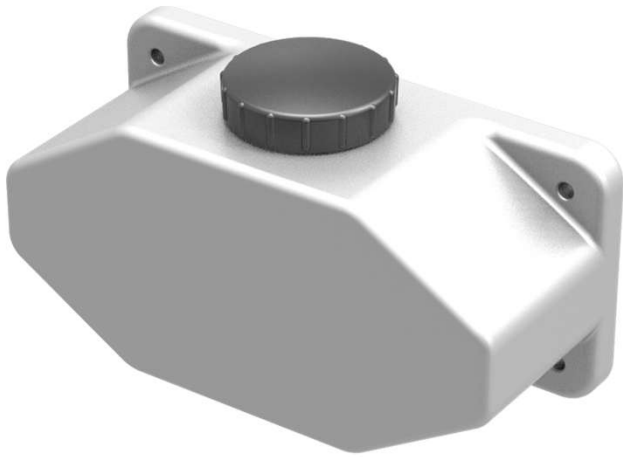


PRODUCT MANUAL

Oil lubrication pump LOP A



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Declaration of incorporation

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

The manufacturer: Lubmann GmbH, Kleiner Johannes 21, 91257, Pegnitz, Germany

declares hereby, that the following partly completed machinery:

Designation: Centralized lubrication pump

Type: LOP

Part No.: 20xxxxxxxx / 99xxxxx

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

The protection targets of the directive for have been electric equipment 2006/95/EG 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 9241 80 89 87 00, email: info@lubmann-gmbh.de) obliges itself to pass on electronically the special documentation for partly completed machinery to individual national authorities upon request.

Pegnitz, 01.10.2023



ppa. Markus Kürzdörfer
General Manager

Lubmann GmbH

Legal disclosure

Manufacturer

Lubmann GmbH
Add: Kleiner Johannes 21, 91257, Pegnitz, Germany
E-Mail: info@lubmann-gmbh.de
Website: www.lubmann-gmbh.de

Training courses

In order to provide a maximum of safety and economic viability, Lubmann GmbH carries out detailed training courses. It is recommended that the training courses are attended. For more information, please contact Lubmann GmbH.

Copyright

© Copyright Lubmann GmbH All rights reserved.

Warranty and extent of warranty



Inappropriate intervention will rule out your warranty claim!

Warranty regarding operational safety, reliability and performance of the lubricating pump is only accepted by the manufacturer under the following conditions:

- Assembly, connection, setting, maintenance and repair are carried out by authorized and specialized staff.
- The limits stipulated in the technical data must never be exceeded.
- Only original components or components approved by the manufacturer may be used for repair and maintenance work.

All guarantees and warranties expire for damages to central lubrication systems that are caused by operation with improper lubricants (e.g., piston wear, piston jamming, plugins, embrittled sealings).

Lubmann does not assume liability on damages caused by lubricants, even if these lubricants have been tested and released by laboratory tests, as damages caused by lubricants (e.g., by expired or improper stored lubricants, batch variations etc.) can not be retraced to their root cause in retrospect.

Contact

Kleiner Johannes 21, 91257, Pegnitz, Germany
Tel.: +49 9241 80 89 87 00

Explanation of symbols



Safety instructions which, if not complied with, may endanger persons, are marked specifically with the general hazard symbol!



This heading is used if inaccurate compliance or non-compliance with the Operating Instructions or specified work procedures etc. may result in damage.



General commandment!

Disclaimer

The manufacturer shall not be held responsible for damages caused by:

- Non appropriate use faulty assembly, operation, setting, maintenance, repair or accidents
- Use of inappropriate lubricants
- Improper or late response to malfunctions
- Unauthorized modifications of the product
- Intent or negligence
- Use of non-original Lubmann spare parts
- Faulty planning or layout of the centralized lubrication system

Liability for loss or damage resulting from the use of our products is limited to the maximum purchase price. Liability for consequential damages of whatever kind is excluded

Safety instructions

General information

Any safety-related faults must be eliminated without delay.

Below, please find fundamental instructions to be complied with, regarding assembly, operation and maintenance. The mechanical and the competent specialists / staff of the operating company must read the Operating Instructions on all accounts prior to starting assembly and commissioning. Moreover, the Operating Instructions must permanently be available on site.

Not only the safety instructions included under this item, but also the specific safety instructions appearing in other parts of this manual must be complied with.,

General risk reference

All system components have been designed in view of operational safety and accident prevention according to the applicable provisions for the design of technical equipment.

Nevertheless, utilization thereof may result in risks for the user or third parties and/or technical equipment. Thus, the system may only be used in proper technical working within its intended fields of application and in compliance with the safety provisions and the Operating Instructions.

Staff

The staff in charge of operation, maintenance, inspection and assembly must be qualified accordingly for this work. The operating company must stipulate competences, responsibilities and the supervision of staff precisely. If the staff does not dispose of the appropriate knowledge, they must be trained and instructed. The operating company must ensure that the staff have understood the contents of the Operating Instructions

Danger due to non-observance of the safety information



Non-compliance with the safety information may put persons at risk and endanger the environment and/or the machine. Non-compliance with the safety instructions may rule out any claims for damages.

Non-compliance may lead, e. g. to the following dangers:

- Failure of important system functions,
- Failure of the specified maintenance and servicing methods,
- Endangering people due to electrical, mechanical and chemical effects,
- Endangering the environment due to leakages of dangerous materials.

Use in conformity with the intended purpose:

The pumps of the series LOP-A serve only for the supply of central lubrication pumps at vehicles, systems and machines. Any use beyond this scope is regarded as being not in conformity with the intended purpose.

Assembly and maintenance



Observe for all assembly works at vehicles, systems and machines the valid local accident prevention regulations and safety instructions as well as the specifications for operation and maintenance.

All maintenance, inspection and assembly work may only be carried out by trained specialists. All work must only be carried out when the plant is at a standstill and while wearing appropriate protective clothing.

All the safety and protective equipment must be replaced immediately after completing work. Media that endangers the environment must be disposed in accordance with pertinent official specifications. Secure the system during maintenance and repair works, against intentional or unintentional reoperation.

Dispose of process materials in accordance with the safety data sheets of the lubricant manufacturer.

Safety information for operators/operating staff



- If hot or cold machine parts led to hazards, the customer must secure them from being touched. The guards on moving or rotating parts must not be removed.
- Drain leakages of dangerous materials in a way, that people or the environment are not endangered.
- Comply with legal regulations.
- Exclude any hazards by electric energy.

Unauthorized modification and spare part production



Modifications and alterations of the system require the manufacturer's prior approval. Original spare parts and accessories authorized by the manufacturer serve for higher safety. The use of other parts may rule out liability for the consequences of such use. For components, which are retrofitted by the operator, Lubmann does not assume liability nor claims for compensation.

Danger caused by the electrics



The units may be connected to the power supply exclusively by appropriately trained qualified personal in conformity with the local connection conditions and regulation (e. g. DIN, VDE)!

Improperly connected equipment may lead to serious personal injury and damage to property!

Danger caused by system pressure



The units might be under pressure. Make them pressure less before you start with repairs, changes or extensions.

Lubricant

Lubricants are selected specifically for the respective application. The selection is made by the manufacturer or operator of the machine, preferably together with the lubricant supplier. Should you have little or no experience with the selection of lubricants for lubrication systems, please contact us. We will be pleased to support you in the selection of suitable lubricants and components for the construction of a lubrication system optimized for the respective application. Please observe the following points when selecting/using lubricants. You will avoid possible downtimes and damages to your machine or the lubrication system.

- Use the correct lubricant according to the manual of the equipment or the lubrication supplier,
- Only use greases of the same saponification type,
- Lubricants containing solid contents must not be used,
- Observe the equipment manufacturer's specifications, when you select the lubricant.



Hazards to environment cause by lubricants



The lubricants which are recommended by the manufacturer of your vehicle, system or machine correspond in their composition to the common safety regulations. Mineral oils and greases are generally hazardous to ground water and their storage, processing and transport requires special precautions.

Inadmissible methods of operation



Operational security of the plant is only guaranteed if it is operated in accordance with the operating instructions. The limit values stated in the technical data must not be exceeded under any circumstances.

Temperature



The lubricant used must be suitable for the specificized temperature of the product. The viscosity required for proper operation of the product must not be exceeded in case of low temperatures nor fall below specification in case of high temperatures.

Ageing of lubricants



Depending on the experience with the lubricant used, it should be checked at regular intervals to be determined by the operator whether the lubricant needs to be replaced due to ageing processes (bleeding). If there is any doubt as to the further suitability of the lubricant, it must be replaced before recommissioning. If you have no experience with the lubricant used, we recommend testing after only one week.

Technical data

Overview

LOP-A is a multi-point piston pump operated by a cam system and designed to feed several independent lines up to a maximum of 12 outlets.

Characterised for its robustness and reliability, it is particularly suitable for lubricating systems installed in difficult environments, which is designed to supply single-point lubrication systems in agricultural machinery and various kinds of machinery for use with oil.

The drive of the device occurs rotating. The drive shaft puts the centrally positioned pump shaft and the cam disk with a gear into a rotating movement. This carries out the strokes of the delivery pistons.

Max. six delivery pistons are, circular arranged, in the pump body. They are controlled by the rotating movement of the pump shaft over a suction and pressure duct.

During the suction stroke is the pressure duct closed and the delivery piston takes in oil from a connected reservoir. After the suction stroke has been finished, the pump shaft closes the suction duct with the mentioned rotating movement and releases the pressure duct so that the oil is under pressure supplied to the lube point with the now following piston stroke.

For seven or more pressure connection there is one time the upper and the other time the lower pressure connection operated. The regulation of the output rate therefore is done in pairs.

The pump is designed for merging outlets (to be defined during the order phase); the same will be provided directly to the merged outlets according to your specifications. Merging the two outlets will allow for the nominal flow rate of a single outlet to be doubled.

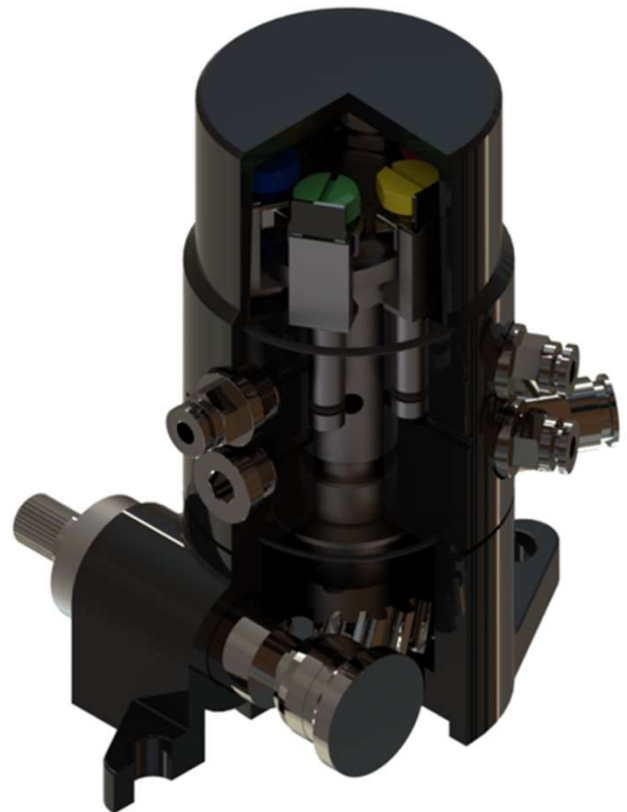


Advantage and specifications of LOP - A

- Improve machine reliability
- Significantly reduce maintenance costs
- Economizing lubricant
- The reservoir can be placed within 0.5 m above the pump
- Operate for up to 1000 hours without oil and will not get stuck without refilling
- Single-piston flow regulation is simple and fast
- The piston and flow are regulated parallel to the outlet
- Reversible, which means that its direction of rotation is not affected by mechanically driven steering

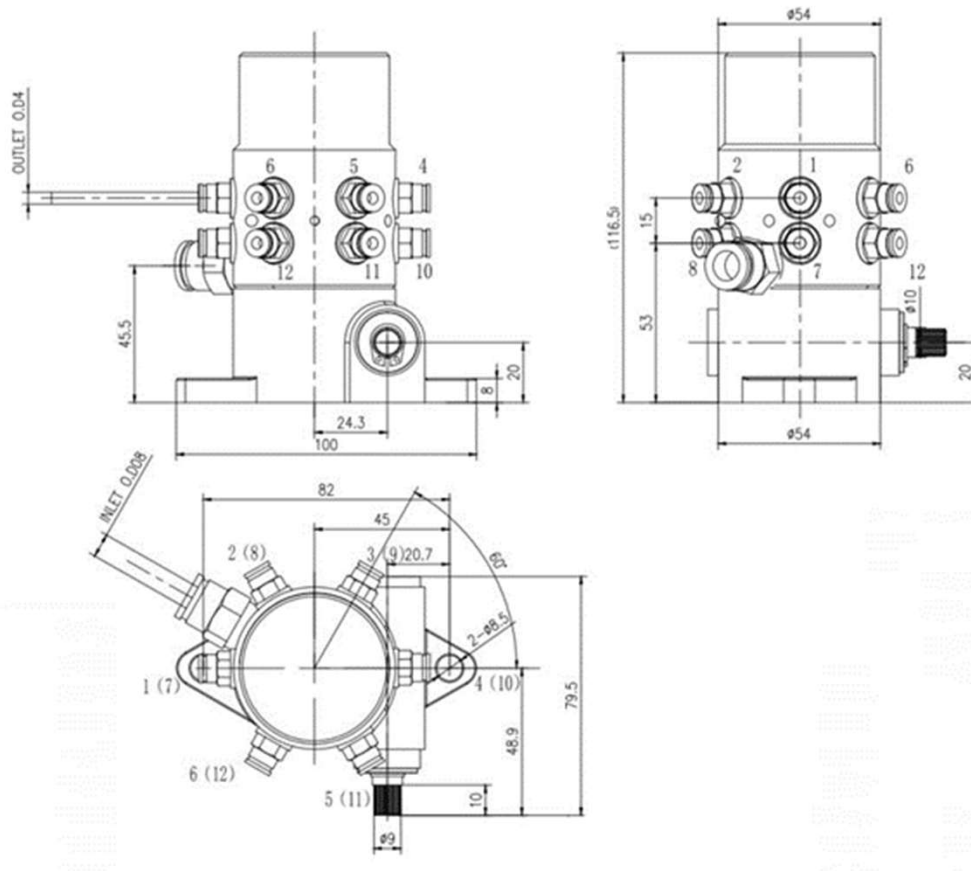
Specifications

Pump inlet tubing	D8 / D10
Pump inlet thread	G1/8
Pump outlets tubing	D4
Pump outlets thread	G1/8
Reservoir size	4L / 7L
Suction height	≤500mm
Mesh size	20µm
Max. outlets	12
Ratio	7.6:1
	11.5:1
	25:1
	50:1
Operating pressure	Max 10Bar
Max. output rate	0.06cc/stroke
Viscosity range	25-1500cst



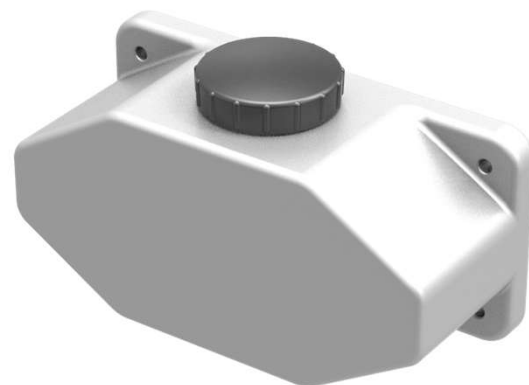
Installation dimensions

LOP - A pump

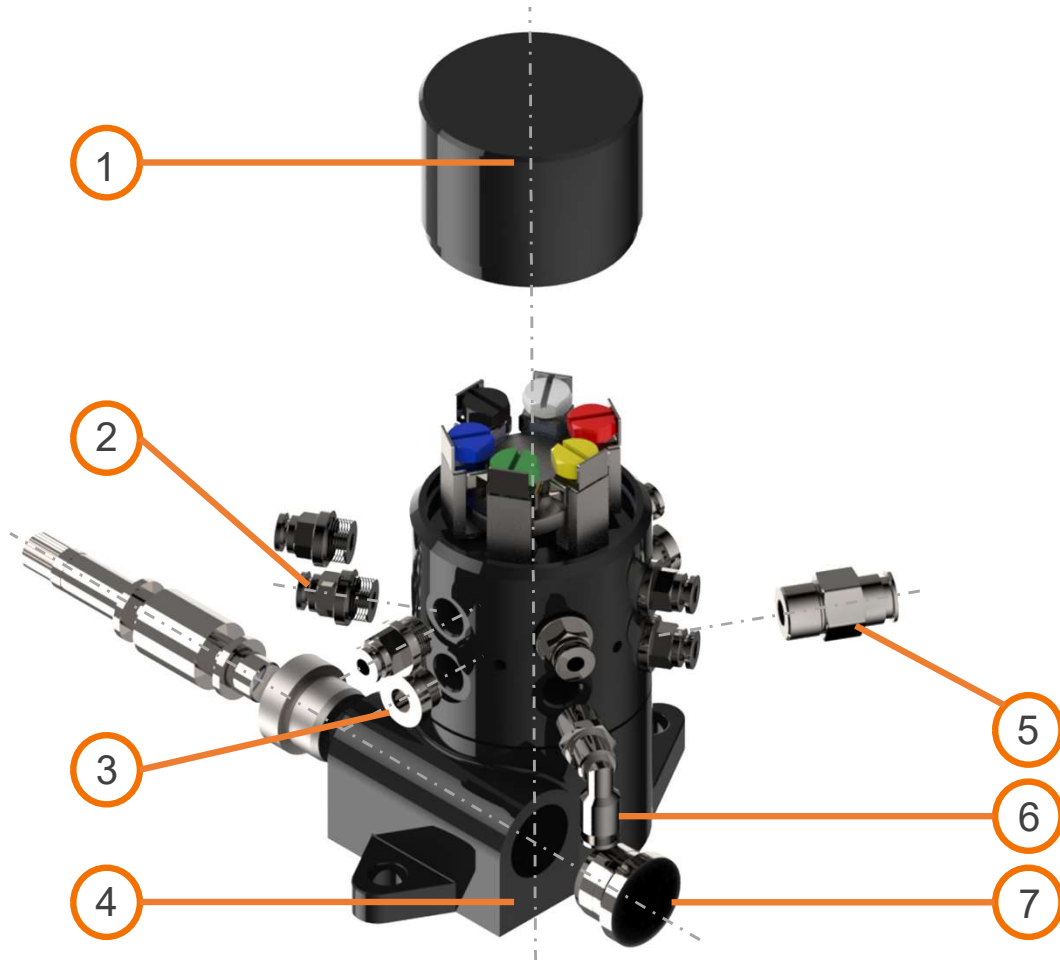


4 Liter reservoir with bracket

7 Liter reservoir



Explosion drawing for LOP - A



Components for LOP - A

Pos.	Description
1	LOP-A pump top cover
2	LOP-A pump outlet quick coupling straight
3	LOP-A pump outlet blind plug
4	LOP-A pump body kit
5	LOP-A pump inlet quick coupling straight
6	LOP-A pump outlet elbow rotatable quick coupling
7	LOP-A pump coupling bolt kit

Assembling and installation

Ensure to perform below steps before doing the system installation.

Preparation for Installation

- Ensure all components are received correctly as per the packing list provided.
- Ensure all required tools are in place.
- Ensure the lubrication plan with all lubrication points which needs be connected with the pump are provided on site before the installation.

Plan for Installation

1. Identify the equipment's drive shaft that will drive the pump and locate the position of the pump closer and in-line with the equipment's drive shaft location.
2. The location of the pump shall preferably be at a lower elevation than the reservoir.
3. Check the operating manual of the equipment for the revolution of the drive shaft. Ensure that the selected pump ring and gearbox combination is consistent with the drive shaft speed.
4. Check the coupling bolt to be used (optional) between drive shaft and connecting hose. The coupling bolt can be ordered as a component from Lubmann.
5. Select the position of the reservoir on the machine and ensure there is enough room for installation.
6. Identify the position, height and width for the brushes. The brushes can be ordered as a component from Lubmann.
7. Double check the schematic layout of the system (lubrication plan). Ensure that the lubrication lines do not interfere with moving parts of the equipment.

Installation of pump

1. Check the metering setting of the pump before fixing the pump on the equipment, identify the outlets No. with the lubrication points
2. Fixing the pump on the equipment
3. Assemble the push-in fittings or bridges at the pump outlets
4. Align the pump with the slot provided on the pump mounting bracket. Insert 1 × M8 screws, nuts, and washers into either of the pump mounting holes and tighten the screws.

Pressure at the closed outlet can reach up to 80 bar. Do not open the closure plugs when the pump is in operation.

Always follow safety precautions and depressurize the system before approaching near the closed outlets of the pump.



Equipment drive shaft end connection

1. Select a suitable adapter coupling bolt
2. Connect one end of the coupling bolt to the device drive shaft
3. Measure the correct length of the hose and cut as necessary to connect to the pump drive shaft
4. Insert two clamps on either ends of the hose
5. Assemble one end of the hose to the free end of the equipment drive shaft and fasten using the hose clamp
6. Connection of the other end of hose to the pump drive shaft to be carried out after priming of the pump

Rotation of pump drive is permitted only when the equipment cover is closed. Don't reach into the rotating drive shaft assembly area during operation.



Stay away from the driving shaft area during operation or commissioning. Ensure equipment drive is detached from pump drive during commissioning and trouble shooting



Displacement range adjustment

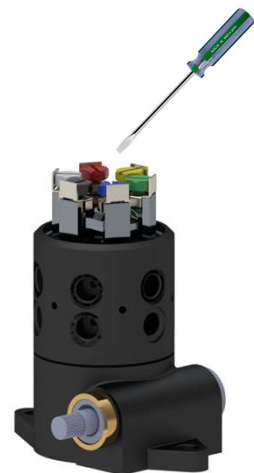


The delivery quantity of the outlet can be adjusted with a screwdriver;

No exits can be closed! An outlet bridge can be used if it is necessary.

Rotate the adjustment screw counterclockwise to reduce oil output.

Rotate the adjustment screw clockwise to increase the oil output.



Elastic stopper

Adjust the screws



Please adjust after shutdown of the machine!

Delivery Quantity

The set screw and the appropriate pressure connection are marked with the same colour.

While adjusting the output rate, always ensure best cleanliness!

Tighten the set screws with a maximum torque of 4,5 Nm!

Non-used outlets can be reduced to zero delivery by screwing out the set screw. The appertaining outlet must not be closed tightly by a screw.

Rather use plastic plugs to avoid dirt entering the device. Anyway, in case of bad operating conditions the device can be damaged due to a lack of lubricant when zero delivery is set.

Do not touch the cam disk when setting the output rate – risk of injuries!

Maintenance

- Regular and appropriate maintenance is a prerequisite to detect and clear faults in time.
- Disconnect the device from power supply before maintenance or repair.
- Maintenance and repair may only be carried out at complete standstill and under pressureless condition.
- Check the surface temperature of the device, as there is the risk of burns by radiant heat.
- Wear heat-resistant gloves and safety goggles! Soiled or contaminated surfaces have to be cleaned before maintenance, wear protective equipment to this purpose, if necessary!
- Protect the device against recommissioning during maintenance/repairs!
- Check all components for leakages and damage at least every four weeks!

If leakages are not repaired, lubricant might come out there under high pressure. Remove possible puddles of lubricant immediately.



Delivery Quantity	
Frequency	Quantity ±10%
0	60 mm ³ / stroke
1	57 mm ³ / stroke
2	53 mm ³ / stroke
3	50 mm ³ / stroke
4	47 mm ³ / stroke
5	44 mm ³ / stroke
6	41 mm ³ / stroke
7	37 mm ³ / stroke
8	34 mm ³ / stroke
9	31 mm ³ / stroke
10	27 mm ³ / stroke
11	24 mm ³ / stroke
12	21 mm ³ / stroke
13	17 mm ³ / stroke
14	14 mm ³ / stroke
15	11 mm ³ / stroke
16	8 mm ³ / stroke
17	4 mm ³ / stroke

Troubleshooting

Malfunction	Possible cause	Possible remedy
Device does not aspirate	<ul style="list-style-type: none"> • Suction line leaky • Level too low • Lubricant cannot be conveyed 	<ul style="list-style-type: none"> • Retighten fitting; seal thread • Refill lubricant • Fill in lubricant with correct viscosity
Supply interrupts but drive is ok	<ul style="list-style-type: none"> • Coupling defective • Suction leaky • Lack of lubricant in reservoir 	<ul style="list-style-type: none"> • Renew coupling • Retighten fitting; seal thread • Refill lubricant
Device supplies without or with low pressure	<ul style="list-style-type: none"> • Burst pipe under reservoir cover • Suction connection not tightened • Heavy wear of the device • Suction line aspires air 	<ul style="list-style-type: none"> • Repair damage • Retighten fitting of suction line • Renew device • Retighten fitting; seal thread
Device is too noisy	<ul style="list-style-type: none"> • Device aspires air • Coupling defective • Device defective • Shaft sealing ring defective • Cavitation in device 	<ul style="list-style-type: none"> • Retighten fitting of suction line; seal thread • Renew coupling • Renew device • Renew shaft sealing ring • Seal suction line • Check lubricant level, refill lubricant if necessary

Delivery, returns and storage

Delivery

After receipt of the shipment, check the shipment for damage and completeness according to the shipping documents. Immediately report any transport damages to the forwarding agent. Keep the packaging material until any discrepancies are resolved. During in-house transport ensure safe handling.

Returns

Clean all parts and pack them properly (i.e., following the regulations of the recipient country) before returning them. Protect the product against mechanical influences such as impacts. There are no restrictions for land, sea or air transport.

Storage

Lubmann products are subject to the following storage conditions:

- dry, dust- and vibration-free in closed premises
- no corrosive, aggressive materials at the place of storage (e. g. UV rays, ozone)
- protected against pests and animals (insects, rodents, etc.)
- possibly in the original product packaging
- shielded from nearby sources of heat and coldness
- in case of high temperature fluctuations or high humidity take adequate measures (e. g. heater) to prevent the formation of condensation water

Storage conditions for parts filled with lubricant

The conditions mentioned in the following will have to be adhered to when storing products filled with lubricant.

Storage period of up to 6 months

The filled products can be used without having to take further measures.

Step for Storage period from 6 to 18 months - Pump

1. Connect the pump electrically
2. Switch the pump on and let it run, e.g., by triggering an additional lubrication, until about 4 cc of lubricant will leak from each pump element
3. Switch the pump off and disconnect it from the electrical grid
4. Remove and dispose of leaked lubricant



Step for Storage period from 6 to 18 months - Divider

1. Remove all connection lines and closure screws
2. Connect the pump which has been filled with new lubrication grease suitable for the application purpose to the divider
3. Let the pump run until new lubricant leaks from the divider
4. Remove leaked lubricant
5. Reinstall closure screws and connection lines



Step for Storage period from 6 to 18 months - Hose

1. Dismantle preassembled hose
2. Ensure that both sides of the hose remain open
3. Fill hose with new lubricant

Storage period exceeding 18 months

To avoid dysfunctions, consult the manufacturer before commissioning. The general procedure to remove the old grease filling corresponds to that of a storage period from 6 to 18 months

Shutdown and disposal

Temporary shutdown

Temporarily shut the system down by:

- Switching off the superior machine.
- Disconnecting the product from the power supply.

Final shutdown and disassembly:

The final shutdown and disassembly of the product must be planned and carried out by the operator in a professional manner and in compliance with all regulations to be observed.

Disposal



- for Countries within the European Union

Disposal should be avoided or minimized wherever possible. Disposal of products contaminated with lubricant must be affected via licensed waste disposal contractor in accordance with environmental requirements and waste disposal regulations as well as local authority requirements.

The specific classification of the waste is in the waste producer's responsibility, as the European Waste Catalogue provides different waste disposal codes for the same type of waste but of different origin.

Electrical components have to be disposed of or recycled following WEEE directive 2012/19/EU.

Plastic or metal parts can be disposed of with the commercial waste.

- for Countries outside the European Union

The disposal has to be done according to the valid national regulations and laws of the country where the product is used.

Order key

LOP-A **12** - **08G** **115** - **000**

Valid outlets

Number of valid outlets = 1 – 12*

* For number of valid outlets not equals 12, must fulfill with a special model not 000 in the order key, which need be confirmed by Lubmann when you are ordering.

Inlet D

000 = G1/8 without inlet

08G = D8 straight

10G = D10 straight

08W = D8 elbow

10W = D10 elbow

Ratio

076 = 7.6:1

115 = 11.5:1

250 = 25:1

500 = 50:1

Special models

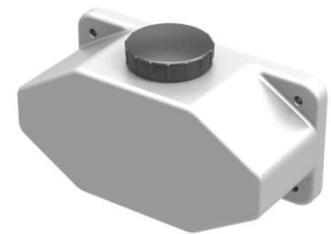
Standard version*	000
Customized version	xxx

* Standard version is only for pump LOP-A, 12 outlets with D4 straight quick couplings, the rest customized version please check with Lubmann staffs.

Spare part list

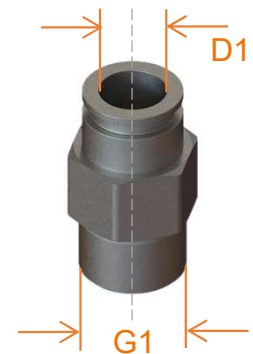
Pump reservoir and reservoir components

Part No.	Description
9900807	Kit-Oil reservoir-4L-(incl. bracket, filter cover, connection G1/4)
9900808	Kit-Oil reservoir-7L-(incl. Filter cover, connection G1/4)
9900587	Mounting bracket-grease reservoir-LOP-4 Liter-200x233x55-ST-black painted
9900792	Filter-Cover-D45-fit for 4 liter oil reservoir
9900794	Filter-Cover-D75-fit for 7 liter oil reservoir



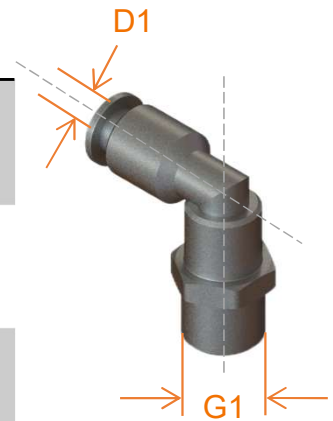
Straight quick couplings for reservoir outlet, pump in/outlets and brushes

Part No.	Description	D1	G1	Used for
9900754	Straight screw coupling-push in- GES-D4-G1/8-20 bar-MS-Ni	4	G1/8	Pump outlet, brushes
9900752	Straight screw coupling-push in- GES-D8-G1/4-20 bar-MS-Ni	8	G1/4	Reservoir outlet
9900753	Straight screw coupling-push in- GES-D10-G1/4-20 bar-MS-Ni	10	G1/4	Reservoir outlet
9900755	Straight screw coupling-push in- GES-D8-G1/8-20 bar-MS-Ni	8	G1/8	Pump inlet
9900756	Straight screw coupling-push in- GES-D10-G1/8-20 bar-MS-Ni	10	G1/8	Pump inlet



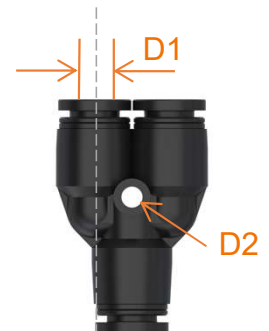
Rotatable elbow quick couplings for reservoir outlet, pump in/outlets and brushes

Part No.	Description	D1	G1	Used for
9900751	Elbow screw coupling-rotatable-push in-WESD-D4-G1/8-20bar-MS-Ni	4	G1/8	Pump outlet, brushes
9900802	Elbow screw coupling-rotatable-push in-WESD-D8-G1/4-20bar-MS-Ni	8	G1/4	Reservoir outlet
9900803	Elbow screw coupling-rotatable-push in-WESD-D10-G1/4-20bar-MS-Ni	10	G1/4	Reservoir outlet
9900804	Elbow screw coupling-rotatable-push in-WESD-D8-G1/8-20bar-MS-Ni	8	G1/8	Pump inlet
9900805	Elbow screw coupling-rotatable-push in-WESD-D10-G1/8-20bar-MS-Ni	10	G1/8	Pump inlet



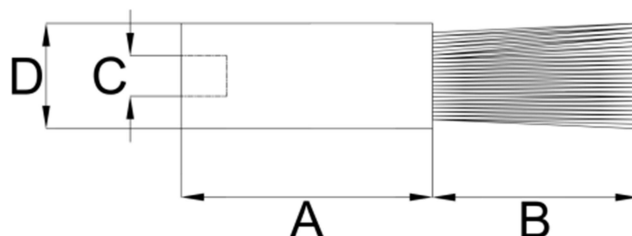
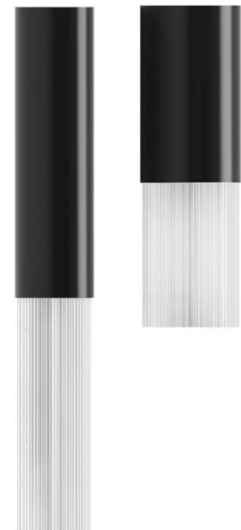
Pump outlet bridges

Part No.	Description	D1	D2	Used for
9900764	Y-connector-push in-YS-D4-20 bar-PPT	4	3.13	Pump outlets bridge



Brushes

Part No.	Description	A	B	C	D
9900745	Oil brusher-D16-G1/8-L100	55	45	G1/8	16
9900746	Oil brusher-D23-G1/8-L100	55	45	G1/8	23
9900796	Oil brusher-D16-G1/8-L69	24	35	G1/8	16



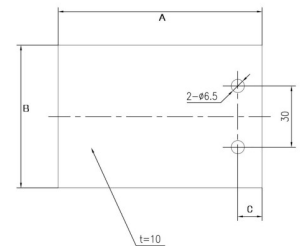
Polyamid hose

Part No.	Description	D	d	Working Pressure (bar)
9900591	Polyamid hose-4x0,75(D2,5)-40 bar-PA12-black-(1m)	4	2.5	40
9900592	Polyamid hose-4x1(D2)-50 bar-PA12-white-(1m)	4	2	50



Felt

Part No.	Description	A	B	C
9900758	Felt-FT50-70x50-2xD6,5	70	50	11
9900759	Felt-FT70-100x70-2xD6,5	100	70	12



Kit coupling bolt fit for LOP-A with bolt, hose, hose clamp

Part No.	Description	G	A	B	C
9900747	Kit-coupling bolt fit for LOP_A-M14x2-L61-bolt, hose, hose clamp	M14x2	21	10	61
9900748	Kit-coupling bolt fit for LOP_A-M16x1,5-L46-bolt, hose, hose clamp	M16x1.5	21	10	46
9900749	Kit-coupling bolt fit for LOP_A-M16x1,5-L58-bolt, hose, hose clamp	M16x1.5	21	10	58
9900750	Kit-coupling bolt fit for LOP_A-M16x2-L58-bolt, hose, hose clamp	M16x2	21	10	58

