GROENEVELD-BEKA
LUBRICATION SYSTEMS BY TIMKEN

Grease lubrication pump

BEKA-ONE

Code 2087...

State 02/2023

Original operating and assembly Instructions

GROENEVELD-BEKA
LUBRICATION SYSTEMS BY TIMKEN

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1. Technical data

General:

Lubricant volume:	120 ml
Lubricant:	Oil ISO VG = 32 - 680 mm²/s
	Grease up to NLGI class 2
	(also with solid parts)
Lubricant reservoir:	follower reservoir
	cartridge
Pump type:	plunger pump
Dosing volume:	0,24 ml/stroke)
Outlet number:	1
Connection;	external thread R1/4
Running time per filling:	1-24 months
Working 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 piston reservoir, w-o. lubricant filling . ca. 520 g
	Version for cartridge but without cartridge. ca. 470 g
Type of control:	processor controlled
Pressure monitoring:	electronic + LED display
Working voltage:	3,0 V depending on the batteries used
	(see chapter 8.4 Inserting the batteries)
Battery type:	2x AA (not included in the delivery)
Degree of protection:	IP67
Sound pressure level:	< 70 db/A)
Supply of progressive distributors:	NO
Order no. without follower piston container, without batteries:	XXXXXX
Order no. without cartridge, without batteries:	XXXXX
Order no. Follower piston reservoir unfilled:	XXXXXX
Order no. Cartridge filled with XXXX:	XXX

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

2. Co-Applicable Documents

Safety data sheet of the lubricant:	(For all lubricants used in the bellows
	should be included)

3. General safety instructions

Before assembly and commissioning the device on the machine, these operating instructions must be read carefully by all persons entrusted with the assembly, commissioning, maintenance and operation of the device! It also must be available at the site of use at all times.

Below, basic notes are given that must be observed during operation and maintenance.

3.1 Safety instructions

Observe both the general safety instructions in this main chapter and the special safety instructions in other chapters of these operating and assembly instructions

Warnings of electrical voltage with this symbol.

Safety instructions which may cause danger to persons if not observed are marked with the general danger symbol.

Warnings about hot surfaces with this symbol.

Warning of suspended loads with this symbol.

Warning of material damage due to electrostatic discharge! Indicates a potential danger that could result in property damage if not avoided.

Attention! This heading is used when imprecise observance or non-observance of the operating instructions, work instructions, prescribed work sequences and the like can lead to damage to the device.

Note! If attention is to be drawn to special features, this expression is used..

Notes attached directly to the device must be observed and kept in a completely legible condition!

3.2 Personnel qualification and personnel training

The personnel for operation, maintenance, inspection and installation must have the corresponding qualification for this work. Relevance, responsibility and monitoring of personnel must be provided for precisely by the operator. If the personnel do not have the required knowledge, they must be trained and instructed. The operator must ensure that the content of the user information is understood in full by the personnel.

3.3 Dangers at non-observance of the safety instructions

Danger to persons, the environment and the machine may result from non-observance of the safety instructions. Non-observance of the safety instructions may cause loss of any damages claims. Specifically, non-observation may, e.g., cause the following dangers:

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

3.4 Obligations of the operator / users

- Where moving, rotating, hot or cold device parts cause any dangers, they must be secured against contact on site. This contact protection must not be remove.
- Leaks of dangerous conveyed media must be discharged so that no danger to persons and the environment will result. The data sheets or safety data sheets of the respective manufacturers must also be observed..
- Statutory provisions must be complied with.
- Dangers from electrical energy must be excluded.
- The inspections for pipe or hose assemblies for safe provision, use, proper assembly and function are to be carried out in accordance with regionally applicable guidelines. The inspection intervals must not be exceede.
- Defective pipe or hose lines must be replaced immediately and professionally.
- Hydraulic hose lines and poly pipes are subject to an ageing process and must be replaced at regular intervals in accordance with the manufacturer‘s specifications.
- A safety data sheet of the lubricant currently used must be made available at the device.
- Observe the latest version of the generally applicable hazardous substances ordinance.

3.5 Safety instructions for maintenance, inspection and assembly work

All **maintenance, inspection** and **assembly work** must only be performed **by authorised and qualified specialists** who have collected enough information by studying the user information thoroughly.

As a matter of principle, work on the device may only be carried out **when it is at a complete standstill** and in a **depressurised and de-energised state**, with appropriate **personal protective equipment** (including safety goggles). The procedure described in these operating instructions for shut-down of the device must be complied with.

Secure the device during maintenance and repair work against intentional and unintentional restarting. All safety and protection devices must be inserted again at once after the work is completed

According to the relevant authority provisions, any environmentally hazardous media must be disposed of professionally. **Dirty** or **contaminated surfaces** must be **cleaned** before maintenance work, protective equipment must be worn for this purpose. Observe the data and safety data sheets of the lubricant manufacturers or those of the manufacturers of the auxiliary and operating materials used.

The surface temperature of the device must be checked, as there is a **risk of burns** due to heat transfer. Wear heat-resistant safety gloves

During all maintenance, inspection and repair work, **open light** and fire are **strictly prohibited** due to **fire hazard**.

3.6 Independent conversion and spare parts production

Conversion, repair and changes to the device are only permitted in coordination with the manufacturer. **Genuine spare parts** and accessories authorised by the manufacturer are used for **safety purposes**. Use of other parts may revoke liability for resulting consequences. Groeneveld-BEKA accepts no liability for components retrofitted by the operator.

3.7 Inadmissible operating modes

The operating safety of the device is only ensured at intended use as indicated in the operating instructions. The thresholds indicated in the technical documents must never be exceeded or undercut.

3.8 Electrostatic discharge

Avoid electrostatic discharge! The devices contain electronic components that can be destroyed by electrostatic discharge when touched. Observe the safety measures against electrostatic discharge according to DIN EN 61340-5-1/-3. When handling the devices, ensure that the environment (people, workplace and packaging) is well grounded.

3.9 General danger warning - residual risk

All components of the device are designed in accordance with the applicable regulations for the construction of technical systems with regard to operational safety and accident prevention. Irrespective of this, their use can lead to dangers for the user or third parties or other technical equipment. The device may therefore only be used for its intended purpose if it is in a technically fault-free condition. This may only be done in compliance with the relevant safety regulations and by observing the operating instructions. Therefore, regularly observe the device and its attachments and check them for any damage or leaks. Fluid can escape under high pressure from pressurised system parts that have become leaky

4. Intended use

Attention!

The device is used as part of a central lubrication system **for conveying lubricant for the lubrication** of machines as described in these operating instructions. 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 operated together with it.

Es darf nur Schmierstoff nach Spezifikation des Maschinenherstellers gefördert werden.

Only lubricant in accordance with the machine manufacturer‘s specifications may be conveyed.

The device may only be used in accordance with the technical data (see chapter 1 „Technical data“). These values must not be exceeded or undercut under any circumstances. Never operate the device without lubricant.

Unauthorised **structural changes** to the device are **not permitted**. Groeneveld-BEKA accepts no liability whatsoever for any resulting damage to persons or machinery

The device was manufactured in compliance with the machinery directive 2006/42/EC. The customer must check whether further guidelines apply for the area of application and place of use. If the device does not conform to these guidelines, it must not be put into operation.

Intended use also includes:

- That you observe all chapters and notes in the operating instructions.
- That you perform all maintenance work.
- That you comply with all relevant regulations on occupational safety and accident prevention during all life cycles of the device.
- That you have the required professional training and authorisation from your company to perform the required work on the equipment.

Any other use or use in excess thereof shall be deemed to be an unauthorised mode of operation.

5. Scope of warranty

Warranties with regard to operational safety, reliability and performance are only warranted by the manufacturer if the product is used as intended and only under the following conditions:

- Assembly, connection and maintenance are carried out by authorised specialist personnel.
- The device is used as described in the operating instructions.
- The thresholds indicated in the technical data must never be exceeded.
- Modification and repair work on the device may only be carried out by Groeneveld-BEKA.

Attention!

For damage caused to the device by operation with unsuitable lubricant (e.g. piston wear, piston jamming, blockages, embrittlement of seals, etc.), the warranty and guarantee are void.

Groeneveld-BEKA generally does not accept any warranty for damage caused by lubricants, even if these have been subjected to a laboratory test at Groeneveld-BEKA and have been approved, as damage caused by lubricants (e.g. due to overstocked, incorrectly stored lubricants, batch fluctuations, etc.) cannot be traced in retrospect.

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6. Transport and storage

Use suitable lifting devices for transport.

Do **not throw the device** or subject it to strong impacts.

The device must be secured against falling over or slipping during transport.

Observe the applicable safety and accident prevention regulations during transport. Wear **appropriate protective equipment** if necessary! Keep **sufficient distance to suspended loads**. The means of transport or the lifting device must have **sufficient load-bearing capacity.**

When storing the device, the storage location should be cool and dry so as not to support corrosion of individual parts of the device.

Observe the storage life of the lubricant contained in devices filled with lubricant. Replace the lubricant if it is overstocked (separation of oil and soap).

7. Functional description

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

The device is designed for oil or grease up to NLGI class. 2 to promote.

The BEKA ONE lubricator is designed for autonomous operation. The power is supplied by replaceable batteries.

The lubricant can be contained either in a follower piston reservoir or in a cartridge. The follower piston reservoir has a capacity of 120 ml and can be refilled. The cartridge, with a capacity of 120 ml, is intended for single use and can be easily replaced.

Depending on the lubricant used or depending on the type of battery used and the environmental conditions, 1 to 5 emptyings of the follower piston container or the cartridge can be achieved with one set of batteries.

Fig.1:

The device is a piston pump. This means that 0.24 ml of lubricant is continuously pumped per piston stroke during operation.
The amount of lubrication is adjusted on a monthly basis (see chapter 9.6 Setting the month setting).

Month setting	Amount of lubrication per month (cm^3)	Amount of lubricant per week (cm^3)
24	5	1,1
12	10	2,3
6	20	4,6
3	40	9,2
1	120	27,5

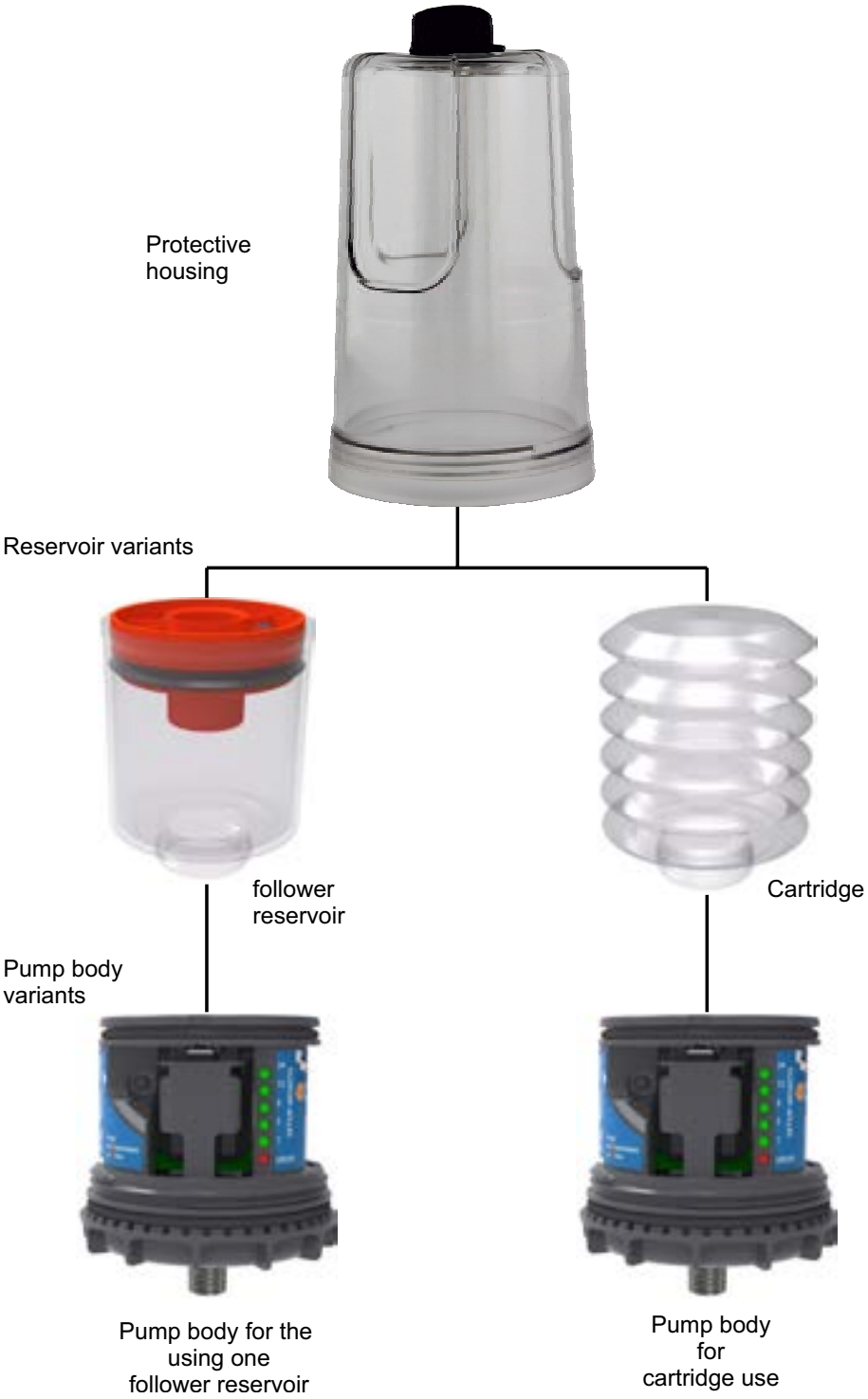
The month is set in the activation area with the help of the activation magnet (Fig. 1) or with the setting button (Fig. 1) (setting the month setting see chapter 9.6 Setting the month setting).

The current functional status of the device is displayed on the LED bar (see Chapter 9.5 Turn on the device).

8. Structure of the device

The device essentially consists of three components.

Fig.2:



9. Start-up

9.1 Filling the device

9.1.1 Initial filling when using a follower piston reservoir

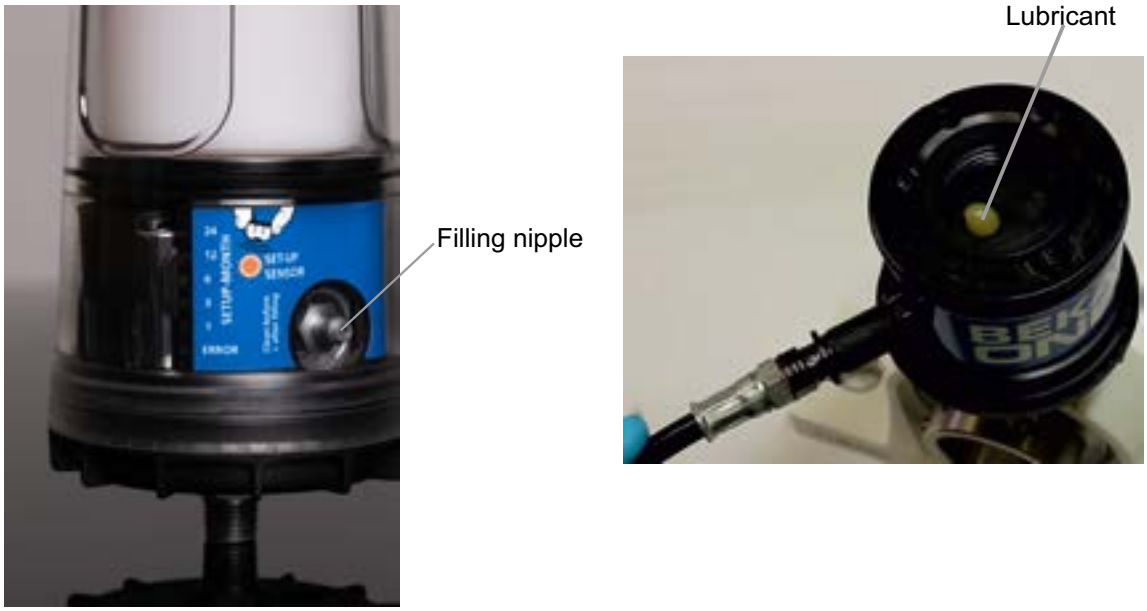
Attention! **Before you can install the follower piston reservoir, you must first fill the channels of the device with lubricant.**

- Loosen the protective housing by turning it counterclockwise.

Note! Use a hand lever grease gun for filling.

- First clean the device, especially the filling grease nipple, and the immediate area to prevent dirt from entering.
- Place the hose of the hand lever grease gun on the grease nipple (Fig. 3 left) and press lubricant into the device until it becomes visible in the suction area (Fig. 3 right).

Fig.3:



- Proceed with the installation of the follower reservoir (see chapter 9.1.2 Follower reservoir installation).

9.1.2 Installation of the follower reservoir

You have received the follower piston reservoir empty.

- Carefully screw the follower reservoir into the suction port of the device.

Attention! Be careful not to overtighten the thread.

Fig.4:

9.1.3 Filling of the follower piston reservoir

- First clean the device, especially the filling grease nipple, and the immediate area to prevent dirt from entering.
- Fill the follower piston reservoir until the red piston is at the top edge.

Attention! Never fill the device above the maximum level to avoid possible damage.

- When selecting the lubricant, observe the information provided by the machine manufacturer!

Note! Only use lubricants that are specified by the machine manufacturer!

- Catch any leaking lubricant in a suitable container and dispose of it properly!
- Observe the manufacturer‘s safety data sheet.
- The flow behavior of the lubricant changes with the operating temperature!
- Pay attention to extreme cleanliness when filling!
- During the first hours of operation, check the level several times at equal intervals. Top up with clean lubricant if necessary.

Fig.5:

- Put the protective housing back on the device and screw it tight

Attention! Be careful not to overtighten the protective housing!

- Trigger a few intermediate lubrications after each filling until the lubricant emerges from the outlet of the device without any bubbles.
- To do this, proceed as described in Chapter 11.5 Triggering an intermediate lubrication.
- Clean the grease nipple
- Put the transparent protective housing back on the device and screw it tight.

Attention! Be careful not to overtighten the cap!

9.2 Filling the device when using a cartridge

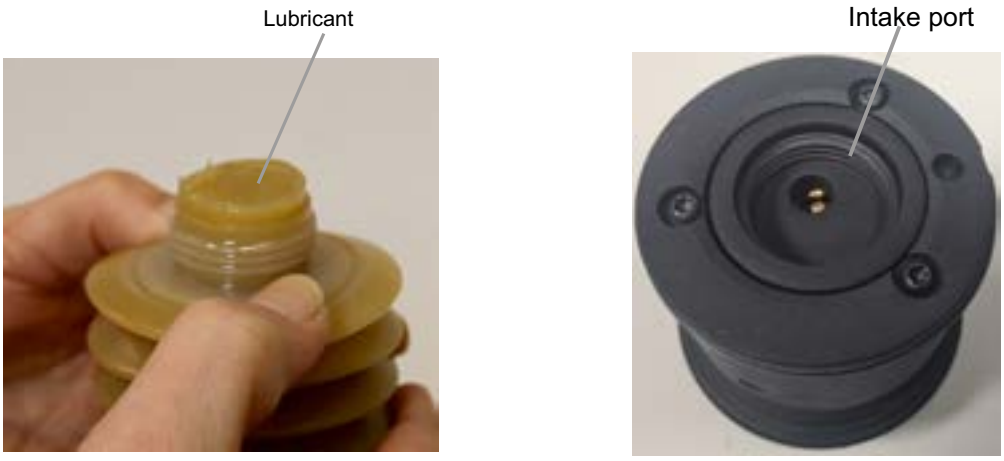
9.2.1 Installing the cartridge

- You will receive the cartridge filled with lubricant.
- Loosen the protective housing by turning it counterclockwise..
- Unscrew the cap from the cartridge.
- Gently squeeze a little lubricant out of the cartridge (see fig. 6 left).
- Place the cartridge on the suction opening of the device and screw it tight.

Attention! Be careful not to overtighten the thread.

- Catch any leaking lubricant in a suitable container and dispose of it properly!
- Observe the manufacturer‘s safety data sheet.
- The flow behavior of the lubricant changes with the operating temperature!
- Pay attention to extreme cleanliness when filling!

Fig.6:



- Put the protective housing back on the device and screw it tight

Attention! Be careful not to overtighten the lid!

- Trigger a few intermediate lubrications every time you change the cartridge, until the lubricant emerges from the outlet of the device without any bubbles
- To do this, proceed as described in Chapter 11.5 Triggering an intermediate lubrication.
- Clean the grease fitting
- Put the transparent protective housing back on the device and screw it tight.

Attention! Be careful not to overtighten the cap!

9.3 Correct filling interval

If the device is equipped with a follower piston reservoir, it can be refilled at any time.

To do this, proceed as described in Chapter 9.1.2 Filling the follower piston reservoir.

In order to get an optimal working time of the device, the device should be filled as described in the following table.

If the device is equipped with a cartridge, the cartridge should always be changed as described in the following table.

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

The BEKA-ONE should not be completely emptied. The device is not damaged when completely emptied, but conveys air. As a result, the lubricating point may no longer be adequately supplied with lubricant and the lines must be vented again after the pump has been filled.

9.4 Inserting the batteries

- Unscrew the protective case by turning it counterclockwise.
- Take the battery holder out of the case.
    - Push the battery holder down (Fig. 7, 1).
    - Fold it forward (Fig. 7, 2) when it has released from the spring pressure.
    - Ziehen Sie den Batteriehalter nach oben aus dem Gehäuse (Abb. 7, 3).

Fig.7:

- Insert the selected batteries. Please note the recommendations in the table.

Battery type	recommended temperature range	recommended back pressure	Possible container emptying
Alkaline batteries Rechargeable batteries	+15°C to +40°C	up to a maximum of 16 bar	1-2
Lithium batteries	-20°C to +60°C	up to a maximum of 20 bar	1-5

- Put the battery holder back into the case.
- Screw the protective housing back on.

Attention! Screw the protective housing back on

9.5 Turn on the device

Note! By default, you get the device turned on.

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

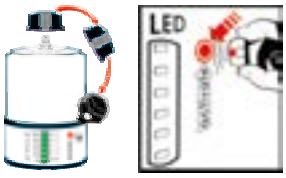
- Take the activation magnet and move it to the activation area or press the settings button.
- Pay attention to the indications of the LEDs:
    - If the LED lights up orange, the device is switched on
    - If the LED lights up red, the device is switched off

If you have determined that your device is switched off, you must switch it on to proceed further. To do this, proceed as follows:

- Remove the activation magnet at the top of the protective housing (see fig. 6).

Fig.8:

Fig.9:



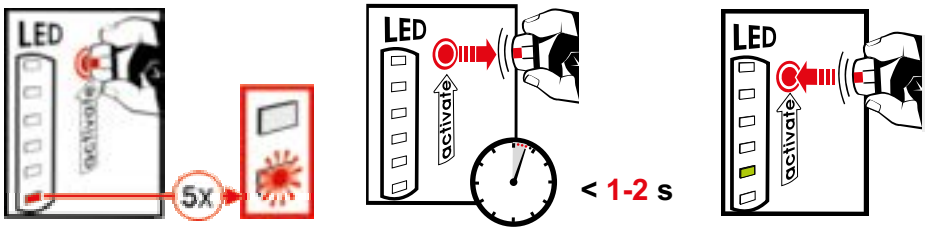
Place the activation magnet on the red dot (Fig. 9) and hold it until the red LED has flashed 5x or keep the setting button pressed.

9.6 Setting the month setting

The month setting can be changed at any time when the device is switched on.

- Place the activation magnet on the activation area or press and hold the button.

Fig.10:



- Now the green LEDs move through continuously. Remove the activation magnet when the desired month setting is reached (e.g. 12) (Fig. 9) or release the setting button.
- The device is set and immediately begins to lubricate. The LED of the selected month setting lights up green (Fig. 10).

Fig.11:

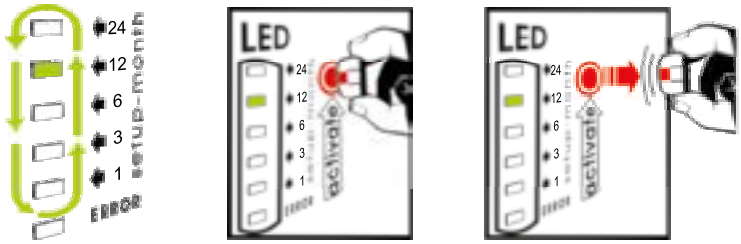
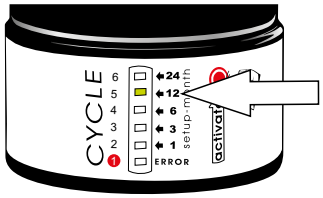


Fig.12:

Beispiel: Einstellung 12 Monate gewählt



After the end of the lubrication process, the current back pressure is determined and displayed (see table).

LED	Counter-pressure (bar)
1. green	4
2. green	8
3. green	12
4. green	16
5. green	20
6. orange	25 = increased back pressure, increased energy consumption
6. red	> 25 = too high back pressure, too high power consumption, Stress leads to mechanical overload and failure of the device

10. Assembly of the device

Before installation, check the device for any transport damage and for completeness.

Remove the attached transport locks.

When assembling the device, the following conditions must be met so that it can be assembled properly and in an environmentally friendly manner to form a complete machine without impairing the safety and health of people and other parts.

Mount the device on the installation site on both sides in the balance with the container standing vertically upwards in order to ensure safe operation. The device must not be subjected to any centrifugal forces.

10.1 General installation instructions

- If possible, select the installation location of the device so that it is protected against environmental and mechanical influences.
- Ensure unimpeded access to the device, e.g. B. for filling with lubricant and for a simple visual inspection.

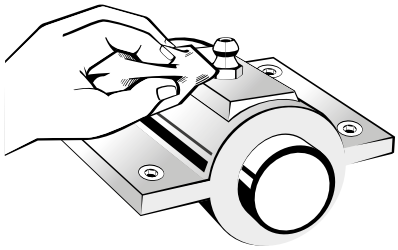
10.2 Assembly of the device

Note! Before assembly, make sure that the BEKA-ONE is properly adjusted and vented.

Attention! Before assembly, fill the lubrication point and grease lines or extensions with the appropriate lubricant. For this you can e.g. B. use the hand lever grease gun.

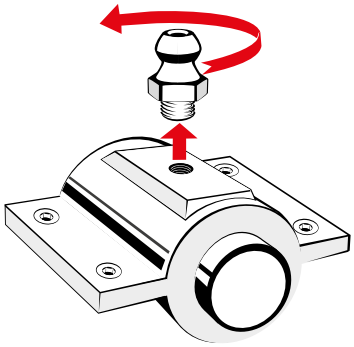
- Clean lubrication point

Fig.13:



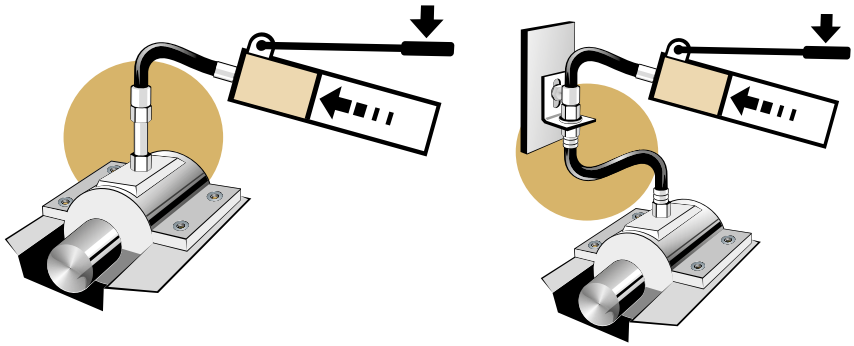
- Remove old screw connection

Fig.14:



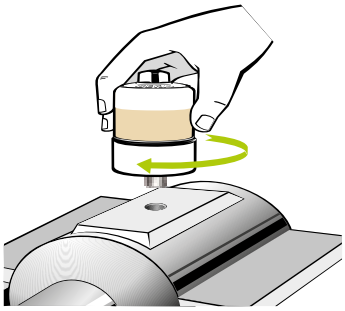
- Pre-fill lubrication point and, if necessary, lines with lubricant

Fig.15:



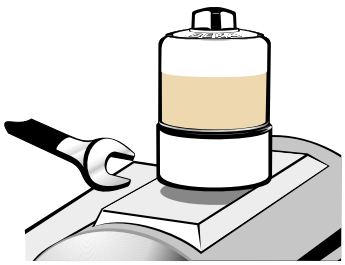
- Screw in the BEKAONE120 hand-tight, use an adapter if necessary

Fig.16:



- Tighten the connection thread over the hexagon

Fig.17:



11. Maintenance and repair

If necessary, remove the batteries from the device before carrying out maintenance or repair work

Only carry out all maintenance and repair work when the device has come to a complete standstill and is depressurised. Check the surface temperature of the device as there is a risk of burns from heat transfer. Wear heat-resistant safety gloves and goggles! Dirty or contaminated surfaces must be cleaned before maintenance work, wear protective equipment if necessary. Secure the device against restarting during maintenance/repair work!

11.1 General maintenance

- Retighten all screw connections 6 weeks after commissioning!
- Check all components for leaks and damage at least every four weeks!
- Check the operational / functional capability of the entire device. Carry out an intermediate lubrication and check whether the device supplies lubricant.
- If a high-pressure cleaner or steam jet is used to clean the vehicle or machine, the lubricating system device must not be directly exposed to the jet. This prevents water from getting into the device, e.g. through the ventilation hole. However, no water can get into the device during normal operation.

11.2 Lubricant change

Attention! Cleanliness must always be ensured when topping up the lubricant!

- Check the fill level regularly, top up with clean lubricant if necessary, as described in the Commissioning chapter 9.1.3 Filling the follower piston reservoir!
- If the device was accidentally run completely empty, proceed as described in chapter Commissioning 8.1.1 Initial filling when using a follower piston container and then follow the instructions in chapter Commissioning 9.1.3 Filling the follower piston container.
- The lubricant exchange must be carried out according to the specifications of the lubricant manufacturer. Environmental influences such as increased temperature or dirt can shorten these intervals!
- Please make sure that only lubricants are used that are suitable for the device and the machine to be lubricated and that meet the requirements of the respective operating conditions!
- Make sure that with different lubricant suppliers, the quality of the lubricant corresponds to that of the pre-filled lubricant! To be on the safe side, the lubricant reservoir should be completely and properly emptied and cleaned!

11.3 Battery change

- To change the battery, proceed as described in Chapter 9.4 Inserting the batteries.

Attention! **Dispose** of **used batteries professionally and appropriately** according to local requirements.

11.4 LED strip flashing signals and troubleshooting

You can see the current operating status of the device from the flashing displays on the LED strip..

<table>
<tr><th>LED</th><th>Status</th><th>Reason</th><th colspan="2">Fault occurrence</th></tr>
<tr><td rowspan="2">green</td><td>ON</td><td colspan="3">Device is lubricating</td></tr>
<tr><td>Flashes every 60 s</td><td colspan="3">Function check (=OK, device is activated)</td></tr>
<tr><td rowspan="3">red</td><td rowspan="3">Flashes 2x briefly every 10 s</td><td rowspan="3">• Back pressure too high
or
• mechanical blockage</td><td colspan="2">Unscrew the device, switch it off and on again:</td></tr>
<tr><td colspan="2">• Check the lubricating point for excessive back pressure and rectify the error if necessary.
• Replace batteries and initiate intermediate lubrication</td></tr>
<tr><td>The 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">• Replace batteries
• Trigger an intermediate lubrication</td></tr>
</table>

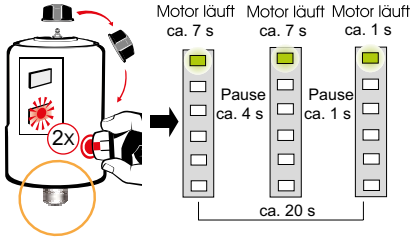
11.5 Triggering an intermediate lubrication

You can trigger an intermediate lubrication to ensure that the device functions properly.

Note! Before the intermediate lubrication, make sure that the BEKA ONE is switched on and set correctly (see Chapter 9.9 Turn on the device).

- Remove the activation magnet and bring it to the activation area (Fig. 12).
- Place the activation magnet on the activation area and hold it there until the red LED has flashed twice (Fig. 12). Then remove the cap
- Or press and release the setting button as soon as the red LED has lit up twice.
- The green LED lights up according to the selected month setting.
- The pump starts the intermediate lubrication cycle (approx. 20 s)

Fig.18:



11.6 Turn off the device

- Place the activation magnet on the activation area (Fig. 11) and hold it until the red LED has flashed 10x. Then remove the cap.
- Or press and hold the settings button until the red LED has flashed 10x. Then let go.

Fig.19:

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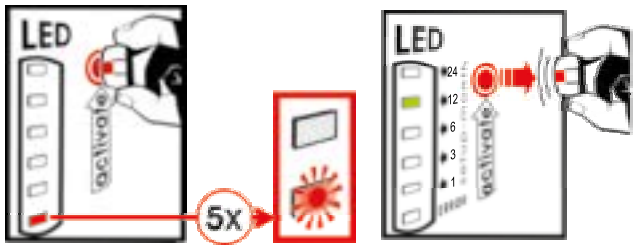

- The device switches off. The red LED lights up for 3 seconds.

Note! To switch the device on again, proceed as described in Chapter 9.5 Turn on the device.

12. Decommissioning

- Switch off the device or remove the batteries!
- To dismantle, remove all pipes and hoses from the device and unscrew the device.

13. Disposal

Note!

When changing the lubricant, the disposal instructions of the lubricant manufacturer must be observed!

Lubricants or rags or similar soiled with lubricant must be collected in appropriately labeled containers and disposed of properly.

The device must be disposed of professionally and appropriately in accordance with national and international laws and regulations.

Groeneveld-BEKA devices may also contain batteries. Batteries can be recycled if they are disposed of professionally and appropriately. They contain important raw materials.

For your notes

For your notes

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14. Information about the manufacturer

Groeneveld-BEKA

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Our further delivery program:

gear pumps
Oil multiline pumps
Grease multi-line pumps
Single-line centralized lubrication systems
Two-line central lubrication systems
Oil circulating central lubrication systems
Oil-air and spray lubrication
Wheel flange central lubrication systems
Rolling mill central lubrication systems
Commercial vehicle central lubrication systems
progressive distributor
control and monitoring devices

This document is intended solely as a means of evaluation and to provide you with data to assist you in using our product. Product performance is influenced by many factors that are beyond Groeneveld-BEKA's control. Groeneveld-BEKA products are sold subject to the Groeneveld-BEKA Conditions of Sale, which include our limited warranty and remedies. You can find them at https://www.groeneveld-beka.com/en/ Specifications are subject to change without notice. For more information and support, get in touch with your technical contact at Groeneveld-BEKA. All reasonable efforts have been made to ensure the accuracy of the information contained in this document, but no liability is accepted for errors, omissions or otherwise

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