

- Detach the protective housing by turning it counter-clockwise.
- Remove the battery holder from the housing.
    - Push the battery holder down (fig. 7, 1).
    - Tilt it forwards (fig. 7, 2) as soon as it it released from spring pressure.
    - Pull the battery holder upwards out of the housing (fig. 7, 3).

Fig.7:

- Remove the currently contained batteries.

Attention! Press the settings button for 2 s to discharge the internal energy accumulator completely.

- Insert the selected batteries. Pay attention to the recommendations in the table below

Battery type	Recommended temperature range	Recommended backpressure*	Possible reservoir draingings
Alkaline batteries Rechargeable batteries	+15°C to +40°C	up to max. 16 bar	1-2
Lithium batteries	-20°C to +60°C	up to max. 20 bar	1-5

- Place the battery holder back into the housing.
- Place the protective housing again and tighten it.

Attention! Be careful not to overtighten the cover!

9.5 Switch on the device

Note! By default you will receive the device switched on.

If you want to check whether your device is switched on or off, proceed as follows:

- Take the activation magnet and approach the activation area or press the settings button.
- Pay attention to the Error-LED signals:
    - LED glows orange, device is switched on
    - LED glows red, device is switched off

If you recognize that your device is switched off, please switch in on for the further procedure. Proceed as follows:

- Take the activation magnet from top of the protective housing (see fig. 8).

Abb.8:

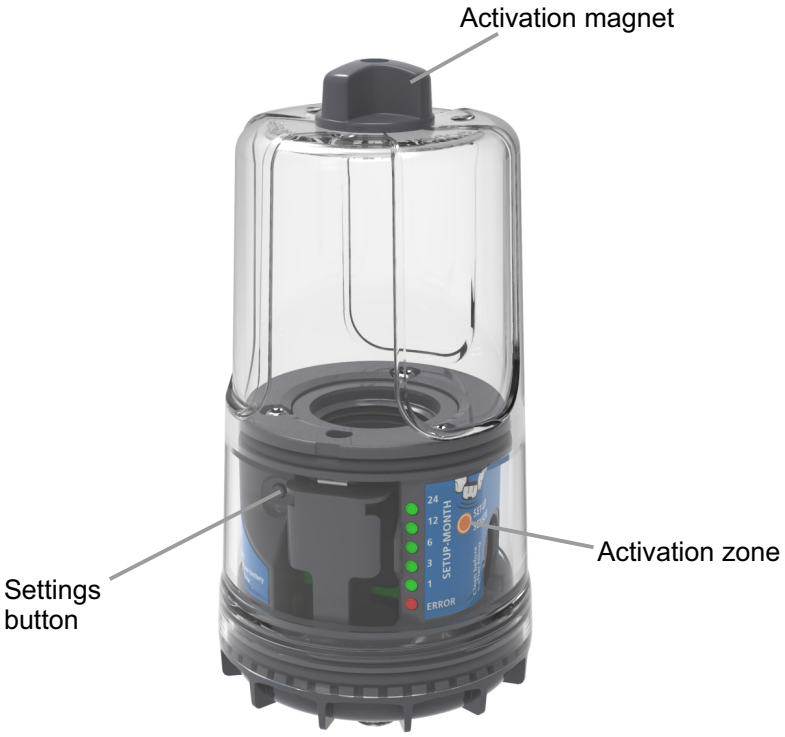


Fig.9:

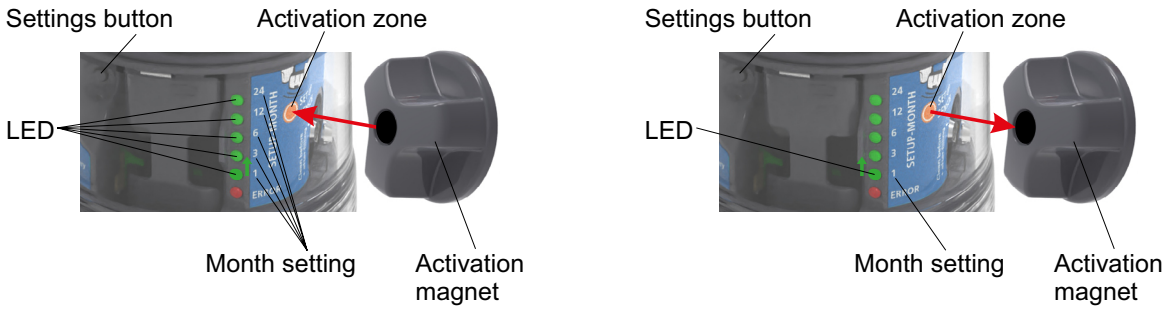
- Place the activation magnet on the red dot (activation zone, fig. 9) and hold it there until the red and the orange LEDs have flashed alternately 10x. As an alternative you can also keep the settings button pressed.
- Flashing of all LEDs signals you to remove the release the button or to remove the activation magnet.

9.6 Set the month setting

You can any time change the month setting when the device is switched on.

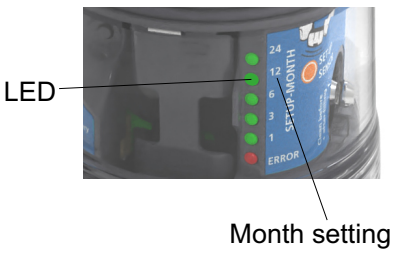
- Place the activation magnet on the activation zone (Abb. 10) and hold it there until the red and the orange LED have flashed alternately 5x. As an alternative you can also keep the settings button pressed.
- Flashing of the current month setting signals you to release the button or remove the activation magnet.
- If you have released the button or removed the magnet at the right time, the currently set month setting will flash permanently.

Fig.10:



- Place the activation magnet on the activation zone again or keep the settings button pressed again.
- The green LEDs will now continuously light up in sequence. Remove the activation magnet or release the settings button when the desired setting is reached (e.g. 12 months) (fig. 10).
- The device is set and immediately starts lubrication. The LED of the selected month setting will light up green (fig. 11).

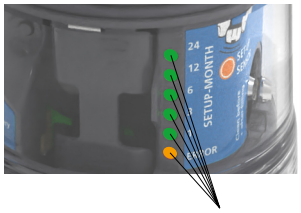
Fig.11:



After the lubrication process is the current backpressure determined and displayed for 2 s (see table).

LED	Backpressure (bar)
1 green	<=4
1+2 green	<=8
1+2+3 green	<=10
1+2+3+4 green	<=19
1+2+3+4+5 green	<=21
1+2+3+4+5+6 orange	<= 25 = increased backpressure, increased energy consumption
1+2+3+4+5+6 red	> 25 = backpressure too high, current consumption too high, load leads to mechanical overstress and failure of the device

Fig.12:



LEDs

(example:
orange LED lights up =
increased backpressure)

10. Assembly instructions

Check the device for possible transport damage and for completeness before assembly.

Remove any attached devices for transportation safety.

The following conditions must be fulfilled when you assemble the device so that it can be properly mounted and form with other parts a complete machine in environmentally friendly manner and without compromising the safety and health of persons.

Mount the device in balance on both sides and with the reservoir upright to ensure safe operation. The device must not be exposed to centrifugal forces.

10.1 General installation instructions

Select the installation location for the device so that it is protected against environmental and mechanical influences in the best possible way.

Ensure full access, for example for refilling of lubricant or visual inspections.

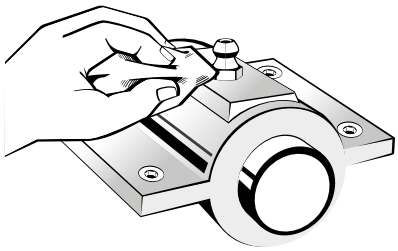
10.2 Assembly of the device

Note! Pay attention that the BEKA-ONE is correctly set and vented before assembly.

Attention! Prefilll the lube point as well as the grease lines or extensions with the appropriate lubricant. You can use a hand-operated grease gun.

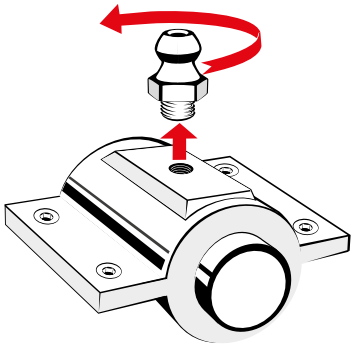
- Clean the lube point.

Fig.13:



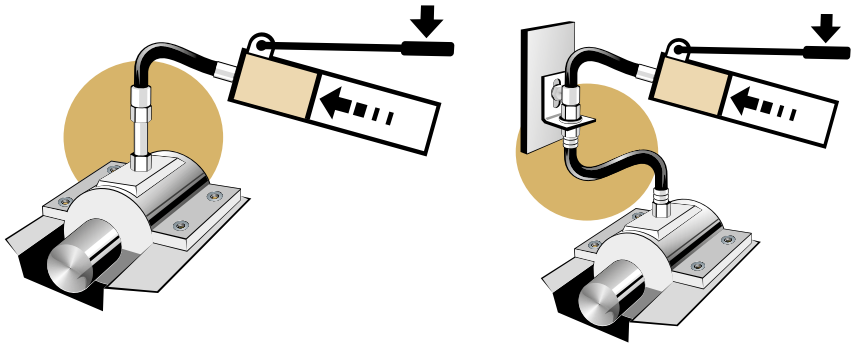
- Remove the old fitting.

Fig.14:



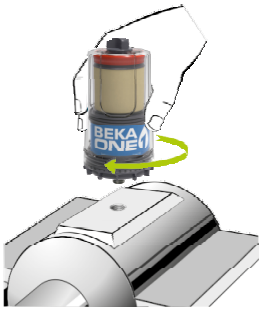
- Prefill the lube point, and the lines if necessary, with lubricant.

Fig.15:



- Screw in the BEKA ONE hand-tight, use an adapter if necessary.

Fig.16:



- Tighten the connection thread, using a hexagonal wrench.

Fig.17:

11. Maintenance and servicing

Remove the batteries from the device before you carry out **maintenance or repair**.

Only carry out any **maintenance or repair** at complete standstill and under **pressureless condition**. Check the surface temperature of the device, as there is the **risk of burns** due to heat transfer. Wear heat-resistant gloves and safety goggles! Clean soiled or contaminated surfaces before maintenance, wear protective equipment if necessary. Protect the device against recommissioning during maintenance/repairs!

11.1 General maintenance

- Retighten all fittings 6 weeks after start-up!
- Check all components for leakages and damage at least every 4 weeks!
- Check the device for operating and functional reliability. Carry out an intermediate lubrication and check whether the device conveys lubricant.
- When you use a high-pressure cleaner or steam cleaner to clean the vehicle or the machine, do not expose the device directly to the jet to prevent that water gets into the device, e.g. at a vent hole. However, during normal operatio, no water can get into the device.

11.2 Lubricant change

Attention! Pay attention to utmost cleanliness when refilling the lubricant!

- Check the level in the reservoir of the device regularly, refill clean lubricant if necessary. Proceed as described under 9.1.3 Filling the follower plate reservoir!
- If the device has been emptied completely by accident, proceed as described under 9.1.1 Initial filling when using a reservoir with follower plate for refilling. Then follow the instructions under 9.1.3 Fill the reservoir with follower plate
- Carry out the lubricant change according to the specifications of the lubricant manufacturer. Environmental influences like increased temperature or pollution can shorten the intervals!
- Please mind to only use lubricants which are suitable for the device as well as the machine to be lubricated and which meet the requirements of the respective operating conditions!
- When the used lubricants are from **different suppliers**, make sure that the **lubricant quality** corresponds to the quality of the previously filled lubricant! As a precaution, the lubricant reservoir should be drained and cleaned properly!

11.3 Battery change

- Proceed as described under 9.4 Insert the batteris.

Attention! **Dispose of used batteries properly and professionally** and according to your local regulations.

11.4 Flashing signals of the LED strip and troubleshooting

You can see the current functional state of the device from the flashing signals of the LED strip.

<table>
<tr><th>LED</th><th>State</th><th>Cause</th><th colspan="2">Troubleshooting</th></tr>
<tr><td rowspan="2">green</td><td>ON</td><td colspan="3">Device is currently lubricating</td></tr>
<tr><td>Flashes every 60 s</td><td colspan="3">Functional check (=OK, device activated)</td></tr>
<tr><td rowspan="3">red</td><td rowspan="3">Flashes briefly 2x every 10 s</td><td rowspan="3">• Backpressure too high
or
• Mechanical blocking</td><td colspan="2">Unscrew device</td></tr>
<tr><td colspan="2">• Check the lube point for too high backpressure and remedy error if necessry.
• Renew batteries and actuate intermediate lubricantion</td></tr>
<tr><td>Device does not work</td><td>Replace device</td></tr>
<tr><td>orange</td><td>Flashes 2x briefly every 10 s</td><td>Battery voltage too low</td><td colspan="2">• Renew batteries
• Actuate an intermediate lubrication</td></tr>
</table>

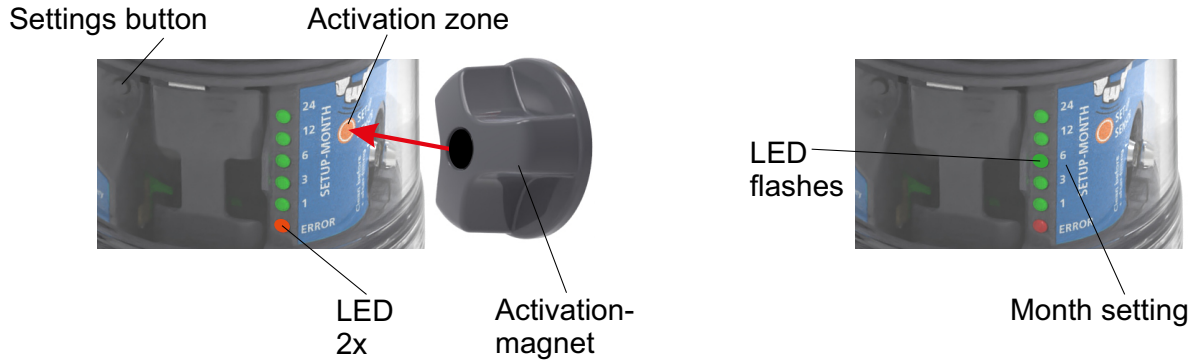
11.5 Actuate an intermediate lubrication

You can actuate an intermediate lubrication for a functional check of your device.

Note! Pay attention that the BEKA ONE is switched on and correctly set before the intermediate lubrication process (see chapter 9.5 Switch on the device).

- Take off the activation magnet from the top and approach the activation zone (fig. 18).
- Place the activation magnet on the activation zone and hold it there until the red LED has flashed 2x (fig. 18). Then remove the activation magnet.
- Or you can also press the settings button and release it when the red LED has flashed 2x.
- The green LED lights up according to the selected month setting.
- The pump will start the intermediate lubrication cycle (ca. 20 s):

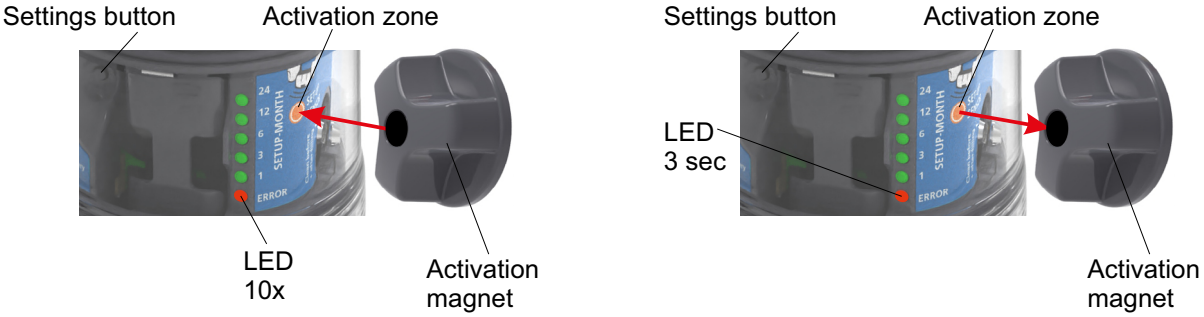
Fig.18:



11.6 Switch off the device

- Place the activation magnet on the activation zone (fig. 19) and hold it there until the red and the orange LED have flashed alternately 10x. As an alternative you can also keep the settings button pressed.
- Flashing of all LEDs signals to you to release the button or remove the activation magnet.

Fig.19:



- The device switches off. The red LED will light up for 3 seconds.

Note! To switch the device on again, proceed as described under 9.5 Switch on the device.

12. Shutdown

- Switch the device off or remove the batteries!
- Remove all pipes and hoses from the device for disassembly and unscrew the device.

13. Disposal

Note!

Observe the disposal instructions of the lubricant manufacturer when lubricant is changed!

Collect lubricants or cloths contaminated with lubricant or similar in specially marked receptacles and dispose of properly.

Dispose of the device professionally and properly and in accordance with national and international laws and regulations.

Morerover, Groeneveld-BEKA devices could contain batteries. Professionally and properly disposed of batteries will be recycled. They contain important raw materials.

For your notes

For your notes

14. Details of the manufacturer

Groeneveld-BEKA

Via S. Pertini 1
23893 Cassago
Brianza
Italia
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Our further product range:

Gear pumps
Multi-line oil pumps
Multi-line grease pumps
Single-line central lubrication systems
Dual-line central lubrication systems
Oil circulation central lubrication systems
Oil-air and spray lubrication
Wheel flange central lubrication
Rolling mill central lubrication systems
Utility vehicle central lubrication systems
Progressive distributors
Control and monitoring devices

This document is provided solely to give you analysis tools and data to assist your use of our product. Product performance is affected by many factors beyond the control of Groeneveld-BEKA.

Groeneveld-BEKA products are sold subject to Groeneveld-BEKA terms and conditions of sale, which include our limited warranty and remedy. You can find these at

https://www.groeneveld-beka.com/en/

Technical data is subject to changes without prior notification. Please consult with your Groeneveld-BEKA engineer for more information and assistance.

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