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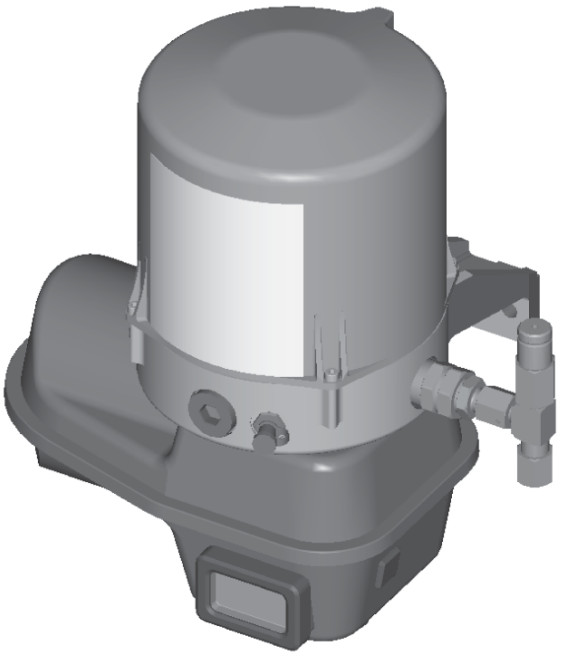
BEKA-MAX

Central lubrication pump EP-1 with integrated control unit BEKA-troniX4

Article-no. 2175....300

Revision 07-2015

Original operating- and assembly manual



BAL2175_35_EP1_BEKAtroniX4_0715_EN

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1. Technical data:

Central lubrication pump:

max. operating pressure: . . . . . 350 bar
Adjustment of over pressure valve: . . . . . 350 bar
Operating temperature: . . . . . -35°C to +80°C
Reservoir size:
Transparent reservoir: . . . . . 1,9 kg, 2,5 kg, 4 kg, 8 kg or 16 kg
Direction of agitator blade: . . . . . counter-clockwise
Installation position: . . . . . Reservoir in vertical position
Output rate: . . . . . depending of pump element
Protection type: . . . . . IP5K9K at DIN 40050
Weight: . . . . . approx. 5.1 kg

Motor:

Operating voltage: . . . . . 12 V DC / 24 V DC
Speed: . . . . . 15 rpm.
Current consuption:
Idle running at +20° C: . . . . . 0.8 A / 0.4 A
Full load at +20° C: . . . . . 2.2 A / 1.1 A
Fuse: . . . . . 5 A / 3 A

Control unit BEKA-troniX4:

Operating voltage: . . . . . 10 to 60 V DC
max. current load: . . . . . I = 6 A
Fuse (not including in device): . . . . . F 6.3 A (5x20) medium
Signal lamp outlet: . . . . . $I_{max.}$ = 0.4 A
Operating temperature: . . . . . -35° C to +75° C
Sound pressure level: . . . . . < 70 db (A)

2. Applicable documents

K-plan: K1463DE/EN
Offering drawing: FAZ02499-19, FAZ02499-32

Attention! **Please observe this documentation for all works with and at the device!**

3. General safety instructions

All persons that are in charge with the assembly, start-up, maintenance and operation of the central lubrication pump GIGA / GIGA PLUS must carefully read these instructions. Furthermore this operating manual always has to be available on site!

Basic notes for the setup, operation and maintenance can be found below!

3.1 Safety instructions:

Do not observe the safety instructions within this point but also have a look at the special safety warnings that are implemented in other areas of this documentation.

Symbols warns against voltage.

Safety instructions that cause person hazards in case of non-observance are marked with the general hazard symbol.

Warnings against hot surfaces are marked with this symbol.

Warnings of suspending loads are marked with this symbol.

Attention! This heading is used if the improper or general non-observeance of the operating manual, specified work flow and the like result in device damage.

Note! This term is used to indicate specialities.

Absolutely observe indications that are directly installed at the central lubrication pump GIGA / GIGA PLUS and keep them always readable!

3.2 Qualification and training of staff

The staff in charge for operation, maintenance, inspection and assembly has to have the according qualification for these works. Competence, area of authority and staff monitoring must exactly be controlled by operator. In case the staff does not have the necessary knowledge it has to be instructed and trained. The operator is obliged that the staff fully understands the content of this user information.

3.3 Hazards in case of non-observing the safety instructions

Results of **non-observing** the **safety instructions** can be **hazard for persons**, environment and for the central lubrication pump itself. The non-observance of the safety automatically leads to the loss of any libility. In detail the non-observance could entail the following hazards:

- Failure of important function of the central lubrication pump.
- 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 Operators obligations

- If movable, rotating, hot or could parts of the device bear risks, these need to be secured against contact by the customer. This protection against contact must not be removed.
- Any leakages of hazardous substances to be conveyed must be drained in a way that no risk for persons or the environment arises.
- Statutory provisions are to be observed.
- Hazards due to electricity are to be excluded.
- Examination of pipes and hoses regarding safe provision, use, proper assembly and function has to be carried out according to regionally applicable directives. Inspection periods may not be exceeded.
- Defective pipes or houses must be replaced immediately and appropriately.
- 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.
- A safety data sheet of the currently used lubricant needs to be provided at the device.

3.5 Safety instructions for maintenance, inspection and assembly

All **maintenance, inspection** and **assembly works** may only be carried out by **trained expert staff** who is sufficiently informed by thorough reading of the user information.

Generally all works at the device may only be carried out during **complete standstil**l and in **pressureless** as well as **disconnected condition**. Furthermore appropriate **personal protection equipment** (goggles among others) is necessary. The shutdown procedure of the central lubrication pump as described in the manual must be strictly followed.

Secure the central lubrication pump against intentional or unintentional restarting during maintenance works or repair. All safety and protection arrangements have to be put back in place again immediately after finishing the works.

Media that endangers the environment must be disposed in accordance with pertinent official specifications. **Polluted** and **contaminated surfaces** have to be cleaned before maintenance works. Please wear protection equipment to that purpose. See the lubricant manufactures´safety data sheets hereto, respectively the data sheet provided by the manufacturers of auxiliaries and working materials.

Check the surfaces temperature of the central lubrication pump as a possible heat transfer bears the risk of burns. Wear heat resistant protective gloves!

Naked light and fire are strictly forbidden during all maintenance, inspection and repair works due to fire hazard.

3.6 Freelancing alteration and spare part production

Alteration, repair and changes of the device are only accepted after manufacturer feedback. **Original spare parts** and authorized accessories from the manufacturer are for your **safety**. The use other parts can result in loss of any liabilities. BEKA does not assume liability for parts that are retrofit by the operator.

3.7 Improper methods of operation

The operational safety of the device is only guaranteed as indicated in the operating manual. Never exceed the indicated values of the technical data.

3.8 General hazard note - residual risk

All components are designed according to valid regulations of the construction of technical systems in regards to operational safety and accident prevention. Independently from this the use can lead to hazards for the user or third parties as well as for other technical facilities. Therefore the device may only fulfill its intended use in a technically acceptable and faultless use. This has to happen in adherence of the according safety regulations and attention of the operating manual. Pay regularly attention of the device and its components and check possible damages or leakage. Liquids could splatter out with high pressure from components that are pressurized and leak.

4. Use in accordance with the regulations

The central lubrication pump is **only** approved for the **industrial use.**

Attention!

Only operate the central lubrication pump if it is installed in/to another machine and operated together with this. Supply only lubricant according to the machine maufacturer´s specification. The central lubrication pump must only be used according to the technical data (see chapter 1 „technical data"). Never exceed the mentioned values. Never operate the central lubrication pump without lubricant.

Unauthorized changes of the central lubrication pump are **not permitted**. We are not liable for damages of machine or persons that result from unauthorized use.

Use according to the regulations is also:

- Observe all chapters and notes in the operating manual
- Carry out all maintenance works
- **Observe** all regulations concerning **work safety and accident prevention** during the life cycles of the device.
- Observe to have the necessary training and authorization to operate the central lubrication pump and carry out the necessary works.

Attention! **Another use or a use beyond is not according to the regulations.**

5. Scope of guarantee

Guarantee in regards to operational safety, reliability and performance will only be granted by the manufacturer if the central lubrication pump is used according to the regulations.

- Assembly, connection and maintenance are carried out by professional staff.
- The central lubrication pump is only used according to the operating manual.
- Never exceed the limit value indicated in the technical data.
- Alterations and repairs at the central lubrication pump may only be done by BEKA.

Attention!

Guarantee and warranty will expire in case of damages at the device that results from improper lubricant (e. g. wear of piston, piston jamming, blockades, brittled sealing etc.).

BEKA does not assume guarantee for lubricants damages also if they were tested and authorized by the BEKA laboratory as damages due to lubricant (for example overlaying, improper stored lubricants, batch changes etc.) cannot be reproduced afterwards.

6. Transport and storage

Use a suitable elevating mechanism for the transport.

Do not throw or shock the central lubrication pump.

Protect the central lubrication pump from topping down or from slipping during the transport.

Observe all valid safety and accident prevention for the transport. Wear suitable **protection equipment** if necessary. **Keep distance to suspending loads.** The transport help or the elevating device must have the **adequate carrying capacity.**

When storing the central lubrication pump pay attention that the storage area is cool and dry to avoid corrasion of the individual parts of the device.

7. Function and design of the system

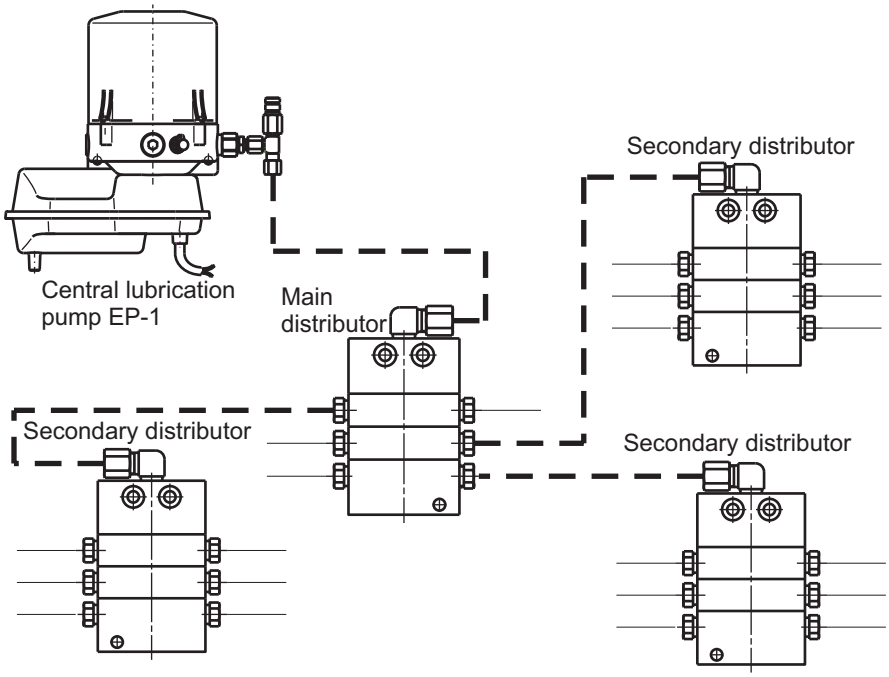
7.1 Function and setup of a progressive central lubrication system

The central lubrication system into which an electrical pump EP-1 is installed, is a progressive system. Progressive means that the lubrication points are lubricated in sequence. The sequential lubrication means a pressure relief valve can easily monitor the progressive central lubrication system.

The central lubrication pump EP-1 delivers the lubricant to the main distributor. The main distributor's task is to distribute the lubricant to the secondary distributors in the right proportions. The secondary distributors then deliver the lubricant to the individual lubrication points.

Should a lubrication point do not receive lubricant from the distributor, the system would block and a pressure of up to 350 bar is built up in the line system. Does the system block but is nevertheless operating properly, the lubricant comes out of the pressure relief valve of the pump. This serves for the system protection and monitoring.

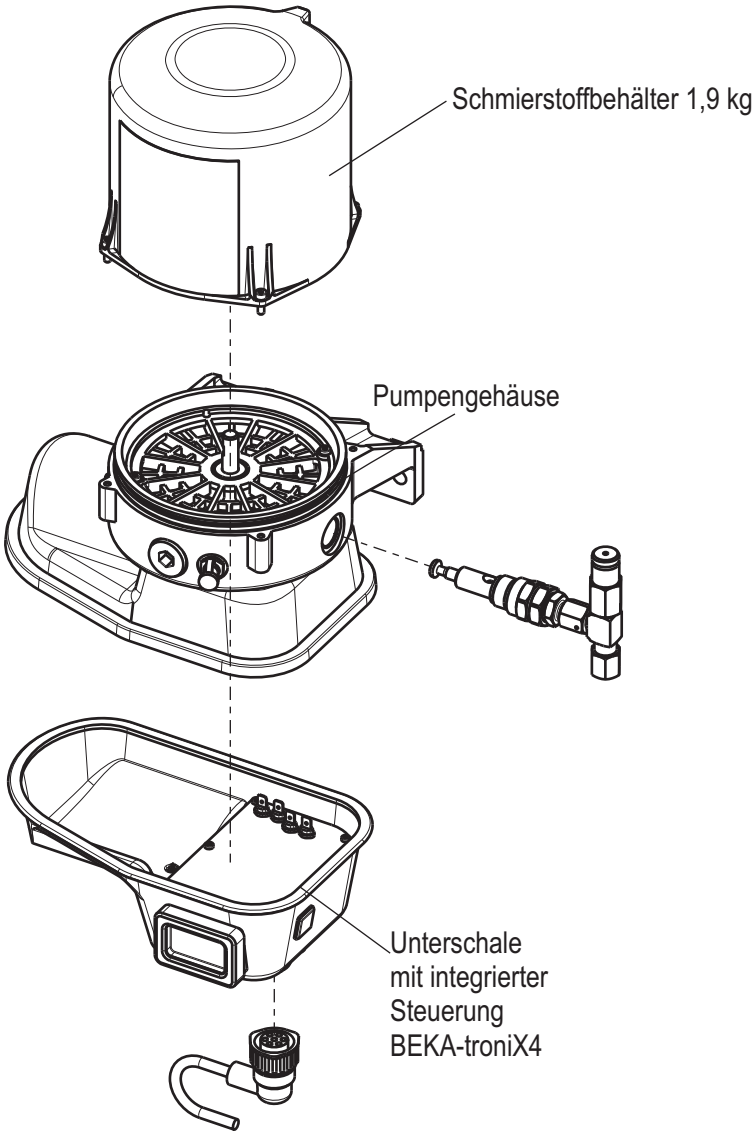
Fig. 1:



7.2 Function and setup of the pump

The central lubrication pump EP-1 basically comprises 6 assemblies (Fig. 2).

Fig. 2:



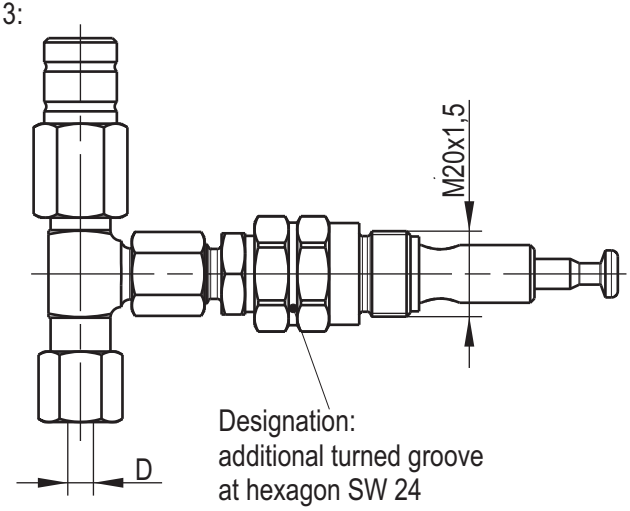
7.3. Function of the central lubrication pump:

The central lubrication pump EP-1 s designed for delivering lubricant up to NLGI class 2. The agitator blade pushes the lubricant through a grease sieve to the intake section of the pump element. The pump element is positively driven by an eccentric so that function is also ensured at low temperatures. The output rate depends on the installed pump element.

7.4 Pump element

There are PE-170 elements installed into the pumps. Their output rate is not adjustable.

Fig.. 3:



7.5 Function of the pressure limiting valve

The lubrication cycle of the central lubrication system is proteced with a pressure limiting valve.

The lubricant comes out under high pressure (250 bar)!

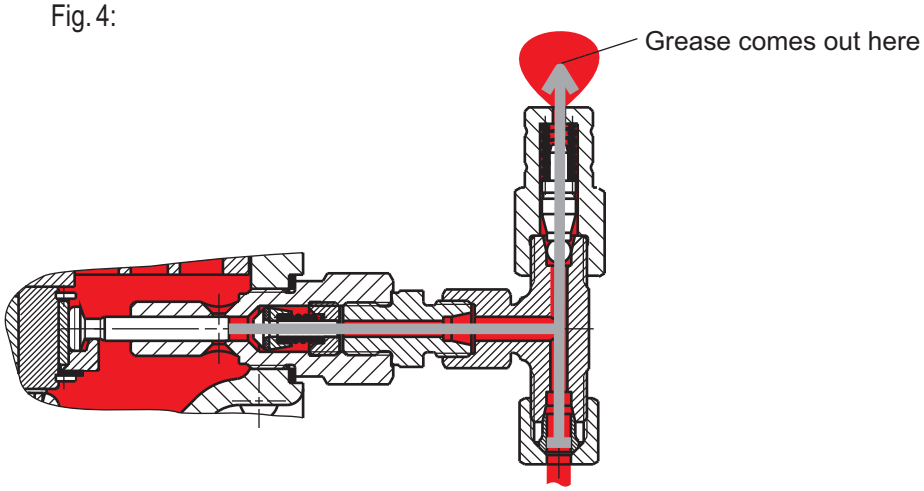
Wear safey goggles and also do not stay otherwise within the area of the pressure relief valve in the case of a malfunction of the central lubrication unit!

Never work when the voltage (ignition) of central lubrication system or pump is connected! Relieve the central lubrication system before you start the works!

Function description:

Should a malfunction occur in a lubrication cycle, the lubricant will escape from the pressure limiting valve of those pump elements which are equipped with one (fig. 4).

Fig. 4:



8. Functions of the control unit BEKA-troniX4:

8.1 Generals:

The integrated EP-tronic control serves for controlling the electric pump EP-1 in a progressive central lubrication system.

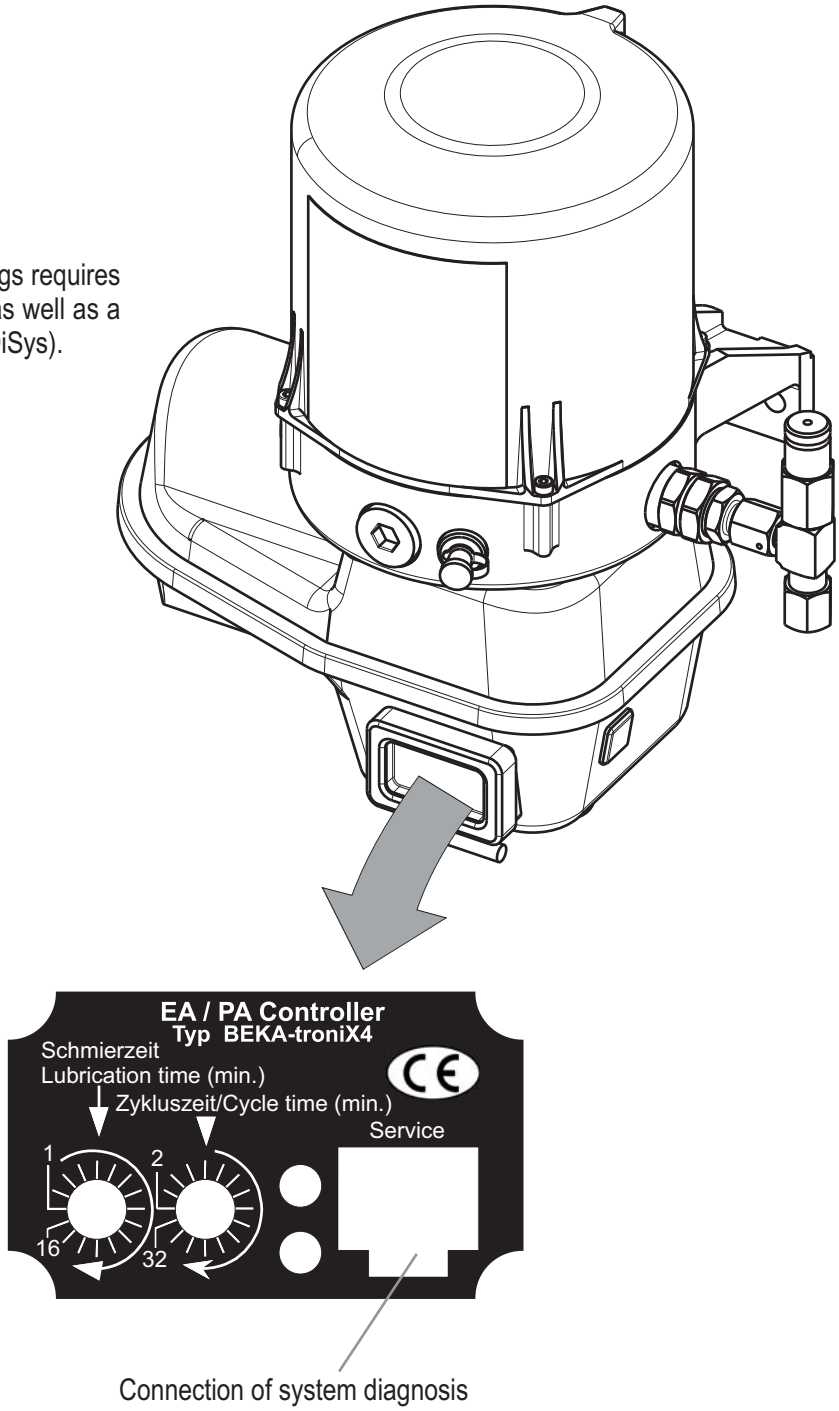
8.2 Internal storage:

The below listed values are saved at the control unit BEKA-troniX4. They can be read out or changed with the diagnosis software BEKA-DiSys:

- Controlling type
- Control unit
- Serial number
- Manufacturing date
- Mode
- Set values (adjusting ranges)

Changing the above mentioned settings requires the BEKA-DiSys diagnosis software as well as a data cable (see description of BEKA-DiSys).

Fig. 5:



8.3. Function sequence

Whatever program is being used, once the ignition has been switched on the green and the red LED or the green and the red signal lamp (optional) lights up on the control panel for 1.5 sec. and shows that the controller is operational (activation control).

Every time the controller is activated for the first time, a lubrication process begins. The green LED in the control half shell is lit during the entire lubrication procedure.

The BEKA-troniX1 integrated electronic controlling device has memory at its disposal. This also serves to keep a record of time elapsed. Should the ignition be switched off during lubrication or operational pauses occur, then the time is stopped and recorded. Once the ignition is switched on again the remaining lubrication or pause time is read from the memory and the sequence will be resumed where it was interrupted.

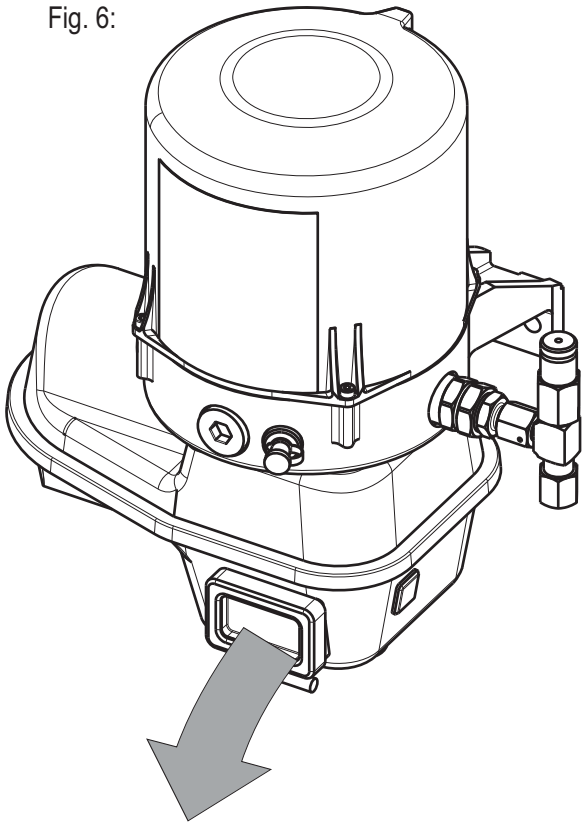
At any time when the ignition is on, an interim lubrication occurs when the button on the side of the pump motor housing or the illuminated button on the control panel is activated, this serves as a check of functionality. The pump then immediately starts its lubrication cycle, the lubrication or cycle duration recorded up to that point is reset and starts from the beginning.

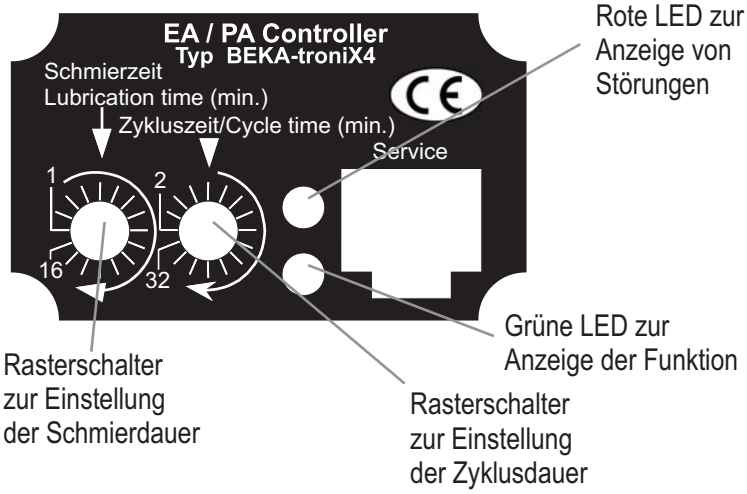
An interim lubrication can also be triggered via an external button, and the indication of the red and green LEDs can also be displayed by a red and green signal lamp in the driver´s cab.

An error can be reset by pressing the interim lubrication button and the pump starts the lubrication process anew.

The lamp on the illuminated button (green) shows the functionality of the controller and the current lubrication sequence.

Fig. 6:



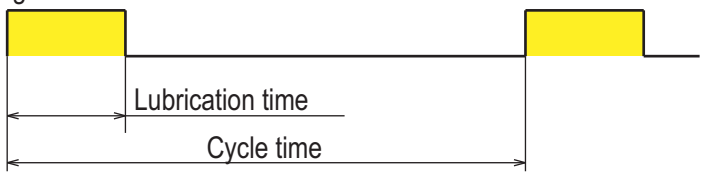


8.4 Operation modes

8.4.1 Generales

One cycle of the central lubrication system comprises cycle time and lubrication time, whereas the lubrication time is part of the cycle time.

Fig. 7:



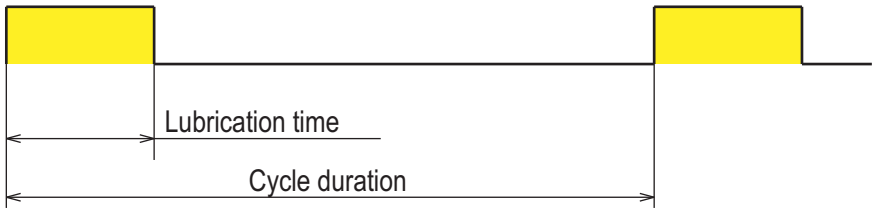
The cycle period can be adjusted in hours or minutes and the lubrication time in hours or minutes as well as by the number of revolutions of the pump motor.

8.4.2 Adjustment of time-dependent lubrication:

When the central lubrication processor is time controlled, the cycle duration and the lubrication time can be adjusted.

Cycle duration means the period from the beginning of one lubrication process to the beginning of another lubrication process.

Fig. 8:



8.4.3 Adjustment of speed-dependent lubrication:

In the case of revolution fluctuations at lower temperatures or high torque, the lubrication duration for the BEKA-troniX1 integrated electronic controller is determined by the number of pump motor revolutions.

The pump motor is connected to the controller via sliding contacts. With every engine revolution a signal is sent to the controller, which counts the incoming signals.

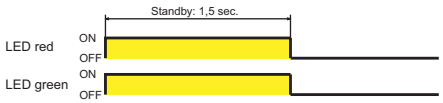
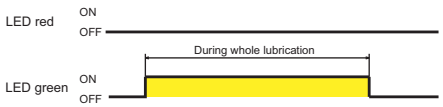
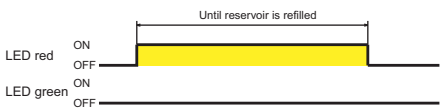
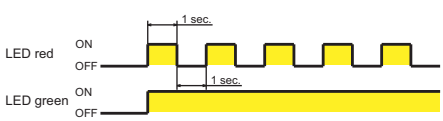
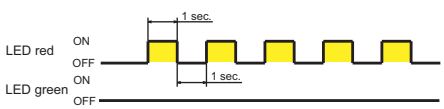
If no signal is received from the pump motor for longer than the adjustable monitoring time (standard 30 sec.) after the lubricating process has begun, the controller will indicate a fault.

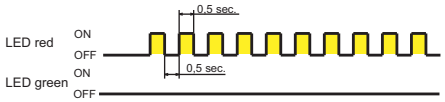
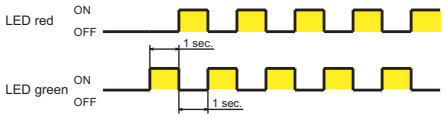
The red LED in the pump´s lower motor casing or an externally attached signal lamp (optional) start to flash.

8.4.4 Signals:

The pump´s functions are indicated via two control LEDs (green/red) in the display on the pump´s motor casing, where the red LED always indicates an error in the program sequence.

Fig. 9:

Signals	Function
	Standby indicator
	Lubricationsequence
	Grease level error
	Excess pressure error
	Revolution error

Signals	Function
	Memory error
	Test lubrication

9. Assembly instructions

9.1 Assembly of the central lubrication pump

Check the central lubrication pump for possible transport damages and for completeness before the assembly. Installed transport safety has to be removed.

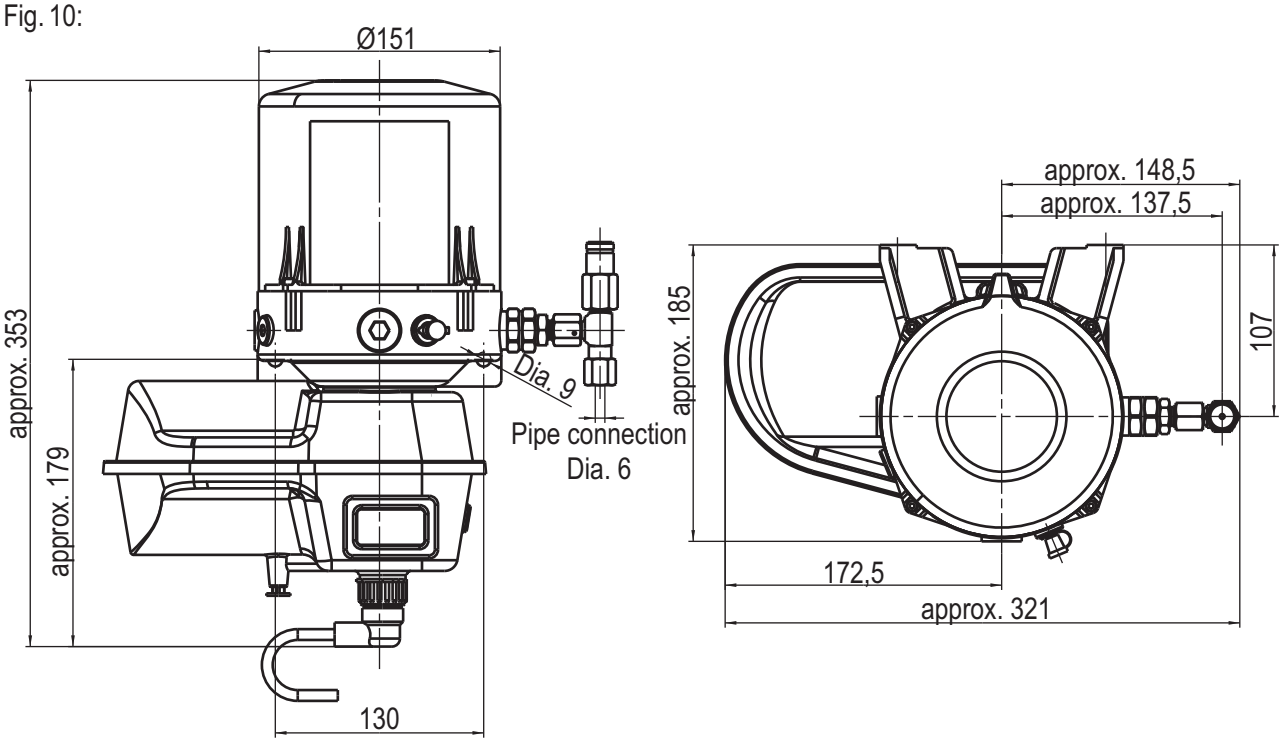
The following conditions must be fulfilled to assemble the central lubrication pump to a complete machine together with other parts without affecting safety and health of human:

Assemble the central lubrication pump in balance on site to ensure a safe operation. Observe the indicated data for fastening drillings In the dimensional drawing. When selecting the installation area, ensure that the device is protected against environmental and mechanic effects. For example also ensure a free access for lubricant refilling.

Special measurements concerning noise prevention or oscillation reduction do not need to be taken.

Dimensional drawing:

Fig. 10:

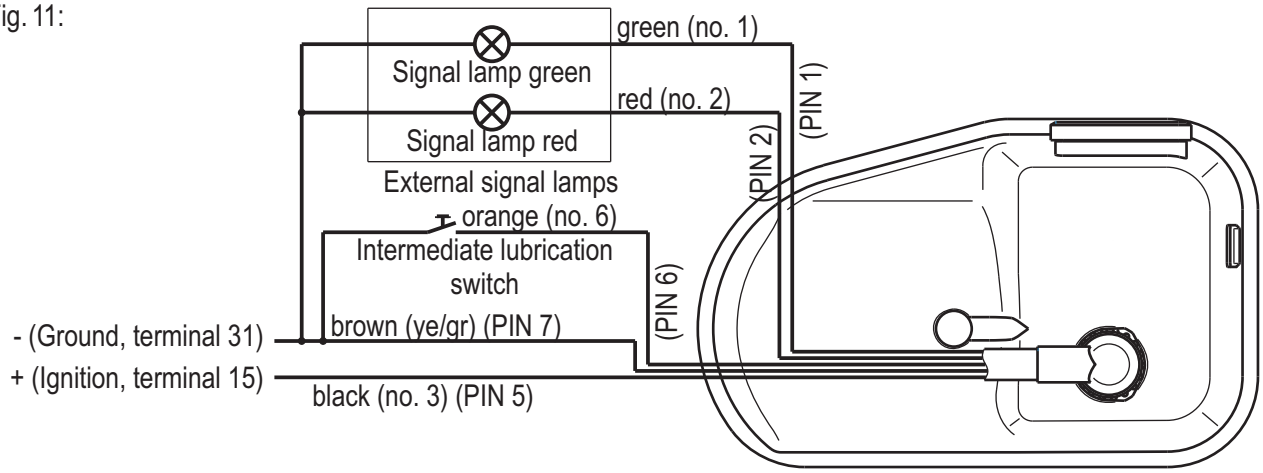


9.2 Electric connection

- Current supply must be done by a professional electrican!
- Connection and wiring of the electrical components should be done expert.
- Compare voltage details with the existing manis voltage.
- For industrial application, the equipotentional bonding has to be carried out properly by the user, via a corresponding grounding connection!
- Wire the device according to the circuit diagram.

Terminal diagram of central lubrication pump EP-1 with integrated control unit BEKA-troniX4:

Fig. 11:



9.3 Disassembly of the pump element:

A) Switch on the pump and have it turning until the agitator blade (1, fig. 12) stands opposite to the pump element to be exchanged.

B) Pull out the plug (2, fig. 13) of the pump (interrupt power supply).

Fig. 12:

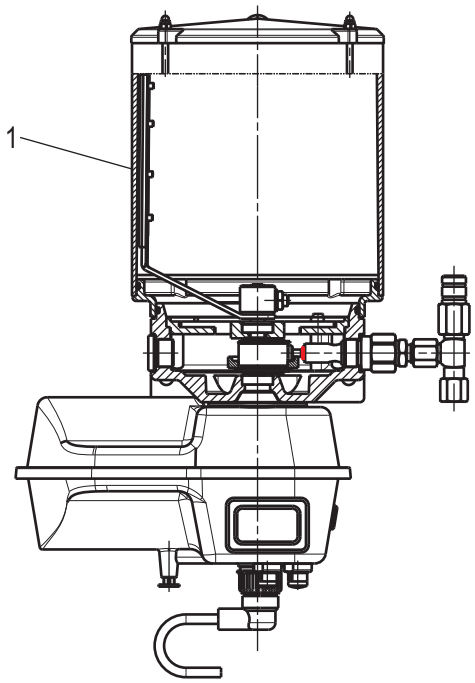
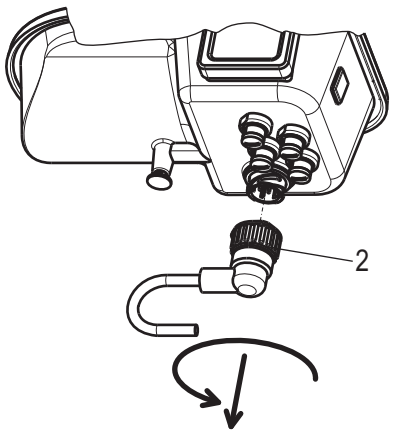
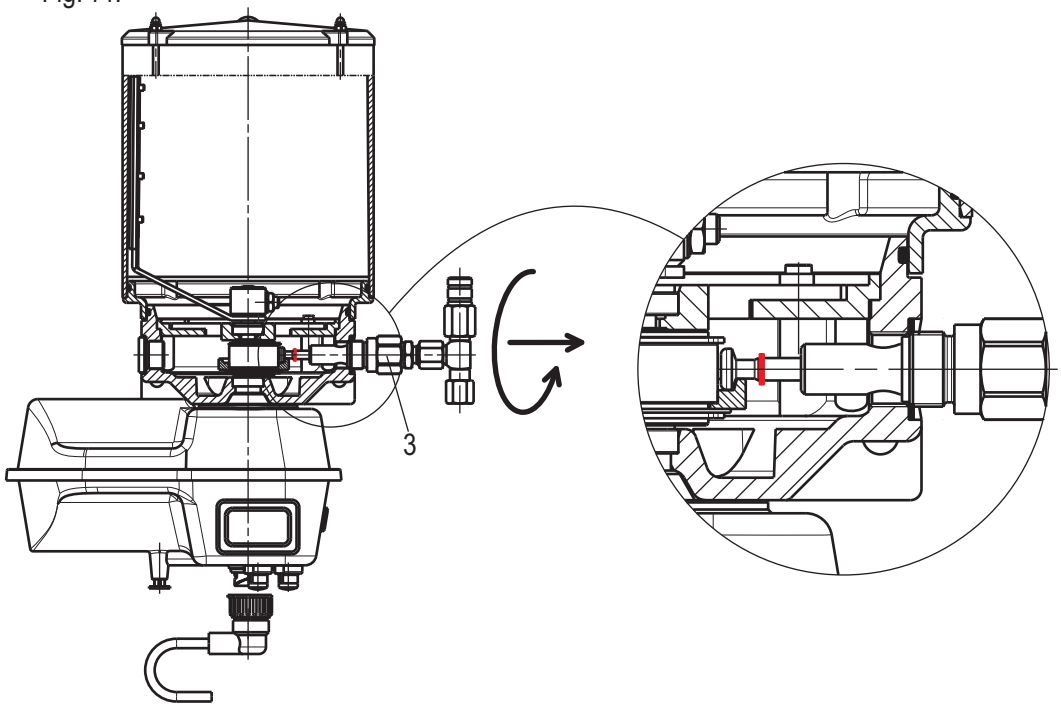


Fig. 13:



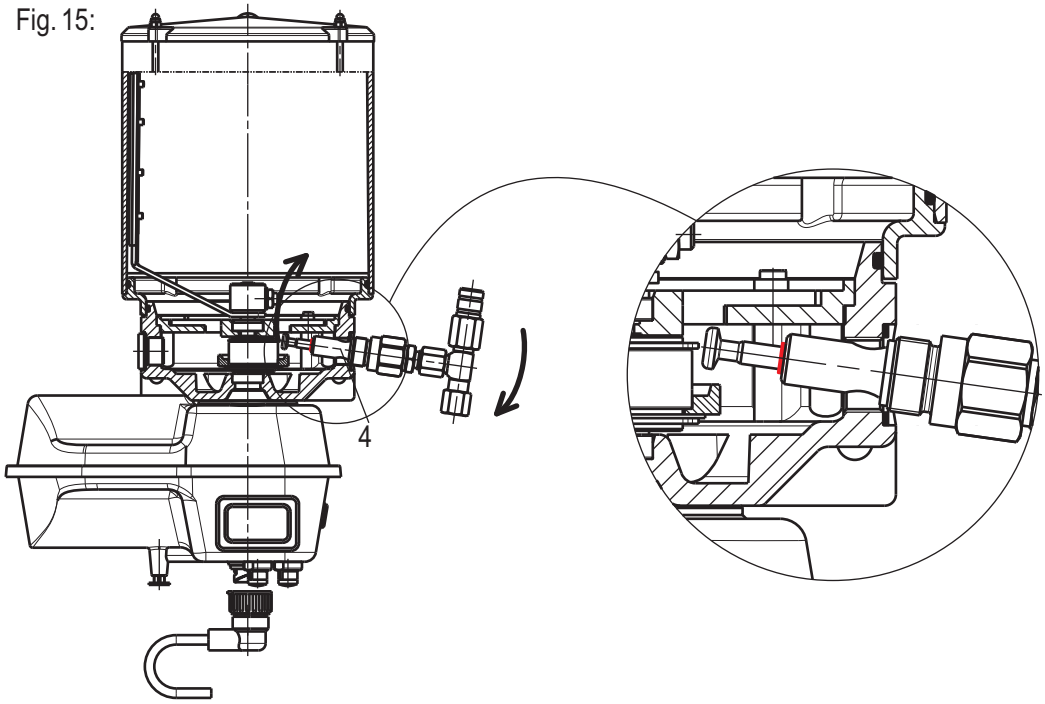
C) Screw out the pump element (3, fig. 14) up to the thread end.

Fig. 14:



D) Tilt the pump element downwards and slowly pull it out of the housing drilling.

Fig. 15:

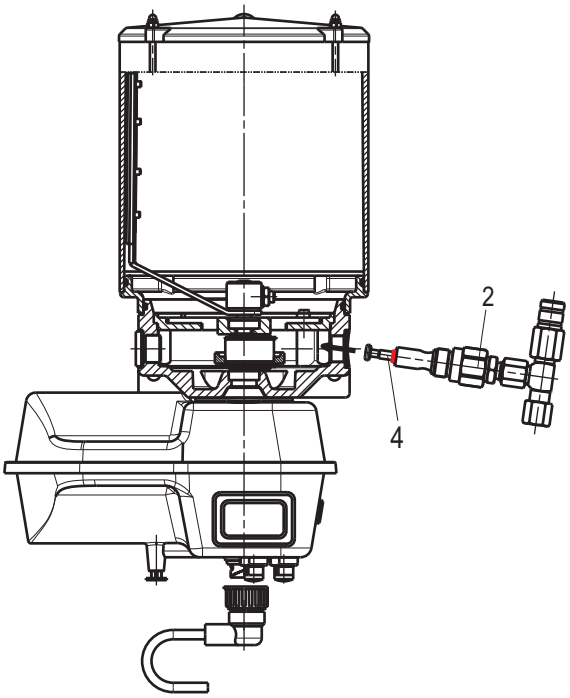


Attention! **The piston (4, fig. 15) of the pump element in any case has to be removed out of the pump housing!**

9.4 Installation of the pump element:

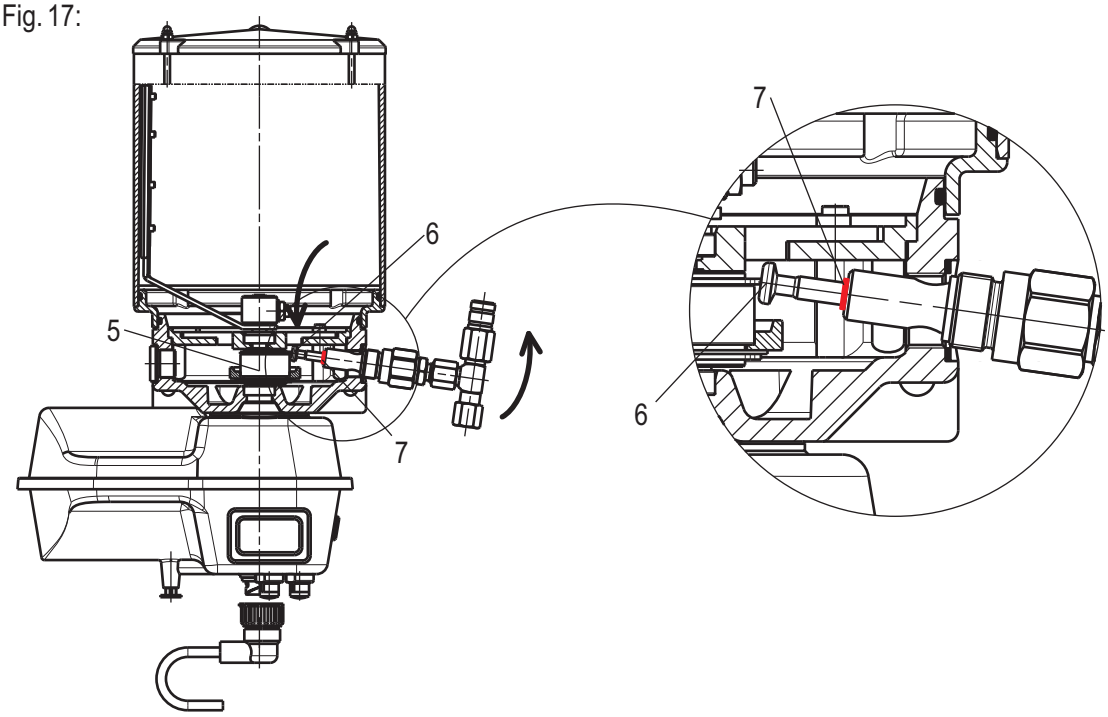
A) Insert the pump element (2, fig. 16) with partly pulled out piston (4, fig. 16) into the housing in sloping upwards position.

Fig. 16:

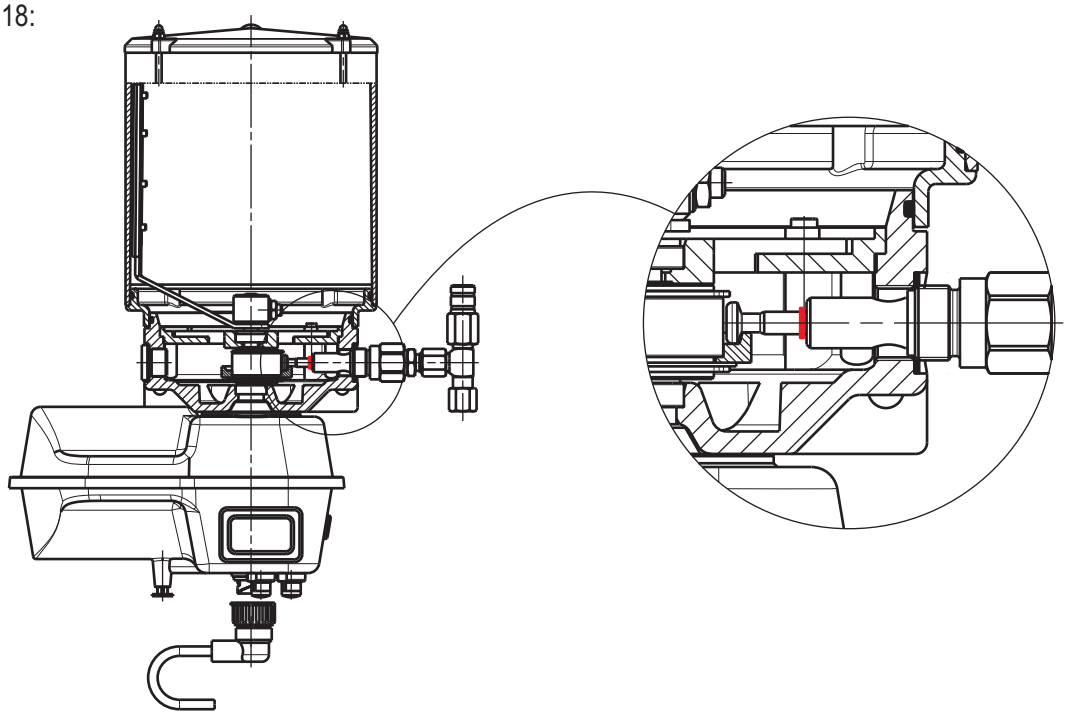


B) When the piston contacts the eccentric (5, fig. 17), tilt the pump element downwards and mount the piston head (6, fig. 17) into the guiding groove of the eccentric. A clamping ring (7, fig. 17) prevents that the piston is pushed back into the pump element.

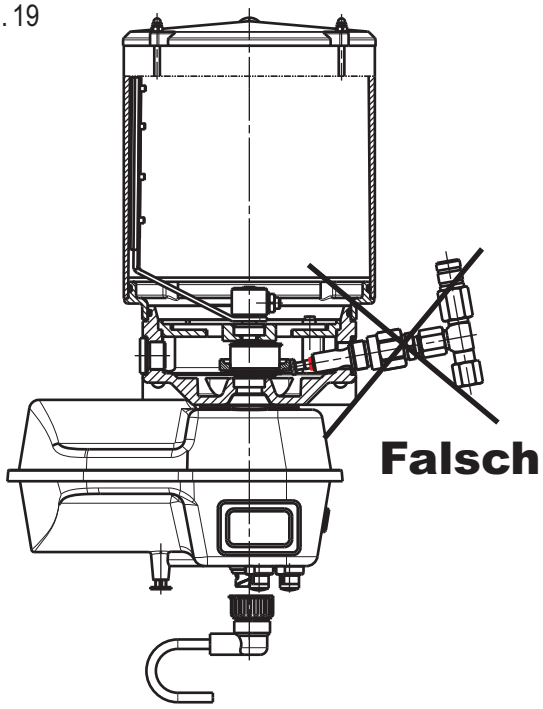
Fig. 17:



Pump element mounted but not tightened
Fig. 18:



C) Check whether the piston is correctly mounted. Ensure that the pump element cannot be pushed upwards.
Fig. 19



Attention! **When the pump element is tightened without the piston being correctly mounted, the pump element will be destroyed.**

D) Tighten the pump element with the indicated torque until the required position is reached (fig. 20).
E) Put on the plug (2, fig. 21) again.

Fig. 20:

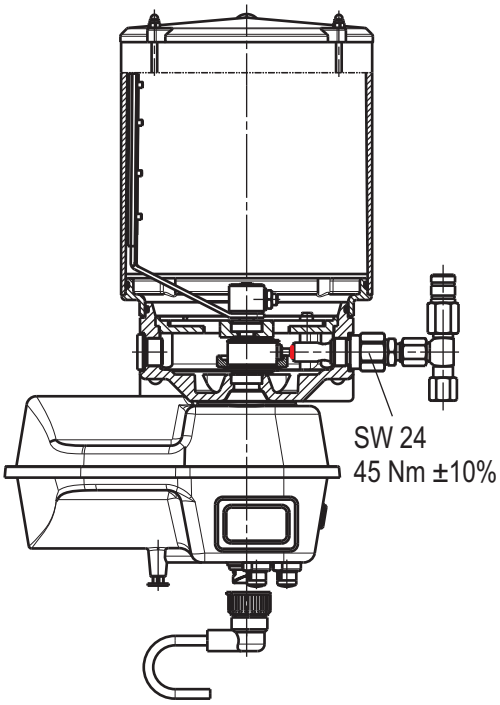
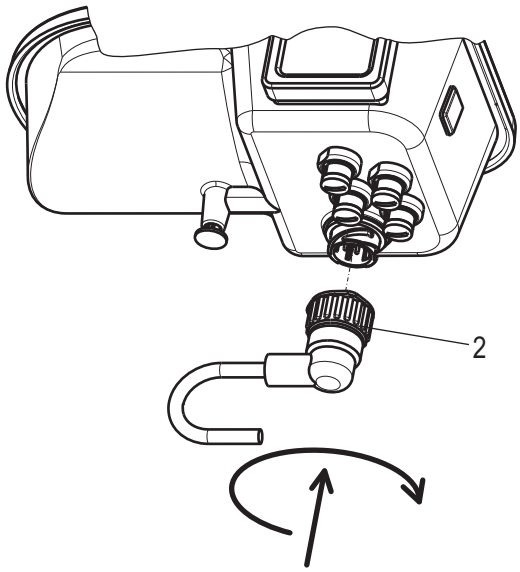


Fig. 21:



9.5 Line assembly

- Professional design!
- When using pipes, observe that they are clean, seamless and precision steel pipes!
- Assemble the pipes professional and free from distortion.
- Observe pressure tightness or fittings!
- All components must be authorized for the max. operation pressure (see technical data).

10. Start up

10.1 Filling with lubricant

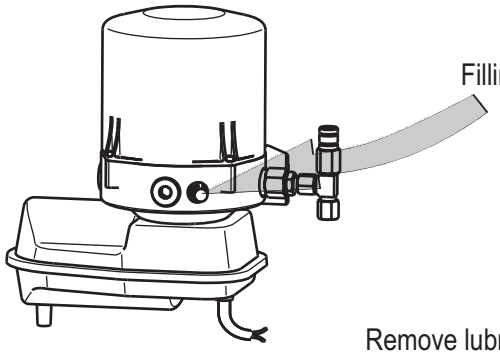
Attention! Fill the reservoir with **clean** lubricant!

- Fill the reservoir using a filling nipple or filling connection!
- Observe the machine manufacturer´s lubricant details! Use lubricants according to machine manufacturers specification!
- Collect outcoming lubricant with a suitable receptacle and dispose it environmental friendly.
- Observe the safety data sheet of the lubricant manufacturer.
- The viscosity range of lubricant changes with the operating temperature.
- Check the level during the first operating hours and refill lubricant if necessary.
- Observe utmost cleanness when refilling the reservoir.

10.2 Filling of the pump:

Standard filling via lubrication nipple with manual or pneumatic grease gun:

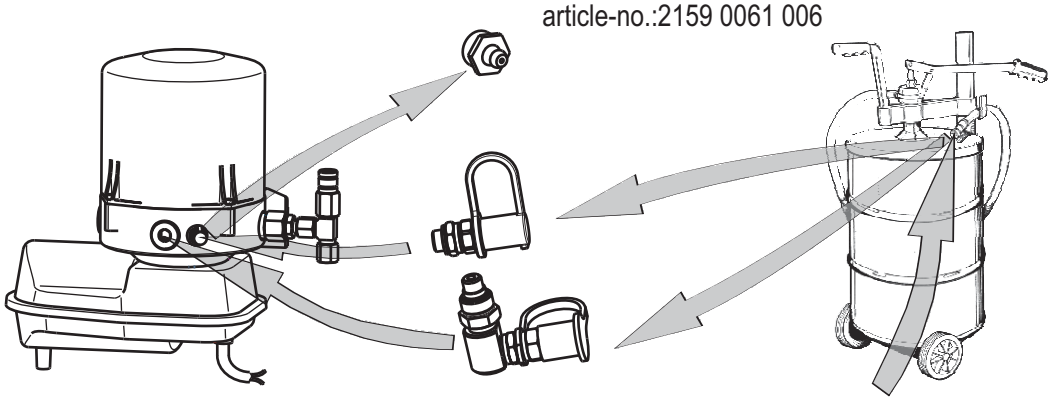
:



Filling lubrication nipple

Filling via filler coupling:

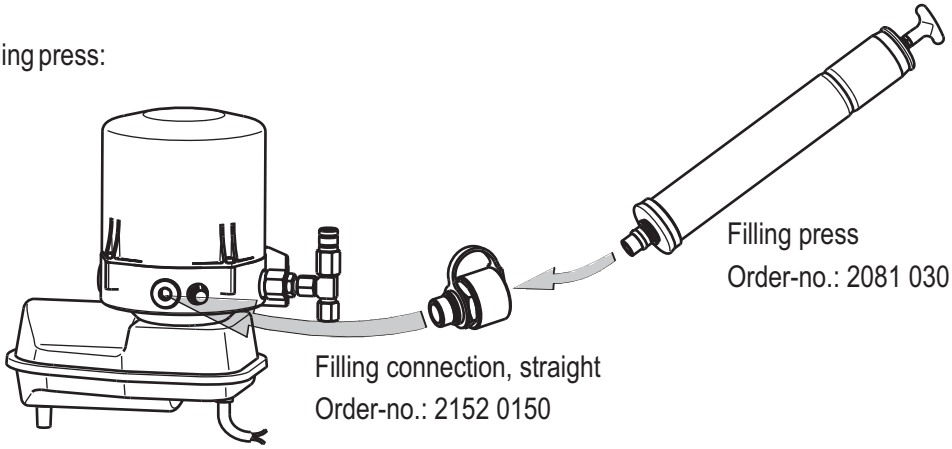
Remove lubrication nipple
and replace it by a coupling
plug for grease
article-no.:2159 0061 006



Filling plug grease
article-no.: 2159 0063 009

Coupling sleeve grease
article-no.: 2159 0062 009

Filling via filling press:



Filling press
Order-no.: 2081 030 26

Filling connection, straight
Order-no.: 2152 0150

Attention! Utmost cleanness is essential for this work!
Only fill in clean lubricant!

Note! The service life of the pump elements highly depends on the quality (impurities) of the used lubricant.

10.3. Adjusting the parameters

The cycle time or lubrication time and the number of revolutions can be adjusted by means of rotary code switches in the controller´s sight glass.

To adjust the time setting, remove the red frame on the pump´s motor housing using a flat screwdriver, loosen the four Phillips screws and remove the transparent protective cover.

The cycle duration or lubrication time can be adjusted by using a flat screwdriver.

Attention! If the cover plate is not replaced properly, water may enter the controller and damage it. In this case, the guarantee is no longer valid.

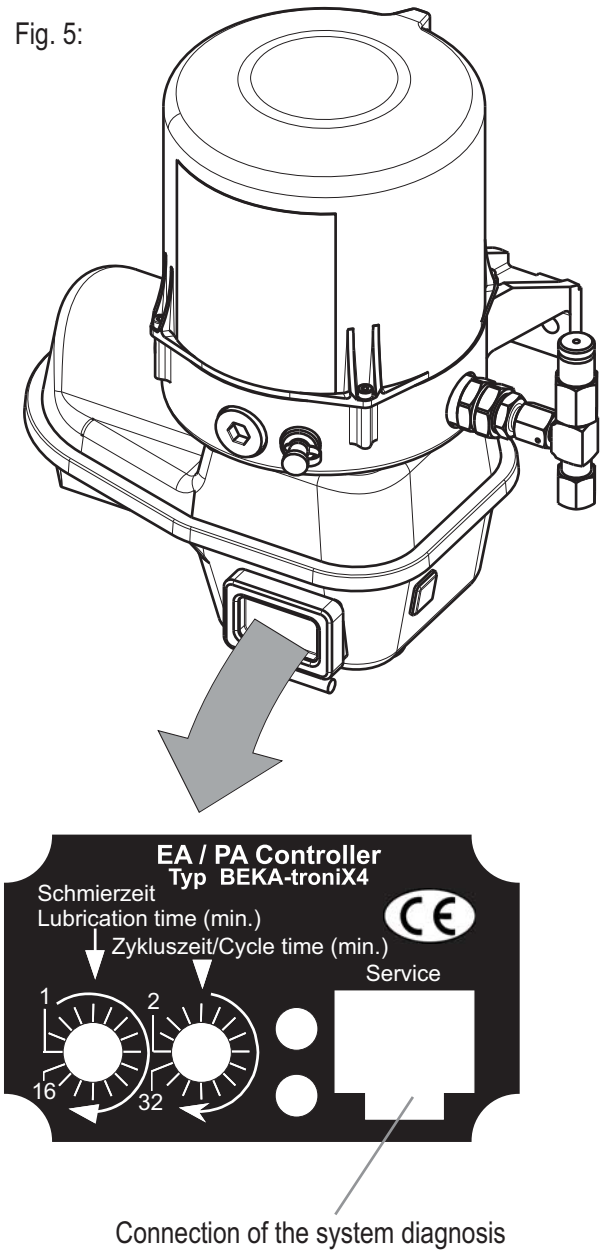
The modes and the adjusting ranges can be changed over by means of the diagnostic software BEKA-DiSys, even on site if the controller has already been operated before.

All adjusting ranges for the lubrication period and all cycle time ranges can be combined at random.

Attention! **When changing the activation modes and the adjusting ranges, the label in the controller window must be replaced.**

Stickers available on request!

Fig. 5:



10.4 Ventilation of the lubrication system

- Ventilate the whole lubrication system after the first operation and after each lubricant exchange!
- Ventilation is done at pressure less operation and open outlets of the system.
- Operate the pump until lubricant comes out of the pressure connection without air inclusions.

10.5 Rotation control of the pump

- Compare the rotation of the fan with the directional arrow.
- In case of wrong direction check the wiring to the terminal box and change it.

Attention! Longer operation with the **wrong direction** causes **motor and pump damages**!

11. Maintenance

Stop the voltage feed, **before** starting with **maintenance or repair**.

Maintenance and repair work may only be done at **standstill** of the central lubrication pump and pressure less conditions. Check the surface temperature of the device, due to danger of burning by radiant heat. Always wear heat-resistance gloves and protection goggles! Soiled or contaminated surfaces have to be cleaned before maintenance works, wear protective cloths if necessary. Protect the device against unintentional reactivation during maintenance and repair works!

Further information and technical details regarding the components can be found in the enclosed operating manuals of the components.

11.1 General maintenance

- Retighten all fittings 6 weeks after start up.
- Check all components for leakage and damages every four weeks.

If leakages are not repaired, lubricant can **come out with high pressure**. Remove possible leakages of lubricant immediately.

10.2 Refilling with lubricant

Attention! Observe utmost **cleanless** when refilling!

- Check the level regular and refill if necessary, see chapter start up.
- Please take care to use lubricants that are suitable for the lubricating machine and that also suit the requirements of the application conditions.
- When ordering from **different lubricant manufacturers** take care that the lubricant **quality** is similar to the previous one. Drain the clean the reservoir completely just to be sure.

12. Shutdown

- Relief the central lubrication pump from pressure!
- Shut down current!
- Separation of central lubrication pump from current supply must be done by a professional electrican.
- Remove all pipes and hoses from the device and loosen all fastenings for the demounting.

13. Disposal

Note!

When changing lubricant, observe the disposal details of the lubricant manufacturer!

Lubricants or cloth contaminated with lubricant or similar textiles must be collected in a specially marked receptacle and disposed accordingly.

The disposal must be done professional and according to the national and international laws and regulations.

Moreover, BEKA devices could contain batteries. Professional and properly disposed batteries will be recycled. The contain important raw materials.

14. Malfunction - Cause - Remedy:

Malfunction	Cause	Remedy
– Pump does not operate	– Fuse of unit blown – Integrated electronic control defective – Electrical cable broken – Pump defective – Pump element not nested	– Replace fuse – Replace integrated control – Renew electrical cable – Replace the pump – Renew pump element
– Pump operates, but does not supply lubricant	– Air in the feed piston – Filling level below minimum – Defective pump element	– Ventilate the pump – Re-fill the reservoir – Renew pump element
– No grease collar at all lubrication points	– Pump does not operate – Cycle time too long – Lubrication time too short – Number of strokes too low – Number of rotation too low – Pump element PE-120 V adjusted too low – System blocked	– See „Pump does not operate” – Reduce cycle time – Increase lubrication time – Increase number of strokes – Increase number of rotations – Adjust pump element – See „Leakage of grease at the pressure relief valve“
– No grease collar at several lubrication points	– Feed pipes for secondary distributors burst or leaky – Fitting leaky	– Renew the pipe – Re-tighten or renew the fitting
– No grease collar at one lubrication point	– Appropriate lubrication line burst or leaky – Fitting leaky	– Renew the pipe – Re-tighten or renew the fitting
– Reduced pump speed	– High pressure in the system – Low ambient temperature	– Check system / bearing points – Not defectiveness (1 or 2 intermediate lubrication cycles might be useful)

Malfunction	Cause	Remedy
– Leakage of grease at the pressure relief valve	– Excessive pressure in the system – Progressive distributor blocked – System blocked – Defective valve spring	– Check the system – Replace distributor – Repair blocked bearing point – Renew the pressure relief valve
– The red indicator pin at the malfunction indicator of the pump element is visible	– Excessive system pressure	– See „Leakage of grease at the pressure relief valve“
– The LEDs in the inspection window of the control flash	– Pump lubricates – Grease level error – Excessive pressure error – Speed error – Stroke error – CPU/memory error	– No error (see signals) – Fill reservoir – Check the system and repair it, if necessary – Check the system and repair it, if necessary – If there is no defectiveness, activate intermediate lubrication once or twice – Exchange the control unit
– Level error, although the reservoir is filled with lubricant	– Capacitive proximity switch in the reservoir defective – Cable of the level monitoring defective	– Send the lubricant reservoir with level monitoring in for being repaired – Exchange the cable
– Level error although there is no level monitoring in the pump	– Level monitoring activated in the control unit	– Deactivate level monitoring in the control unit with the system diagnosis software BEKA-DiSys
– The pump function (pump operating time or cycle time) does not correspond to the values adjusted in the inspection window of the control unit	– The operating mode or the adjustment range of the control has been changed, but the sticker in the inspection window not	– Make a diagnosis with the diagnosis software – BEKA-DiSys – Adapt the adjustment to the sticker in the inspection window or exchange the sticker

15. Order key for the pump with control units:

Construction type	2175 . 3 . 1 . E . 0 . 1 . 2 . 1 . 300

Motor voltage	
with bayonet connector	
12V	24V
3	4

Outlet	Pump element	without	PE-60	PE-120	PE-120 V	PE-170
Pos. 1	without micro switch	0	7	1	2	G
	with micro switch	0	A	D	N	H
Pos. 2	without micro switch	0	8	3	4	J
	with micro switch	0	B	E	P	K
Pos. 3	without micro switch	0	9	5	6	L
	with micro switch	0	C	F	A	M
Special variants		ZZZ				

Only one micro switch can be connected to the BEKA-troniX4 controller!

	Transparent reservoirs					Steel reservoirs		
Size of reservoir (kg)	1,9	4	2,5	8	16	2	4	8
without grease level monitoring	1	2	4	8	9	6	7	5
with LM min. plug connection M12x1 in reservoir cover		B	A	C				

Additional equipment	
without connectors for additional equipment	0
Grease level monitoring	1
System excess pressure monitoring	2
Grease level controller and system excess pressure monitoring	3
without connection to the controller (only connectors, not connected, not activated)	4

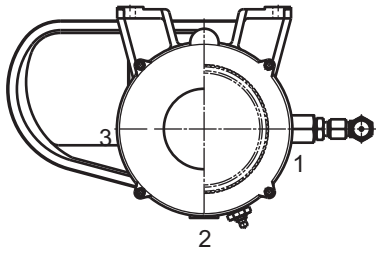
Parameter		Cycle duration		
Lubrication time		0.5 to 8 h	2 to 32 min.	2 to 32 h
I	1 to 16 min.	1	A	J
II	2 to 32 min.	2	B	K
III	2 to 32 sec.	3	C	L
Pump revolutions				
I	1 to 16	7	G	O
II	10 to 160	8	H	Q
III	170 to 320	9	I	R

Special models	300

The operating modes and setting ranges, respectively, can be subsequently set in the PC by means of the diagnostic software BEKA-DiSys.

Additional functions can be activated or deactivated at any time if the controller was ordered with additional functions, i.e. if the additional plugs are available on the bottom motor housing!

Positions of outlets:



16. Declaration of incorporation for incomplete machinery (acc. to EC-directive 2006/42/EG)

The manufacturer: BAIER + KÖPPEL GMBH+CO
Beethovenstrasse 14
91257 Pegnitz / Germany
Tel.: +49(0)9241 729 0

declares hereby, that the following partly completed machinery:

Product description: Grease lubrication pump
Type designation: EP-1, FKGGM_EP
Article number: 2018...; 2037...; 2152...; 2157...; 2175...; 2183...; 2184...
Serial number: from 835000 to 999999

is complying with all essential requirements of the above mentioned machinery directives (2006/42/EG):
Annex I, article 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4, and 1.5.1.
The following coordinated standards have been used:

DIN EN 809

DIN EN ISO 12000

The following other specifications and standards have been used:

VDE 0530

ECE approval
Following pump types have been tested by TÜV Süd Automotive GmbH and approved for usage by Kraftfahrt-Bundesamt (KBA)
EP1 with EP-tronic 12V 2157.3
EP1 with EP-tronic 24V 2157.4
EP1 with Beka-troniX1 12V 2175.3
EP1 with Beka-troniX1 24V 2175.4
The approval sign is (E1) 10R-036003

The protection targets of the directive for **electric equipment 2006/95/EG** have been observed according to the annex I, no. 1.5.1 of the machine directive.

The incomplete machine may only be put into service as soon as there has been stated that the machine, into which the incomplete machine shall be installed, responds to the determinations of the machine directive (2006/42/EG).
The special documentation that responds to the machine, has been prepared according to annex VII part B.

The manufacturer (documentation department, phone +49(0)9241 729 779, email: tb3@beka-lube.de) obliges itself to pass on electronically the special documentation for partly completed machinery to individual national authorities upon request.

Pegnitz,

ppa. A. Zapf (sales manager)

...a product of BEKA

BEKA

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Unser weiteres Lieferprogramm:

Zahnradpumpen
Öl-Mehrleitungspumpen
Fett-Mehrleitungspumpen
Einleitung-Zentralschmieranlagen
Zweitleitungs-Zentralschmieranlagen
Ölumlauf-Zentralschmieranlagen
Öl/Luft- und Sprühschmierung
Spurkranzschmierung
Nutzfahrzeug-Zentralschmieranlagen
Walzwerk-Zentralschmieranlagen
Progressivverteiler
Steuer- und Überwachungsgeräte

Änderungen vorbehalten!