

PRODUCT MANUAL

ALP01 Single Point Lubricator



CLS
CHAMBERS LUBRICATION SERVICES

MANUFACTURED BY LUBMANN
Centralized Lubrication System

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Overview

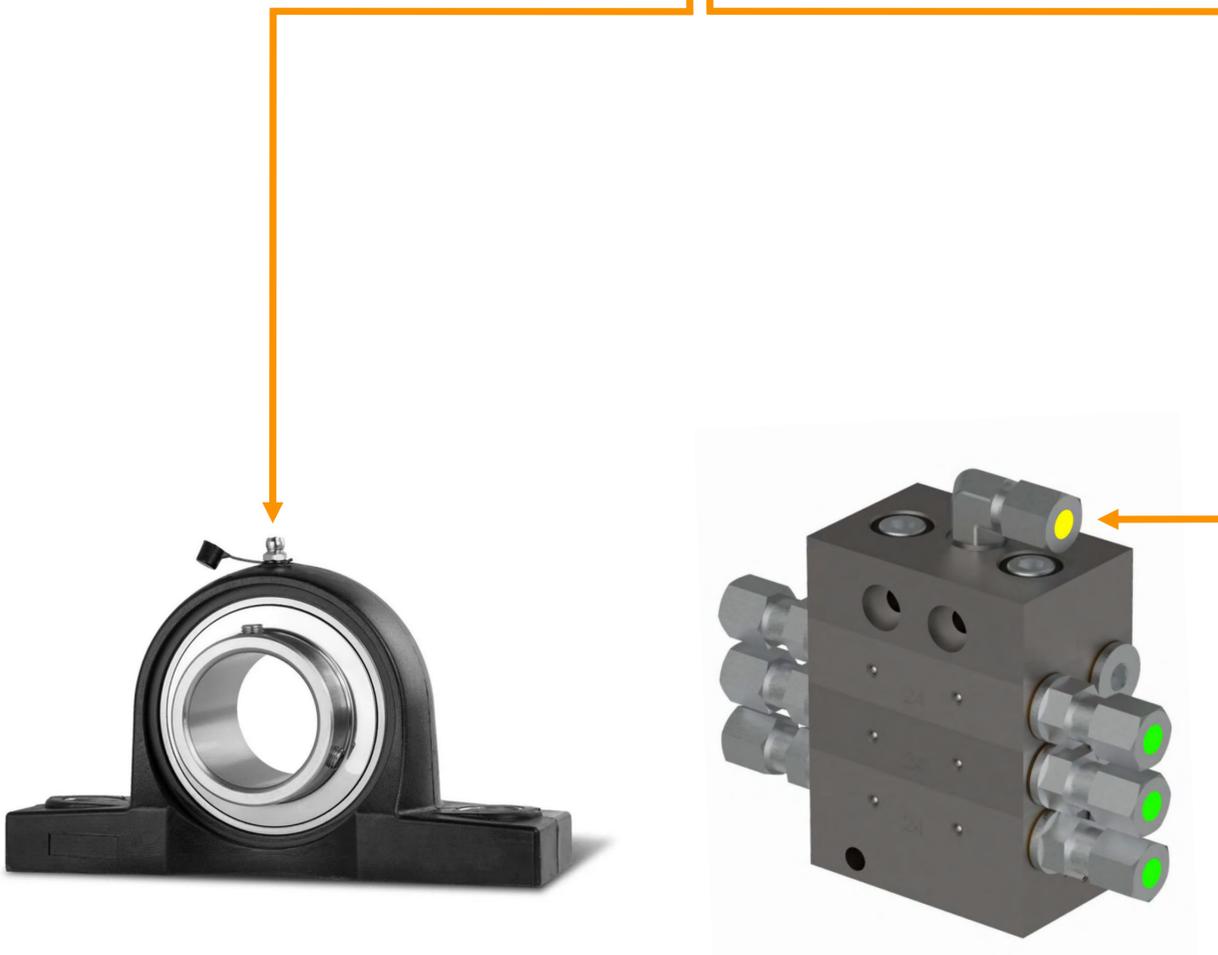
Lubmann progressive - single point lubricator - ALP01 has been widely used in industries like wind power, mining, metallurgy, machine tools, textiles, food, etc. as one of the best price - performance rate choice.

Our Lubmann single point lubricator lubricates all lube points as required through the lubricator directly like in **Dia. 3.1** or by a progressive dividers system like in **Dia. 3.2**. It can reduce the friction resistance, reduce contact wear and decrease the friction surface temperature. Meanwhile, it plays a supporting role of anti-rust, shock absorption and sealing.



To single Greasing Point

To Max. 8 outlets divider



Dia. 3.1 Single point Lubricator ALP01 connected with Greasing Point

Dia. 3.2 Single point Lubricator ALP01 connected with Divider

Overview

The Lubmann single point lubricator - ALP01 is electrically operated by a replaceable 3.6V Lithium battery cell (around 28 hrs continues running time) with max. 40 bar operation pressure with NLGI 2 grease.

The ALP01 series lubricator differs in various reservoir size 120ml, 250ml and 500ml. No matter

By using a magnet cap on the top cover of the lubricator in **Dia. 4.1**, the lubricator parameter setting e.g. test running or preset operation period can be adjusted.

Technical data:

Motor/Battery:

Operating voltage:	3.6 V DC Lithium (inrechargeable)
Idling revolutions:	10 ± 1 rpm
Nominal capacity of battery:	5400 mAh

Pump:

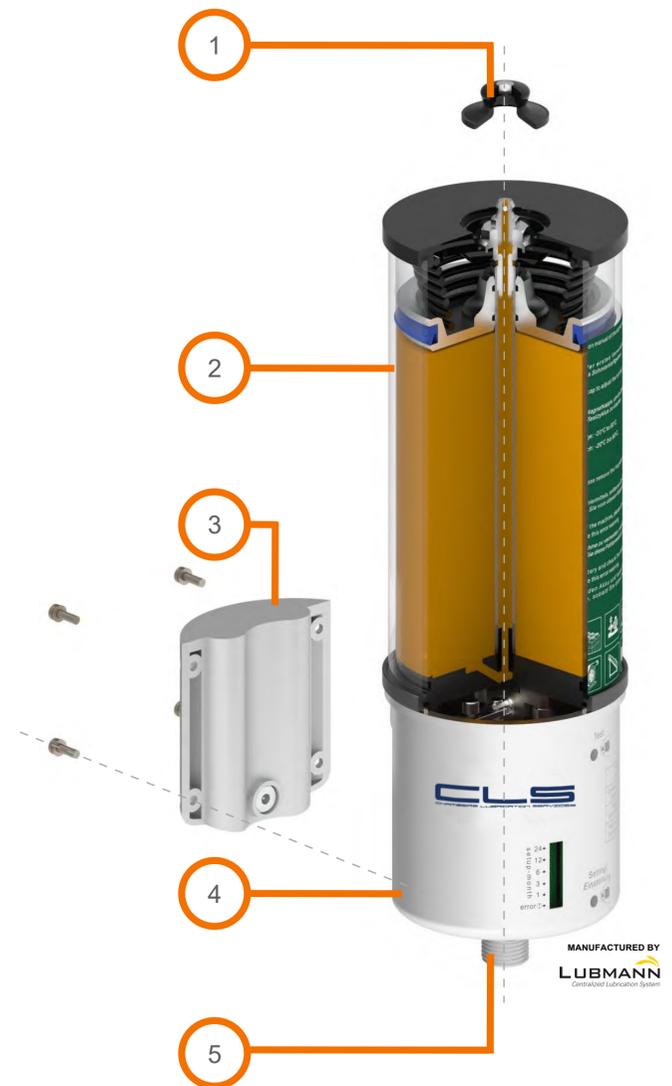
Pump type:	Plunger Pump
Max. number of outlet:	1
Max. operating pressure:	40 bar
Max. outlets by connecting a divider	8
Permissible operating temperature:	-20°C to +60°C
Noise lvl. under idling operation:	<65 dB
Standard outlet connector thread:	R 3/8
Greasing Volume per stroke:	0.24 cm ³
Greasing volume per operation cycle:	0.72 cm ³
Reservoir size:	120/250/500 ml
Protection type:	IP65 as per ISO
Max. volume of refilled grease:(Lifetime of the Single Point Lubricator)	5000 ml
Preset operation period:	1/3/6/12/24 Months

Controller:

Type of controller:	Built-in Controller
Display mode:	LED Indicator Display

Lubricant:

	Greases up to NLGI- CI.2
Refilling method:	From Top under Magnet Cap



- 1- Magnet Cap
- 2- Reservoir with Follower Spring
- 3- Lithium Battery Cell
- 4- Lubricator Body
- 5- Outlet Connector

Dia. 4.1 Single Point Lubricator Functional Components

Grease Refilling

1. Take off the magnet cap (**Dia. 5.1-1**).
2. Connect the manual/electrical grease gun with the greasing nipple under the magnet cap (**Dia. 5.1-2**).
3. Inject the grease into the reservoir smoothly till the "MAX. Grease Level"* (**Dia. 5.1-2**).
4. Disconnect the grease gun and greasing nipple and clean the greasing nipple, put the magnet cap back into the position (**Dia. 5.1-3**).

* *Attention: please slow down the grease injection speed specially when the grease level in the reservoir almost reaches "MAX" to avoid over-refilling (the grease level can not be higher than the ventilation).*

Important Tipps by the first time grease filling

During the first time grease filling, the air bubble might be built in the reservoir*. To get rid of the air bubble, the level of the grease needs to be around 1-2 mm higher than the ventilation hole to drain the air bubble out of the reservoir (**Dia. 5.2**).

Start a test greasing cycle to check the lubricant comes out from the lubricator outlet. Make sure there is no air bubble mixed in the lubricant. Otherwise continue the test greasing cycles.

* *Too much air bubble might damage the friction pairs.*

Please make sure the grease level NOT higher than "MAX. Grease Level" during a regular refilling process.

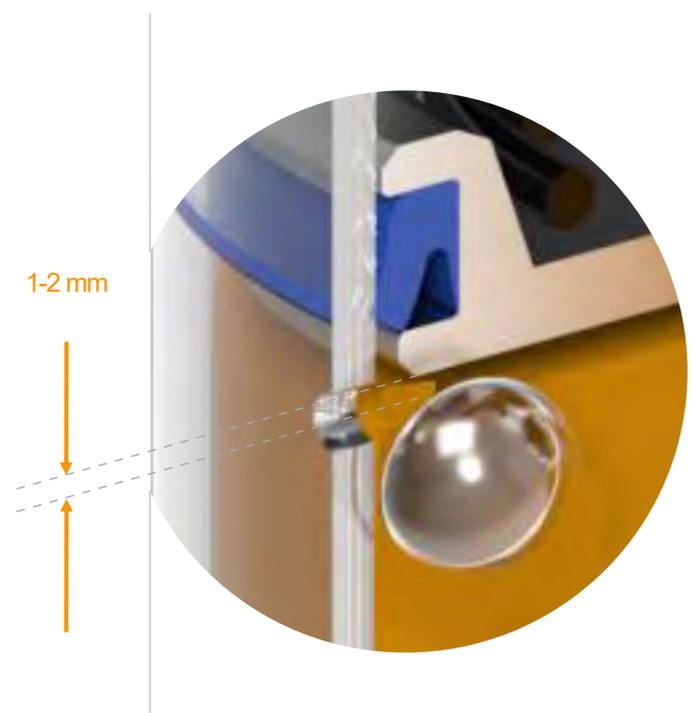
Important Tipps by outdoor or Food Grade Application

For the high-level environment standard, a grease film is strongly recommended.

1. Get the air rid of the reservoir.
2. Clean the surface around the ventilation.
3. Put the grease film on the ventilation.



Dia. 5.1 Grease Refilling



Dia. 5.2 Ventilation of Reservoir

Grease Refilling Period

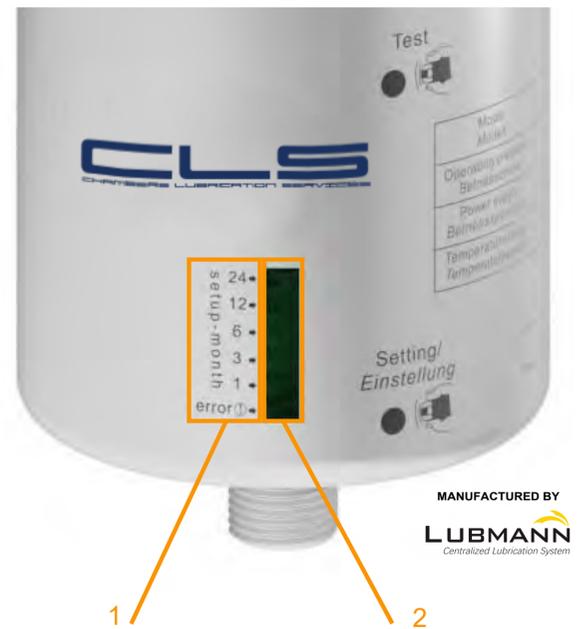
Preset of the Operation Period (Theoretical Grease Refilling Period)

The preset operation period equals the theoretical grease refilling period, which can be set on the single point lubricator ALP01.

Based on the reservoir size and preset operation period which can be adjusted on the lubricator in **Dia. 6.1**, the grease consumption per month or per week for the greasing point or connected divider can be calculated as in the following table.

Recommended Grease Refilling Period

However, to make sure the grease can be refilled before the reservoir is empty, a shorter grease refilling period is recommended (around 80% of the theoretical grease refilling period) to avoid injecting the air into the fiction pairs or bad lubrication status.



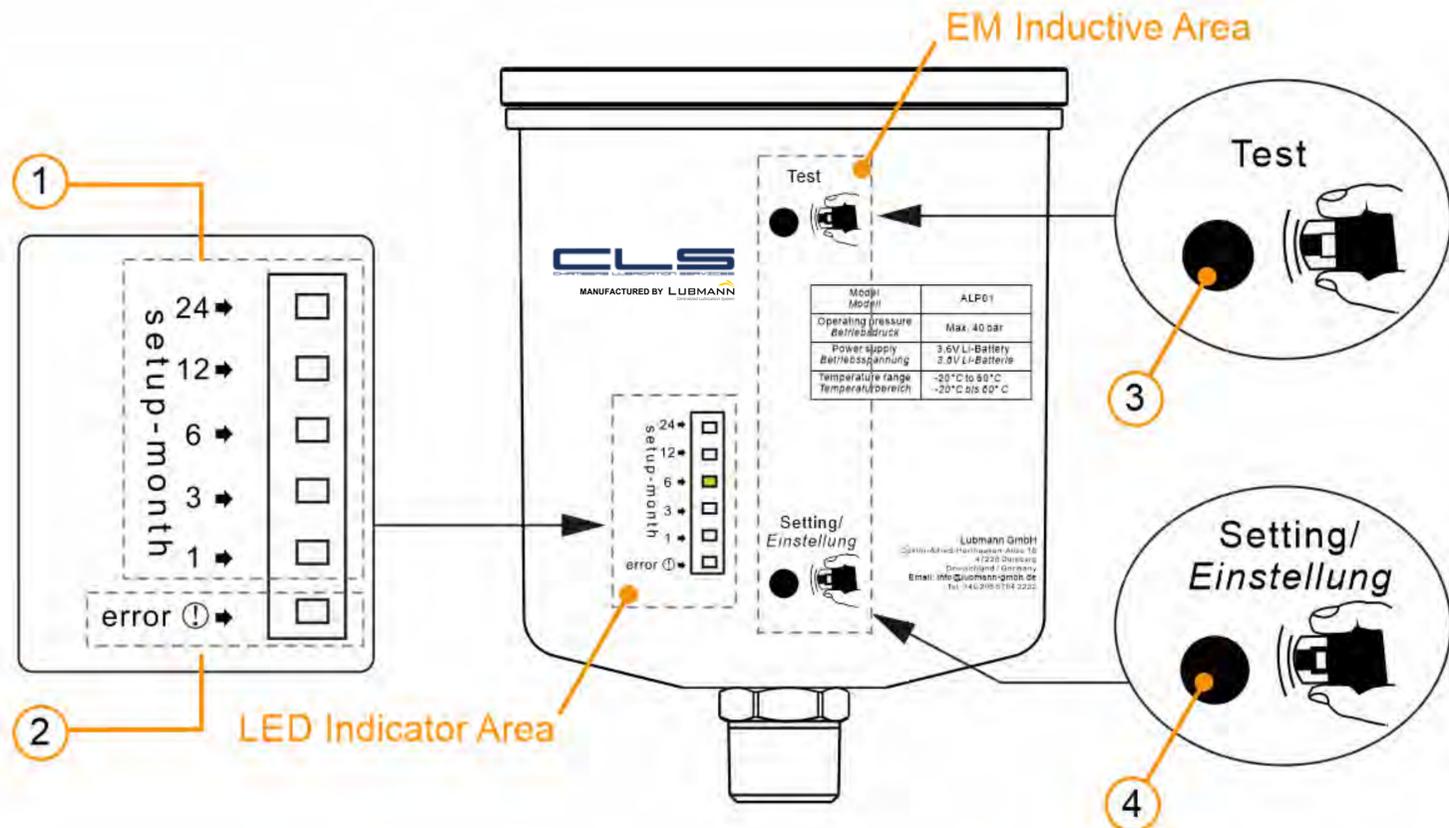
- 1- Pad of Preset Operation Period in Month
- 2- LED Indicator Interface

Dia. 6.1 Preset of Operation Period

Preset Operation Period	Grease Refilling Period	Grease Consumption* for 120 mL Reservoir		Grease Consumption* for 250 mL Reservoir		Grease Consumption* for 500 mL Reservoir	
		Per Month	Per Week	Per Month	Per Week	Per Month	Per Week
24 Months	20 Months	5.0 cm ³	1.1 cm ³	10.4 cm ³	2.3 cm ³	20.8 cm ³	4.6 cm ³
12 Months	10 Months	10.0 cm ³	2.3 cm ³	20.8 cm ³	4.6 cm ³	41.7 cm ³	9.3 cm ³
6 Months	5 Months	20.0 cm ³	4.6 cm ³	41.7 cm ³	9.3 cm ³	83.3 cm ³	18.5 cm ³
3 Months	10 Weeks	40.0 cm ³	9.2 cm ³	83.3 cm ³	18.5 cm ³	166.7 cm ³	55.6 cm ³
1 Month	24 days	120.0 cm ³	27.5 cm ³	250.0 cm ³	55.6 cm ³	500.0 cm ³	111.1 cm ³

* The grease consumption volume in the above table is only for single grease point or the inlet of the divider. For the multi greasing points which connected by divider, depends on the configuration of the divider, which can be checked in our divider manual.
The greasing volume per cycle is 0.6 cm³.

Test and Time Setting



Control Panel of ALP01

The control panel area of ALP01 single point lubricator is built up by the LED indicator area (□ and ②) in **Dia. 7.1**) and the EM inductive area (③ and ④) in **Dia. 7.1**).

LED Indicator Area: The LED indicator helps the user to get information about the lubricator operation period and error codes during the operation process through different display modes such as constant lighting or flashing.

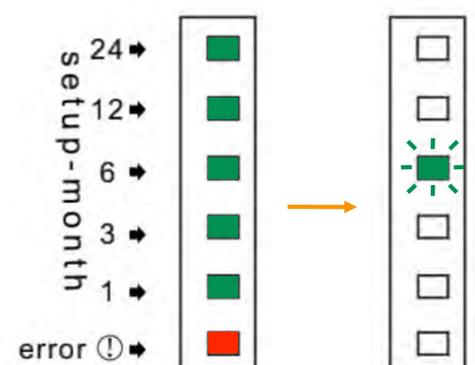
- 1 - Setup - Month:** shows the preset operation period in months in GREEN LED, e.g. 1=1 month, 3 = 3 months, or shows together with error and an error code
- 2 - Error:** shows together with LED of Setup - Month for the error code such as Low Battery or overloading of the lubricator

EM Induction Area: Users can contact the EM induction area by using the magnetic cap to adjust the operation period, or to implement a manual greasing cycle.

- 3 - Test :** Test induction point for starting a manual greasing cycle
- 4 - Setup:** Setup induction point for operation period length adjustment

First Time Running

When the single point lubricator ALP01 first connects the battery, all lights in LED indicator area turn on for 2 seconds, then turn off. The lubricator default operation period light flashes x times (x depends on the volume of the reservoir*). Lubricator has been initialised and starts working under the default operation period immediately.



Dia. 7.2 First time running

* For 120 ml reservoir x=1, for 250 ml reservoir x=2, for 500 ml reservoir x=5.

Test and Time Setting

Operation Period Adjustment

To change the preset operation period:

1. Use the magnetic cap vertically close to the Setup EM induction point to activate the setting mode till the preset/default operation period LED turns on, then move the cap away.
2. Use the magnetic cap close to the induction point again for at least 3 seconds to adjust the length of the operation period.
3. The light jumps to the next value after removing the cap*.
4. Repeat the step 2 and 3 to choose the required length of the operation period.
5. Move the cap away, let the LED of the required value be lighting for 5 seconds and flashing once to save the setting.
6. Put the magnetic cap back to the top of the lubricator. Adjustment of the operation period length finishes.

* The jumping sequence is 1 - 3 - 6 - 12 - 24 - 1
The original setting of the operation period length is 6 (6 months)

Test Cycle

Use the magnetic cap close to the Test induction point for at least 3 seconds, then move the cap away. The lubricator starts immediately a manual greasing cycle (fixed running time as around 20 seconds* and the total greasing volume around 0.6 cm³).

During the running time, use the cap to close the test induction point again can immediately stop the cycle.

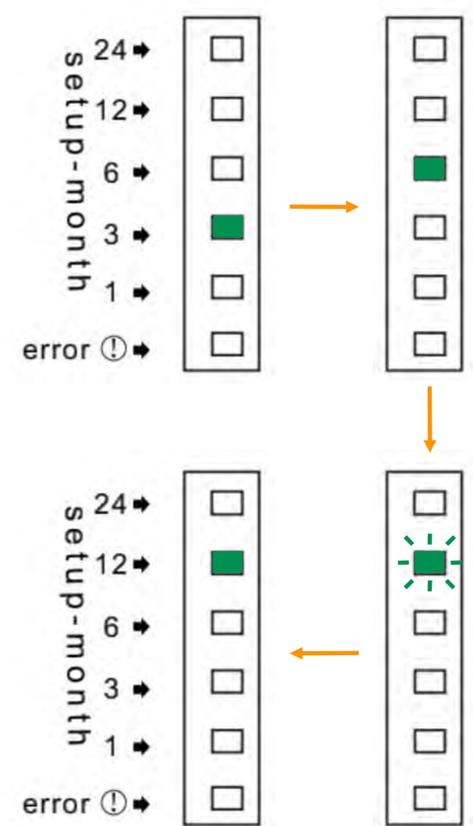
During the test cycle running time, the LED for corresponding setting of the operation period will continue to flash until the running cycle ends.

Recommended: After the lubricator is long inactive or the battery is replaced, start a test greasing cycle to ensure that the lubricator works in goods position and confirm the current setting of the operation period.

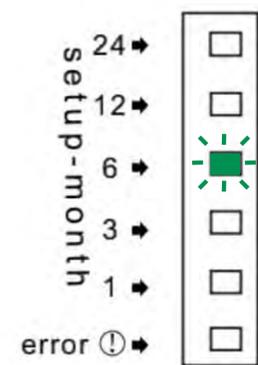
* The length of the manual running time equals a normal programmed running time, is around 20 seconds. It can be longed depends on the working situation and type of lubricant (max. 60 seconds).

About Being Idle

Caution: A function of stopping the lubricator is NOT available in our standard version. Please take off the battery during a long term maintenance of the equipment.



Dia. 8.1 Adjustment of Operation Period Length



Dia. 8.2 Test Greasing Cycle

System Debugging

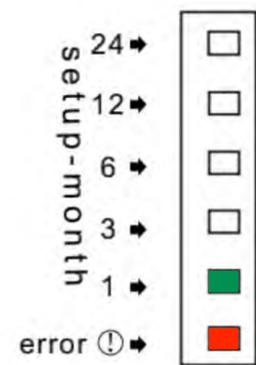
No Motor pulse Warning

During the running time of the lubricator, the controller will detect the motor pulse. If less than 2 motor pulse has been detected by the controller in 45 seconds, the lubricator will send an error code on the LED indicator area like in Dia. 9.1. The error code lasts for 2 seconds. The battery is reached the lifetime or in low status. A new battery must be used to replace the old one.

The no pulse warning does not affect the operating status of the controller. The controller will detect the motor pulse again in the begin of the next cycle.

Battery replacement process:

1. Take off the old battery.
2. Replace with a new battery.
3. Start for a test cycle.
4. Check for the operation period setting.

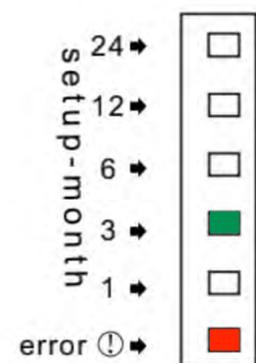


Dia. 9.1 No motor pulse warning (low battery)

Overloading Warning

During the running time of the lubricator, the controller will detect the working current of the motor in real time. If the detected motor current is more than 750mA for 4 consecutive seconds, the lubricator will send an error code on the LED indicator area like in Dia. 9.2. The lubricator is overloading (internal pressure higher than 40 bar).

The error code remains until the failure is removed.



Dia. 9.2 Overloading warning (blockage)

Reason

Action

The motor pulse detected but motor stops running

Check the entire greasing channel, find the block point and remove it. Start a test cycle.

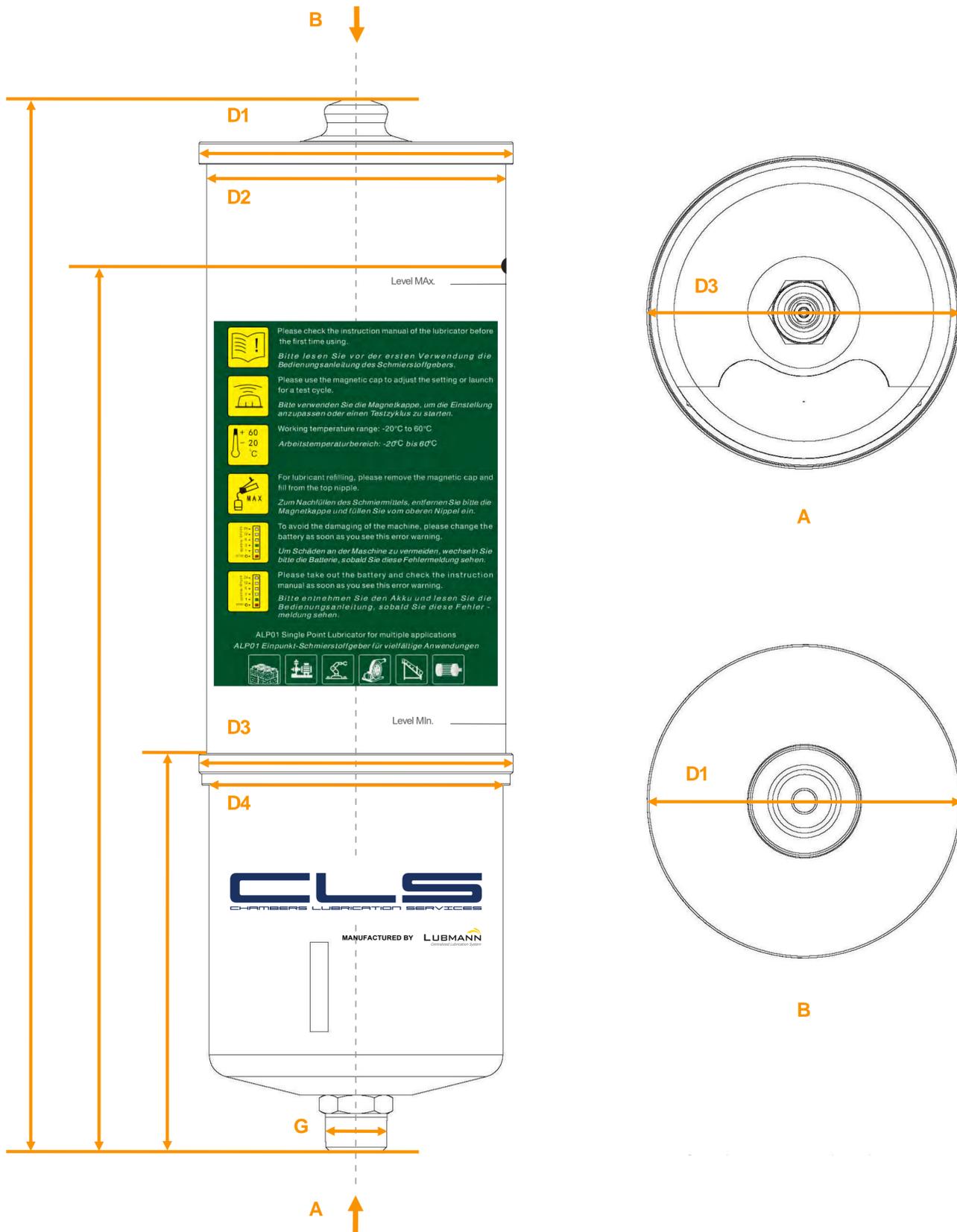
Low temperature, the lubricant gets harder

Change the lubricant and start a test cycle.

Controller detects a working current failure more than 3 times during the working time. The lubricator locks the greasing function itself.

Enter the setting mode with the magnetic cap, the overloading protection will be unlocked automatically.

Installation Dimension



ALP01 Reservoir Size	H1 mm	H2 mm	H3 mm	D1 mm	D2 mm	D3 mm	D4 mm	G*
120 ml	192	147						
250 ml	222	177	107	84	80	84	78,5	R 3/8
500 ml	282	237						

* R 3/8 is standard connecting thread, for other connection thread requirement please contact us.

Accessories

Item	Specification	Part No.
Single Point Lubricator	ALP01 120ml with battery	2010110240
	ALP01 120ml without battery*	2010110210
	ALP01 250ml with battery	2010110230
	ALP01 250ml without battery*	2010110200
	ALP01 500ml with battery	2010110220
	ALP01 500ml without battery*	2010110190



Dia. 11.1 Single Point Lubricator with/without Battery

Item	Specification	Part No.
Battery	ALP01 Battery Set with fixing parts	2010120530



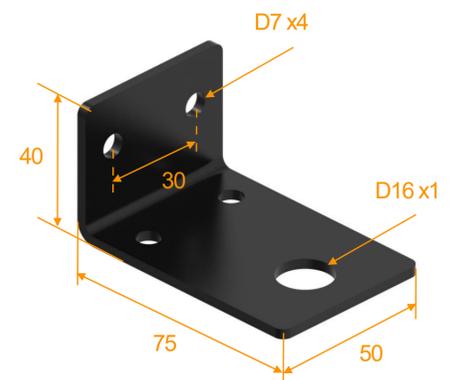
Dia. 11.2 Single Point Lubricator Battery

Item	Specification	Part No.
Magnet Cap	ALP01 Magnet Cap	3020101500



Dia. 11.3 Magnet Cap

Item	Specification	Part No.
Bracket	ALP01 universal Bracket Bl. L75mm x B50mm x H40mm	3010107510



Dia. 11.4 Single Point Lubricator Bracket

Accessories

Item	Type	Specification	Part No.
Couplings for Bracket	A	Elbow High Pressure Quick Coupling (xxx bar) G3/8 - D8	2010120420
	B	Elbow Double Cone Drive Coupling G3/8 - D8	2010120400
	C	Straight High Pressure Quick Coupling (xxx bar) G3/8 - D8	2010120410
	D	Straight Double Cone Drive Coupling G3/8 -D8	2010120390

* The part No. for couplings is exclusive bracket. Please check the part No. on page 11 for the bracket.



A



B



C



D

Dia. 12.1 Couplings for Bracket Connection

Item	Specification	Part No.
Couplings for Greasing Points Connection	Brass Coupling G3/8 F - R3/8 M	3050105310
	Brass Coupling G3/8 F - R1/4 M	3050105320
	Brass Coupling G3/8 F - R1/8 M	3050105330
	Brass Coupling G3/8 F - M6x1.0 M	3050105340
	Brass Coupling G3/8 F - M8x1.0 M	3050105350
	Brass Coupling G3/8 F - M10x1.0 M	3050105360
	Brass Coupling G3/8 F - M12x1.25 M	3050105370
	Brass Coupling G3/8 F - NPT1/8 M	3050105380



Dia. 12.2 Couplings for Greasing Point Connection