



# BECHEM Lubricator 125 technical manual

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## 1. Introduction and intended use

These instructions contain important information on function, application possibilities, assembly and disposal of the BECHEM lubricator and shall contribute to a maximum of safety during use and an efficient product application.

The BECHEM Lubricator 125 is an electrochemically driven device for automatic supply of lubrication points with lubricating grease or lubricating oils. For this purpose, the lubricator is screwed into the thread hole of the previously removed lubrication fitting. Over a certain period of time it dispenses a preset amount of lubricant quantity.

The lubricator is particularly suitable for supplying lubricant to (difficult to access) single lubrication points. It can be used at lubrication points of plain and roller bearings, linear guides, shafts, spindles, roller and toothed chains, seals, ropes and open gears. If necessary, extension tubes can also be used.

## 2. Safety instructions

These safety instructions make no claim to completeness. If you have any questions or problems please contact your BECHEM sales partner. The BECHEM Lubricator 125 has been developed and manufactured according to the state of the art and the accepted safety regulations. Please read the following general safety and warning instructions carefully before putting the lubricator into operation to avoid personal injury or damage to property.

When reselling this product, the technical manual must always be included or accessible. The latest version can be downloaded from [https://www.bechem.de/bechem\\_lubricator](https://www.bechem.de/bechem_lubricator) in several languages. Resellers are obliged to provide the information properly in the respective national language.

## 2.1 Use

The intended use requires that these instructions and especially chapter 2 on safety instructions are read and observed. The BECHEM Lubricator 125 is a product according to the machinery directive 94/9/EC. Assembly, commissioning, operation and maintenance should principally be carried out by trained and qualified personnel only, as this requires basic knowledge of mechanics, related technical terms as well as of pertinent standards, regulations and accident prevention measures.

## 2.2 Safety and warning instructions

The safety instructions point out dangers of personal injury and damage to property. Please pay particular attention to sections marked with this symbol:



Indicates a danger to the health of persons, which can lead to serious injuries.

### General safety instructions:

- Please note the country-specific regulations for accident prevention, environmental protection and workplace.
- Use the lubricator only in technically flawless.
- Check the product for obvious defects such as cracks in the casing, missing covers and seals.
- The lubricator must not be changed, opened or modified, otherwise the manufacturer's warranty will become void and personal injury or application damage may occur.
- Opening the top part by removing the anthracite-colored ring may only be performed by qualified personnel.
- Please pay attention to the safety data sheets and the technical data sheets of the filled BECHEM lubricants.
- Use the device exclusively in the area of application specified in chapter 1, introduction and intended use.
- Always switch off the power supply before assembly/disassembly.

### Safety instructions for handling batteries:

- Avoid contact of eyes, skin and clothing with battery substances.
- Do not swallow leaking battery substances.
- All relevant safety data sheets must be observed.
- Do not throw batteries into open fire. The temperature specifications of the batteries must be observed.
- Do not open the batteries.
- The batteries must be disposed of according to the regulations.

### Safety instructions for installation and use:

- Wear protective gloves, protective clothing and eye protection during installation.
- During assembly, ensure that the lubricator and its components are securely fastened.
- During installation and maintenance on machines and systems, the relevant operating instructions and safety instructions must be observed and complied with.
- Ensure that all seals and covers are correctly installed and undamaged to prevent the intrusion of foreign objects.

- Make sure that all electrical connections are in use or closed. Only put a fully installed product into operation.
- Make sure that the lubricant supply is ensured.

### Safety instructions for maintenance:

- Do not clean the lubricator with solvents or aggressive cleaning agents.
- Avoid electrostatic charges by cleaning the lubricator from the outside with an antistatic cloth using little pressure.
- The lubricator must be disposed of in accordance with the relevant national regulations.

### Obligations of the operator:

The operator of the lubricator must regularly inform his personnel about the following topics:

- Observance of the technical manual and the legal regulations.
- Correct operation and use of the lubricator.
- Observe the instructions of the factory security and the operating instructions of the operator.
- Behavior in case of emergency.

### **2.3 Reports and certificates**

The lubricator has been tested by the following testing institutes:

- Fraunhofer-Institut für Grenzflächen und Bioverfahrenstechnik
- FMPA Forschungs- und Materialprüfungsanstalt Baden-Württemberg

Food testing values and food law regulations were met

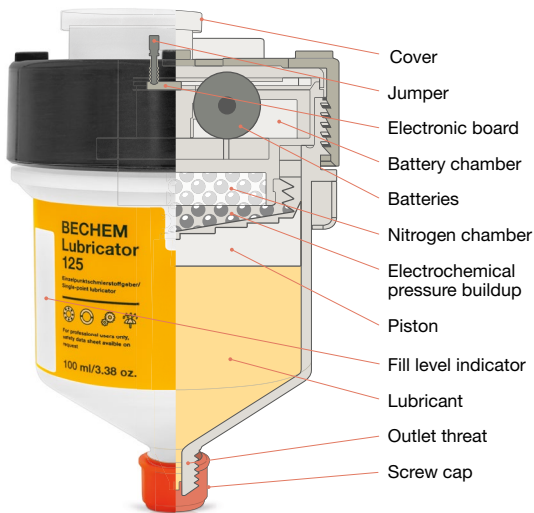
- Prüflabor ELMAC GmbH  
CE test certificate No. 76087-1BCD
- Physikalisch-Technische Bundesanstalt (PTB) Certificate of conformity
- DEKRA EXAM GmbH
- Specialist office for safety of electrical equipment
- EC type-examination certificate for explosion endangered areas
- BVS 03 ATEX E 223 according to directive 94/9/EC
- 2nd supplement to the test report BVS PP 03.2138 EC

## **3. Product setup and technical data**

### **3.1 Setup and functionality of the BECHEM Lubricator**

The BECHEM Lubricator 125 is activated by closing the contacts by using the jumper. This triggers an electrochemical reaction, producing nitrogen as an intermediate product, which leads to a pressure build-up in the nitrogen chamber. This pressure is transferred to the piston by a bellow. The piston displaces the lubricant, which is supplied to the lubrication point via the outlet opening. The lubricant delivery quantity can be regulated by four jumper positions (see setting the running time under 6.1.1).

## Basic concept BECHEM Lubricator 125



The lubricator can be used independent of the position. A visual control of the filling level is possible. After expiration of the operating time the lubricator will be replaced by

a new unit. The housing is weather-proof, corrosion resistant and offers protection against water penetration during immersion for an indefinite period (IP68).



### 3.2 Technical data

Type	BECHEM Lubricator 125
Content	100 ml
Measurements: height x diameter	130 x 80 mm
Connection thread	G ¼
Tare weight	approx. 230 g
Operating pressure	up to max. 5 bar
Operating voltage	3 V
Battery capacity	3000 mAh
IP	68
Battery (standard version)	Varta Industrial 4006 (firmly installed, no change intended)
Service temperature range	approx. -20 °C – +50 °C
Relative air humidity	30 % – 80 %, non-condensing
Lubrication duration, adjustment range	3, 6, 9 and 12 months
Explosion protection	BVS 03 ATEX E 223
Identification	8II 2G Ex ib IIC T4 / T3 Gb I M2 Ex ib I Mb

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## Observed standards and guidelines

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RL 94/9/EG	Devices and protective systems for use as intended in potentially explosive atmospheres
RL 98/37/EG	„Safety of machines“
RL 97/23/EG	„Safety of pressure equipment“
RL 89/336/EWG	„Electromagnetic compatibility“ EMC Guideline

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## 4. Storage



Storage conditions for the lubricator and its components:

- Relative air humidity 30 % – 80 %, non-condensing.
- No direct sunlight.
- Storage temperature: approx. 20 °C (recommended).
- The storage period depends on the intended duration: based on a total sum of 24 months, this results in for 9 months running time a storage time of 15 months, for 12 months a storage time of 12 months.
- The lubricant may leak if stored improperly.
- Store the lubricator with the opening pointing downwards.
- Before storage, check lubricator for leak-tightness.
- Too long storage time or improper storage can lead to malfunctions of the lubricator.

## 5. Installation

Before mounting the lubricator the bearing/lubrication point has to be greased properly with a hand operated grease gun. Possible blockages and resin deposits have to be removed professionally before. The applied pressure for lubrication of the bearing or actuator should not exceed 0.5 bar. Then remove the grease fitting from the casing.

Screw in a suitable adapter (connection thread BECHEM Lubricator 125: G 1/4). Before screwing in the lubricator the adapter must be completely filled with the lubricant. Mount the lubricator by screwing it down with a tightening torque of 6 Nm (at 20 °C). If a hose extension to the lubricating point is used, it should be filled with the same BECHEM lubricant as the lubricator.



Remove the transparent protective cap from the lubricator housing and start the lubricator by plugging the enclosed jumper into the slot for the desired run time. For setting the run time, refer to section 6.1.1.

At temperatures above +50 °C, the lubricator must be distanced from the heat source by means of a tube extension (Attention: Note the length of the line), see chapter 6.2. For lateral mounting of the lubricator we recommend a pipe clamp (see chapter 8).



- The lubricator may only be installed by qualified personnel (see general safety instructions on page 3).
- Wear protective gloves, protective clothing and eye protection during assembly.
- Do not install the lubricator directly on vibration sources.
- Do not install the lubricator on heat sources.
- A protective cover is recommended for outdoor installation.
- The lubricator must not be installed in electromagnetic areas.

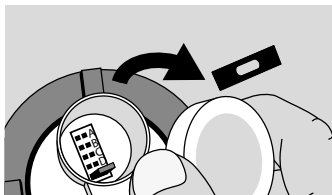
## 6. Start of operation

### 6.1 Preparation of the BECHEM lubricator

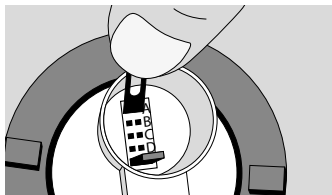
Before the lubricator is installed, the lubrication points must be sufficiently pre-lubricated to remove possible clogging and gumming. A manual grease gun with nano-meter is suitable for this purpose.

#### 6.1.1 Commissioning of the BECHEM lubricator

When the lubricator is mounted on the lubrication point, remove the transparent protective cover from the upper part of the housing and start the lubricator with the enclosed loose jumper.

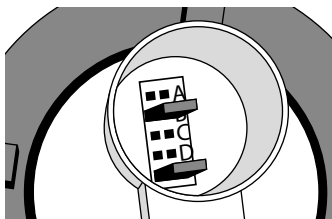


To do this, plug it into the slot for the desired runtime (here position A for 1 month runtime) as shown. The jumper on the slot not marked with a letter is a reserve jumper.

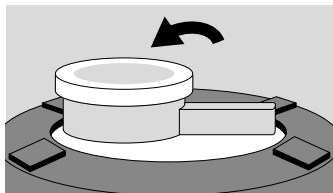


Possible runtime (A, B, C or D):

Position	Duration	Daily lubricant release at filling with grease (approximate values)
A	1 month	3,33 cm <sup>3</sup>
B	3 months	1,11 cm <sup>3</sup>
C	6 months	0,55 cm <sup>3</sup>
D	12 months	0,28 cm <sup>3</sup>



After the run time has been set, the cover must be carefully replaced. The lubricator immediately starts dispensing lubricant (for grease, maximum 3.33 cm<sup>3</sup> per day). The installation date and the running time can be marked on the label.



<b>1</b>	<b>3</b>	<b>6</b>	<b>12</b>
Installed:		Expired:	

When filled with lubricating oil, the running time is extended by up to 40 %. Due to various influencing variables such as ambient temperature, length of the extension line and different lubricant properties, e.g. density, the above values are only a rough guide.

The running time and lubricant delivery quantity of the lubricator may vary if the optimum operating temperature/ambient temperature

changes over a longer period of time. Short-term temperature deviations up or down have little or no influence on the total running time of the lubricator.

### 6.1.2 Interruption and re-commissioning

By removing the jumper, the lubricant delivery is interrupted. The pressure built up in the nitrogen chamber is maintained for about five days. After reactivation of the lubricator the lubricant delivery starts again with a short time delay. The slot (the running time) can be changed if required when reactivating the lubricator.



- Check the lubricator for external damage.
- Check the installation of the lubricator.
- Check the filling level and function of the lubricator regularly.
- Check whether the jumpers are set correctly.
- Protect the lubricator from direct overheating.

## 6.2 Use of extension tubes

If supply lines are installed between lubricator and lubrication point, these must be filled with the same lubricant used in the lubricator before installation. A mixing of different lubricants must be avoided at all costs. The length of the supply lines depends on the consistency of the lubricating grease or the viscosity of the lubricating oil as well as on the respective environmental parameters. When using lubricators with oil filling, it is recommended to install a 0.2 bar non-return valve upstream of the lubrication point to prevent the line from running empty.

Lubricant	Max. length of the line	Required min. inner diameter of the line
Greases, pastes	0,5 m	6 mm
Oil	2 m	6 mm

Only one lubricator should be used per lubrication point. A lubrication point requiring more lubricant can be additionally supplied with 2 lubricators via a T-lead-in-connector.

## 7. Maintenance

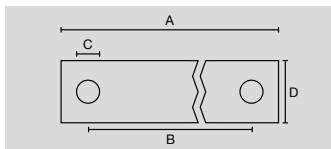
- The lubricator must not be opened.
- Make sure that no liquid can ingress.
- Clean the lubricator only from the outside.
- Clean the lubricator only with a damp cloth.
- Do not use any aggressive solvents or cleaning agents.
- Check the grease level and function of the lubricator regularly.

## 8. Optional component parts

Please contact us regarding possible component parts for the BECHEM Lubricator 125.



Installation dimensions „pipe clamp“ for mounting the BECHEM Lubricator 125:



Mounting dimensions in mm

Typ	A	B	C	D
125	112	95	6,5	16

## 9. Disassembly and replacement

- Switch off the lubricator and the system before carrying out any assembly work.
- Deactivate the lubricator by removing the jumper.
- If the lubricator is fixed with a pipe clamp, loosen the clamping screw of the pipe clamp.
- Remove the lubricator and close the outlet opening.
- Now install a new lubricator, retighten the clamping screw.





- Avoid contact with possibly leaking lubricant. The lubricant can cause irritation of the skin and mucous membranes and contaminate clothing.
  - Wear protective gloves, protective clothing and eye protection.
  - When using oil, the outlet opening should point upwards after removing the lubricator and be closed with a cover.
- ## 10. Environment, disposal and recycling
- BECHEM lubricators must be disposed of according to the national regulations of the respective country.
  - Used BECHEM lubricators can be returned to the manufacturer ALS, where they will either be recycled or disposed of by a certified waste management company.
  - Lubricant residues must be disposed of according to the safety data sheets of the respective lubricant.

## 11. Error search and error correction

<b>Observation</b>	<b>Possible causes</b>	<b>Proposed solution</b>
There is no lubricant release.	The lubricator has not been started or the jumper has been inserted incorrectly.	Plug the jumper in correctly according to the operating instructions.
	The jumper was incorrectly set to a slot for a longer runtime. Consequence: Low flow rate.	Change the jumper to the desired slot.
	The bearing to be greased is blocked.	If necessary, clean the bearing properly and lubricate it with a hand operated grease gun.
	Batteries have no charge.	Replace the lubricator.
Water in the plastic cover/condensation water.	Aggressive cleaning by high-pressure cleaner.	Replace the lubricator.
	The cover was not placed correctly (does not seal).	Replace the lubricator.

The information, data and notes provided in this technical manual corresponded to the latest status at the time of publication. Details, illustrations and descriptions may differ from those of lubricators already supplied. Claims based on them cannot be asserted. BECHEM does not assume any liability for damages and malfunctions resulting from improper handling, improper use or disregard of the technical manual of the BECHEM lubricator.

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**MADE IN GERMANY**

**CARL BECHEM GMBH**

Weststr. 120 · 58089 Hagen · Germany · Phone +49 2331 935-0 · Fax +49 2331 935-1199  
bechem@bechem.de · [www.bechem.com](http://www.bechem.com)

**Manufactured for BECHEM by ALS Schmiertechnik GmbH & Co. KG**

Maybachstr. 32 · 71332 Waiblingen · Germany · Phone +49 7151 5020830  
+49 (0) 6131-232466 (Poison Emergency Call Mainz)