

P 215





CE Declaration of Conformity

(according to ATEX Directive 94/9/EC, Appendix X)

The Manufacturer
LINCOLN GmbH, Heinrich-Hertz-Str. 2-8, D - 69190 Walldorf
hereby declares that the partly completed machinery

Designation: Pump for supplying lubricants within a centralized lubrication system

Explosion protection class   II 2G c IIC T4 Gb II 2D c IIIC T120 °C Db

Type: P 215

Part number 660- 41264-1

Year of construction See type identification plate

Complies with the basic safety and health requirements laid down in the ATEX Directive 94/9/EC and the safety and health requirements of the Machinery Directive 2006/42/EC when first being launched in the market.

1.1.2 ○ 1.1.3 ○ 1.3.2 ○ 1.3.4 ○ 1.3.7 ○ 1.5.2 ○ 1.5.6 ○ 1.5.8 ○ 1.5.9 ○ 1.7.3 ○ 1.7.4

The special technical documents were prepared following:

- ATEX Directive 94/9/EC, Appendix VIII No. 3 and stored at the named institute (0123).
- Machinery Directive 2006/42/EC, Appendix VII Part B was prepared. We undertake to send this in electronic form to the respective national authorities upon justifiable request.

Authorized representative of the technical documentation is the head of standardization. For address, see Manufacturer.

Harmonized and other standards:

DIN EN ISO 12100:2011	DIN EN 809-1:2011
DIN EN 1127-1: 2011	DIN EN 60204
DIN EN 13463-1: 2009	DIN EN 13463-5:2011

The partly completed machine must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the EC Machinery Directive 2006/42/EC (and all other directives to be applied.)



Walldorf
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Operating Instructions

Pump P 215 ATEX

Declaration of Conformity

Contents

1. Guidelines.....	6
1.1 Warnings.....	6
1.2 Illustrations.....	6
1.3 Abbreviations.....	7
1.4 Manufacturer and Service addresses.....	7
1.5 Warranty.....	7
1.6 Disclaimer.....	7
1.7 Copyright.....	7
 2. Safety information	 8
2.1. Emergency stopping of pump.....	8
2.2. Intended use.....	8
2.3. Explosion protection class.....	8
2.4. Expiry of the ATEX certification.....	8
2.5. Pump operation	8
2.6. Foreseeable misuse	9
2.7. Prohibition of certain activities.....	9
2.8. Conversions / modifications.....	9
2.9. Inspections.....	9
2.10. Warning labels on the machine	10
2.11. Other applicable documents.....	10
2.12. Sources of hazard.....	11
2.13. Moving, rotating parts	11
2.14. Energies.....	11
2.15. Lubricants	11
2.16. Explosive substances at the location of use.....	11
2.17. Existing residual risks	12
2.18. Persons authorized to operate the pump	15
2.19. Operator.....	15
2.20. Specialist for maintenance and repairs in potentially explosive areas	15
2.21. Protection of special groups of persons	15
2.22. Safety recommendations to be complied with.....	16
2.23. General behaviour when handling the machine	16
2.24. Explosion protection	17
2.25. Transport / installation / maintenance / repairs / servicing	19
2.26. Initial commissioning / daily start-up.....	21
2.27. Cleaning.....	21
2.28. Operator's obligations.....	21
2.29. Determination of hazards	21
2.30. Explosion protection – measures following ATEX.....	22
2.31. Provision of necessary information.....	22
2.32. Instruction and qualification obligations.....	23
2.33. Briefing of external technicians.....	23
2.34. Inspection for correct use	23

Operating Instructions

Pump P 215 ATEX

2.35.	Provision of personal protective equipment	23
2.36.	Training courses	24
2.37.	Inspection of the delivery	24
2.38.	Returns	24
2.39.	Disposal	24
3.	Lubricant.....	25
3.1.	Selection of lubricants	25
3.2.	Ageing of lubricants	25
3.3.	Specification	26
4.	Technical Data.....	27
4.1.	Ambient temperature	27
4.2.	Operating pressure	27
4.3.	Installation position	27
4.4.	Sound pressure level.....	27
4.5.	Maximum set-up height	27
4.6.	Maximum dust thickness	27
4.7.	Weight.....	27
4.8.	Gear ratio.....	27
4.9.	Reservoir variants.....	28
4.10.	Space requirements.....	29
4.11.	Electrical connection.....	30
4.12.	IP protection classes.....	30
4.13.	Tightening torques	31
4.14.	Flow rate	31
4.15.	Connections / outlets	31
4.16.	Filling possibilities.....	31
4.17.	Rotational direction of the pump.....	32
4.18.	Permitted speeds.....	32
4.19.	Painting.....	32
4.20.	Type identification plate of pump.....	33
4.21.	Storage until first use	34
5.	Technical data of the capacitive sensor.....	35
6.	Technical data of motors	36
7.	Brief description of the pump.....	37

Operating Instructions

Pump P 215 ATEX

8. Installation and commissioning	39
8.1. Important note on the installation of the pump elements	39
8.2. Assembly of the pump elements (grease)	40
8.3. Assembly of the pump elements (oil)	41
8.4. Adjustment of the pump elements	42
8.5. Filling the reservoir	43
8.6. Inadvertent filling with incorrect lubricant	44
8.7. Electrical connection to the operator's network	44
8.8. Electrical connection of the low-level indication	45
8.9. Inspections prior to initial commissioning	45
8.10. Activation of the pump	46
9. Standard operation	47
9.1. Daily start-up	47
9.2. Inspections	47
9.3. Filling the reservoir during operation	47
9.4. Cleaning	47
10. Maintenance	48
10.1. Pump maintenance	48
10.2. Gear maintenance	48
10.3. Maintenance of SEW motors	49
10.4. Measurement of insulation resistance	49
10.5. Maintenance of sensors	49
11. Troubleshooting	50
12. Declarations of conformity of purchase parts	53

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1. Guidelines





As you read these instructions, you will notice a number of depictions and symbols which are to facilitate the navigation and understanding of these instructions. For reasons of better legibility, in these instructions we mainly use the male form for general references. Of course, the female form is also always intended. In the following the different meanings are explained.

Text representations	Meaning
Bold print	Highlighting of particularly important words / passages
• List 1	Marks lists
○ List 2	Marks lists
(parenthesis)	Item numbers
➤ Instructions	Instructions to personnel. These always appear in chronological order.

1.1

Warnings

Activities which generate actual hazards (to life and limb or possible damage of the machine) are marked by warnings. Definitely observe the instructions given in the warnings. The following warnings are possible:

Warning stage	Effect	Probability
 DANGER	Death / severe injury	Imminent
 WARNING	Serious injury	Possible
 CAUTION	Minor injury	Possible
 ATTENTION	Damage to property	Possible

1.2

Illustrations

The illustrations used refer to a specific product. In the case of other products they may have a schematic character only. The basic functions, however, do not change.

Operating Instructions

Pump P 215 ATEX

1.3 Abbreviations

The following abbreviations may be used within these instructions.

max.	maximum	Nm	Newton metre
min.	minimum	incl.	including
min.	minutes	i.e.	this means
s.	seconds	r. h.	relative humidity
etc.	et cetera	approx.	approximately
e.g.	for example	Ø	diameter
ml	millilitres	®	registered trademark
ccm	cubic cm	©	copyright
mm	millimetres	TM	trademark
°C	degree Celsius	%	per cent
°F	degree Fahrenheit	dB (A)	sound pressure level
K	Kelvin	>	greater than
inch	inch	<	less than
kg	kilogramme	±	plus minus
L	litre	AF	across flat
mbar	millibar	ESD	Electrostatic discharge
no..	number	N/A	not applicable
rpm	revolutions per min.	MTTF	mean time to failure

1.4 Manufacturer and Service addresses

Manufacturer	Customer Service
LINCOLN GmbH Heinrich-Hertz-Str. 2-8 D - 69190 Walldorf	LINCOLN GmbH Central Customer Service Dept. P.O. Box 1263 D - 69183 Walldorf

1.5 Warranty

The instructions make no statement regarding warranty. To learn more about our warranty, see our General Terms and Conditions.

1.6 Disclaimer

Observation of these instructions is the prerequisite for safe operation and the achievement of product characteristics and performance levels. The manufacturer shall bear no liability for damages - of any kind - resulting from the non-observance of these instructions.

1.7 Copyright

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2. Safety information

Safety information is to be read and observed by any persons entrusted with works on the machine or by those persons who supervise or instruct the before-mentioned group of persons. It is prohibited to commission or operate the machine prior to reading the Instructions. These Instructions must be kept at an accessible location for further use.

2.1. *Emergency stopping of pump*

In case of an emergency, the pump can be shut down by:

- Switching off the machine or system in which the pump is integrated.

2.2. *Intended use*

Supply of lubricants within a centralized lubrication system following the specifications made in these instructions and the stated explosion protection class. The use is allowed within commercial machines or systems only.

2.3. *Explosion protection class*

See declaration of conformity / type identification plate of the pump.

2.4. *Expiry of the ATEX certification*

The ATEX certificate for this product expires through:

- Use not in accordance with the intended purpose.
- Unauthorized modifications.
- Use of non-original spare parts.
- Non-observance of these instructions and other applicable instructions.
- Verwendung von nicht spezifizierten Betriebsmitteln.
- Missachten der vorgeschriebenen Wartungs- und Instandhaltungsintervalle.

2.5. *Pump operation*

Operation is permitted only, if in compliance with:

- All indications given in these instructions or stated in the applicable documents.
- Laws and regulations to be complied with by the user.
- Information on explosion protection according to Machinery Directive 1999/92/EC (ATEX 137).
- ATEX certification.

2.6. *Foreseeable misuse*

Any other use and purpose than the ones described before are strictly prohibited. The use is expressly forbidden:

- In any critical explosion protection zones other than indicated in these instructions.
- Outside the indicated temperature range.
- In combination with a motor of high speed, which would result in exceeding the maximum admissible pump speed.
- In areas with aggressive or corrosive material (e.g. high levels of ozone), which may attack seals and painting.
- In areas with harmful radiation (e.g. ionising radiation)
- For the supply / transport / stockpiling of hazard group I fluids following Directive 67/548/EC.
- For the supply / transport / stockpiling of gases, liquefied gases, dissolved gases, vapours and fluids that reach a steam pressure of more than 0.5 bar above the normal atmospheric pressure (1013 mbar) at the maximum admissible operating temperature.

2.7. *Prohibition of certain activities*

The following activities may be carried out by manufacturer specialists or authorized persons only due to potential sources of faults that may not be visible for the user, or due to legal regulations:

- Repairs or changes to the motor, gears or coupling.
- Replacement or changes to the pistons of the pump elements.

2.8. *Conversions / modifications*


Unauthorized conversions or modifications may result in unforeseeable impacts on safety. Therefore, any unauthorized reconstructions or changes are expressly prohibited.

2.9. *Inspections*

The following inspections were carried out prior to delivery:

- Inspections following ATEX.
- Electrical inspections following EN 60204.
- Safety and functional tests.

2.10. **Warning labels on the machine**

	Warning against hand injuries During operation of the pump, never remove the lid and reach into the reservoir. Risk of trapping or shearing off hands and fingers!
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2.11. **Other applicable documents**

In addition to these instructions, the following documents must be observed by the respective target group:

- Operator's explosion protection document.
- Operating instructions / release provisions by the operator.
- Safety data sheet of the lubricant used.

Gear

Rehfuss

Motors:

SEW

- Explosion protected 3-phase AC motors model EDR71
Documentation no.: 19402007

Where appropriate:

- Any instructions of other components required to erect the centralized lubrication system
- Project planning documents.
- Other relevant documents for the integration of the pump into the machine.

The owner must supplement these documents by the respective valid national or regional regulations laid down by the country in which the product is to be used. If the machine is sold or transferred, any associated documents must be passed on to the subsequent operator as well.

2.12. Sources of hazard

The pump has been designed, built and tested using state-of-the-art technology. It will have left our company only after having passed stringent safety and reliability tests. Like for all complex machines, also for this pump there may still be involved potential sources of hazard, for example:

2.13. Moving, rotating parts

- Drive, stirring paddles.

2.14. Energies

- Electricity
- Temperature (hot/cold surfaces)
- Position energy (raised components)
- Parts subject to (operating) pressure
- Parts subject to spring tension

2.15. Lubricants

- Greases / oils

2.16. Explosive substances at the location of use

- Gases / dusts

Operating Instructions

Pump P 215 ATEX

2.17. Existing residual risks

Residual risk	Remedy
Operation in potentially explosive areas	
Deviating installation position. Loss of correct low-level signal function.	Maintain installation position ($\pm 5^\circ$) Correct installation position if necessary.
Heat-up of non-supplied lubrication points in the area of ignition temperature through undetected faults within the centralized lubrication system.	The operator must check thoroughly whether operation without low-level signal leads to a new hazard potential (e.g. through heat-up of bearing points on the machine in the area of ignition temperature). If uncertain, provide low-level signal.
Heat-up of components in the area of ignition temperature or formation of a potentially explosive atmosphere through whirling up of dust.	Avoid dust accumulation and remove dust regularly. Select a location of installation with as little dust as possible.
Substantial heat-up of the motor through a blockage at high loads or failure of the motor protection switch.	Switch off pump. Allow parts to cool down, replace motor protection switch or adjust it correctly.
Loosening of plug-in connections under voltage.	Secure plug-in connections against inadvertent loosening with the safety clips. De-energise the pump prior to loosening the plug-in connections.
Generation of electrostatic charges / sparks through unsuitable clothing / tools.	Use only ESD clothing and tools within potentially explosive areas.
Generation of sparks through dropping parts.	Secure parts against falling. If applicable, cover parts in order to avoid the formation of sparks.
Missing or insufficient earthing.	Check the earthing on the pump.
Bringing catalytic, unstable or pyrophoric substances into a potentially explosive area.	Ensure that none of these substances gets into the potentially explosive area. Have all substances approved by the operator.
Use of isolating amplifiers to operate the capacitive sensors respectively the contact rod of the follower plate in potentially explosive areas.	Mount isolating amplifiers only outside potentially explosive areas.

Operating Instructions

Pump P 215 ATEX

Residual risk	Remedy
Transport lifecycle	
Tilting / falling of parts during transport, e.g. over inclines.	Secure parts against tilting / falling during transport (e.g. using tapes, belts, ropes etc.).

Installation lifecycle	
Dropping of lifted parts/ tools.	No people may remain under suspended loads. Keep unauthorized people away. Secure suspended loads using suitable hoisting equipment (e.g. tapes, belts, ropes etc.).
Falling of parts through insufficient fixing to the machine.	Fix parts only to machine parts with a sufficient load capacity. Observe the weight. Observe the stated tightening torques. If no tightening torques are stated, the tightening torques are to be applied according to the screw size for 8.8 screws.
Electric shock when connecting the pump.	Prior to connection of the pump, de-energize all affected electrical components. If necessary, please observe discharge times. The electrical connection may be carried out by commissioned and qualified electricians only and in accordance with the connection diagram.
People falling due to contamination of floors with spilled lubricant.	Take care when filling. Bind / remove spilled lubricant immediately with a suitable agent. Observe the legal / company regulations on dealing with oils / greases and contaminated parts.
Ripping out / damage to lines when assembling movable machine parts (e.g. pivot arm).	If possible, do not mount onto movable parts. Should this not be possible, use flexible hose lines of sufficient length.
Deviating installation position: <ul style="list-style-type: none"> - Foreign objects falling into the motor air intake. - Borehole for drainage of condensation water is no longer at the lowest point of the motor. 	<p>Installation of a suitable protective roof over the air intake.</p> <p>Deviating installation position only if the formation of condensation water has been completed.</p>

Operating Instructions

Pump P 215 ATEX

Residual risk	Remedy
Commissioning / operation / maintenance lifecycle	
Lubricant spraying out due to incorrect screw connection of components / connection of lines.	Tighten all parts with appropriate tightening torques. Use suitable hydraulic screw connections and lines for the stated pressures. Check these prior to commissioning for correct connection and damage.
Contact with the stirring paddles when filling from the top during operation of the pump.	Fill preferably via the filling connection. Fill only from the top when the pump is not moving. When filling, do not reach into the reservoir.
Electric shock through reduced insulation resistance.	Check the formation of condensation water in the motor regularly. If applicable, drain off condensation water at the drain plug. Check the insulation resistance regularly.
Electric shock when connecting the pump.	Prior to connection of the pump, de-energize all affected electrical components. If necessary, please observe discharge times. The electrical connection may only be carried out by commissioned and qualified electricians in accordance with the connection diagram.

Residual risk	Remedy
Fault lifecycle	
Severe heat-up / defect on motor through blockage.	Switch off the pump. Allow the parts to cool down and remove the cause of the fault.

Residual risk	Remedy
Disposal lifecycle	
Environmental contamination with lubricants and moistened parts.	Dispose of the parts in accordance with the valid legal / company regulations.

2.18. *Persons authorized to operate the pump*

2.19. *Operator*

A person who is qualified by training and experience to carry out the functions and activities related to normal operation, including the avoidance of possible hazards that may arise during machine operation.

2.20. *Specialist for maintenance and repairs in potentially explosive areas*

A person who is qualified by training and experience to identify and assess possible risks and hazards during work on the machine or partial components in potentially explosive areas and to initiate suitable measures to prevent such risks. The specialist has knowledge of the different ignition protection types, installation procedures and zone divisions. He is familiar with the rules and regulations relevant for his activities and explosion protection, in particular with ATEX Directive 94/9 EC.

2.21. *Protection of special groups of persons*

The respective legal employment restrictions do apply.

2.22. *Safety recommendations to be complied with*

2.23. *General behaviour when handling the machine*

- Only operate the pump if it is in perfect technical condition, according to its intended use, in awareness of safety and risks and in adherence to these Instructions.
- Familiarize yourself with the functions and working methods required. Always keep to the order of the indicated assembly and operating steps.
- If there are uncertainties regarding the proper condition or the correct assembly / operation, ensure clarification. The machine / pump must not be put into service until all uncertainties will have been clarified.
- Keep unauthorized people away from the machine.
- All relevant safety provisions and in-house operational instructions applicable to the respective activity must be adhered to.
- Responsibilities for different activities must be clearly defined and adhered to. Ambiguities greatly endanger safety.
- During operation, safety-related protective and emergency devices must not be removed, modified or affected otherwise in their function and are to be checked at regular intervals for completeness and function-
- Occurring faults are to be remedied in the frame of the responsibilities. Inform your superior in the case of faults beyond your competence.
- Do not open the reservoir lid during operation. Do not reach into the reservoir.
- Wear personal protective equipment always.
- When handling lubricants etc., adhere to the respective safety data sheets.
- Never use parts of the centralized lubrication system or of the machine as standing or climbing aids.

2.24. Explosion protection

- Always behave so that that fire and explosion hazards are avoided.
- A written work approval from the operator is required prior to working in potentially explosive areas.
- There must be no indications that parts of the explosion protection are missing or are not working. Should such indications become apparent, switch off the machine and inform a superior without delay. Keep unauthorized people away.
- Measures for explosion protection must never be deactivated, modified or bypassed.
- It is forbidden to bring in ignition sources such as sparks, open flames and hot surfaces in potentially explosive areas.
- Check the machine at regular intervals for damage which may represent an ignition risk.
- The ignition temperature of the lubricant must lie at least 50 K over the maximum permitted surface temperature of the components.
- Only use tools and clothing which are permitted for use in potentially explosive areas (ESD).
- Transport / installation / repairs and work on electrical components may only be carried out if it has been ensured that the atmosphere is not potentially explosive.
- Repairs or modifications to machines which are protected against explosions may be carried out only by the manufacturer or by a workshop recognized by a named institution and confirmed in writing. If the work is not carried out by the manufacturer themselves, the repairs must be approved by a named expert and confirmed in writing. The repairs are to be marked through a repair sign on the machine, stating the following:
 - Date
 - Company responsible for the work
 - Type of repair
 - If applicable, expert's code
- Transport damages can lead to the loss of the explosion protection. If transport damages can be seen, do not assemble the machine or put it into operation.

Operating Instructions

Pump P 215 ATEX

- All parts of the earthing concept must be correctly available and connected with the superordinate machine.
- If transport lugs are dismantled after set-up, the threaded bores must be permanently sealed in accordance with the protection class.
- Handle the materials so that no sparks are generated through tilting, falling, sliding, rubbing, impacting etc. If applicable, cover materials with suitable covers.
- Never disconnect plug-in connections when energized. Secure plug-in connections against manual disconnection with the safety clips included in delivery.
- The operator must check critically whether operation without a low-level signal might lead to new risk potentials (e.g. through heat-up of bearing points on the machine in the area of ignition temperature. If this cannot be ascertained, provide a low-level signal or suitable organisational measures for monitoring of the bearing point temperature.
- Avoid dust accumulation or remove it immediately. Dust accumulations have a thermally insulating effect and, if whirled up, generate the formation of a potentially explosive atmosphere.
- The pump should be integrated into the operator's lightning protection concept.
- All parts are to be checked regularly for corrosion. Replace the affected parts.
- Terminal boxes must be firmly closed and the cable breakthroughs correctly sealed.
- Additional electrical monitoring devices must be firmly connected and correctly adjusted.
- The motor must be protected against unpermitted heat-up through a motor protection switch.
- The motor bearing must, on reaching its nominal service lifetime, be replaced or its suitability for further use must be verified through inspection.

2.25. Transport / installation / maintenance / repairs / servicing

- Alle relevant people, (e.g. operating personnel, superiors) are to be informed prior to starting the work about its execution. Observe the company precautionary measures / working instructions.
- If protective and safety equipment has to be dismantled, it must be reassembled immediately after finishing the work, and then checked for correct function.
- Ensure through suitable measures that movable / loosened parts are blocked during the work and that no limbs can be trapped through inadvertent movements.
- Only carry out transport using suitable hoisting equipment.
- If the motor is transported separately (e.g. repairs), this should be lifted by the transport lugs / eyebolts. Check that the transport lugs / eyebolts are fixed tightly prior to lifting. Do not lift any other loads on the transport lugs / eyebolts. Motors may not be transported on the ventilator cover.
- All the parts to be mounted onto the shaft end of the motor are to be dynamically balanced according to the balancing system. With a direct coupling, please ensure that the parts align precisely (observe the manufacturer's guidelines).
- Assemble the pump only outside the working area of moving parts with sufficiently large distance to sources of heat or cold.
- Dry wet, slippery surfaces.
- Cover hot or cold surfaces accordingly.
- Prior to carrying out the work, de-energize and depressurize the pump and secure it against unauthorized switch-on. Work on electrical components must be carried out by electrical specialists only. Observe any waiting periods for discharging if necessary.
- Carry out electrical connections only according to the information in the valid wiring diagram and taking the relevant regulations and the local connection conditions into account.
- Do not touch cables or electrical components with wet or damp hands.
- Maintenance and repair work can be subject to restrictions in low or high temperatures (e.g. changed flow properties of the lubricant). Therefore try to carry out maintenance and repair work at room temperature if possible.

Operating Instructions

Pump P 215 ATEX

- Carry out all work on electrical components only using voltage insulated tools.
- Fuses must not be bypassed. Always replace fuses by such of the same type.
- Ensure correct earthing of the electrical system.
- Only undertake drilling at non-critical, non-supporting parts. Use any available boreholes. Do not damage lines and cables when drilling.
- Observe possible abrasion points. Protect the parts accordingly.
- Other aggregates of the machine / vehicle must not be adversely affected or damaged in function by the installation of the central lubrication system.
- All components used must be designed for:
 - maximum operating pressure
 - maximum / minimum ambient temperature
 - lubricant to be conveyed
 - necessary ATEX zone
 - operating / ambient conditions at the location of use.
- Parts of the centralized lubrication system must never be subjected to torsion, shearing or bending.
- Check all parts prior to use for contamination and clean if necessary. Lubricant lines should be filled with lubricant prior to installation to make the subsequent ventilation of the system easier.
- Maintain the specified tightening torques. When tightening, use a calibrated torque wrench.
- When working with heavy parts, use suitable lifting tools.
- Avoid confusion / incorrect installation of dismantled parts. Mark these parts accordingly.

2.26. Initial commissioning / daily start-up

Ensure that:

- All safety devices are completely available and functional.
- All connections are correctly connected.
- All parts are correctly installed.
- All warning labels on the machine are completely available, highly visible and undamaged.
- Unreadable or missing warning labels are to be replaced without delay.
- The machine is correctly earthed.

2.27. Cleaning

- Risk of fire and explosion when using inflammable cleaning agents. Only use non-flammable cleaning agents suitable for the purpose.
- Do not use aggressive cleaning agents.
- Do not use sharp-edged or spark-generating tools for cleaning (e.g. cooling fins on the motor).
- Do not use steam jet or high pressure cleaners. Electrical components may be damaged. Observe the IP protection class.
- Cleaning work on energized components may be carried out by specialists only.
- Do not touch cables or electrical components with wet or damp hands.
- Mark damp areas accordingly.
- Remove dust accumulations regularly. Do not whirl up dust whilst doing so.

2.28. Operator's obligations

2.29. Determination of hazards

The operator must determine all hazards resulting from the integration of the pump into the superordinate machine and the hazards at the location of operation of the machine, and carry out the measures necessary to ensure safety and health protection.

2.30. *Explosion protection – measures following ATEX*

Due to a holistic assessment of the workplace, the operator ensures that the working equipment and all installation materials are suitable for operation in potentially explosive areas, and that they are assembled, installed and operated so that they do not give rise to explosions.

If changes, extension and/or redesigns are undertaken in potentially explosive areas, the operator must carry out the required measures so that these changes, extensions or redesigns fulfil the minimum regulations for explosion protection.

The operator

- Documents the measures for explosion protection.
- Marks the potentially explosive areas.
- Prepares written operating instructions.
- Selects suitable employees.
- Provides these employees with sufficient and appropriate instructions with reference to explosion protection.
- Applies an approval system for hazardous activities and for those which may become hazardous in interaction with other work.
- Carries out the necessary inspections and monitoring.
- Ensures that only original spare parts are used.

2.31. *Provision of necessary information*

The operator must make the instructions required for the respective activity accessible to all people commissioned with operation, maintenance and repairs. He must ensure that these people have read the necessary instructions and have understood them.

The same applies for all relevant safety data sheets, company instructions, accident prevention regulations, instructions for purchased parts and lubricant suppliers. Depending on the business organization, the relevant instructions may have to be made accessible to other people / departments.

2.32. *Instruction and qualification obligations*

The operator clearly determines the responsibility of personnel for operation / installation / repairs. The operator is obliged to instruct all people authorized for use in the correct handling of the machine prior to initial use, in accordance with the respective activity and responsibility area, based on practical exercises.

The instructions must contain at least:

- Zone divisions
- Scope and limits of the activity and responsibility area of the respective group of people.
- Safe behaviour / behaviour in case of emergency.
- Avoidance of hazards when dealing with the machine.
- The meaning of warning guidelines, warning labels.
- Dealing with lubricants and cleaning agents.
- If applicable, the use and inspection of personal protective equipment.

These instructions are to be documented and repeated at regular intervals. New personnel may operate the machine only under supervision and instruction. Maintenance and repair work may be carried out by qualified personnel only.

2.33. *Briefing of external technicians*

Prior to commencing the activities, external technicians must be informed by the operator of the company safety provisions, the applicable accident prevention regulations to be maintained, and the functions of the superordinate machine and its protective devices.

2.34. *Inspection for correct use*

The operator must check at regular intervals through suitable measures that the machine is being used according to its intended purpose, that no conversions or manipulations have been made to the machine and that all parts are fully functional.

2.35. *Provision of personal protective equipment*

The operator must provide suitable personal protective equipment for the respective location of operation and the purpose of operation. This includes ESD clothing and ESD tools for work in potentially explosive atmospheres.

2.36. **Training courses**

In order to provide a maximum of safety and economic viability, Lincoln carries out detailed training courses.

It is recommended that the training courses are attended. Please contact Lincoln Customer Services for information.


2.37. **Inspection of the delivery**

The delivery must be inspected for completeness based on the delivery papers.

Transport damages must be reported to the forwarder immediately. The packaging material should be stored until any inconsistencies have been clarified.

2.38. **Returns**

All parts must be cleaned and correctly packed prior to being returned. Returned goods are to be marked as follows on the packaging:

	Do not place under pressure / This side up
	Protect against moisture
	Handle with care! Fragile, do not throw!

2.39. **Disposal**

At the end of its service lifetime, the pump must be dismantled correctly and disposed of according to the respective valid provisions.

It is forbidden to use parts of a pump which is to be disposed of or to assemble these parts to make a new pump.

3. Lubricant

Lubricants are used specifically for certain application purposes. In order to fulfil their tasks, lubricants must fulfil various requirements to varying extents:

The most important requirements for lubricants are:

- Reduction of abrasion and wear
- Corrosion protection
- Noise minimisation
- Protection against contamination / penetration of foreign objects
- Cooling (primarily with oils)
- Longevity (physical / chemical stability)
- Compatibility with as large a number of materials as possible.
- Economic and ecological aspects.

3.1. *Selection of lubricants*

A lubricant is selected already during design of the machine and forms the basis for the planning of the centralized lubrication system.

The selection is made by the manufacturer / operator of the machine, preferably together with the lubricant supplier based on the requirement profile defined through the specific application purpose. Should you have little or no experience with the selection of lubricants for centralized lubrication systems, please contact Lincoln. You will avoid possible costly downtimes through damage to your machine / system or damage to the centralized lubrication system.

3.2. *Ageing of lubricants*

After a prolonged downtime, the lubricant must be inspected prior to recommissioning as to whether it is still suitable for use due to chemical / physical ageing. We recommend that you undertake this inspection already after a machine downtime of 1 week. If doubts arise as to the suitability of the lubricant, please replace it prior to recommissioning and if necessary undertake initial lubrication manually.

3.3. **Specification**

Lubricants of the following consistency can in principle be conveyed using Lincoln centralized lubrication systems.

- Lubricating greases up to NLGI 2
- Solids content up to max. 5 %
- Mineral oils with a viscosity of min. 40mm²/s at +40 °C

Lubricants must be compatible with the following materials:

- Steel / grey iron / brass / copper / aluminium
- NBR / FPM / ABS / PA / PU

ATTENTION

Risk of damage to machine / system

Do not mix lubricants. This may have unforeseeable effects on the usability and therefore on the function of the centralized lubrication system.

Due to the multitude of possible additives, it is possible that individual lubricants, which - according to the manufacturer's data sheets - fulfil the necessary specification, are not in fact suitable for use in central lubrication systems (e.g. incompatibility between synthetic lubricants and materials). In order to avoid this, always use lubricants which have been tested by Lincoln.

Please contact the Service Department for an overview of lubricants tested by Lincoln.

4. Technical Data

4.1. *Ambient temperature*

Standard temperature range	min. -20 °C	max. +40 °C
----------------------------	----------------	----------------

4.2. *Operating pressure*

Max. 350 bar

All system parts must be designed for the maximum operating pressure. Each pump element is to be secured against higher pressures using a suitable pressure limitation valve

4.3. *Installation position*

Vertical, i.e. reservoir at top. Maximum deviation $\pm 5^\circ$

4.4. *Sound pressure level*

< 70 dB(A)

4.5. *Maximum set-up height*

1000 m above sea level

4.6. *Maximum dust thickness*

< 5 mm

4.7. *Weight*

The weight of the empty pump lies between approx. 28 kg and approx. 35 kg depending on the equipment variation (e.g. number of pump elements, reservoir size, coupling, motor and gear variations). The weight of the baseplate and the coupling may also have to be added.

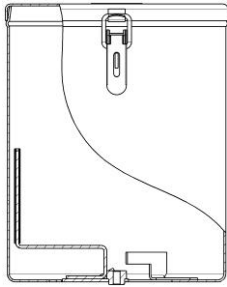
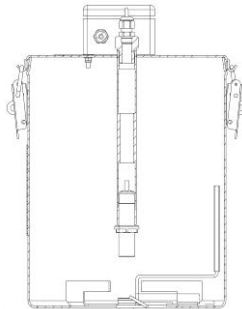
4.8. *Gear ratio*

i = 100:1

Operating Instructions

Pump P 215 ATEX

4.9. Reservoir variants

10 XYN Part no. 655-46404-9	10 XL Part no. 655-46720-2 / 1
	

Operating Instructions

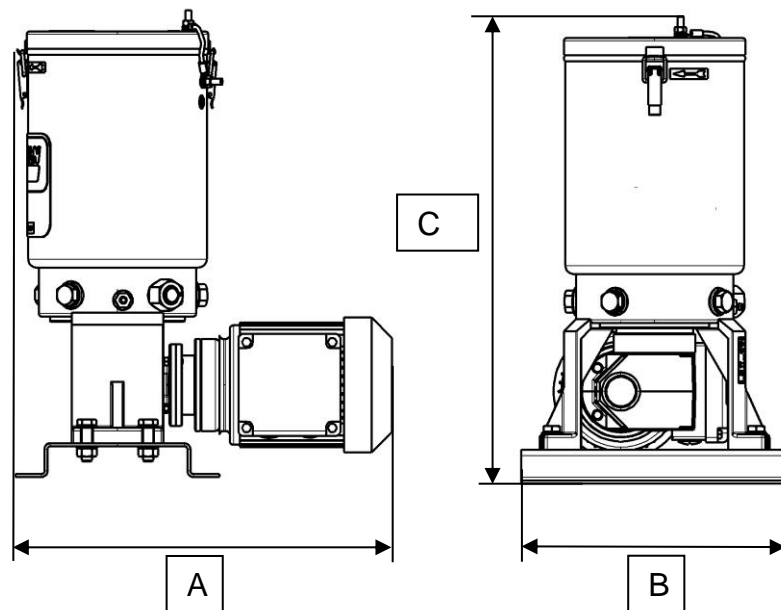
Pump P 215 ATEX

4.10. Space requirements

Reservoir size	Width A	Depth B	Height C*
10 L	approx. 500 mm	approx. 300 mm	approx. 850 mm

The actual space requirements depend on the dimensions of the motor, those of the base plate, and perhaps also on the type of coupling. It is recommended that 100 mm are allowed in each direction outside of the baseplate for maintenance / inspection work.

The distance between the motor air intake and any obstacles must total at least 40 mm. Ensure that the air can flow into the motor without hindrance. Outflowing air cannot be sucked in again directly.



*include space to remove the lid

4.11. *Electrical connection*

Connection must be done in such way that a permanent safe electrical connection can be maintained (use safe protective earth connection, assigned cable end equipment, no protruding wire ends). In the terminal box there must not be any foreign particles, dirt or humidity. The terminal box must be closed in such way that it is protected against dust and water.

In addition to the general valid installation prescriptions for electrical systems, the electrical connection is carried out in accordance with the applicable national ATEX regulations, for example:

- ElexV
- EN 60079-14, EN 61241-14
Electrical systems in explosive areas
- EN 50281-1-2
Electrical equipment for use in areas with combustible dust
- DIN VDE 0100

Tolerance voltage $\pm 5 \%$

Tolerance frequency $\pm 2 \%$

The waveform and mains symmetry must be maintained so that motor heat-up remains within the permitted limits.

The distance to any voltage-carrying or conductive parts has to correspond to the minimum values following DIN EN / IEC 60079-7 / -15.

Nominal voltage	Distance to motors EX category 2	Distance to motors EX category 3
Up to 500 V	5 mm	8 mm
over 500 V up to 690 V	5.5 mm	10 mm

4.12. *IP protection classes*

Gear	Sensor	Motor
IP 65	IP 67	See type identification plate

4.13. Tightening torques

Component	Tightening torques	
Pump element to housing	20	Nm
Pressure relief valve	6	Nm
Screw plug to housing	20	Nm
Filling connection / return line	10	Nm
Lubricating nipple / adapter for lubricating nipple	10	Nm
Reservoir to pump housing	25	Nm
Terminal box with reservoir lid	4	Nm
Earthing connection lid / reservoir	8	Nm
If no tightening torques are stated for screw connections, the tightening torques are to be applied according to the screw size for 8.8 screws.		

4.14. Flow rate

Flow rate per pump element

K6	Piston Ø 6 mm	approx. 0,16 ccm / stroke
K7	Piston Ø 7 mm	approx. 0,23 ccm / stroke

This information applies to greases in NLGI class 2 at + 20 °C and 100 bar counterpressure. Deviating conditions such as grease class, temperature and counterpressure may lead to a deviation in the flow rate. This should be taken into account when designing the lubrication points.

4.15. Connections / outlets

- 15 x outlet (pump element)
- G1/4" for lubrication lines

When using less than 15 pump elements, one outlet can be used as a filling connection.

The following adapters are available as accessories.

Filling adapter G 1/4"

Filling adapter G 1/2"

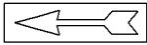
4.16. Filling possibilities

- Via filling adapter
- Via reservoir lid

Operating Instructions

Pump P 215 ATEX

4.17. **Rotational direction of the pump**

	The rotational direction is always clockwise (CW). Observe the arrow on the reservoir. If the rotational direction deviates: switch off the pump immediately and check the electrical connection.
---	---

4.18. **Permitted speeds**

	Minimum speed	Maximum speed
Grease	2,0 rpm	25 rpm
Oil	2,0 rpm	35 rpm

When supplying the pump without motor and gear, speeds must be maintained by selecting a suitable motor and gear.

4.19. **Painting**





All pump components are painted in accordance with the requirements of EN / IEC 60079-0 (electrostatic charge). Should a repainting become necessary, e.g. after a repair work, corrosion, etc, the requirements of EN / IEC 60079-0 must also be complied with. Make sure to thoroughly cover all seals with adhesive tape. Ensure painting is compatible with the sealing material used.

Operating Instructions





Pump P 215 ATEX

4.20. Type identification plate of pump

The following information is stated on the type identification plate:

MADE IN GERMANY D-69190 WALLDORF		LINCOLN	
Model:	<input type="text"/>		
P.No.:	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	≤ Ta ≤ <input type="text"/>
Series:	<input type="text"/>		
	<input type="text"/>		
Voltage	<input type="text"/>	<input type="text"/>	Power <input type="text"/>
Control-Voltage	<input type="text"/>	<input type="text"/>	  
An SKF Group Brand			

Product and manufacturer identifications

Model:	Type designation of pump	MADE IN GERMANY	Country of origin
Part no.:	Order no. / part no.	LINCOLN	Manufacturer
 	CE / EX marking	Electrical information	
≤ Ta ≤	Min. / Max. ambient temperature	Voltage	Voltage
Series:	Year of construction / order no. / batch / 4 figures / 6 figures / 3 figures		Frequency
	Observe associated instructions	Control-Voltage	Control voltage
	Year of construction	Power	Output
			VAC
			Hz
			VDC
			VA

4.21. *Storage until first use*

- In the original packaging
- In dry rooms with little dust
- Without direct sun or UV radiation
- Without aggressive, corrosive substances at the place of storage
- Without vibrations
- Protected against pests (insects, rodents, etc.)

Temperature range:	minimum	- 20 °C
	maximum	+ 40 °C
Air humidity (relative):	maximum	90 %
Storage time	maximum	24 months

ATTENTION

Risk of damage to machine or system

Prior to initial use or after the storage time ends, prefilled components must be inspected and replaced, if necessary, in case the lubricant quality has changed, or filled with lubricant suitable for the application purpose.



Special motor storage conditions

- Do not store the motor on the ventilator hood.
- After longer time of storage make sure to check the insulation resistance before the start-up.

In case of storage > 1 year:

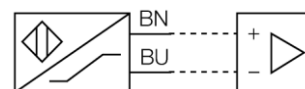
Observe the duration of the grease usage of the ball bearings, which is reduced by 10% per year.

5. Technical data of the capacitive sensor

Type designation	Capacitive sensor (Namur)
Part no.	234-11061-9
Rated switching distance S _n	5 mm in case of flush installation 7,5 mm in case of non-flush installation
Secured switching distance	(0,72 x S _n) mm
Hysteresis	1..... 20 %
Temperature drift	≤ ± 20 %
Repeatability	≤ 2 %
Ambient temperature	-25 °C - +70 °C
Voltage	nominal 8.2 VDC
Current consumption, activated	≤ 1.2 mA
Current consumption, not activated	≥ 2.1 mA
Switching frequency	0,1 kHz
Output function	2-wire NAMUR
Internal capacity (C _i)	150 nF
Inductivity (L _i)	150 µH
Design	Threaded tube M 18 x 1
Dimensions	74 mm
Housing material	Plastic PA12-GF30
Material of active surface	Plastic PA12-GF30, yellow
Admissible pressure onto front closing cap	≤ 6 bar
Max. tightening torque	2 Nm
Housing nut	
Connection	Cable
Wire quality	Ø 5,2 LiYY, PVC, 2 m
Wire cross section	2 x 0,34 mm ²
Vibration resistance	55 Hz (1mm)
Shock resistance	30 g (11ms)
Type of protection	IP 67
MTTF	448 years following SN 29500
Switching status display	LED, yellow
Fine adjustment	Potential meter
Approvals	KEMA 02 ATEX 1090X
Marking	 II 2 G EX ia IIC T6  II 1D EX ia IIIC IP 67 T 115 °C max. U _i = 20 V, I _i = 20mA, P _i = 20 W



Connection diagram






Operating Instructions

Pump P 215 ATEX

6. Technical data of motors

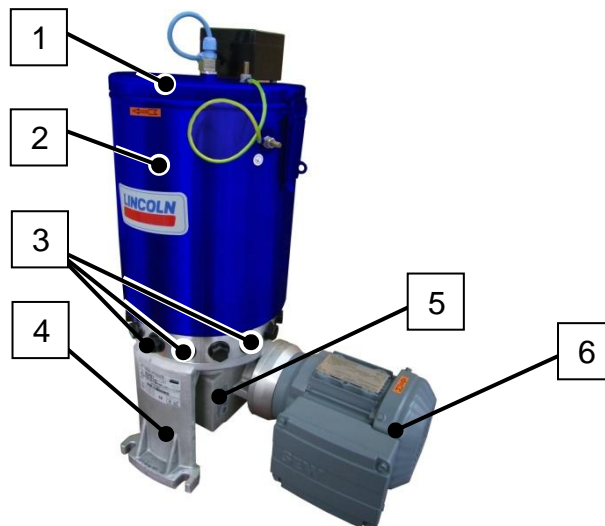
Part number	Motor type	ATEX number	Manufacturer
245-13997-4	EDR71S4	04 ATEX 3033/02	SEW
Rated power	0,25	kW	Code -----
Operating mode	S 1		Flange Ø 105
Rated frequency	50	Hz	IP 65
Rated speed	1405	rpm	Design B5/14
Rated voltage	276 - 304	VDC	Dimension 63
Switching	D Y	Shaft	Welle 14x30
Rated current	1,19	0,69 A	
Performance factor	0,67	cos φ	
Insulation class	F		

7. Brief description of the pump

	 DANGER
	Risk of explosion Carry out work on electrical parts only if the atmosphere is not potentially explosive.
	Electric shock Disconnect the pump from the mains prior to all work on electrical parts.

Pump model P 215 consists of the following main components:

- | | |
|--|-----------------------|
| (1) Reservoir lid with earthing
(2) Reservoir with stirring paddle and earthing
(3) Adapter for pump elements (1-15)
(4) Pump housing | (5) Gear
(6) Motor |
|--|-----------------------|



Operating Instructions

Pump P 215 ATEX

Working method:

The gear (5) reduces the motor (6) speed to the necessary speed of the eccentric shaft.

The eccentric shaft drives the pump elements (3) and the stirring paddle.

The stirring paddle homogenizes and ventilates the lubricant and pushes it in the direction of the suction boreholes of the pump elements (3).

The pump elements (3) convey the lubricant by the movement of the pistons.

It is distinguished between the suction phase (suction of lubricant out of the reservoir) and the pressure phase (supply of lubricant into the lubricant feed line).



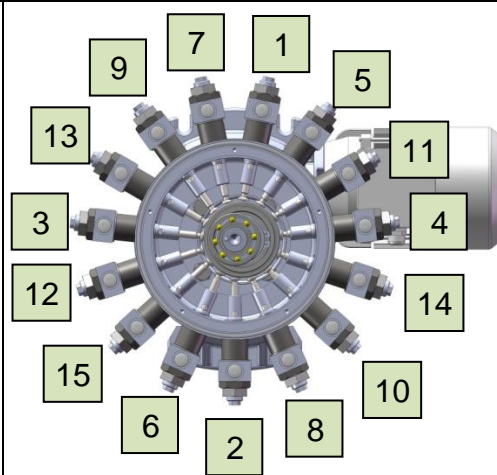
8. Installation and commissioning

8.1. *Important note on the installation of the pump elements*

Pump elements are factory-set to minimum flow rate in order to improve the suction behaviour (minimum space of air in the pump element).

After commissioning, the pump elements must be set to the required flow rate.

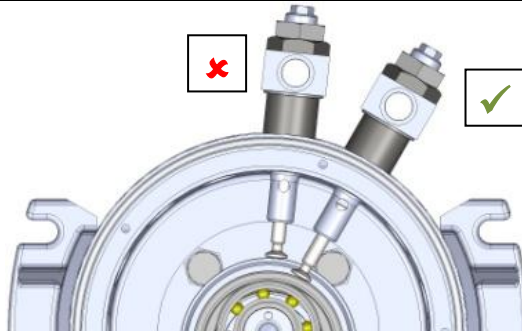
For installation of the individual pump elements, see schematic on the right.



8.2. Assembly of the pump elements (grease)

ATTENTION

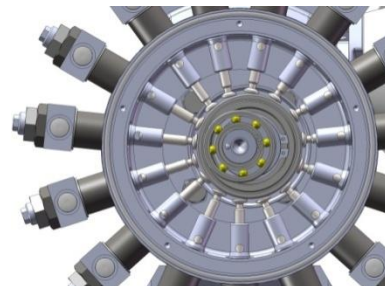
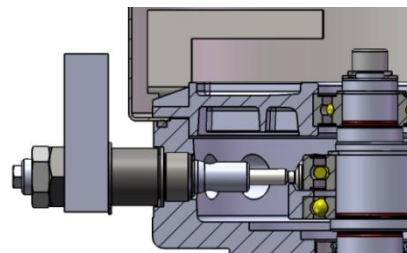
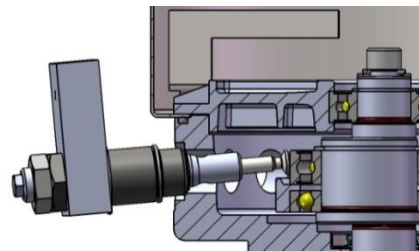
Damages to the pump are possible. Make sure that each pump element is seated correctly in the notch of the catch ring.



- Remove closure screw.
- In the case of the reservoir being full, use adequate tool, e.g. screw driver, to open a channel up to the catch ring.
- Pull piston about 30 mm out of the pump element.
- Insert pump elements slantwise and hang them straight into the catch ring.
- Tighten pump elements with torque wrench.

Tightening torque = 35 Nm

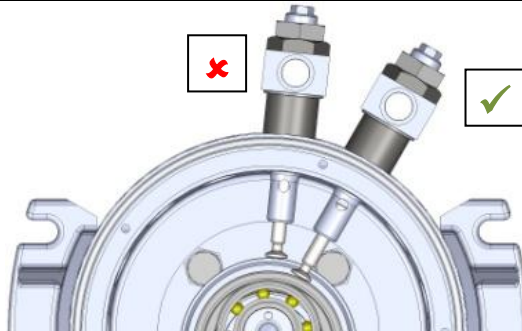
- In the case of the reservoir being empty, additionally check the position of the pump element in the notch of the catch ring.
- Switch on pump.
- Verify correct functioning of the pump elements.
- Switch off pump.



8.3. Assembly of the pump elements (oil)

ATTENTION

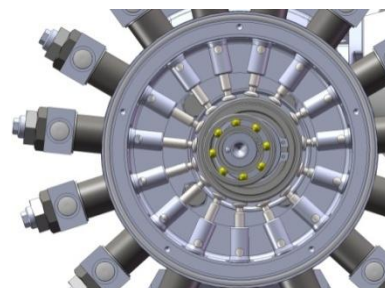
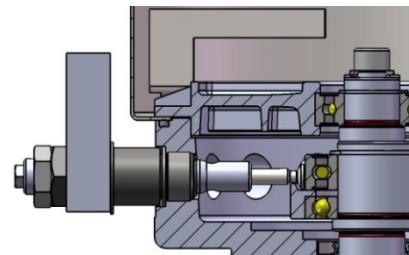
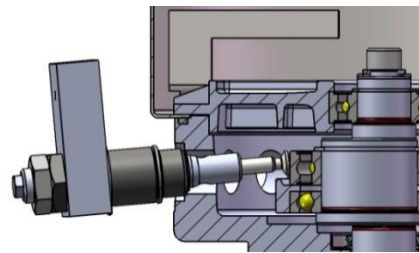
Damages to the pump are possible. Make sure that each pump element is seated correctly in the notch of the catch ring.



- In the case of the reservoir being full: Empty the reservoir down below the level of the pump elements.
- Remove closure screw.
- Pull piston about 30 mm out of the pump element.
- Insert pump elements slantwise and hang them straight into the catch ring.
- Tighten pump elements with torque wrench.

Tightening torque = 35 Nm

- Verify from the top the position of the pump element in the notch of the catch ring.
- Fill the reservoir.
- Switch on pump.
- Check correct functioning of the pump elements.
- Switch off pump.



8.4. Adjustment of the pump elements

NOTE:

The output of the pump elements can be modified also during operation:

- Loosen counternut (1).
- In order to adjust the flow rate, turn the spindle (2).



= lower flow rate



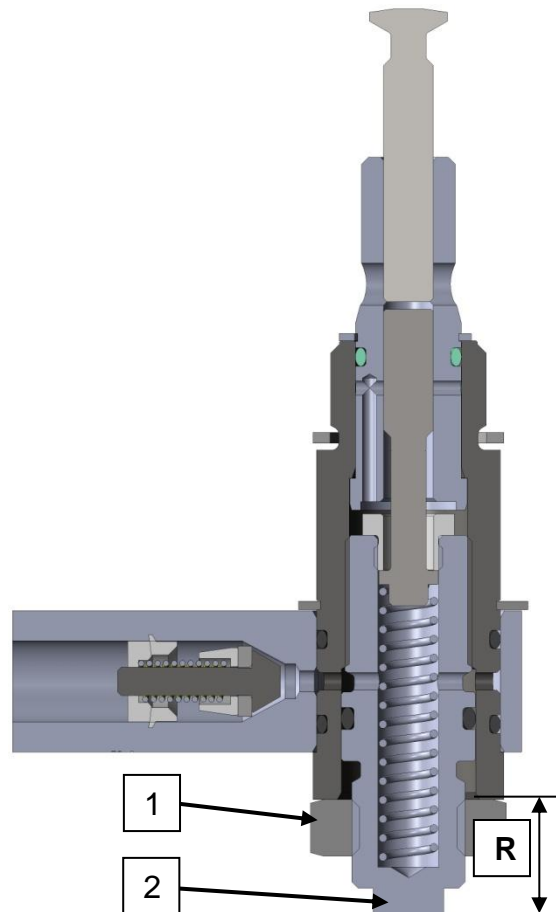
= higher flow rate

The measure R states the approximate flow rate.



R = 22.5 mm	Full supply
R = 21.0 mm	$\frac{3}{4}$ supply
R = 19.5 mm	$\frac{1}{2}$ supply
R = 18.0 mm	$\frac{1}{4}$ supply

- After adjusting the flow rate, retighten the counternut (1).

Tightening torque = 12 Nm



8.5. Filling the reservoir

	<div data-bbox="507 497 1343 544">WARNING</div> <div data-bbox="507 544 1343 638">Risk of hand injuries caused by the stirring paddle Fill lubricant via the lid only when the pump is not moving. Never reach into the reservoir while the pump is running.</div>
---	---

ATTENTION

Risk of centralized lubrication system faults

- When filling, ensure that no contamination enters the reservoir.

Filling via the reservoir lid

- Switch off the pump.
- Open the reservoir lid (1).
- Ensure that no dirt enters the reservoir or the inner side of the reservoir lid. In case of reservoirs equipped with a sensor, the sensor must not be damaged or contaminated.
- Fill in lubricant up to max. 1 cm below the rim of the reservoir.
- Reposition and close the reservoir lid (1). Make sure not to crush the earthing cable.
- Switch on the pump.

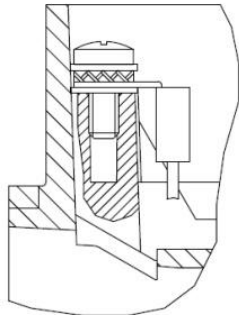


8.6. *Inadvertent filling with incorrect lubricant*

Should incorrect lubricant have been filled, please proceed as follows.

- Switch off the pump and secure it against being switched on again.
- Remove lubricant.
- Clean the reservoir / pump housing and, if applicable, the tubing system.
- Fill in lubricant of correct specification.
- Switch on pump.
- Inform your superior to ensure that the error does not occur again.

8.7. *Electrical connection to the operator's network*

SEW motors	
Connect feed lines following the connection diagram located in the motor terminal box. When connecting the protective conductor to the protective conductor connection, the cable shoe and the housing must be separated by a washer.	 <p>Connection of protective conductor</p>

8.8. *Electrical connection of the low-level indication*

Capacitive sensor / contact rod of the follower:

Electrical connection follows the indications given in the technical data sheets of these Instructions. In addition, indications regarding the switch amplifier and, if applicable, those of other devices to be connected by the operator have to be observed.

8.9. *Inspections prior to initial commissioning*

ATTENTION

Risk of damage to the machine

Fill the feed lines with lubricant and lubricate the lubrication points manually. Otherwise the bearing points may become damaged due to a lack of lubricant.

Check the entire system for accordance with the intended purpose and the planning documentation.

Ensure that all parameters and lubricants have been correctly adjusted or are present.

If deviations are detected, they must be remedied without delay.

In order to warrant safety and function, a person assigned by the operator must inspect certain areas of the central lubrication system prior to initial commissioning. Detected defects must be reported without delay to a superior and remedied. The repair of defects must be carried out by a specialist only.

The following points must be inspected prior to initial commissioning.

Electrics:

- Electrical connections carried out correctly.
- Cable entries sealed correctly.
- The voltage and frequency of the power network correspond to the information on the type identification plate of the motor.
- Monitoring devices and additional equipment (e.g. motor circuit breaker) are correctly connected and adjusted.
- Earthing is complete.
- All parts such as lines, cables, metering devices, etc. have been correctly installed and are undamaged.

Mechanics:

- No dust accumulations present, in particular on the air intake of the motor.
- No loose or missing parts remaining (e.g. pressure relief valves, feed lines).
- No damages, deformations or cracks.
- No smoke or smouldering spots.
- No discolorations, contamination and/or corrosion.
- No unusual humidity accumulations, odours, vibrations, or sounds.
- No leakage of lubricant at connections and from lines.

8.10. *Activation of the pump*

The pump is activated on:

- Installation into a machine
 - By switching on the machine contact.
 - By a control provided by the customer.

9. Standard operation

9.1. *Daily start-up*

Below find the activities to be carried out in case of standard operation.









9.2. *Inspections*

With regard “Inspections prior to initial commissioning”, the operator has to define suitable inspection intervals depending on the actual operating conditions.

9.3. *Filling the reservoir during operation*

Fill the reservoir as described in chapter “Installation and commissioning”.

9.4. *Cleaning*

	 DANGER			
	Danger to life Risk of fire and explosion when using inflammable cleaning agents. Do not use steam or high-pressure cleaners. Electrical components may be damaged. Do not touch cables or electrical components with wet or damp hands. Cleaning work on energized components may be carried out by electrical specialists only. Wear personal protective equipment.			
				

Exterior cleaning




- Thorough cleaning of all surfaces.
- Mark and secure wet areas.

Interior cleaning

- Normally, interior cleaning is not required.

10. Maintenance

Regular and appropriate maintenance is a prerequisite to detect and clear faults in time. As individual operating conditions cannot be defined for all applications, the listed terms represent a general advice for undisturbed operation. The terms have to be adapted to the local conditions always.

	 DANGER
	Risk of explosion When carrying out maintenance, repair or modification works on explosion-protected machines, observe the national prescriptions. If the works are not carried out by the manufacturer, authorized and qualified personnel only is allowed to carry out such works. Works then have to be reviewed by a qualified and officially recognised person.
	Carry out any work only, if the atmosphere is not explosive. Electric shock Disconnect the pump from the mains electrically prior to all work on electrical parts.

10.1. Pump maintenance

Any maintenance works may be carried out only while the pump is idle.
 The pump is mainly maintenance-free.
 However, the following parts should be inspected and, if necessary, replaced by new parts at regular intervals:

- Pressure relief valves
- Check valves
- Pump elements

Pressure relief valve tolerance + 5% / - 10 %
 Should this tolerance be exceeded, the pressure relief valves must be replaced.



10.2. Gear maintenance

For further information on maintenance and necessary inspections, see original Instructions of the gear manufacturer..	
Activity	Interval
Visual check for: <ul style="list-style-type: none"> • Leckages 	Every 3,000 hours, but at least once a year
<ul style="list-style-type: none"> • Damages to the surface protection / corrosion protection 	Depending on the type of application and ambient conditions

10.3. Maintenance of SEW motors

For further information on maintenance and required inspections, please see original Instructions of the motor manufacturer.	
Activity	Interval
Checking air lines and surfaces	Depending on the grade of local contamination, however, at the latest every 4 weeks
First inspection	After about 500 operating hours, however, at the latest after half a year
Ball bearing / rotary shaft seal	Check every 10,000 operating hours and replace, if necessary
Re-lubrication / oil change	Re-lubrication term, grease quantity, grease quality → see type identification plate or motor lubrication plate
Main inspection	After about 10,000 operating hours, however, at the latest after one year.

10.4. Measurement of insulation resistance

	 DANGER
	Electric shock Do not touch the terminals when measuring the insulation. Wear insulating gloves if applicable. Observe the instructions for the insulation measurement device.
ATTENTION	
Risk of damage to the motor The applied voltage during insulation inspection must not exceed a maximum of 500 V.	

In case of an initial start-up and after longer downtimes, the insulation resistance must be measured in accordance with the standards applicable in the country of use (e. g. VDE 0100 / IEC / EN 61557).

If insulation resistance falls below the required values, the cause must be determined and remedied (e. g. proper drying of the windings, etc).

10.5. Maintenance of sensors

Capacitive sensor:

The capacitive sensor is maintenance-free. Repairs are not possible.

Operating Instructions

Pump P 215 ATEX

11. Troubleshooting

Pump		
Fault	Possible cause	Remedy
No supply	Reservoir empty	Check visually, refill if necessary.
Bad suction behaviour Little pressurization	Bubbles in the lubricant	Vent
	Suction bore of pump element is clogged.	Disassemble and clean pump element.
	Inappropriate lubricant.	Check and, if necessary, use a different lubricant.
	Defective or dirty check valve.	Replace check valve.
	Worn pump element.	Replace pump element.
Grease leaking from pressure limiting valve	Defective pressure limiting valve or fault in the lubrication point. Blockade in the downstream lubrication system.	Determine cause. Replace pressure limiting valve.

Rehfuss Gear		
Fault	Possible cause Ursache	Remedy
Constant unusual running noise	Bearing damage (grinding noise)	Check oil and oil level, if required, change bearing → Consult the manufacturer.
	Irregular tooththing (knocking noise)	→ Consult the manufacturer.
Inconstant unusual running noise	Foreign particle in the gear.	Check oil.
Oil/grease leaking from rotary shaft seal.	Defective seal.	→ Consult the manufacturer.
Oil leaking from vent valve.	Too much oil in the gear; vent valve dirty; frequent cold starts (foaming oil).	→ Consult the manufacturer.
Output shaft does not rotate although motor is on.	Defective shaft-hub joint.	Sent gear to manufacturer for repair.
<p>For further relevant information on maintenance, see original Instructions by the gear manufacturer. Make sure to observe these at all times.</p> <p># Oil/grease leaking from the rotary shaft seal (small quantities) during the run-in phase (24 hours runtime) are deemed normal (DIN 3761).</p>		

Operating Instructions

Pump P 215 ATEX

SEW motors		
Fault	Possible cause	Remedy
Motor does not start up	Supply cable interrupted	Check the connections and (intermediate) terminal points; correct if necessary.
	Fuse has blown	Replace fuse
	Motor circuit breaker has triggered	Check that the motor circuit breaker is set correctly; correct, if necessary.
	Motor circuit breaker does not trigger. Fault in the control.	Check motor circuit breaker control; correct, if necessary.
Motor only starts with difficulty	Motor power designed for delta connection but connected in star.	Correct the connection.
	Voltage or frequency deviate considerably from setpoint, at least while being switched on.	Provide better power supply system; reduce the power supply load. Check cross section of supply cable, replace with cable of larger cross section if need be.
Motor does not start in star connection, only in delta connection	Star connection does not provide sufficient torque.	If the delta inrush current is not too high (observe the regulations of the power supplier), start-up directly in delta. Check the project planning and use a larger motor or special version if necessary (upon prior consultation)
	Contact fault on star/delta switch.	Remedy fault.
Incorrect direction of rotation	Motor connected incorrectly.	Swap two phases of the motor supply cable.
Motor hums and has high current consumption	Winding defective	→ Consult manufacturer. Motor must be sent to specialist workshop for repair.
	Rotor rubbing	
Fuses blow or motor circuit breaker trips	Short circuit in the motor supply cable.	Remedy short circuit.
	Short circuit in motor.	→ Consult manufacturer. Motor must be sent to specialist workshop for repair.
	Supply cables connected incorrectly.	Correct the wiring.
	Earth fault on motor.	→ Consult manufacturer. Motor must be sent to specialist workshop for repair.
Severe speed loss under load	Overload	Measure power, check project planning and use larger motor or reduce load if necessary.
	Voltage drops.	Increase cross section of supply cable.
For further relevant information on maintenance, see original Instructions by the motor manufacturer. Make sure to observe these at all times.		

Operating Instructions

Pump P 215 ATEX

SEW motors		
Fault	Possible cause	Remedy
Motor heats up excessively (measure temperature)	Overload	Measure power, check project planning and use larger motor or reduce load if necessary.
	Insufficient cooling.	Provide for cooling air supply or clear cooling air passages, retrofit forced cooling fan if necessary. Check the air filter, clean or replace, if necessary.
	Ambient temperature too high.	Observe the permitted temperature range, reduce the load if necessary.
	Motor in delta connection instead of star connection as provided for.	Correct the wiring.
	Loose contact in supply cable (one phase missing).	Tighten loose contact, check connections.
	Fuse has blown.	Look for and rectify cause (see above); replace fuse.
	Line voltage deviates from the rated motor voltage by more than 5 %. Higher voltage has a particularly negative effect on multi-pole motors, as their no-load current is close to the rated current already in case of normal voltage.	Adjust motor to line voltage.
	Rated operation type (S1 to S10, DIN 57530) exceeded, e.g. through excessive starting frequency.	Adjust the rated operating mode of the motor to the required operating conditions; consult a professional to determine the correct drive if necessary.
Excessively loud noise	Ball bearing compressed, dirty or damaged.	Re-align motor. Inspect ball bearing and replace, if necessary. (See original instructions of the motor manufacturer).
	Vibration of rotating parts.	Find and eliminate cause, possibly an imbalance.
	Foreign particles in cooling air passages.	Clean the cooling air passages.
For further relevant information on maintenance, see original Instructions by the motor manufacturer. Make sure to observe these at all times		

12. Declarations of conformity of purchase parts

Carl Rehfuß GmbH + Co. KG Antriebstechnik

- Getriebe und Getriebemotoren mit konstanten Drehzahlen / Fixed speed gearboxes and geared motors
- Elektronisch und mechanisch regelbare Antriebe / Electronic and mechanical variable speed drives
- Sonderantriebe und kundenspezifische Lösungen / Special drives and customized solutions

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EG-Konformitätserklärung EC-Conformity Declaration

CARL REHFUSS GmbH + Co.KG

erklärt in alleiniger Verantwortung, das die SR, FG, S, SM, SS, SSM-Getriebe der **Kategorie 2G und 2D**, auf die sich diese Erklärung bezieht, mit der

declares in sole responsibility that the SR, FG, S, SM, SS, SSM-gearboxes in category **2G and 2D** that are subject to this declaration are meeting the requirements set forth in

ATEX – Richtlinie 1994/9/EG

ATEX – Directive 1994/9/EC

übereinstimmen.
to conform.

Angewandte Norm:
Applicable standard:

EN 1127-1:2011
EN 13463-1:2009
EN 13463-5:2011
EN 13463-8:2003
EN 60529:2000

CARL REHFUSS GmbH + Co.KG

hinterlegt die gemäß 1994/9/EG, Anhang VIII geforderten Unterlagen bei benannter Stelle:

Will archive the documents as required in 1994/9/EG, addendum VIII at the following location:

TÜV PRODUKT SERVICE GmbH, EU-Code 0123

Ort und Datum der Ausstellung
place and Date of issuing

Albstadt 21.03.2013

Bevollmächtigter zur Ausstellung dieser Erklärung im Namen des Herstellers
authorized representative for issuing this declaration on behalf of the manufacturer

Bevollmächtigter zur Zusammenstellung der technischen Unterlagen
authorized representative for compiling the technical documents

Dipl. Ing. (FH) M. Fink

Funktion: Bereichsleiter Technik
Function: Technical Director



Handelsregister Albstadt HRA 238
Persönlich haftende Gesellschafterin: Firma Pfister Verwaltungs- und Beteiligungsgesellschaft mbH · Handelsregister Albstadt HRB 529
Geschäftsführer: Gerd Pfister

Ust-ID-Nr.: DE144844167 · Steuer-Nr.: 5306905951
Volksbank Tübingen (BLZ 653 620 80) 30 602 009 · BIC-Code: GENODE33ITA1 · IBAN: DE74 6538 2000 0080 6020 09
Sparkasse Zülpheim (BLZ 653 512 60) 31 704 492 · BIC-Code: SOLADE33FAL · IBAN: DE22 6535 1260 0031 7044 92
Dresdner Bank AG (BLZ 653 800 03) 387 234 800 · BIC-Code: DRESDEFF653 · IBAN: DE89 6538 0003 0987 2348 00

Operating Instructions

Pump P 215 ATEX

EC Declaration of Conformity



900890110



SEW-EURODRIVE GmbH & Co KG
Ernst-Blickle-Straße 42, D-76646 Bruchsal

declares under sole responsibility that the following products

motors of the series	EDRS71...EDRE225
variant	/2GD
category	2G 2D
labeling	II2G Ex e IIB T3 Gb II2G Ex e IIC T3 Gb II2G Ex e IIB T4 Gb II2G Ex e IIC T4 Gb II2D Ex t IIIC T120°C Db II2D Ex t IIIC T140°C Db

are in conformity with

ATEX Directive	1994/9/EC
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Applied harmonized standards	EN 60079-0:2009 EN 60079-7:2007 EN 60034-1:2004 IEC 60079-31:2008
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Bruchsal 18.08.10

Place

Date

Johann Soder
Managing Director Technology

a) b)

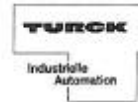
a) Authorized representative for issuing this declaration on behalf of the manufacturer
b) Authorized representative for compiling the technical documents

3054888203

Operating Instructions

Pump P 215 ATEX

Konformitätserklärung Nr. 4060M Declaration of Conformity



Diese Konformitätserklärung entspricht der Europäischen Norm EN ISO/IEC 17050-1:2010 "Allgemeine Kriterien für Konformitätserklärungen von Anbietern".

This "Declaration of Conformity" complies with the European Standard EN ISO/IEC 17050-1:2010 "General criteria for a supplier's declaration of conformity".

Wir/ We **HANS TURCK GMBH & CO KG**
WITZLEBENSTR. 7, D – 45472 MÜLHEIM A.D. RUHR

erklären in alleiniger Verantwortung, dass die Produkte
declare under our sole responsibility that the products

NAMUR Sensoren nach EN 60947-5-6 Typenreihe ...-...-Y1-.../...

auf die sich die Erklärung bezieht, mit den folgenden Normen übereinstimmen
to which this declaration relates are in conformity with the following standards

EN 60947-5-6:2000

bei ATEX Richtlinie
in case of ATEX Directive

EN 60079-0:2009 EN 60079-11:2007 EN 61241-11:2006 EN 60079-26:2007

Gemäß den Bestimmungen der Richtlinie (falls zutreffend)
Following the provisions of Directive (if applicable)


EMV – Richtlinie	/ EMC Directive	2004 / 108 / EG	15. Dez.2004
Richtlinie ATEX 100a	/ Directive ATEX 100a	94 / 9 / EG	23. März 1994

Weitere Normen, Bemerkungen
additional standards, remarks

Das Produkt stimmt mit den Anforderungen der Richtlinie 94/9/EG überein. Eine oder mehrere in der zugehörigen EG-Baumusterprüfbescheinigung KEMA 02 ATEX 1090 X genannten Normen wurden bereits durch neue Ausgaben ersetzt. Der Hersteller erklärt für das Produkt auch die Übereinstimmung mit den neuen Normenausgaben, da die veränderten Anforderungen der neuen Normenausgaben für dieses Produkt nicht relevant sind.

The product complies with the directive 94/9/EG. One or more norms mentioned in the respective EC type examination certificate KEMA 02 ATEX 1090 X were already replaced by new ones. The manufacturer declares that the product complies with the new valid norms, as the changed requirements mentioned there are not relevant for the product.

Aussteller der EG- Baumusterprüfbescheinigung:

KEMA Quality B.V.
Utrechtseweg 310, 6812 AR Arnhem, NL
Kenn-Nr. 0344, Registriernummer: KEMA 02 ATEX 1090 X
Kennzeichnung:  II 1 G oder II 2 G oder II 1 D (typenabhängig)

Mülheim, den 28.06.2012

(i.V. W. Bibernell)

Ort und Datum der Ausstellung /
Place and date of issue

Name und Unterschrift des Befugten /
Name and signature of authorized person

Lincoln's Global Distribution and Service Network – The Best in Our Industry –



Whatever service is required – selecting a lubricating system, customized system installation or the supply of top quality products – you will always be best advised by the staff of the Lincoln offices, representatives and contract dealers.

Systems dealers

Our systems dealers have the most extensive specialized knowledge in our industry. They plan your installations to suit your specifications with exactly the combination of Lincoln components that you need. They then build the installations at your operation with experienced technicians or work closely with your personnel to ensure that everything goes smoothly.

All dealers have the complete range of pumps, distributors, monitoring devices and accessories in stock and meet our exacting demands with their specialized knowledge about products, installations and service. Whenever and wherever you need our experts, from St. Louis to Singapore, Walldorf and worldwide, Lincoln's first-class systems dealers are at your service.

Find out where the nearest Lincoln distribution and service office to you is located:

Americas	Lincoln Industrial	One Lincoln Way St. Louis, MO 63120-1578 USA	Phone: (+1) 314 679 4200 Fax: (+1) 800 424 5359 Home: www.lincolnindustrial.com
Europe Middle East Africa India	Lincoln GmbH	Heinrich-Hertz Straße 2-8 69190 Walldorf Germany	Tel: (+49) 6227 33-0 Fax: (+49) 6227 33-259 E-Mail: lincoln@lincolnindustrial.de Home: www.lincolnindustrial.de
Asia Pacific	Lincoln Industrial Corporation	3 Tampines Central 1 # 04-05 Abacus Plaza Singapore 529540	Phone: (+65) 6588-0188 Fax: (+65) 6588-3438 E-Mail: sales@lincolnindustrial.com.sg