KLÜBER LUBRICATION

your global specialist

Translation of the Original Operating Instructions

# Klübermatic PRO

# Lubrication System Klübermatic PRO

**Protection cover**
With bayonet catch for quick opening/closing

**PRO LC**
(Lubrication Canister)
Cartridge, piston, spindle filled with lubricant.

**Red LED**
Additional malfunction indication

**Push Button: MODE/SAVE**
Leads to the Configuration Menu and saves the selected settings.

**Drive Unit**
Contains electronics, motor, and pump system.


**Content**
Description of the filling date and the contained lubricant

**Type**
Product type and size of PRO LC

**Display**
Informs about operating conditions, malfunctions, settings, and the lubricant volume left in the PRO LC.

**Push Button: ON/OFF/SELECT**
To turn system ON or OFF and to change settings.

**Green LED**
Additional indication of the current operating condition

**Connector for Klübermatic distributor PRO MP-6**

**Connection thread**
G3/8 for application into a lubrication point or for connecting a grease tube

## Display

**Configuration menu**
For entering the settings

**Outlets 1 - 6**
Shows activated outlets.

**Number**
Shows remaining volume, discharge period, outlet no., PIN, and malfunction codes.


**Remaining volume of the PRO LC**
Shows the lubricant remaining in the PRO LC in % volume.

**Setting Mode**
Displays the current setting in days, weeks, or months.

**Size of PRO LC**
Displays volume of PRO LC (250 or 500 $cm^3$).

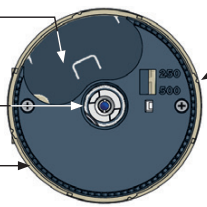
**Ice icon**
Indicates either that the temperature fell below 0 °C/32 °F (icon blinking), or that the low temperature shutoff (below -20 °C/-4 °F) has turned the system off (icon permanent).

## Drive Unit

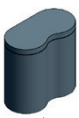
**Battery Compartment**
For insertion of battery PRO B

**Catch**
For driving the spindle

**Interlocking Teeth**
To position the PRO LC.




**No function!**
Setting of PRO LC size is done via menu on the display.



**Battery PRO B**

# Quick Reference Guide for the Lubrication System Klübermatic PRO

On this page you will find some important information for quick and easy operation and setting of the Klübermatic PRO. Before the first installation of the Klübermatic PRO, and whenever you need detailed instructions, you should read the complete Operating Manual which contains information that must be observed. Make sure to follow the instructions given in the chapter “Safety Notes”.

## 1 Assembly of Klübermatic PRO / Exchange of PRO LC

**(refer to chapter 3 and 6)**

- Mount the drive unit on the mounting plate and secure it at the three pre-drilled holes (see attached template).
- Insert a new battery PRO B into the battery compartment (follow directions of the arrows).
- Place the PRO LC inside the cover and remove the plug of the PRO LC.
- Push the PRO LC into the cover until lubricant comes out of the opening.
- Place the PRO LC with its cover on the drive unit. Make sure that the catch locks and that the teeth of PRO LC and drive unit interlock.
- Turn the cover clockwise until the bayonet catch locks.

## 2 Determine Discharge Period

**(refer to chapter 5.7)**

- Refer to the manufacturer’s guidelines about the lubrication point that you want to lubricate, in order to determine the required lubricant amount in $cm^3$ per one hundred operating hours.
- Refer to chart (chapter 5.7, chart 4) and find your required lubrication amount. Based on that, the chart will show you the required PRO LC size, the setting of the discharge period, and the setting mode.

## 3 Setting of PRO LC Size, Discharge Period, Outlets and PIN

**(refer to chapter 5.8)**

- Hold down the MODE/SAVE button until the set time is displayed.
- Hold down the MODE/SAVE button again until you reach the current PIN (PIN cannot be changed here/PIN setting at delivery is “00”).
- Hold down the MODE/SAVE button again until you reach the other setting menus:
  PRO LC, discharge period, outlets (only with attached Klübermatic MP-6) and PIN change.
  Change settings with a short push of MODE/SAVE or ON/OFF/SELECT.

## 4 Save Settings

**(refer to chapter 5.8)**

- Keep the MODE/SAVE button pressed until display shows “--”.

## 5 Starting Klübermatic PRO

**(refer to chapter 5.5)**

- Hold down the ON/OFF/SELECT button until the “Remaining Volume” appears in the display and the green LED starts blinking.

## 6 Stopping Klübermatic PRO

**(refer to chapter 5.6)**

- Keep the ON/OFF/SELECT button pressed until the display shows “--”.

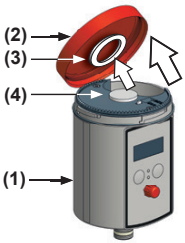
Klübermatic Distributor PRO MP-6  45

# 1. General Information

## 1.1 Delivery / Content

- Klübermatic PRO will be delivered according to customer specifications in regards to type of grease and size of PRO LC. The user must only assemble it and adjust the desired settings.
- Mounting device and screws included.
- Battery PRO B
- Operating instructions and EC Conformity Declaration included.
  Upon delivery, make sure to check if the delivered goods correspond to your order.
  Klüber will not accept liability for subsequent claims of any shortcomings.
- Please immediately forward any claims:
  - of noticeable transport damage directly to the forwarder.
  - of noticeable faults, shortcomings or defects directly to your Klüber distributor.

## 1.2 Storage




If the lubricators are not immediately installed, you must ensure appropriate storage conditions in dry, dust-free places at a temperature of +20 °C ± 5 °C (+68 °F ± 9 °F).
Storage period:

- PRO LC - max. 1 year
- Battery PRO B - max. 5 years
- Drive unit - max. 2 years

For drive unit (1) protection during storage: Do not remove protection cover (2), disc (3), and plug (4) until you are ready to install the system (see chapter 5.2).

## 1.3 Markings

- The lubricator Klübermatic PRO is clearly marked with a label (serial number) on the drive system and a label on the PRO LC.
- **CE mark** on the drive unit.
- **UL mark** on the drive unit:
  “This equipment is suitable for use in Class I, Div. 2, Groups A, B, C and D; or Non-Hazardous Locations only. Warning - Explosions Hazard - Substitution of components may impair suitability for Class I, Division 2. The lubricants dispensed by this equipment are to have flash points greater than 200 °F.“
- Manufacturer:
  perma-tec GmbH & Co. KG
  Hammelburger Straße 21
  97717 Euerdorf
  Germany
  Tel: +49 (0) 9704 609-0 E-mail: info@perma-tec.com
  Fax: +49 (0) 9704 609-50 Web page: www.perma-tec.com

## 1.4 Intended Usage

The lubricator Klübermatic PRO

- immediately supplies all lubrication points with lubricant, at a **pressure build-up of max. 25 bar** (360 psi.), permanently, precisely and independent of temperature;
- has passed the environmental audit according to standard EN 60068-2-6 (vibration test) without any component damage or malfunctions. In test: PRO drive unit with MP-6, PRO LC 500 $cm^3$, and mounting device in various mounting positions;
- can be used for all lubrication points of sliding- and roller bearings, drive- and transport chains, sliding guideways, open gears and seals;
- **must** be used with a suitable protection box (refer to ”Accessories and Spare Parts”) if operated outside or around splashing water;
- should only be connected to/used with original lubrication tubes from Klüber;
- is intended for use on machinery and equipment;
- is only to be used for the ordered purpose and purposes confirmed by Klüber;
- is only to be used for operating conditions recommended in this operating manual;
- is only to be used with settings and variations recommended in this operating manual.

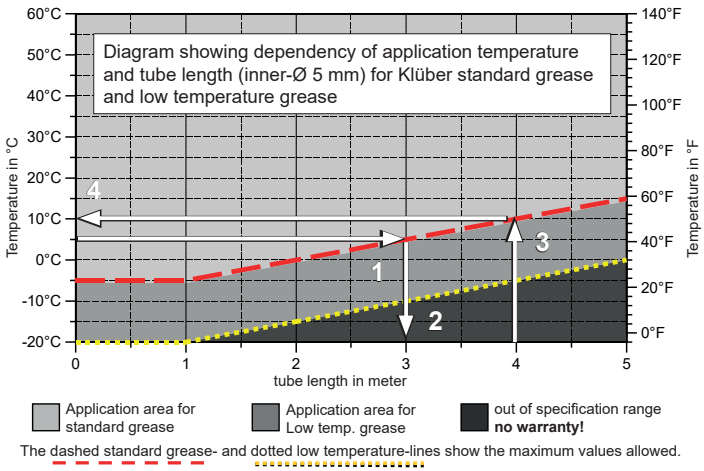
**Any other usage, setting, addition, and variation is considered to be inappropriate!**

## 2. Technical Data


figure 1

| | Klübermatic PRO 250 | Klübermatic PRO 500 |
|---|---|---|
| **Volume of the PRO LC** | 250 $cm^3$ | 500 $cm^3$ |
| **Length (L)** | 210 mm | 260 mm |
| **Diameter (D)** | 92 mm | 92 mm |
| **Weight, empty** | 1.30 kg | 1.37 kg |
| **Weight, filled with high performance grease** | 1.53 kg | 1.82 kg |
| **Discharge period** | 1 day to 24 months | 1 day to 12 months |
| **Discharged volume per lubrication impulse** | 0.5 $cm^3$ | |
| **Application temperature** | -20 °C to +60 °C / -4 °F to +140 °F | |
| **Maximum pressure build-up** | 25 bar / 360 psi | **Combination of these Maximum-Values can only be realized by temperatures of ≥ 20 °C/ 68 °F. At lower temperatures, the application is limited according to the diagram below.** |
| **Maximum tube length (inner-Ø 5 mm)** | 5 m | |
| **Lubricants** | Greases up to rated consistency NLGI 2 | |
| **Power supply** | Battery PRO B (3 V alkaline manganese, not rechargeable) | |
| **Emission sound pressure level** | < 70 dB(A) | |
| **Connection thread** | G3/8 | |
| **Protection class** | IP 54 | |

chart 1



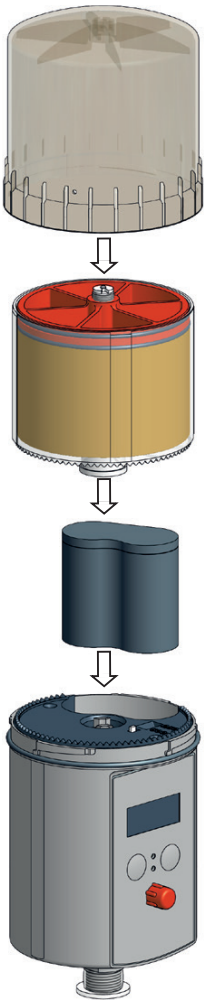

**If your application is out of the specification range shown in this diagram, please contact your local distributor. Klüber cannot be held liable for these applications.**

Example:

1. *The application temperature is +5 °C / +41 °F. What is the maximum tube length allowed for standard grease?*
   Correct Answer: 3 m max. tube length for standard grease, 5 m max. tube length for low temp. grease (arrow 1 meets the dashed line of the standard grease range at 3 m).
2. *You want to use a 4 m tube. Up to which temperature can the system be used?*
   Correct Answer: +10 °C / 50 °F with standard grease -5 °C / 23 °F with low temp. grease (arrow 3 meets the dotted line of low temp. grease at the -5 °C mark; and the dashed line of the standard grease at the +10 °C mark).

## 2.1 Design of the Klübermatic PRO Lubricator

Lubricators are available as 250 $cm^3$ and 500 $cm^3$ versions and they can be supplied with the lubricant requested by the customer. They consist of (refer to figure 2):



Protection cover for the drive unit, **re-usable.**

PRO LC (Lubrication Canister), can be supplied as 250 $cm^3$ and 500 $cm^3$ versions with the lubricant requested by the customer.
**Use only original Klüber PRO LC!**

The battery PRO B is not rechargeable and must be changed every time the PRO LC is replaced.
**Batteries can only be used once!**
**Usage of Klüber battery PRO B only!**

Drive unit, consisting of a gear motor, a pump system and an electronic unit for the control system, **re-usable**.

figure 2

## 3. Mounting and Assembly of the Lubrication System

### 3.1 Mounting the Drive Unit onto a Fixing Device for Wall-Mounting

- Attach the supplied mounting device to the drive unit using the two enclosed hex head bolts (M6 x 16) and the two washers.
- Screw the mounting device with the drive unit onto a support of your system.
  The boring template of the three mounting screws (141.5 x 45) can be seen below in figure 3 or on the template that is included. You have to use at least three hexagon screws M6 x 25 (e.g. on metal ground).
- Before you connect the outlet of the drive unit to the lubricant tube, you have to make sure that the lubrication points and the complete lubricant tube is pre-lubricated with the same lubricant that is contained in the PRO LC. For that, Klüber offers a 400 g lubrication cartridge for manually-operated grease presses with the requested lubricant.
- Connect the lubricant tube (connection G3/8) to the outlet of the drive unit and install the tube correctly between the outlet and the lubrication point. The lubricant tube must not be longer than five meters.

⚠ **Make sure that you assemble the connections and lubricant tubes correctly and tightly to avoid possible leakage.**

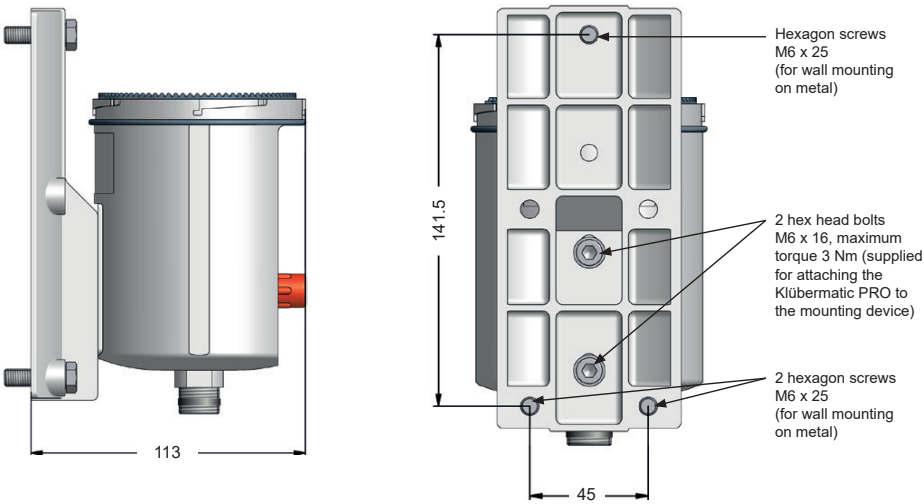



figure 3

### 3.2 Assembly of the Lubricator

a)

– Insert the battery PRO B into the drive unit (according to the direction of the arrow on the label).

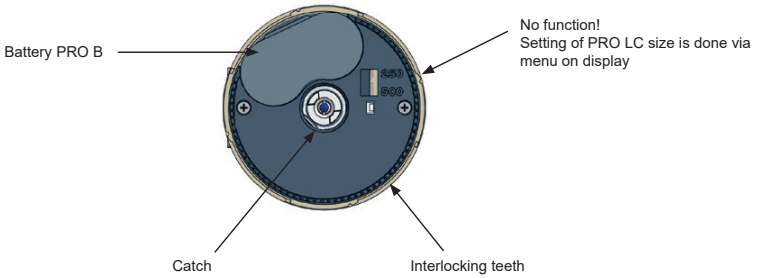



figure 4

b)

– Place the PRO LC inside the protection cover and remove the plug of the PRO LC (refer to figure 5).

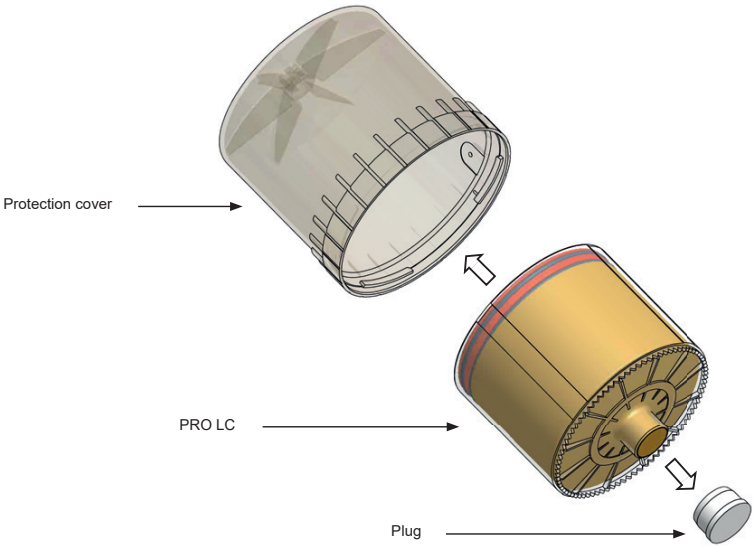



figure 5

c)

– Push the PRO LC into the protection cover until lubricant comes out of the opening (refer to figure 6).

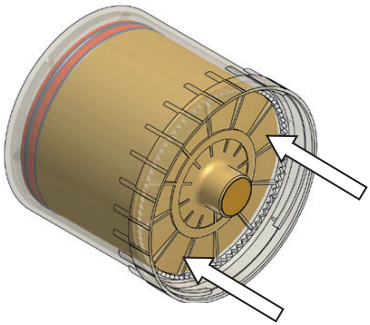


figure 6

d)

– Place the PRO LC with its protection cover on the drive unit. Make sure that the catch locks and that the teeth of the PRO LC and the drive unit interlock (refer to figure 4 and figure 7).
– Turn the cover clockwise until the bayonet catch locks.

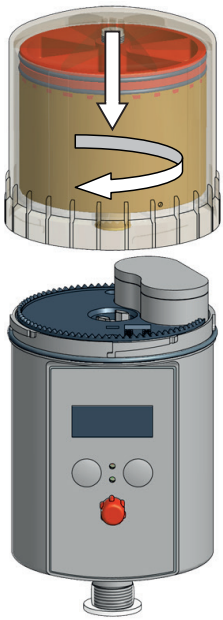


figure 7

## 4. Display and Control Elements of the Lubrication System

### 4.1 Display Elements

The operating status of the lubricator can be determined via the green or the red LED and via the display at the control unit (refer to figure 8) of the Klübermatic PRO.
The Klübermatic PRO offers a menu-guided setting. Changes of the settings are shown on the display. Error messages, e.g. in case the pressure in the lubricant tube gets too high, are also indicated on the display.


figure 8

### 4.2 Function Indication on the Display

The display is located on the control unit of the Klübermatic PRO (refer to figure 8, chapter 4.1). The display shows settings, operating conditions and error messages of the lubricator.

In case of an error free operation of the lubrication system, the display shows the remaining volume of the mounted PRO LC in percent volume (% Vol.). Figure 9 shows an example of the displayed information if the PRO LC 500 is new and full.


figure 9

**The display cannot be switched off by the operator. If the lubrication system is switched off, the display will always show two lines (see figure 10 below).**

figure 10

### 4.3 Function Indication via the LEDs

| LED | Signal | Signal Length | Explanation |
|---|---|---|---|
| green | flash | every 10 seconds | operation (OK) |
| red | flash | every 3 seconds | error / malfunction |
| green and red | flash | every 3 seconds | PRO LC empty |
| green | light | permanently | Lubricator is discharging |
| green and red | none | none | Lubricator switched off or battery low |

chart 2

### 4.4 Control Buttons

There are two push-buttons on the control unit (refer to figure 8) which can be used for a menu-guided change of the settings.

– With the MODE/SAVE button (refer to figure 11), you can reach the configuration menu, change the mode and save the modified settings for further operation.
– With the ON/OFF SELECT button (refer to figure 12) you can do the following: turn lubricator On/Off, increase discharge period (Days, Weeks, Months - each time you press the button increases the discharge period by one calendar unit), change PRO LC size, activate MP-6 outlets and set PIN.

| PRESS | Short | Short | Long > 4 sec. until the display content changes completely | Long > 4 sec. until the display content changes completely |
|---|---|---|---|---|
| BUTTON |  figure 11 |  figure 12 |  figure 11 |  figure 12 |
| FUNCTION | Selection in current display | Changing of values | Moves to new menu and saves selected values | Returns to original menu without saving changes |

chart 3, figure 11, figure 12

## 5. Operation and Control

### 5.1 Preparations

– Prior to the installation of the lubricator, the lubrication point and the complete connection tube must be sufficiently prelubricated with the same lubricant that the PRO LC contains. For this, Klüber offers a 400 g lubrication cartridge for grease presses with the corresponding lubricant (refer to “Accessories and Spare Parts”).
– When installing the Klübermatic PRO, the supplied Klüber mounting device should be used.
– The lubricant tube must be installed and mounted correctly. The length of the lubricant tube may not exceed a maximum of 5 meters and the tube must be a Klüber product.
– Please check if the thread of the Klübermatic PRO (G3/8) corresponds to the connection thread of the lubrication point. If this is not the case, you can order a corresponding reducer or other parts from the Klüber accessory range.

⚠ **During initial operation, the Klübermatic PRO drive is filled with high performance grease from Klüber’s standard range of lubricants. Please press “additional discharge” repeatedly in order to exchange the lubricant in the drive until the lubricant inside the LC is discharged at the drive outlet (refer to chapter 5.8).**

### 5.2 Prior to Operation

– Check all parts of the lubricator for obvious damages!
– Is the new PRO LC filled with the required lubricant?
– Did you insert a new battery PRO B?
– Did you remove protection cover, disc and plug from drive unit (see chapter 1.2)?
– Did you assemble and mount all of the parts correctly and tightly?

### 5.3 Setting into Operation

- If necessary, mount the drive unit onto a fixing device for wall-mounting (refer to chapter 3.1).
- Insert the battery PRO B into the drive unit and the PRO LC into the protection cover and close the complete system (refer to chapter 3.2).
- Determine the discharge period (refer to chapter 5.7).
- Set volume of PRO LC discharge period, outlets of MP-6, and the PIN via buttons on display (refer to chapter 5.8).
- Switch-on the lubrication system (refer to chapter 5.5).
- Carry out an additional discharge (refer to chapter 5.8).
  If the drive motor has started and the green LED is lit, the lubricator has started to discharge. The display indicates the remaining volume (% Vol.) of the PRO LC.

**The operator must always check the customer-specific settings and if necessary change them before the lubricator is set into operation!**

### 5.4 During Operation

- Carry out regular inspections during the operation. You should pay special attention with regard to leakage and to the condition of the lubricator!
- Check the condition of the lubricant tube and the connections regularly!
- Check the filling level of the transparent PRO LC regularly!
- After one or several additional discharges, you have to calculate the reduced discharge period and note this on your lubrication and maintenance schedule.
- If a malfunction is indicated on the display, you can determine the cause using the trouble shooting guide (refer to chart 7, chapter 7.2). If the fault cannot be fixed, please contact your supplier for technical support.

**Additional discharges and long machine standstills must always be taken into account with regard to the remaining discharge period of the lubricator.**

### 5.5 Switching the Lubrication System On

To switch the lubrication system on (refer to figure 13), keep the ON/OFF/SELECT button pressed until the indication ("--") on the display is replaced by an indication of the remaining volume – e.g. 99 % VOL (with a new PRO LC) – and the green LED starts blinking.


figure 13

### 5.6 Switching the Lubrication System Off

To switch the lubrication system off (refer to figure 14), keep the ON/OFF/SELECT button pressed until the display no longer indicates the remaining volume – % VOL – but indicates ("--") instead. When the lubrication system is switched off, all of the settings are saved. This means that if you start the lubricator again, it will take up the operation at the point where it had been switched off.


figure 14

## 5.7 Determining the Discharge Period

The discharge period is automatically factory-set to six months according to the supplied PRO LC.
Upon request, a factory-setting of the discharge period required by the customer is also possible. The size of the PRO LC is taken into account.

If you want to determine the discharge period, you need to know the required amount of the lubricant in cubic centimeters for 100 operating hours ($cm^3$/100 h). This information can be taken from the technical documents of the manufacturer of the lubrication point.
With this information, you can determine the discharge period using the following chart (chart 4).

| | Average discharge volume in $cm^3$ per 100 operating hours | | | | | |
|---|---|---|---|---|---|---|
| PRO LC | 250 | | | 500 | | |
| Setting mode / Setting point / Discharge period | Days | Weeks | Months | Days | Weeks | Months |
| 1 | 1041.7 | 148.8 | 34.3 | 2083.3 | 297.6 | 68.5 |
| 2 | 520.8 | 74.4 | 17.1 | 1041.7 | 148.8 | 34.3 |
| 3 | 347.2 | 49.6 | 11.4 | 694.4 | 99.2 | 22.8 |
| 4 | 260.4 | 37.2 | 8.6 | 520.8 | 74.4 | 17.1 |
| 5 | 208.3 | 29.8 | 6.9 | 416.7 | 59.5 | 13.7 |
| 6 | 173.6 | 24.8 | 5.7 | 347.2 | 49.6 | 11.4 |
| 7 | 148.8 | 21.3 | 4.9 | 297.6 | 42.5 | 9.8 |
| 8 | 130.2 | 18.6 | 4.3 | 260.4 | 37.2 | 8.6 |
| 9 | 115.7 | 16.5 | 3.8 | 231.5 | 33.1 | 7.6 |
| 10 | 104.2 | 14.9 | 3.4 | 208.3 | 29.8 | 6.9 |
| 11 | 94.7 | 13.5 | 3.1 | 189.4 | 27.1 | 6.2 |
| 12 | 86.8 | 12.4 | 2.9 | 173.6 | 24.8 | 5.7 |
| 13 | 80.1 | 11.4 | 2.6 | 160.3 | 22.9 | -- |
| 14 | 74.4 | 10.6 | 2.4 | 148.8 | 21.3 | -- |
| 15 | 69.4 | 9.9 | 2.3 | 138.9 | 19.8 | -- |
| 16 | 65.1 | 9.3 | 2.1 | 130.2 | 18.6 | -- |
| 17 | 61.3 | 8.8 | 2.0 | 122.5 | 17.5 | -- |
| 18 | 57.9 | 8.3 | 1.9 | 115.7 | 16.5 | -- |
| 19 | 54.8 | 7.8 | 1.8 | 109.6 | 15.7 | -- |
| 20 | 52.1 | 7.4 | 1.7 | 104.2 | 14.9 | -- |
| 21 | 49.6 | 7.1 | 1.6 | 99.2 | 14.2 | -- |
| 22 | 47.3 | 6.8 | 1.6 | 94.7 | 13.5 | -- |
| 23 | 45.3 | 6.5 | 1.5 | 90.6 | 12.9 | -- |
| 24 | 43.4 | 6.2 | 1.4 | 86.8 | 12.4 | -- |
| 25 | 41.7 | -- | -- | 83.3 | -- | -- |
| 26 | 40.1 | -- | -- | 80.1 | -- | -- |
| 27 | 38.6 | -- | -- | 77.2 | -- | -- |
| 28 | 37.2 | -- | -- | 74.4 | -- | -- |
| 29 | 35.9 | -- | -- | 71.8 | -- | -- |
| 30 | 34.7 | -- | -- | 69.4 | -- | -- |

chart 4

Please take into account that in case of one or several additional discharges, the remaining discharge period of the lubrication system must be recalculated (refer to chapter 5.9). This also applies in case of a cut-off of the lubrication system due to a long machine standstill (e.g. weekends or annual holidays). You should also note the result of your calculation of the remaining discharge period in your lubrication and maintenance schedule.

## 5.8 Settings and Display for Klübermatic PRO (+ KM Distributor PRO MP-6)

(see caption on page 15)

| MODE SAVE | Display | ON/OFF SELECT | Meaning / Description | |
|---|---|---|---|---|
| | – – | | Display at delivery with attached PRO LC | |
| MODE SAVE | Time 06 Months | | Shows discharge period PIN-reset | Info |
| MODE SAVE | PIN 00 | Change first digit → ON/OFF SELECT | Enter first digit of current PIN PIN "00" at delivery | PIN Entry |
| MODE SAVE | PIN 00 | Change second digit → ON/OFF SELECT | Enter second digit of current PIN | PIN Entry |
| MODE SAVE | Config. LC LC 500 | Change from LC500 to LC250 → ON/OFF SELECT | Set PRO LC size | LC |
| MODE SAVE | Config. Time 06 Months | Change Months → ON/OFF SELECT | Set discharge period: Months **or** Weeks **or** Days | Time |
| MODE SAVE | Config. Time 01 Weeks | Change Days or Weeks → ON/OFF SELECT | Set discharge period: Go to "Days" or "Weeks" | Time |
| MODE SAVE | Config. Outlets 1☐ ☐4 2☐ ☐5 3☐ ☐6 1 | Outlet 1 On / Off → ON/OFF SELECT | Activate outlets: Activate outlet 1 Outlets only displayed if MP-6 is connected | Outlets |
| | Config. Outlets 1■ ☐4 2☐ ☐5 3☐ ☐6 1 | | Outlet 1 activated | Outlets |
| MODE SAVE | Config. Outlets 1■ ☐4 2■ ☐5 3☐ ☐6 2 | Outlet 2 On / Off → ON/OFF SELECT | Outlet 2 activated (if desired, other outlets may be turned On / Off the same way) | Outlets |
| MODE SAVE \| MODE SAVE | Config. PIN 00 | Change first digit → ON/OFF SELECT | PIN (first digit) enter for initial configuration or after a PIN-reset – otherwise, setting is complete | PIN |
| MODE SAVE | Config. PIN 00 | Change second digit → ON/OFF SELECT | PIN (second digit) enter for initial configuration or after a PIN-reset | PIN |
| MODE SAVE | – – | | Configuration finished | |

chart 5

**Caption for Chart on Left Side**

Instructions should be followed from top to bottom and from left to right (also refer to chart 3). The instructions correspond to the operating sequence on the turned-off lubrication system Klübermatic PRO. Configuration is also possible if Klübermatic PRO is On.

| Function | short push | long push | blinking display | go to |
|---|---|---|---|---|
| Symbol | ↓ | ↓ | ✳ | → |

chart 6

**CONFIGURATION SECTIONS (see vertical bar, chart 5)**

I N T R O

INTRO informs Info and asks for the current PIN. PIN Entry

C O N F I G U R A T I O N M E N U E

Settings can be changed in the configuration menu with its different sections (LC, Time, Outlets, PIN).

**LC**

You can change the PRO LC size from LC250 to LC500 and back by pushing the ON/OFF/SELECT button (refer to chapter 6.1 and 6.2).

**Time**

The discharge period can only be set in **one** type of calendar unit (i.e. either Months, Weeks or Days). When the highest unit size is reached, counting starts again with number "01".

**Outlets**

If a MP-6 distributor is connected, outlets 1 - 6 can be set individually. The activated outlets 1 - 6 are displayed with a filled-in square in the display (please refer to the operating instruction of the MP-6 distributor for more details).

**PIN**

We strongly suggest to enter a personal PIN in order to protect your settings from unauthorized access. The PIN can **only be changed during initial configuration or after a PIN-reset**. A PIN-reset (short push of buttons: left-left-right-right-left in the INTRO-Info-menu) changes your personal PIN back to "00". The PIN-reset was successful when the displayed time disappears for a second and then comes back on. All other settings remain unchanged.

**Save or Reject Changed Settings**

The display settings can be saved with a long push of the MODE/SAVE button. If you do **not** want to save your changes to settings that are currently displayed in the configuration menu (LC, Time, Outlets, PIN), press the ON/OFF/SELECT button until the display shows either ("--") for Off or the remaining volume of the PRO LC in % VOL. All other settings and already saved changes remain valid.

**Automatic Termination of the Configuration Mode**

If you do not press a button in the configuration menu for 180 seconds, the control system is automatically switching back to the previously set mode ("On" or "Off") without saving the changes. All other settings and already saved changes remain valid.

**Additional Discharge**

With an additional discharge, a lubrication point can be supplied with an additional amount of the lubricant. For an additional discharge, the lubrication system must be switched on (display shows remaining volume) and you have to press both buttons simultaneously and hold them down (refer to figure 15).


figure 15 Lubricator On


For an additional discharge, press both buttons at the same time and hold them down (> 4 sec.)

An additional discharge is only possible at temperatures above 0 °C / 32 °F (figure 16, ice crystal is not visible) and when the lubrication system is not currently conducting a regular discharge.
Every additional discharge reduces the remaining discharge period since an increased amount of the lubricant has been supplied. This must be taken into account in your lubrication and maintenance schedule. A calculation is possible with the formula from chapter 5.9 and with the remaining volume which is displayed.

**The time between two additional discharges is 30 seconds. Each additional long push of both buttons (simultaneously, figure 15) during this time is being registered and will lead to even more additional discharges. The system remembers a max. of 5 additional discharges.**

**Low-Temperature Cut-Off of the Lubrication System**

The temperature range from 0 °C to -19 °C (32 °F to -2.2 °F) is indicated by a blinking ice crystal symbol (refer to figure 16).
In this temperature range the lubrication system Klübermatic PRO continues to operate without interruption.

**Please note, that in this temperature range an additional discharge is not possible!**


figure 16 Display with a blinking ice crystal (in this example with *89* % Vol.)

In order to protect the system from damage, the low-temperature cut-off of the lubrication system is automatically carried out by the control system and the built-in temperature sensor.

If the temperature reaches or falls below -20 °C (-4 °F), the lubricator is switched off by the low-temperature cut-off and the ice crystal symbol is permanently indicated on the display. The remaining volume is still displayed in % Vol.

⚠ **From this time onwards, the lubricant is no longer discharged. You have to take this fact into account if your system continues to operate in order to prevent damages!**

As soon as the temperature rises and reaches -19 °C (-2.2 °F) or higher, the control system switches the lubrication system on. The display shows the remaining volume and the blinking ice icon.

☞ **All discharges (except additional discharges), accumulated during the shut-off, will be caught up when the system continues operation (at a max. of two additional discharges with every regular discharge).**

## 5.9 Calculation of the Remaining Discharge Period

☞ Please note, that in case of one or several additional discharges, the remaining discharge period of the lubrication system must be recalculated. This also applies in case of a cut-off of the lubrication system due to a long machine standstill (e.g. weekends or annual holidays) or in case of a low-temperature cut-off carried out by the system if temperatures reach -20 °C (-4 °F).
You should also note the result of your calculation of the remaining discharge period in your lubrication and maintenance schedule.

$$\text{Formula:} \quad R_{DP} = \frac{SDP * RV}{100}$$

SDP: Set Discharge Period of the lubricator (days, weeks, months)
RV: Remaining Volume (displayed in % Vol.)
$R_{DP}$: Remaining discharge period (days, weeks, months depending on SDP)

**Example of a Calculation of the Remaining Discharge Period**

The Klübermatic PRO with a 250 $cm^3$ PRO LC was originally set to a discharge period (SDP) of eight months, since the lubrication point needs 4.3 $cm^3$ lubricant /100 h. After two months, the Klübermatic PRO indicates a remaining volume (RV) of *75* % Vol. At this point, the lubricator is switched off for six weeks (e.g. machine standstill). When it is switched on again, you would like to determine when the PRO LC will be empty.

$$R_{DP} = \frac{SDP * RV}{100} = \frac{8 * 75}{100} = \frac{600}{100} = 6$$

This results in a remaining discharge period of six months. After these six months, the PRO LC will be empty and must be replaced by a new one.

## 6. Replacement of the PRO LC

**The Following Must Always Be Taken into Account**

If the replacement of an empty PRO LC becomes necessary, it will be indicated by a simultaneous blinking of the red and the green LED. Additionally, the display indicates that the PRO LC is empty (refer to figure 17).


figure 17

**If you replace the PRO LC, you also have to change the battery PRO B. Otherwise, the correct operation of the lubricator cannot be guaranteed!**
**If you replace the PRO LC by a PRO LC of a different size, a corresponding protection cover (refer to "Accessories and Spare Parts") must be used.**

**Since the drive unit and the control board must be protected against moisture, an exchange may only be carried out in dry conditions!**

After the installation of the new PRO LC, the control system continues to operate using the previously valid setting of the discharge period.

### 6.1 Setting the Volume of the PRO LC

The size of the PRO LC must be set in the configuration menu with the two buttons on the drive unit (see figure 18). Please also refer to the operating chart (chart 5, chapter 5.8).

**ATTENTION!**
**If the displayed setting does not correspond with the attached PRO LC size it will result in incorrect discharge amounts and wrong signals in the display (Display, LEDs).**

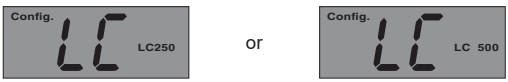



figure 18

**ATTENTION!**
Whenever a PRO LC is removed from the lubricator and is replaced by another PRO LC, the control system assumes that a new, completely filled PRO LC was attached.
**Therefore NEVER attach a PRO LC that is not completely full!**

## 6.2 How to Replace the PRO LC

Drive system and circuit board must be protected from moisture. Exchanges should only be done in a dry place and it must be ensured that no moisture enters the drive unit.

a) Turn the protection cover on the drive unit counter-clockwise and remove it.

b) Remove the empty PRO LC. The display indicates "*LC*" and the red LED is blinking.

c) Remove the used battery PRO B from the drive unit.

d) Insert the new battery PRO B into the drive unit. Follow the directions of the arrows.

e) Remove the plug of the PRO LC (refer to figure 5, chapter 3.2).

f) Push the PRO LC into the protection cover until lubricant comes out of the opening (refer to figure 6, chapter 3.2).

g) Place the new PRO LC on the drive unit, turn it until the catch locks and the teeth of the PRO LC and the drive unit interlock. The control system automatically recognizes the new PRO LC.
The display indicates "––", if the Klübermatic PRO was *switched off* prior to the replacement of the PRO LC
**Or** it indicates "*99* % Vol.", if the Klübermatic PRO was *switched on* before the replacement.
You should only use completely full Klüber PRO LC, in order to guarantee a trouble-free operation.

h) The lubrication system continues to operate with the previous setting of the discharge period.

i) If required, change lubricator settings (see chapter 5.8).

**If the lubricator was ON before changing the PRO LC, it will automatically resume operation with existing settings. If the lubricator was OFF, it must be turned ON (refer to figure 13, chapter 5.5).**

# 7. Trouble Shooting

## 7.1 Error Messages on the Display

Possible errors of the lubrication system and the application are detected by the electronic control system and are indicated on the display. If an error is displayed, the system is switched OFF until the cause of the error has been eliminated and the error message has been acknowledged.

**Error messages are acknowledged and reset by pushing the ON/OFF/SELECT button.**
**However, error messages "LC" and "Lo" are automatically acknowledged when errors are corrected (see remedial measures).**

## 7.2 Trouble Shooting Guide

If there are malfunctions during the operation of the lubrication system, please check for possible causes using the following chart (refer to chart 7).

**Every time that an error message is displayed, the red LED is also blinking.**

| Indication of the display | Error | Possible cause | Remedial measures |
|---|---|---|---|
| E1 | Lubricator has been switched off | Excess motor current of the lubricator motor due to a blocked outlet | Clear the blockage and acknowledge the fault by pushing and holding down the ON/OFF/SELECT button |
| | | Battery PRO B is empty | Insert a new battery PRO B and use a full PRO LC |
| E4 | Lubricator has been switched off | Drive mechanism is defective | Exchange the drive unit |
| LC | System does not detect the PRO LC. | No PRO LC installed | Install an PRO LC |
| Lo | No power supplied to the system from the battery | No battery PRO B inserted or battery PRO B empty | Insert a new battery PRO B and use a full PRO LC |
| No display | System gets no power from internal back-up battery | Internal back-up battery empty | Replace the drive unit of the lubricator |
| **In addition to the above, the following malfunctions can occur when a Klübermatic distributor PRO MP-6 is connected to the lubrication system:** | | | |
| E0 | Lubrication system has been switched off | Excess motor current of the Klübermatic MP-6 | Replace Klübermatic distributor PRO MP-6 |
| F1 to F6 | Error at the displayed lubrication point | Excess motor current of the lubricator motor caused by a blocking of the displayed outlet | Clear the blockage and acknowledge the fault by pushing and holding down the ON/OFF/SELECT button |
| E2 | Lubrication system has been switched off | Outlets of distributor not correctly recognized | Replace distributor |
| E3 | Lubrication system has been switched off | Timeout while activating distributor | Replace distributor |
| | | Connection cable damaged | Replace connection cable |
| E5 | Outlet configuration missing | Outlets were not activated | Activate desired outlets |

chart 7

## 8. Disposal

Help us in protecting the environment and saving resources by recycling valuable raw material.
Please follow your local waste disposal regulations.