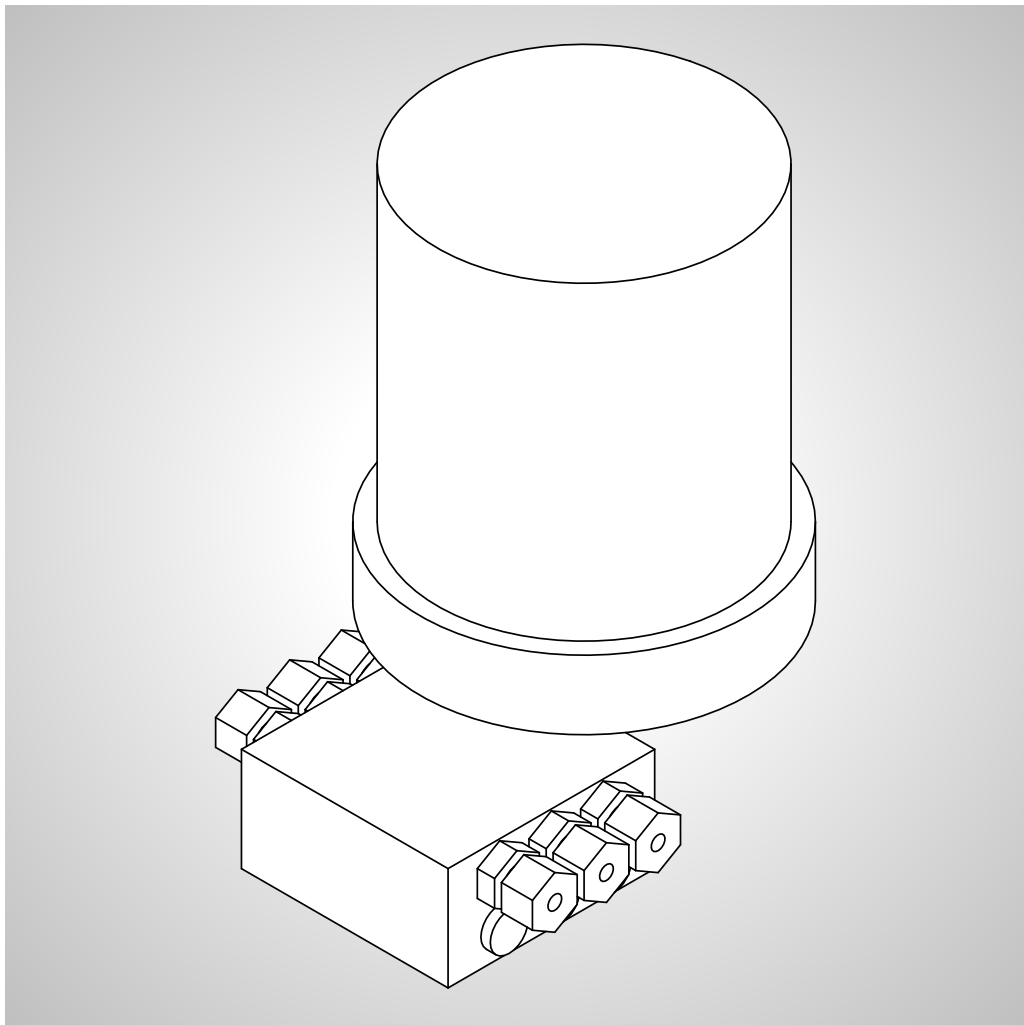


SERVICE MANUAL

Automatic lubrication system Memolub HPS



Project / Order:

Bill of materials:

Serial number:

Year of manufacture:

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Translation of the original instructions

This manual contains standard illustrations that may deviate from the original. In the case of special models, options, or technical changes, the scope of delivery may differ from the descriptions here. Reprinting the instructions, in whole or in part, requires our permission. Subject to change due to technical improvements.

Revision history



Version	Date	Description
2.0	10.07.2019	Entire manual updated New: • Outputs open and closed   II
1.0	25.05.2016	Basic version

Table - I Revision history

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I Safety

I.1 General

Read the entire manual before working with the product. The manual contains important information for your personal safety. The manual must be read and understood by all persons who work on the product in any of the product life phases.



Read the Safety chapter of the superordinate manual before working with the product. It contains important information for your personal safety. The chapter must be read and understood by all persons who work on the product in any of the product's phases. You are obligated to implement the information and warnings it contains, wherever they pertain to the product.

WARNING



Automatic startup

During work on the product, there is danger of the machine starting up automatically. This can lead to severe or fatal injuries!

Before working in the danger area:

- Secure vertical axes (if equipped) against falling.
- Switch off the superordinate main power supply. Secure it against being switched on again (main switch for the complete system)
- Before switching on the system again, make sure that no one is in the danger area

2 Design, function

2.1 Design

The automatic lubrication system of the drive module consists of a small lubricant dispenser with progressive distributor with several outputs. The automatic lubrication system lubricates the guideway and rack of the equipped axes automatically. The lubricating pinion unit lubricates the rack. The wiper and lubrication unit lubricates the guideway.

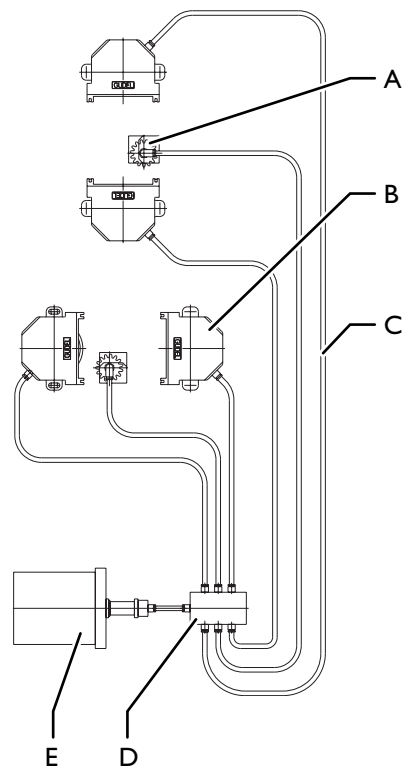


Fig. 2-1

Design of the MEMOLUB automatic lubrication system

- | | | | |
|---|----------------------------|---|-------------------------|
| A | Lubricating pinion unit | D | Progressive distributor |
| B | Wiper and lubrication unit | E | Lubricant dispenser |
| C | Lubrication line | | |

2.2 Function

Lubrication is an important part of the maintenance.

The following are the most important elements for achieving effective lubrication to optimize productivity:

- Lubricant dispenser
- Lubrication point
- Lubrication quantity
- Lubrication cycle

MEMOLUB is a powerful (25 bar) and precise electro-mechanical lubricant dispenser. The lubrication is centralized and automated. The lubricant is contained in a cartridge. With the progressive distributor, several points can be lubricated simultaneously.

2.2.1 Functional description of progressive distributor



The progressive distributor evenly distributes the incoming lubricant to all outputs that are in use. If an output is closed, the output on the opposite side from it will discharge double the quantity of lubricant.

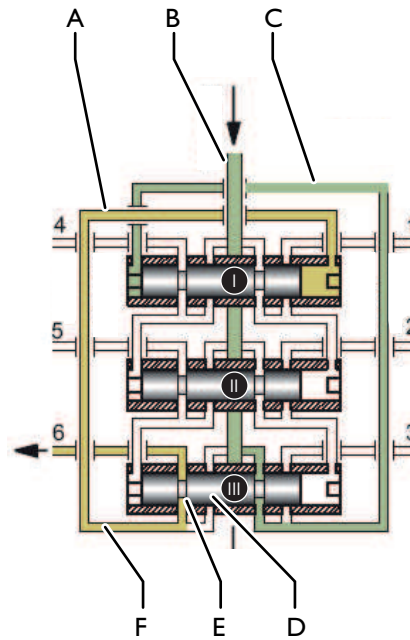


Fig. 2-2

Function of the progressive distributor I

A	Left changeover line	D	Piston
B	Main line	E	Ring groove
C	Right changeover line	F	Lubricant

From the main line, the lubricant flows through the right-hand ring groove of piston III. The changeover line moves piston I to its right-hand end position. The lubricant displaced by piston I goes through the left changeover line and exits at output 6.

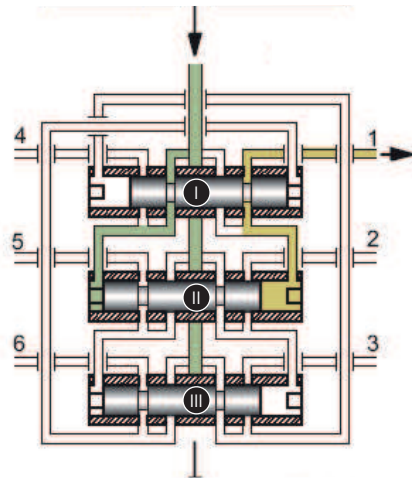


Fig. 2-3 *Function of the progressive distributor 2*

After piston I has moved, lubricant flows to the left side of piston II and pushes the piston to its right-hand end position. The displaced lubricant exits through output 1.

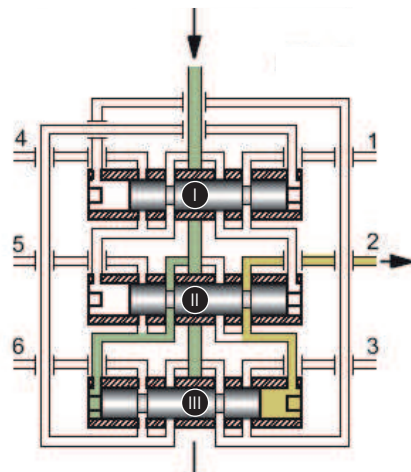


Fig. 2-4 *Function of the progressive distributor 3*

After piston II has moved, lubricant flows to the left side of piston III and pushes the piston to its right-hand end position. The displaced lubricant exits through output 2.

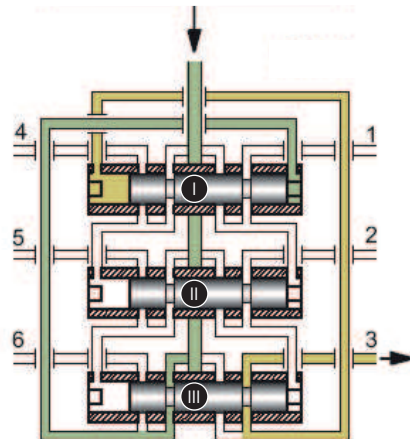


Fig. 2-5 *Function of the progressive distributor 4*

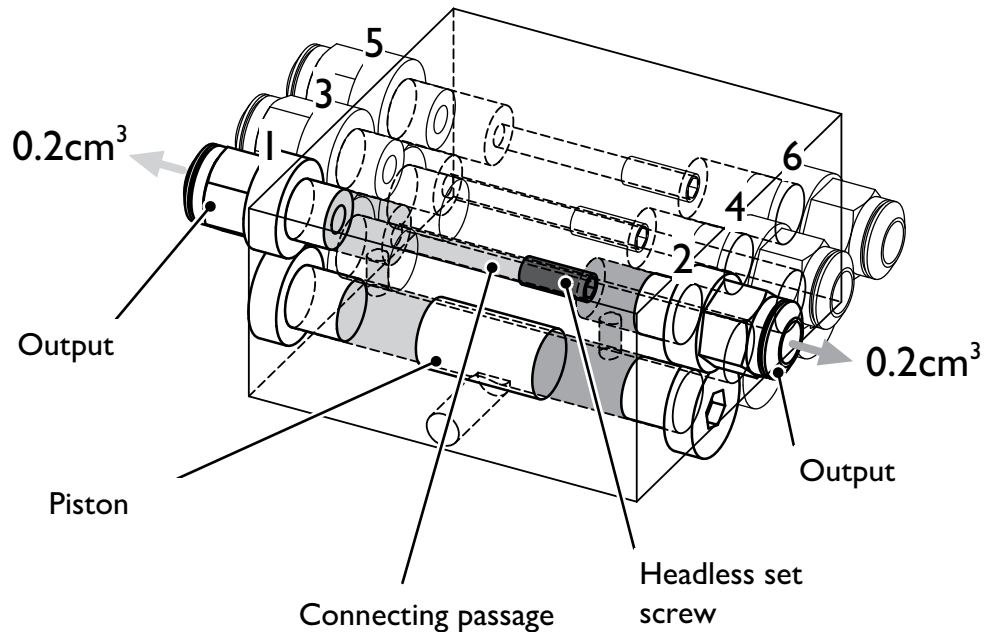
After piston III has moved, lubricant flows to the right side of piston I and pushes the piston to its left-hand end position. The displaced lubricant exits through output 3. The progressive distributor continues to follow the functional sequence as described, until all outputs have been supplied with lubricant.



As long as pressure is generated by the lubricant, the entire procedure keeps repeating in the progressive distributor.

2.2.1.1 All outputs open

The progressive distributor evenly distributes the incoming lubricant to all outputs. The opposite outputs are operated by the same piston. For the identical conveying volume to be output at the opposite outputs, the headless set screw must close the connecting passage of the two outputs. The progressive distributor is normally supplied ex works with the headless set screw fitted.



The same conveying volumes are output by the piston at output 1 and output 2. The connecting passage between the two outlets is closed with the headless set screw.

Fig. 2-6 All outputs open (the internals of the progressive distributor are shown in simplified form)

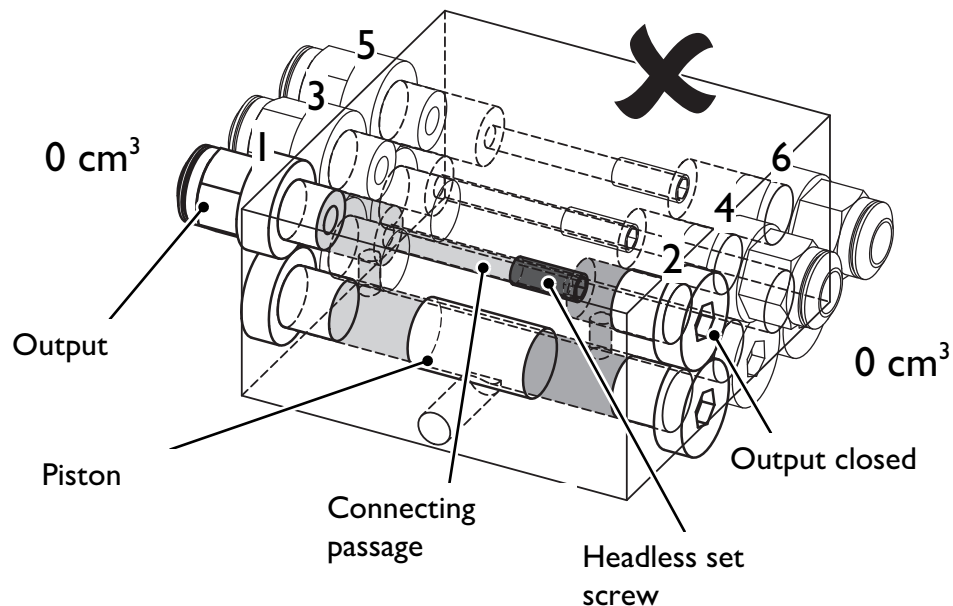
2.2.1.2 Output closed

The connecting passage between opposite outputs is closed with a headless set screw ex works. In some cases, outputs on the progressive distributor may be closed. The headless set screw must then be removed. As a result, the piston conveys twice the volume to the open output.

NOTE

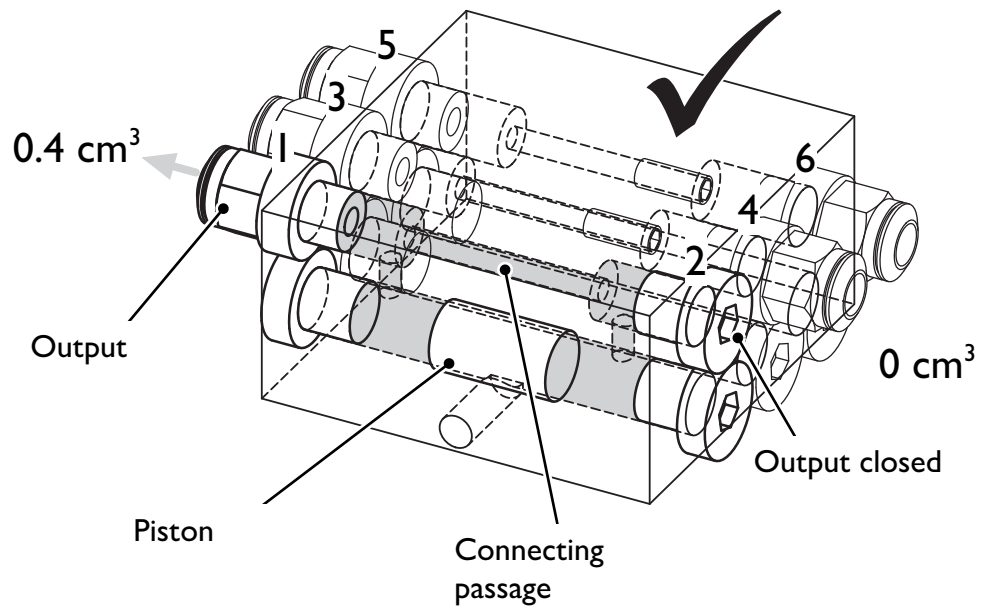
Lubricating film missing

If an output is closed without removing the headless set screw from the connecting passage between the opposite outputs, the progressive distributor will not work. The piston cannot move. A missing lubricating film on guide-ways and racks leads to damage to the product. This results in operational failure.



Output 2 is closed. The connecting passage between the two outlets is closed with the headless set screw. The piston is blocked by the enclosed conveying volume. The progressive distributor does not work.

- Always remove the headless set screw from the connecting passage if you want to close the outputs



Double the conveying volume is output by the piston at output 1.
Output 2 is closed. The connecting passage between the two outlets
is open.

Fig. 2-7 Output closed (the internals of the progressive distributor are shown in simplified form)

3 Operation

3.1 Setting the lubrication cycle / lubrication quantity

The following table shows the lubricant consumption when standard settings are used.

You can find additional settings in the third-party documentation from MEMOLUB.

Lubrication cycle

The lubrication cycle is 48 hours long. Perform lubrication work at the latest when the first signs of tribocorrosion (reddish discoloration of the track) show.

Emptying time of the cartridge

The emptying time was measured using the black dosing ring. This is the default setting at Güdel.

Cartridge 120 ml	Cartridge 240 ml	Cartridge 480 ml
12 months	24 months	36 months

Table 3-1

Emptying time of the cartridge

Lubrication quantity

Per lubrication cycle, the lubricant dispenser discharges the following lubrication quantity to the progressive distributor:

Lubrication quantity [ml]	Lubrication quantity per output on the progressive distributor [ml]
0.635	0.1015

Table 3-2

Lubrication quantity per lubrication cycle: at the lubricant dispenser / at an output of the progressive distributor

The lubrication quantity per output on the progressive distributor is usually equal. However, closing an output affects the lubrication quantity per output.

4 Replacing the cartridge



Fig. 4-1

Replacing cartridge

Lubrication ex works	Specification	Lubrication quantity
➡ Chapter 6.1, 📄 23	➡ Chapter 6.1, 📄 23	

Table 4-1

Lubricants: *Guideways, racks, and pinions*

Replace the cartridge as described in the MEMOLUB third-party documentation.

5 Replacing the battery

Replace the battery as described in the MEMOLUB third-party documentation.

6 Lubricants

NOTE

Unsuitable lubricants

Using unsuitable lubricants can cause damage to the machine!

- Only use the lubricants listed
- If uncertain, please contact our service departments

For more information on the lubricants, refer to the tables below. For further information, refer to the chapter "Maintenance tasks" and the respective third party documentation.

Special Güdel lubricants

If special lubricants have been delivered ex-works at the request of the customer, you can find the relevant specifications in the spare parts list.

Alternative manufacturers

The following tables show the specifications of the lubricants. Please inform your manufacturer accordingly. They will then suggest an alternative from their product range.

Low temperatures / food grade

Observe the application range limits of lubricants according to the safety data sheet.

6.1 Lubrication



Fig. 6-1

Automatic lubrication system Memolub

Lubrication ex works	Specification	Lubrication quantity	Location of application	Category
Mobil Glygoyle 460 NSF no.136467	CLP PG 460 in accordance with DIN 51502		Automatic lubrication system Memolub	oil

Table 6-1

Lubricants: Automatic lubrication system Memolub



Fig. 6-2 Automatic lubrication system Memolub

Lubrication ex works	Specifica-tion	Lubrica-tion quantity	Location of appli-cation	Cate-gory
Castrol Longtime PD	2KP2K-30 in accordance with DIN 51502		Automatic lubrica-tion system Memolub	grease

Table 6-2 Lubricants: Automatic lubrication system Memolub

6.2 Lubricant table

Lubrication ex works	Specifica-tion	Lubrica-tion quantity	Location of appli-cation	Cate-gory
Castrol Longtime PD	2KP2K-30 in accordance with DIN 51502		Automatic lubrica-tion system Memolub	grease
Mobil Gly-goyle 460 NSF no.136467	CLP PG 460 in accor-dance with DIN 51502		Automatic lubrica-tion system Memolub	oil

This table does not purport to be exhaustive.

Table 6-3 Lubricant table

7 Malfunions / Troubleshooting



⚠ WARNING

Automatic startup

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- Before switching on the system again, make sure that no one is in the danger area



⚠ WARNING

Overpressure

The automatic lubrication system is pressurized during operation. If maintenance and repairs are performed without depressurizing the system, people can be severely injured!

- Wear protective goggles
- Depressurize the system before performing the work

Malfunion	Cause	Measure
Lubrication system does not lubricate	Cannot be determined	<ul style="list-style-type: none"> • Check all possible malfunctions • Fix malfunctions as in Measures
Lubrication system does not lubricate	Lubrication lines damaged	Check lubrication lines
Lubrication system does not lubricate	Cartridge empty	Refill cartridge according to third-party documentation

Malfunction	Cause	Measure
Lubrication system does not lubricate	No voltage	<ul style="list-style-type: none"> • Check voltage supply • Replace battery as per third-party documentation
Lubrication lines do not carry lubricant	Pre-lubrication distributor / progressive distributor defective	Replace pre-lubrication distributor / progressive distributor
Lubrication lines do not carry lubricant	Output closed and the headless set screw is mounted in the connecting passage	Remove headless set screw ➔ Chapter 2.2.1.2, 15
Lubrication points are supplied too little or not at all	Air in the automatic lubrication system	Venting the automatic lubrication system
Lubrication points are supplied too little or not at all	Dosage too small	<ul style="list-style-type: none"> • Adjust lubrication cycle • If necessary, adjust intermission

Table 7-1 Malfunctions / Troubleshooting

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Version	2.0
Author	chrgal
Date	10.07.2019
GÜDEL AG	
Industrie Nord	
CH-4900 Langenthal	
Switzerland	
Phone	+41 62 916 91 91
Fax	+41 62 916 91 50
E-mail	info@ch.gudel.com
www.gudel.com	

GÜDEL

GÜDEL AG
Industrie Nord
CH-4900 Langenthal
Switzerland
Phone +41 62 916 91 91
info@ch.gudel.com
www.gudel.com