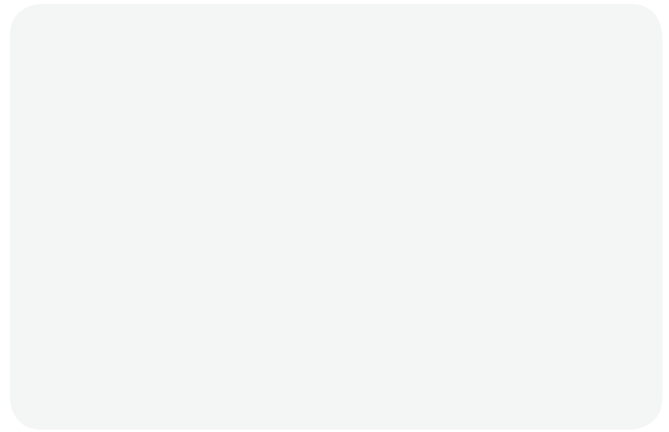


Your perma partner:

# Special Solutions



The Expert in Lubrication Solutions

**perma**



General Catalogue  
 → For more information go to  
 the general Catalogue.

## Legend

### Applications:



Conveyors



Electric  
motors



Pumps



Blowers /  
Fans



Power supply with  
15-30 V via system  
or PLC

### Machine elements:



Roller  
bearings



Sliding bearings /  
Sliding guides



Linear guides



Open gears /  
Gear racks



Spindles



Shaft seals



Chains

### Ex-proof certification:

Testing and certification of equipment intended for use in potentially explosive atmospheres. It certifies that the device was tested and is in compliance with ex-proof requirements and safety standards.



**Ex**  
→ Europe



**IECEX**  
→ Global

**ANZEx**

**ANZEx**  
→ Australia and New Zealand

**TIIS**

**TIIS**  
→ Japan



**FM APPROVED**  
→ Canada and USA



**FM APPROVED**  
→ USA



**UL (Underwriters Laboratories)**  
→ Canada and USA



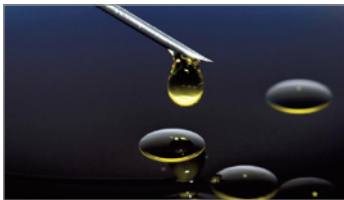
## Special Solutions ..... 4-11

- **Lubrication Systems with external power supply:** perma STAR CONTROL, perma PRO C MP-2, perma PRO C-MP 6, perma PRO LINE
- **Applications with oil:** perma ECOSY
- **Linear guides:** perma PRO LINE



## Lubrication Systems ..... 12-17

- **Single-point Lubrication Systems:** perma STAR CONTROL
- **Multi-point Lubrication Systems:** perma PRO C MP-6, perma ECOSY, perma PRO LINE, perma PRO C LINE



## Lubricants ..... 18-19



## Part Numbers - Lubrication Systems ..... 20-25

- perma Lubrication systems with part numbers and pictures



## Part Numbers - Accessories ..... 26-37

- Brackets, mounting plate, mounting angles, extensions, angles, tube connectors, tubes, reducers, reducer couplings, oil retaining valves, oil brushes, special connecting parts, mounting brackets, cartridges, bottles with part numbers and pictures
- **Special accessories:** CWL PLUS and SET Rail oiler



## perma SERVICE ..... 38-39









- perma Lubrication Systems - OVERVIEW
- **www.perma-tec.com:** Product- / Application flyer, perma SELECT Program, Videos / Photos, Installation Instructions
- **perma SERVICE:** Project Planning, Installation, Maintenance, perma MLP, perma ACADEMY

A quick guide to the right system for




## Special Solutions

Special applications often require the know-how of a specialist. Some lubrication points are very challenging and cannot be lubricated with standard lubricators. They require very specific lubricant amounts and lubrication intervals, longer feeding lines, PLC connection, discharge on demand after long equipment downtimes, or special applicators for lubricant distribution. Special solutions not only demand close cooperation between perma engineers and end user, but also experience, creativity, perfection and economic efficiency.




### Special Applications

			
			
<b>Roller / Sliding bearing</b> → p. 12-13 + General catalogue	<b>Chains / Oil application</b> → Pages 8-9	<b>Linear guides</b> → Pages 10-11	<b>Spindles / Open gears</b>

#### Single-point Lubrication Systems






	<b>CLASSIC FUTURA</b>	+	+	-	+
	<b>FLEX NOVA</b>		++	-	++
	<b>STAR VARIO / STAR CONTROL</b>	++ More information: General catalogue	+	O	+

#### Multi-point Lubrication Systems → 2 to 6 lubrication points








	<b>PRO / PRO C MP-2</b>	++	-	+	O
	<b>PRO / PRO C MP-6 PRO / PRO C LINE</b>	++	-	++ perma PRO LINE / perma PRO C LINE	O
	<b>ECOSY</b>	-	++	-	-

O limited suitability + suitable ++ very suitable




## Single- and multi-point Lubrication Systems

<p><b>perma STAR CONTROL TIME / IMPULSE</b> → Pages 12-13</p> 	<p><b>perma PRO MP-2 / perma PRO C MP-2</b></p> 	<p><b>perma PRO MP-6 / perma PRO C MP-6</b> → Pages 12-13</p> 	<p><b>perma PRO LINE / perma PRO C LINE</b> → Pages 16-17</p> 	<p><b>perma ECOSY</b> → Pages 14-15</p> 
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### Technical data

	<p><b>Code switch LED signal red/green</b></p>  <p>→ STAR Motor reusable</p>	<p><b>Push button + LCD-display LED signal red/green</b></p>    <p>→ PRO MP-2 Motor reusable</p> <p>→ PRO Motor + MP-6 Distributor reusable</p> <p>→ ECOSY can be refilled</p>			
	<p><b>-10 to +50 °C</b></p>		<p><b>-20 to +60 °C</b></p>		
	<p><b>Max. 5 bar</b></p>	<p><b>Max. 25 bar</b></p>			<p><b>Max. 10 bar</b></p>
	<p><b>60, 120, 250 cm<sup>3</sup></b></p>	<p><b>250, 500 cm<sup>3</sup> (grease up to NLGI 2)</b></p>			<p><b>7 liter (oil)</b></p>

### Electromechanical (discharge independent of ambient temperature and counter pressure)

 <p><b>Battery</b></p>	<p>perma STAR VARIO with battery: → General catalogue pages 24-25</p>	<p><b>1 day - 24 months</b></p>	<p><b>1 day - 24 months</b></p>	<p><b>Different discharge amount for each outlet possible</b></p>	<p>-</p>
<p><b>15-30 V DC</b> <b>Time controlled</b></p>	<p>Discharge amount per <b>100 OPhrs</b> <b>OPhrs = Operating hours</b> → 1 lube-point</p>	<p>Discharge amount per <b>100 OPhrs</b> → 2 lube-points</p>	<p>Discharge amount per <b>100 OPhrs</b> → up to 6 lube-points</p>	<p>Time between discharge <b>Different discharge amount for each outlet possible</b> → up to 6 lube-points</p>	<p>Discharge amount per <b>1,000 OPhrs</b> <b>Different discharge amount for each outlet possible</b> → up to 6 lube-points</p>
<p><b>Impulse controlled</b></p>	<p>Choice of 4 discharge amounts per impulse → 1 lube-point</p>	<p>Discharge amount <b>0.25 cm<sup>3</sup></b> per impulse / outlet → 2 lube-points</p>	<p>Discharge amount <b>1.0 cm<sup>3</sup></b> per impulse / outlet → up to 6 lube-points</p>	<p>-</p>	<p>Discharge amount <b>0.5 cm<sup>3</sup></b> per impulse / outlet → up to 6 lube-points</p>
	<p>EX-version available <b>CE</b></p>	<p><b>CE</b></p>	<p><b>CE</b> </p>	<p><b>CE</b></p>	<p><b>CE</b></p>

### Special operating conditions

	<p><b>Indoor / outdoor</b> (with protection cap)</p>	<p><b>Indoor / outdoor</b> (with protection box, page 23)</p>			
	<p><b>High vibration</b></p>	<p><b>High vibration</b> Remote mounting of lubrication system with tube extension</p>			
	<p><b>&lt; 5 meter tube extension</b> at +20 °C with lubricant SF01, tube ø16mm, part no. 101555</p>	<p><b>&lt; 5 meter tube extension</b> at +20 °C with lubricant SF01, tube ø8mm, part no. 101569</p>			<p><b>&lt; 10 meter tube extension</b> at +20 °C with lubricant S014, tube ø6mm, part no. 101499</p>

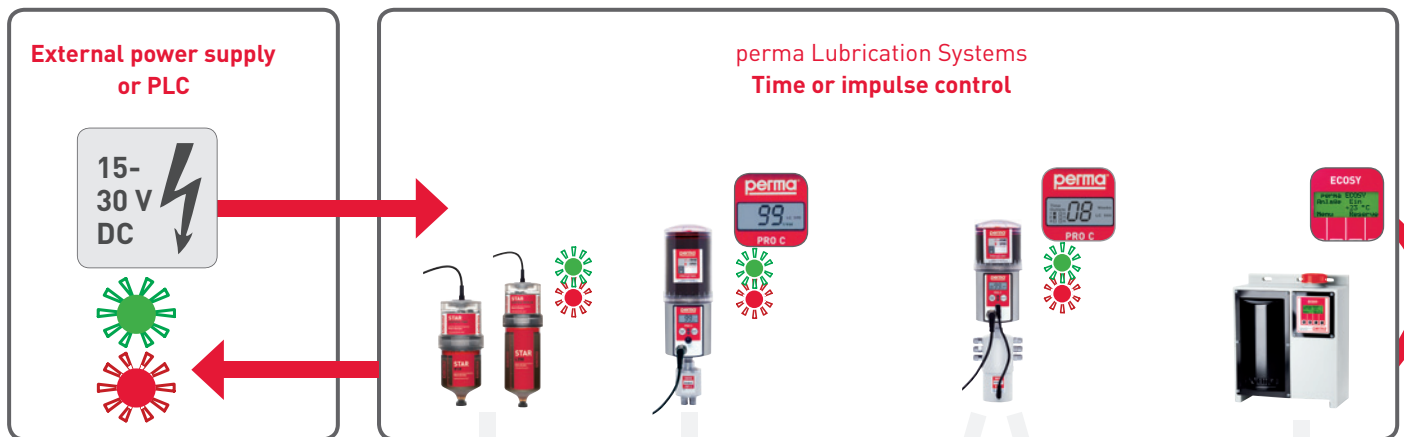
# External power supply

Industrial equipment using a PLC (Programmable Logic Controller) is known for great adaptability and automatic programming documentation.

PLC programs and integrated components, like perma lubrication systems, can easily be controlled, monitored and modified from remote places.

- Automotive industry
- Chemical industry
- Power generation
- Power plants
- Food industry
- Paper industry
- Pharma industry

## 15-30 V Machine controlled or PLC connection



### Operating status via LED

- OK
- Error
- Lubricant Cartridge (LC) empty  
Refill / LC exchange

### Additional options for impulse control:

- Time of the discharge impulses
- How many discharge impulses
- Notification of 10% lubricant remaining

**Time control:** The lubrication system will discharge the predefined amount **per operating hour (OPhr)**. The required discharge amount must be selected on the lubrication system.

STAR CONTROL	PRO C MP-2	PRO C MP-6	PRO C LINE	ECOSY
Discharge amount per 100 OPhrs → 1 lube-point	Discharge amount per 100 OPhrs → 2 lube-points	Discharge amount per 100 OPhrs → up to 6 lube-points	Time between discharges <b>Different discharge amount for each outlet possible</b> → up to 6 lube-points	Discharge amount per 1,000 OPhrs <b>Different discharge amount for each outlet possible</b> → up to 6 lube-points

**Impulse control:** The lubrication system will carry out **one discharge every time external power is applied**. The actual time for the discharge is programmed into the PLC. The discharge amount is either pre-set (PRO C + ECOSY) or can be selected (STAR CONTROL).

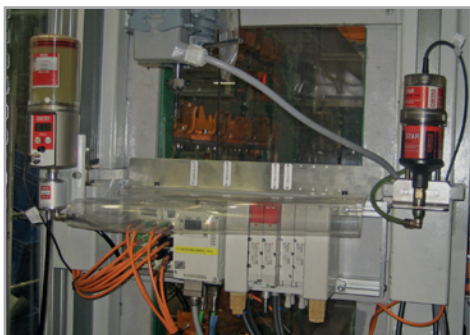
STAR CONTROL	PRO C MP-2	PRO C MP-6	ECOSY
Choice of 4 discharge amounts per impulse → 1 lube-point	Discharge amount <b>0.25 cm<sup>3</sup></b> per impulse / outlet → 2 lube-points	Discharge amount <b>1.0 cm<sup>3</sup></b> per impulse / outlet → up to 6 lube-points	Discharge amount <b>0.5 cm<sup>3</sup></b> per impulse / outlet → up to 6 lube-points

15-  
30 V  
DC

## Advantages of automatic lubrication

- ✓ **Errors and operating status** of the lubrication system are **transmitted directly to the PLC**.
- ✓ **Maintenance runs are minimized** when lubrication systems are connected to the PLC.
- ✓ perma lubrication systems **increase workplace safety** as they can be installed away from dangerous equipment and areas (remote mounting).
- ✓ The perma lubrication system only works when the machine is in operation. This **reduces lubricant consumption** and **conserves resources**.

## Benefits



Automatic lubrication systems from perma-tec can easily be integrated into machines with external power supply. This connection enables control over the lubrication system. **Signals** about operating status or error messages are **transmitted to the PLC** and can be processed accordingly (e.g. alarm).

→ **Operating status displayed** via LED lights on lubrication system and via PLC control

Lubrication can be adjusted exactly according to manufacturer`s specifications. Each lubrication point receives the **right amount of fresh lubricant** at the required time.

→ **Saves resources and optimizes operating efficiency**

Feedback of operating status to the control unit **drastically minimizes maintenance runs** and reduces the exposure of workers to dangerous equipment and areas.

→ **Increases workplace safety**



## Solutions



### Single-point Lubrication Systems: perma STAR CONTROL TIME / STAR CONTROL IMPULSE

- ✓ Different LC sizes available (60, 120, 250 cm<sup>3</sup>) / Greases up to NLGI 2 and oil
- ✓ Simple mounting: Either directly at the lubrication point or remote with grease lines
- ✓ We offer the right lubricant for every lubrication point

### Multi-point Lubrication Systems: perma PRO C MP-2 / PRO C MP-6 / PRO LINE / ECOSY / NET

- ✓ One system can lubricate up to 6 lubrication points
- ✓ Extended maintenance intervals help reduce maintenance costs
- ✓ High-end solution from perma controls up to 600 lube-points (ask about perma NET!)

perma Lubrication Systems for  
**Oil applications**

The primary aim of all operators is equipment safety and availability. Oil lubrication presents numerous problems, some of which can be solved with "intelligent" perma lubrication systems. They provide timely and adequate lubrication which increases performance and extends equipment service life.

- Elevators
- Moving walkways
- Escalators
- Conveyors
- Lifting stations
- High rack guides

## Challenges

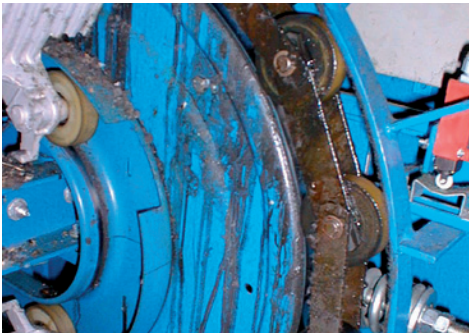


In oil lubrication it is extremely important to apply just the right amount of lubricant. Not enough lubricant can be just as bad as too much lubricant.

**The following aspects must be considered:**

Potential dangers of over-lubrication

- **Slipping hazard** at the lubrication point
- **Contamination** of the environment



Severe wear from **lubricant starvation**

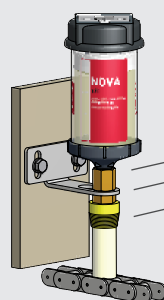
- **Premature aging of chain pins and rollers**
- Unpleasant noise development - **squeaking**
- Uneven chain movement - **jerking**
- **System failures**

**Access** to the system for lubrication or cleaning **is not always possible** or desired.

- Additional night work **increases maintenance costs**
- **Emergency shutdowns** required

## Solution

### Single-point Lubrication Systems: perma CLASSIC / FUTURA / FLEX / NOVA / STAR VARIO



**perma NOVA with LC 130** → For part no. go to "General catalogue"

- Insert for bracket G1/4o x G1/4i Part no. 104820
- Bracket Part no. 104864
- Oil brush Ø20 mm G1/4i Part no. 101396

NOTE: perma CLASSIC and perma STAR have no integrated oil retaining valve. When using these systems, you must order a separate oil retaining valve (see page 30).





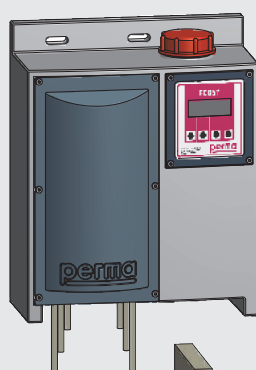
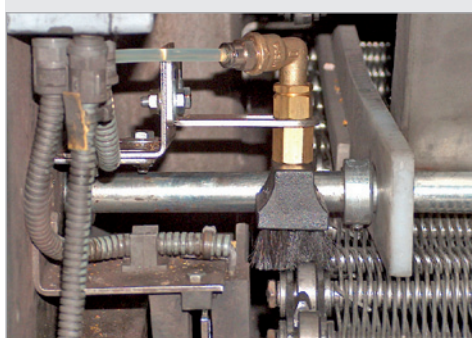
## Advantages of automatic lubrication

- ✓ **Protection** against corrosion and contamination **increases chain service life**
- ✓ Reduces oil consumption (up to 75%) and **minimizes maintenance costs**
- ✓ perma lubrication systems can be **remote mounted**, away from moving machine parts. They are **easy to access** even during operation and tremendously **increase workplace safety**
- ✓ **Prevents contamination** caused by too much lubricant and **reduces the environmental impact**

## Solution

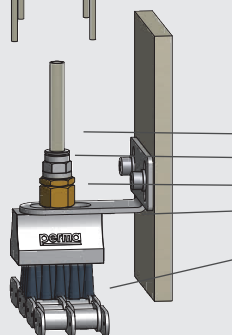
### Multi-point lubrication system perma ECOSY for up to 6 lubrication points

- ✓ Up to 6 lubrication points can be lubricated. Each one with a different oil amount.
- ✓ Large oil tank results in extended maintenance intervals and reduces maintenance costs
- ✓ For hard-to-reach lubrication points: Remote mounting with tube extensions up to 10 meters for each lube-point



perma ECOSY

Part no. 101700



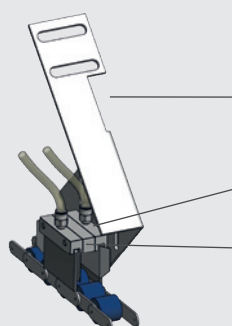
Tube black up to +100 °C oØ 6 mm x iØ 4 mm Part no. 101499

Tube connector G1/4o for tube oØ 6 mm Part no. 101447

Oil retaining valve G1/4o x G1/4i up to +60 °C Part no. 104862

Bracket Part no. 104864

Oil brush 60 x 30 mm G1/4i thread on top Part no. 101398

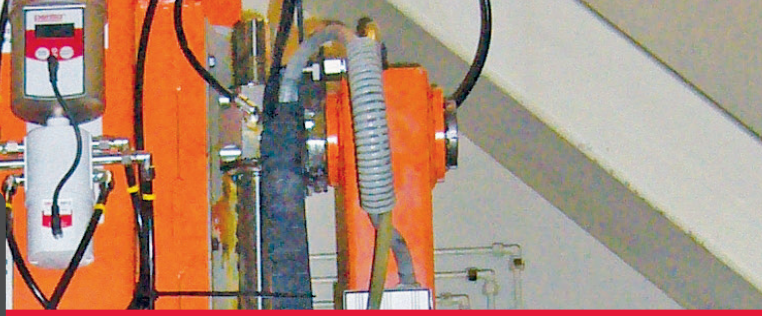


Tube black up to +100 °C oØ 6 mm x iØ 4 mm Part no. 101499

Special mounting bracket for special brush  
left Part no. 101533  
right Part no. 101534Special brush for large chains  
up to +80 °C (with tapped bore M6)  
incl. tube connector Part no. 101524 +  
101525

Spacer for special brush, width: 13 mm Part no. 101535

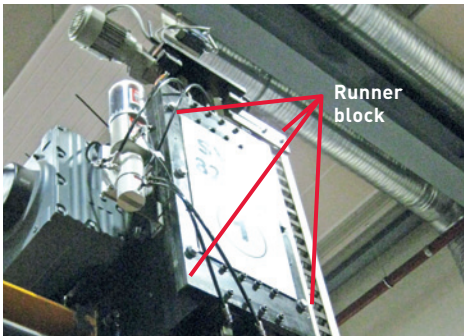
## perma Lubrication Systems for Linear guides



Linear guides are machine elements that enable the movement of machines or components in linear direction. They are designed as roller guides or sliding guides. Linear guide drives are mainly screw drives, lifting gears, or a combination of both.

- Automotive industry
- Conveyor technology
- Food industry
- Packaging
- Machine tools

## Lubrication points



Lubrication points are located on the **runner block** or on the **drive** (spindle, rack, belt).

A **continuous supply** of linear guide components with fresh lubricant is a basic requirement for maximum service life.

## Challenges

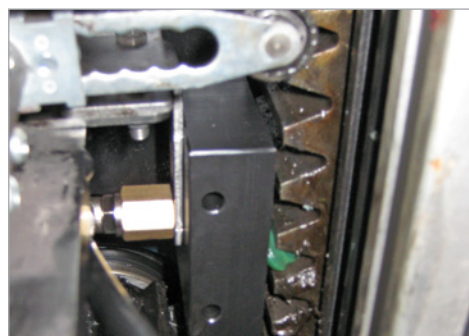


Linear guide lubrication points present a challenge for preventive maintenance due to the **special design** and **diverse use** of linear guides. Lubrication points are often **hard to reach** and can only be accessed with additional equipment. The consequences are neglected or insufficient lubrication.

- Prevent **system downtimes** through relubrication
- Ensure **workplace safety**

Several lubrication points must be lubricated exactly according to **manufacturer specifications** while systems are running. Different lubrication points require different lubricant amounts. Improper lubrication can cause **system failures** and reduces productivity and efficiency.

- Recirculating ball- and roller guides:  
The internal distribution to the 4 raceways on the runner block requires a very **specific lubricant speed / amount**.
- The **drive** (spindle or rack) often **requires more lubricant** than the runner blocks.





## Advantages of automatic lubrication

- ✓ The lubricant amount can be **programmed differently for each one of the 6 outlets** according to **manufacturer specifications**.
- ✓ **Long exchange intervals** significantly **reduce maintenance time** required for lubrication runs (compared to manual lubrication).
- ✓ perma lubrication systems **minimize the risk of accidents**, as they can be **remote mounted** at a safe and easy to access place, away from moving machine parts.
- ✓ The **precise lubricant discharge prevents over-lubrication** and contributes to environmental protection.

### Reference

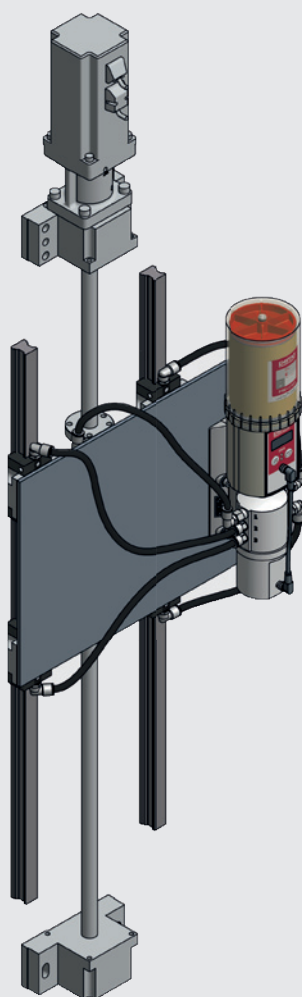
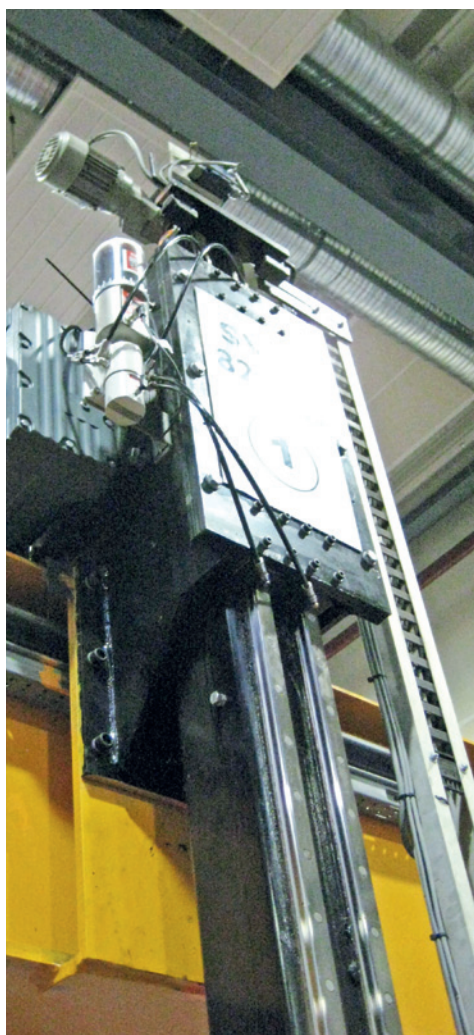
**Rexroth  
Bosch Group**

Use of lubricants approved  
by the manufacturer

## Solutions – perma Multi-point Lubrication Systems

### Special systems for linear guides: perma PRO LINE / PRO C LINE

- ✓ Different discharge amounts per outlet: Number of pump strokes per discharge
- ✓ Flexibility in the number of active outlets: 1 – 6
- ✓ Flexible setting of time between discharges: Pauses between discharges in days (24 h)



#### Outlet assignment linear guide:

- Outlet 1: Spindle / gear rack  
(= larger discharge amount)
- Outlet 2: Closed
- Outlet 3: Runner block 1
- Outlet 4: Runner block 2
- Outlet 5: Runner block 3
- Outlet 6: Runner block 4

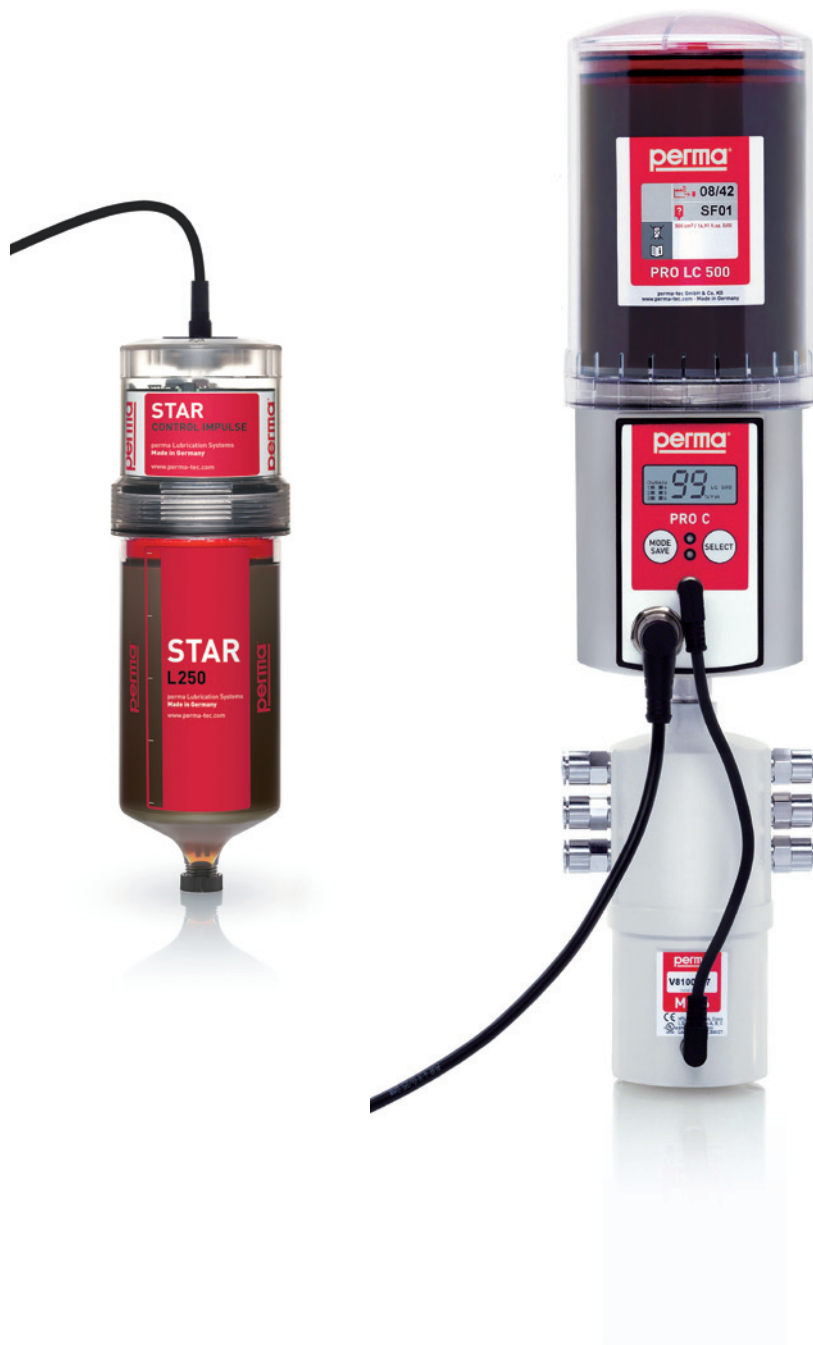
**perma PRO LINE Basic system**  
with battery

**perma PRO C LINE Basic system**  
with external power supply

→ for further product information go  
to page 24

# perma STAR CONTROL / perma PRO C MP-6

Precise Lubrication Systems with external power supply



15-30 V  
power supply via  
machine or PLC

## Lubrication Systems for up to 6 lubrication points

perma STAR CONTROL and perma PRO C MP-6 are machine / PLC controlled lubrication systems with external power supply. perma STAR CONTROL TIME discharges a predefined amount per 100 operating hours as long as power is applied. perma STAR CONTROL IMPULSE carries out one discharge (amount preset by user) every time external power is applied.

perma PRO C MP-6 is a multi-point system which can be programmed to discharge in TIME or IMPULSE mode (up to 6 outlets). The MP-6 distributor dispenses directly without pressure loss.

**perma**

## perma STAR CONTROL TIME / IMPULSE

### Product characteristics

### Benefits



**External power supply  
via machine / PLC**

- ON / OFF mode to meet equipment operating times
- Can be connected to a fault reporting system
- No battery required

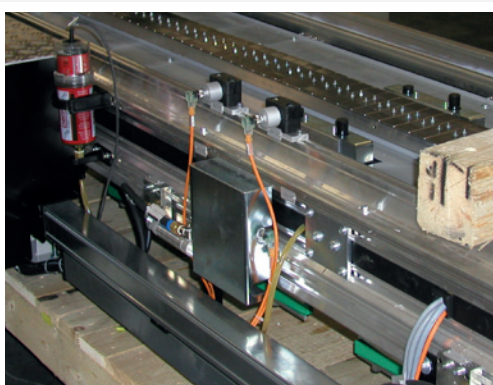


**Reusable electromechanical  
STAR CONTROL drive unit**

**STAR LC:  
60 cm<sup>3</sup> / 120 cm<sup>3</sup> / 250 cm<sup>3</sup>**

- Reliable, precise lubricant discharge independent of temperature and counter pressure
- One-time acquisition costs for STAR CONTROL drive unit
- 3 different LC sizes for individual lubrication requirements

Drive – reusable  
**Electromechanical**  
Power supply  
**External 15-30 V DC | 200 mA**  
Discharge period  
**CONTROL TIME:  
Time controlled**  
**CONTROL IMPULSE:  
Impulse controlled**  
Lubricant volume  
**60 cm<sup>3</sup>, 120 cm<sup>3</sup> or 250 cm<sup>3</sup>**



Operating temperature  
**-10 °C to +50 °C**  
Pressure build-up  
**Max. 5 bar**  
**< 5 meter tube extension**  
Lubricants  
**Grease up to NLGI 2 / oil**  
Applications  
**Roller and sliding bearings / sliding  
guides, open gears, gear racks,  
chains, shaft seals**

## perma PRO C MP-6

→ Ask for perma PRO C MP-2 with 2 outlets

### Product characteristics

### Benefits



**Push button programming  
Display / LED lights  
PRO LC 250 cm<sup>3</sup> or 500 cm<sup>3</sup>**

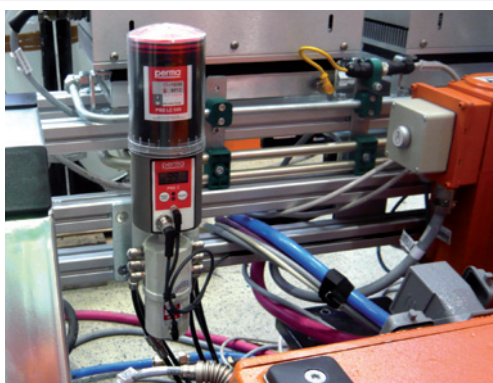
- Discharge period and active outlets are easy to program and to adjust
- Shows operating status: Remaining volume / active outlets / blocked outlets / errors



**MP-6 distributor  
Up to 6 outlets can be selected**

- Direct, precise lubricant discharge to remote lubrication points (up to a distance of 5 m)
- Automatic feedback from lubrication system to machine control

Drive – reusable  
**Electromechanical**  
Power supply  
**External 15-30 V DC | 120 mA**  
Discharge periods  
**1 day to 24 months or  
impulse controlled**  
Lubricant volume  
**250 cm<sup>3</sup> or 500 cm<sup>3</sup>**



Operating temperature  
**-20 °C to +60 °C**  
Pressure build-up  
**Max. 25 bar**  
**< 5 meter tube extension**  
Lubricants  
**Grease up to NLGI 2**  
Applications  
**Roller and sliding bearings / sliding  
guides, open gears, shaft seals in  
motors, generators, pumps,  
blowers, fans and conveyors**

## perma ECOSY

Ideal oil lubrication for demanding applications

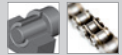


### Exact oil discharge for up to 6 lubrication points

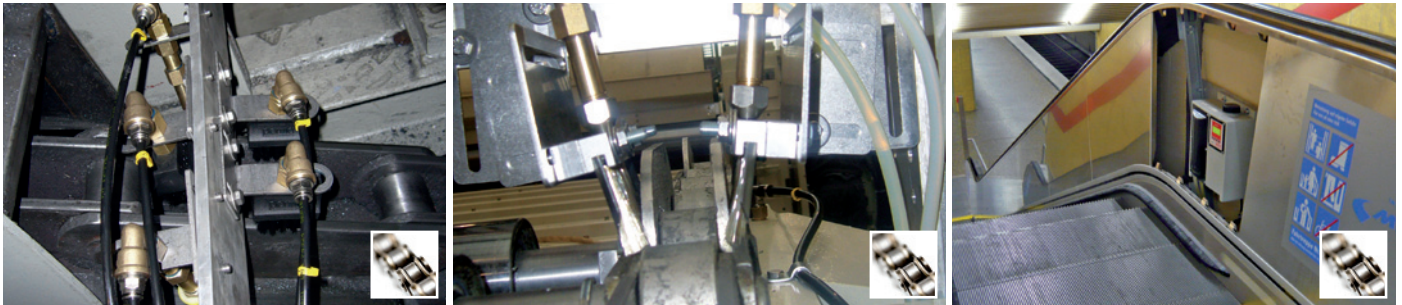
perma ECOSY is a multi-point lubrication oil system which can lubricate up to 6 lubrication points, each lubrication point with a different amount. It can be programmed to discharge in time, sensor, or impulse mode to meet different lubrication point requirements. The compact 7 liter oil tank can be filled by the user and holds the control unit and the pump. Due to the high pressure build-up, the system can be remote mounted with tubes, up to 10 m away from dangerous and hard to access lubrication points.

**perma**

# Applications



perma ECOSY is ideal for the lubrication of guide ways, drive and transport chains. A special brush ensures that the oil is accurately applied to contact points, which reduces wear and protects your system against corrosion and contamination. The results are longer equipment service life, lower maintenance costs, increased customer satisfaction and an active contribution to environmental protection.



## Product characteristics

## Benefits



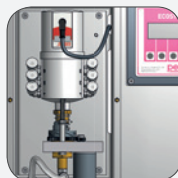
**Multifunction display with different language options**

- User-friendly menu
- Displays operating status



**High quality, compact plastic housing with 7 liter oil tank**

- Requires very little mounting space
- Extended service intervals lower maintenance costs



**Time, sensor or permanent signal mode**

- Flexible programming of each outlet
- Operating status can be analyzed via machine control

## Technical data

→ Refer to page 23 for part numbers

Tank capacity  
**7 liter**

Number out outlets  
**1-6, each outlet can be programmed individually**

Discharge period  
**Time, sensor or impulse controlled**

Discharge amount  
**0 - 9.999 ml / 1.000 h for each outlet**

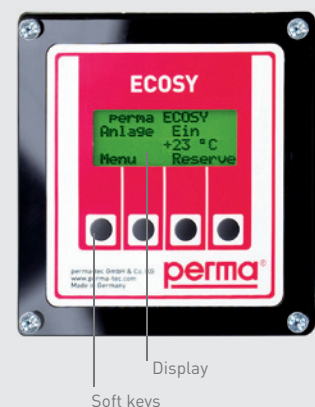
Operating temperature  
**-20 °C to +60 °C**

Pressure build-up  
**Max. 10 bar**

Input supply voltage  
**85-240 V AC | 50-60 Hz  
24 V DC | 25 W**



perma ECOSY Display



# perma PRO LINE / perma PRO C LINE

Precise Lubrication Systems for linear guides



## The flexible multi-point lubrication system for 1 to 6 lubrication points

perma PRO LINE is a special multi-point lubrication system for linear guides. The lubricant discharge can be exactly adapted to manufacturer specifications. The PRO LC is available in two sizes (250 cm<sup>3</sup> / 500 cm<sup>3</sup>) and supplies lubrication points with lubricant for up to 2 years. The high pressure build-up enables remote mounting with tube extensions of up to 5 m [per outlet]. Remote mounting not only increases workplace safety, but also makes it possible to lubricate linear guides while they are in operation.

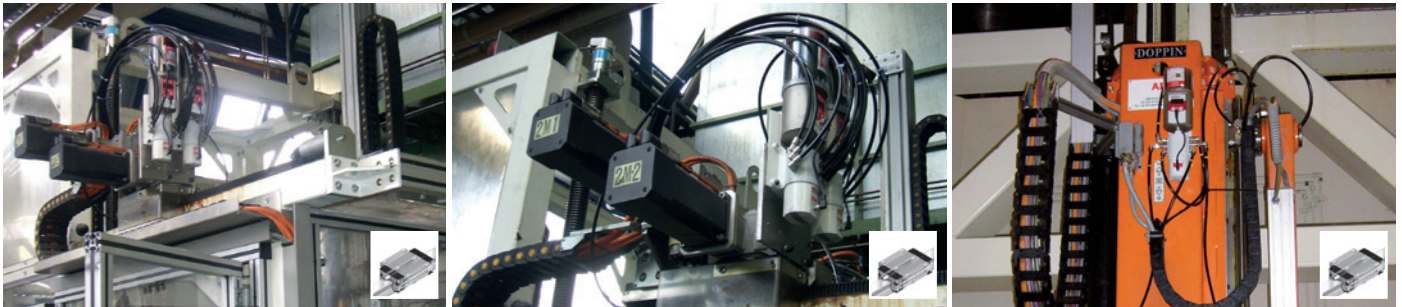
**perma**



## Applications



Main applications for the multi-point lubrication systems perma PRO LINE and perma PRO C LINE are linear guides. Application fields range from the automotive industry to steel and paper industry. Other applications are roller and sliding bearings, open gears and spindles.



## Product characteristics

## Benefits



**Flexible setting options:**  
Lubricant amount per outlet /  
pause time per outlet

- Lubricant amount for each outlet can be configured individually – different amounts per outlet possible with one system
- Individual setting of pause time in between discharges for each outlet



**Settings via push button**  
**Display shows:**  
Remaining discharge time  
Active outlets  
LED red / green indicates  
function

- Simple operation
- Quick inspection saves time and simplifies planning of PRO LC exchange
- Operating status displayed



**Additional discharge**

- Additional lubricant discharges can be triggered for all outlets during pause times
- Peak loads can be compensated
- Lubrication point can be purged (e.g. to add fresh lubricant after long system downtimes)

## Technical data

→ Refer to pages 24 / 25 for part numbers

Drive – reusable

**PRO LINE: Battery operated**  
**PRO C LINE: External power supply**  
15–30 V | 120 mA

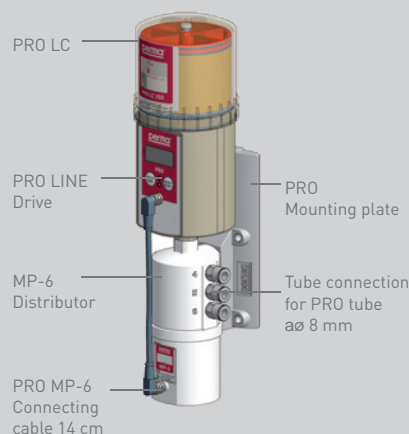
Discharge periods - settings  
**Pause time in days (24 h)**  
**Discharges for each outlet**

Lubricant volume  
**250 cm<sup>3</sup> or 500 cm<sup>3</sup>**

Operating temperature  
**-20 °C to +60 °C**

Pressure build-up  
**Max. 25 bar**  
**< 5 meter tube extension / outlet**

Lubricants  
**Grease up to NLGI 2**



### 3 steps to your perma PRO System:

- ① **PRO LINE or PRO C LINE Basic system**
- ② **PRO KIT Accessories**
- ③ **PRO LC size and grease PRO Cover for LC**

The grease for pre-filling tube extensions must be the same grease as in the PRO LC. Refer to page 21 for 400 g prefill cartridges.

The right lubricant for a longer service life

# Lubricants

perma-tec offers a wide range of high quality, high performance lubricants to meet the lubrication requirements of different industries, applications, and operating environments. Our lubricants are developed especially for the use in perma automatic lubrication systems. They are tested under laboratory conditions and in real applications to ensure optimal performance.



Food and pharma industry



Bio-degradable for all applications

## Oil

perma Code Name Identification according to DIN 51 517-3 →Lubricant properties	Lubricant	Base oil	Operating temperature (°C)	Viscosity at +40 °C [mm <sup>2</sup> /s]				
<b>S014 High performance oil</b> → Effective lubrication even at high temperatures → Good adhesion and penetration properties → Little residue	Oil	PAO + Ester	-20 to +250	320	-	-	-	✓
<b>S032 Multipurpose oil</b> CLP 100 → FZG scuffing load stage >12 / high micro pitting resistance → Aging and oxidation resistance → Good wear protection for gear teeth and rolling bearings	Oil	Mineral oil	-5 to +100	100	✓	✓	✓	✓
<b>S064 Bio oil, low viscosity</b> CLP E 100 → Rapidly biodegradable → Good wear protection → Good viscosity / temperature behavior	Oil	Ester	-30 to +110	100	✓	✓	✓	✓
<b>S069 Bio oil, high viscosity</b> CLP E 460 → Rapidly biodegradable → Very adhesive → Good viscosity / temperature behavior	Oil	Ester	-20 to +110	460	✓	✓	✓	✓
<b>S070 Food grade oil NSF H1</b> CLP H 220 → Excellent aging and oxidation stability → Neutral towards sealing materials → Good wear protection	Oil	PAO + Ester	-30 to +120	220	✓	✓	✓	✓

### Additives

Additives are organic or inorganic compounds mixed into the base oil to enhance the existing oil properties or to impart new properties. Examples: AW (anti-wear) and EP (extreme pressure) additives. Additives are selected based on the requirements of the application.

### Operating temperature

The safe function of components can be guaranteed within this temperature range. Using the lubricant outside this range can lead to damage.

### Speed index

The speed factor indicates the permissible bearing speed range for lubricants. The perma lubricant overview indicates the max. speed for grease lubrication of deep groove ball bearings. The  $n \times dm$  factor is a criterion for the selection of the grease taking into consideration bearing size and operating speed.

Calculation:  $n \times dm = \text{speed factor}$   $dm = (D + d) \div 2$   
 $n$  = Operating speed (1/min)  
 $D$  = Outside bearing diameter  
 $d$  = Inside (bore) bearing diameter  
 $dm$  = Bearing size

→ Special lubricants are available upon request  
 → The perma SELECT software helps you choose the right lubricant

[1] Please check compatibility of lubricant and sealing material.

## Grease

perma Code Name Identification according to DIN 51 502 → Lubricant properties	NLGI-grade	Thickener	Base oil	Operating temperature range (°C)	Viscosity at +40 °C [mm <sup>2</sup> /s]	Speed index	Applications					
							Roller bearings	Sliding bearings / guides	Linear guides	Open gears / gear racks	Spindles	Shaft seals [1]
<b>SF01 Multipurpose grease</b> KP2K-30 → Resistant to salt water → Free of heavy metal and silicone → Wear-reducing EP additives	2	Li / Ca	Mineral oil	-30 to +130	220	350,000	✓	✓	✓	-	✓	✓
<b>SF02 Extreme pressure grease</b> KPF2K-30 → Good load carrying capacity → Resistant to ageing and oxidation → Good emergency lubrication properties	2	Li + MoS <sub>2</sub>	Mineral oil	-30 to +120	105	350,000	-	✓	-	✓	-	-
<b>SF03 High temp. grease</b> KE1T-20 → High thermal stability → Good oil retention → High water resistance	2	PHS + solids	Ester + PFPE	-20 to +220	420	300,000	✓	✓	-	-	-	-
<b>SF04 High performance grease</b> K1S-20 → High performance for vibration and shock loads → Resistant to aggressive media → Multipurpose grease for extreme requirements	0/1	PHS	Mineral oil + PAO	-20 to +160	500	200,000	✓	✓	✓	✓	✓	-
<b>SF05 High temp. / Extreme pressure grease</b> KPF1S-20 → High performance for vibrations and shock loads → Good emergency lubrication properties → Excellent aging and oxidation resistance	0/1	PHS + MoS <sub>2</sub>	Mineral oil + PAO	-20 to +160	500	200,000	✓	✓	-	✓	-	-
<b>SF06 Liquid grease</b> K0K-20 → Good water resistance → High wear protection → Good flow characteristics	0	Al-Com.	Mineral oil	-20 to +130	220	300,000	✓	✓	✓	-	✓	-
<b>SF08 High speed grease</b> KHC2N-50 → Resistant to aging and oxidation → Good wear protection → High speed factor	2	Ca-Com.	PAO	-40 to +140	100	600,000	✓	✓	-	-	-	-
<b>SF09 Multipurpose bio grease</b> KPE2K-40 → Rapidly biodegradable → Good low-temperature properties → High aging resistance	2	PHS	Ester	-40 to +140	100	300,000	✓	✓	-	✓	-	-
<b>SF10 Food grade grease NSF H1</b> K1K-40 → Synthetic → Especially for the food / pharma industry → Good flow characteristics	1	Al-Com.	PAO	-45 to +120	150	300,000	✓	✓	✓	✓	-	-

### Base oil

Base oil is the main component of a grease and influences its behavior. Base oils may be mineral oil, hydrocracked oil, polyalphaolefin (PAO) oil, or synthetic ester oil.

### Base oil viscosity

Base oil viscosity indicates the flow capability of the base oil. Low viscosity base oils are used for very high speeds. High viscosity base oils are used for high load applications. The viscosity of a typical roller bearing grease at +40 °C is between 15 and 500 mm<sup>2</sup>/s.

### NLGI grade

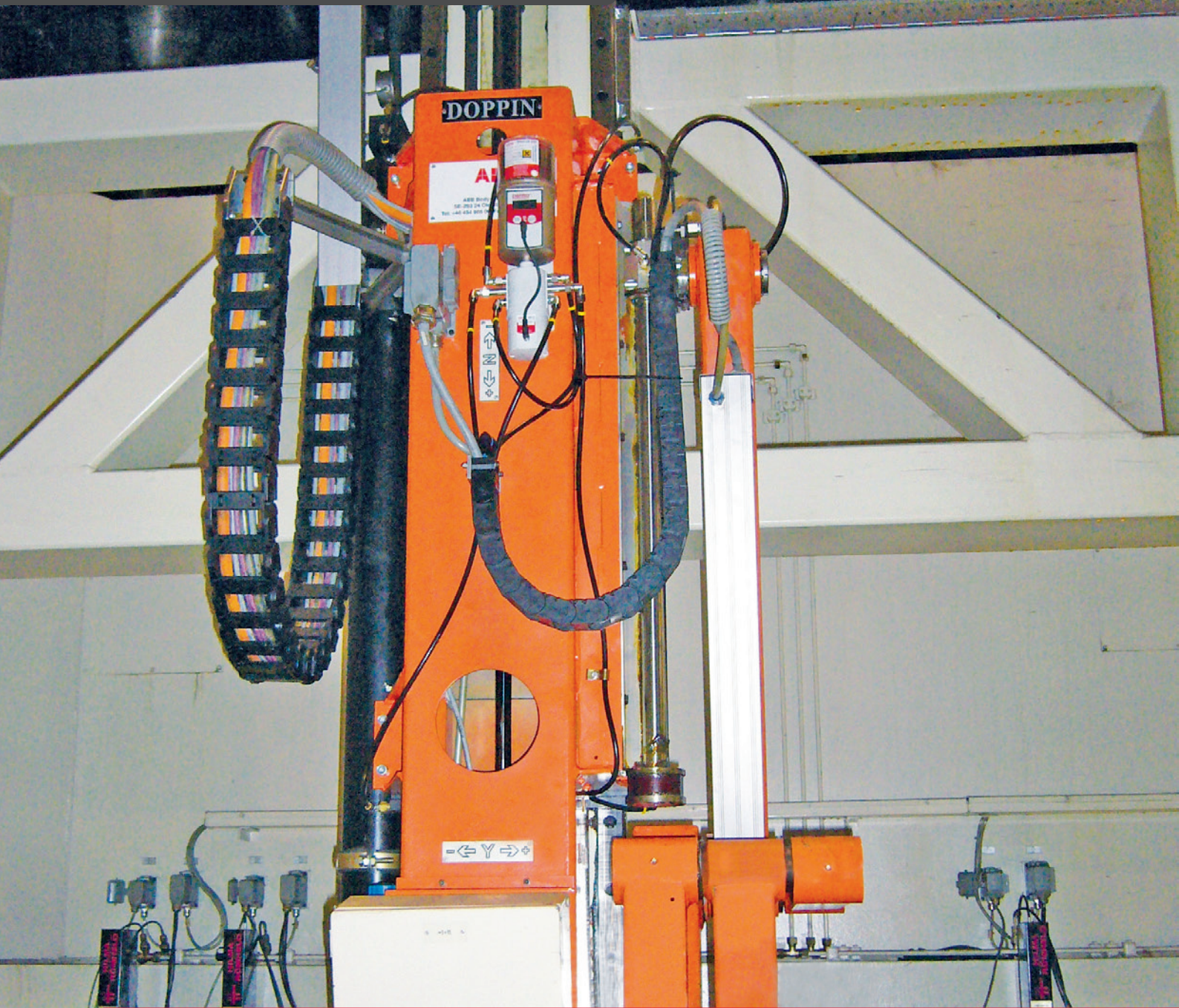
Greases are divided into various consistency grades (NLGI grade). High consistency = stiff grease = high NLGI grade  
 Low consistency = soft grease = low NLGI grade  
 NLGI starts at 000 (liquid) to 6 (very stiff).  
 Greases up to NLGI grade 2 are suitable for use in perma lubrication systems.

### Thickeners

The thickener acts like a sponge. It holds the individual components of the grease together and ensures that the oil stays at the contact point.

perma Part numbers for ordering

## Lubrication Systems



## Prepare lube-point



Clean lube-point and remove grease fitting



Add sealant and screw reducer into lubrication point






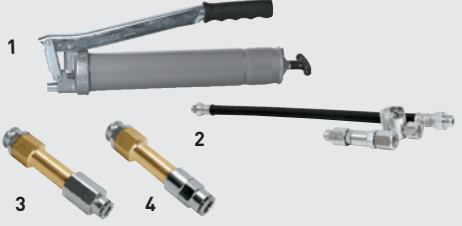


Prefill lube-point and any grease lines / connections (use the same grease that is contained in the lubrication system)



Pressure check: Lube-point / all connecting parts  
Accessory set for pressure test  
Part no. 101480


## Cartridges / Pails / Bottles / Canisters for pre-filling

Grease	perma Code	Cartridge 400 g for grease gun 	Pail 1 kg 	Pail 5 kg 
perma Multipurpose grease	SF01	101585	107494	107508
perma Extreme pressure grease	SF02	101588	107495	107509
perma High temp. grease	SF03	101589	107496	107510
perma High performance grease	SF04	101590	107497	107511
perma High temp. / Extreme pressure grease	SF05	101591	107498	107512
perma Liquid grease	SF06	101592	107499	107513
perma High speed grease	SF08	101593	107500	107514
perma Multipurpose bio grease	SF09	101594	107501	107515
perma Food grade grease NSF H1	SF10	101595	107502	107516
Oil	perma Code		Bottle 1 ltr 	Canister 5 ltr 
perma High performance oil	S014		107463	107520
perma Multipurpose oil	S032		107465	107521
perma Bio oil, low viscosity	S064		107469	107523
perma Bio oil, high viscosity	S069		107472	107525
perma Food grade oil NSF H1	S070		107473	107526
Grease gun	Pic. 1	101455		
Tube with rotary joint and slide coupling for grease gun	Pic. 2	101461		
Tube prefill adapter for tube with oØ 6 mm	Pic. 3	101532		
Tube prefill adapter for tube with oØ 8 mm	Pic. 4	101526		
Accessory set for pressure test	-	101480		




## perma STAR

### STAR LC (=Lubricant Canister)

 Be sure to exchange the battery pack for STAR VARIO Drive when you replace the empty LC



Grease	perma Code	STAR LC S60 60 cm <sup>3</sup>	STAR LC M120 120 cm <sup>3</sup>	STAR LC L250 250 cm <sup>3</sup>
perma Multipurpose grease	SF01	104044	100724	104473
perma Extreme pressure grease	SF02	104048	100733	104480
perma High temp. grease	SF03	104051	100739	104485
perma High performance grease	SF04	104054	100744	104488
perma High temp. / Extreme pressure grease	SF05	104057	100750	104492
perma Liquid grease	SF06	104061	100755	104497
perma High speed grease	SF08	104063	100762	104500
perma Multipurpose bio grease	SF09	104065	100766	104502
perma Food grade grease NSF H1	SF10	104069	100770	104506
Oil	 Order oil retaining valve [see page 40] separately			
perma High performance oil	S014	104180	101096	104685
perma Multipurpose oil	S032	104188	101117	104696
perma Bio oil, low viscosity	S064	104198	101137	104711
perma Bio oil, high viscosity	S069	104202	101145	104716
perma Food grade oil NSF H1	S070	104204	101148	104719



STAR Components / Accessories	Pic.	perma STAR VARIO	Pic.	perma STAR CONTROL TIME	Pic.	perma STAR CONTROL IMPULSE
Drive	1	107529	2	101366	3	101367
Battery pack	4	101351				
Cable (5 m)			5			101451
Cable (10 m)			6			101452
STAR Support flange G1/4o x G1/4i (brass / plastic)	7	101416	7			101416
STAR Profile seal ring (NBR)	8	101418	8			101418
STAR Protection cap L250 (plastic)	9	101419	10			101474
STAR Protection cap M120 / S60 (plastic) can be cut to fit size S60	11	101420	12			101475





If you would like more information about perma NET please call us.  
→ Phone: +49 9704 609-99

## Central control for up to 600 lubrication points

perma NET is a centrally controlled lubrication network consisting of up to 100 multi-point lubrication systems, which can be cable connected up to a distance of 1000 meters. Each system can be individually programmed and settings can be changed at any time. Configuration, control and monitoring via internet browser. perma NET has an automatic alarm and can be remote monitored from any office. perma-tec also offers remote support.

perma NET	Pic.	Part no.
NET GATEWAY	1	106969
NET Power (power supply)	2	106971
NET I/O	3	106970
NET DRIVE	4	106963
NET Termination resistor	5	106972
NET Connector plug	6	106967
NET Cable (per meter)	7	106968

## Exact oil discharge for every application


perma ECOSY	Pic.	Part no.
<b>ECOSY incl. connector plug</b> The perma ECOSY tank can be refilled manually and holds up to 7 liters. For oil containing bottles please go to → page 21	1	101700
ECOSY Control sensor	2	101536



Our standard connection parts can be used (e.g. oil retaining valve)


## Outdoor applications: Protection against dust and water jets

Protection boxes PRO / ECOSY	Pic.	Part no.
<b>Protection box single (steel)</b> Incl. mounting plate and mounting set With pre-bored holes for grease lines and cable screw connections	1	101527 - for 1x PRO -
<b>Protection box double (steel)</b> Incl. mounting plate and mounting set No bore holes for grease lines No cable screw connections	2	101500 - for 2x PRO or 1x ECOSY -
<b>Protection box single (plastic)</b> Incl. mounting set & boring template No bore holes for grease lines, No cable screw connections	3	101548 - for 1x PRO -



perma PRO / ECOSY are attached to the mounting plate inside the protection box. The box is installed on the wall with 4 screws.

This protection box can be installed with the PRO Mounting device for wall mounting (part no. 27.008.007)

 For every perma PRO Basic system you also need a PRO LC unit and a PRO LC cover.



## 1 perma PRO Basic systems

### Battery operated

Part no.

#### PRO MP-2 Basic system with PRO Battery B

for 2 lube-points

106908

1 x PRO MP-2 Drive with mounted distributor  
incl. PRO Mounting device (for wall mounting) pre-assembled  
1 x PRO MP-2 Accessory box (Tube Connector G1/8o: 2x straight / 2x 90°)



#### PRO MP-6 Basic system with PRO Battery B

for 6 lube-points

106919

#### PRO LINE Basic system with PRO Battery B

for Linear guides

106934

#### Each Basic system contains:


1 x PRO or PRO LINE Drive  
1 x PRO Mounting device (for wall mounting) pre-assembled  
1 x PRO MP-6 Distributor incl. PRO MP-6 Accessory box (consisting of 16 pcs.)  
1 x PRO MP-6 Connecting cable (14 cm)



**NEW**

### External power supply 24 V / PLC connection

Part no.

15-30 V DC 

#### PRO CMP-2 Basic system with PRO C M12 Cable 5 m with PRO C M12 Cable 10 m

for 2 lube-points

106910  
106911

1 x PRO MP-2 Drive with mounted distributor  
incl. PRO Mounting device (for wall mounting) pre-assembled  
1 x PRO MP-2 Accessory box (Tube Connector G1/8o: 2x straight / 2x 90°)



#### PRO CMP-6 Basic system with PRO C M12 Cable 5 m with PRO C M12 Cable 10 m

for 6 lube-points

106922  
106938

#### PRO C LINE Basic system with PRO C M12 Cable 5 m with PRO C M12 Cable 10 m

for Linear guides

106935  
106936

#### Each Basic system contains:

1 x PRO or PRO LINE Drive  
1 x PRO Mounting device (for wall mounting) pre-assembled  
1 x PRO MP-6 Distributor incl. PRO MP-6 Accessory box (consisting of 16 pcs.)  
1 x PRO MP-6 Connecting cable (14 cm)



**NEW**

## 2 perma PRO KIT Accessories

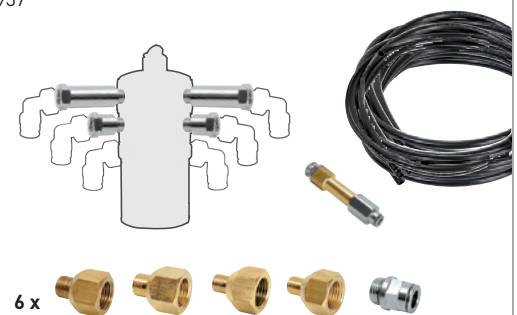
→ for all PRO Basic systems

### PRO KIT Accessories

→ Go to page 26-31 for part details

106937

Contents:	Part no.
30 m Tube black for PRO	101569
- each outlet <5 m tube extension possible	
1 x Tube prefill adapter for tube ø 8 mm	101526
6 x Tube connector G1/4o for tube ø 8 mm straight	101496
6 x Reducer G1/8o x G1/4i (brass)	104833
6 x Reducer M6o x G1/4i (brass)	104837
6 x Reducer M8x1o x G1/4i (brass)	104838
6 x Reducer M10x1o x G1/4i (brass)	104840
2 x Extension G1/8o x G1/8i 16 mm	101576
2 x Extension G1/8a x G1/8i 36 mm	101577



6 x

 400 g Cartridges for prefilling of tubes → go to page 21



1st order: PRO / PRO C Complete system in 3 steps



- 1 PRO Basic system:**  
Battery or external power supply?  
How many lube-points? Application: Linear guides
- 2 PRO KIT Accessories:**  
Part no.106937
- 3 PRO LC and PRO Cover:**  
Which grease? Size 250 / 500 cm<sup>3</sup>?

ReOrder:  
PRO

ReOrder:  
PRO C



**3 perma PRO LC (=Lubricant Canister) / PRO Cover for LC**

	perma Code	PRO LC 250 250 cm <sup>3</sup>	PRO LC 500 500 cm <sup>3</sup>
perma Multipurpose grease	SF01	106639	106753
perma Extreme pressure grease	SF02	106641	106754
perma High temp. grease	SF03	106642	106755
perma High performance grease	SF04	106644	106757
perma High temp. / Extreme pressure grease	SF05	106645	106758
perma Liquid grease	SF06	106646	106759
perma High speed grease	SF08	106647	106760
perma Multipurpose bio grease	SF09	106648	106761
perma Food grade grease NSF H1	SF10	106649	106762

Codes of lubricants contained in your lubrication systems are marked here (for ReOrder):



**⚠** Be sure to exchange the battery pack for PRO Drive when you replace the empty LC.

PRO Cover for LC	1	106959	2	106960
------------------	---	--------	---	--------

For prefilling of tube extensions always use the same grease that is filled in the PRO LC. Refer to page 21 for 400 g prefill cartridges.

PRO Components	Pic.	Part no.
PRO Drive incl. 1 x Reducer coupling G3/8i to G1/8i, nickel-plated (part no. 27.005.081) Mounting material for PRO Mounting device	1	106896
PRO Battery B	2	106953
PRO Battery B plus (for low temperature)	3	106956
PRO C Drive	4	106903
PRO C M12 Cable (5 m)	5	106942
PRO C M12 Cable (10 m)	6	106943
PRO MP-6 Distributor Mounting material for PRO Mounting device incl. PRO MP-6 Accessory box: 6 x Tube connector G1/8o for tube oØ 8 mm straight 6 x Tube connector G1/8o for tube oØ 8 mm 90° 4 x PRO MP-6 Plug G1/8	7	106939
PRO MP-6 Connecting cable (14 cm)	8	106940
PRO MP-6 Connecting cable (2 m)	9	106941
<b>PRO Accessories</b>	<b>Pic.</b>	<b>Part no.</b>
PRO Mounting device (for wall mounting)	10	101568



4x 6x 6x

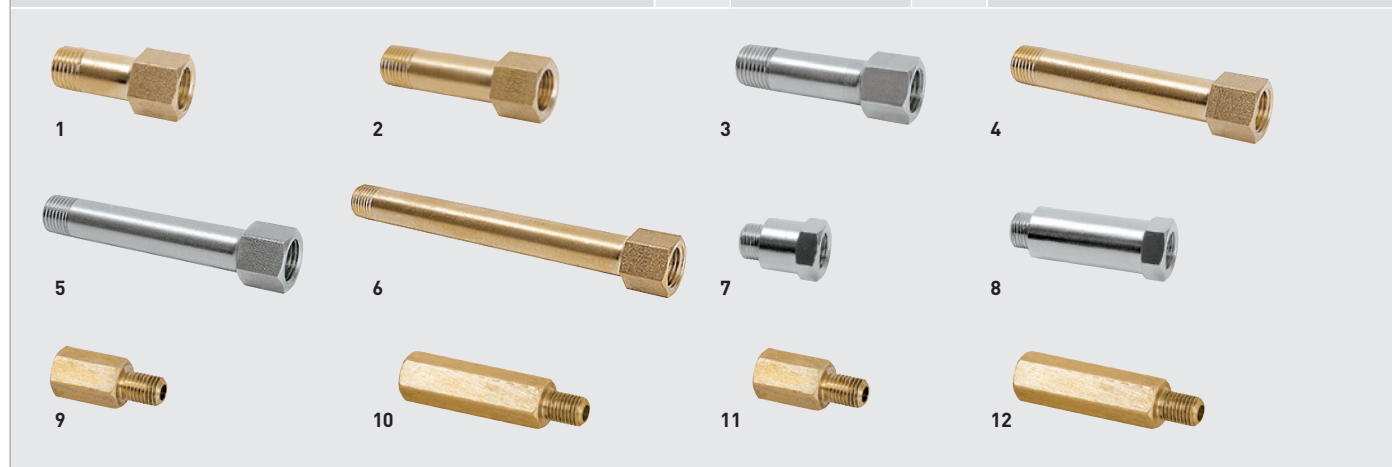
Part Numbers - Lubrication Systems

perma Part numbers for ordering

## Accessories for durable installations

Correct installation with the right accessories will ensure long-term lubricator reliability and lays the foundation for a robust maintenance solution. perma accessories have been carefully selected to ensure that installations will stand the test of time in harsh operating environments.

Extensions	Pic.	Brass	Pic.	Stainless steel 1.4571
Extension 30 mm R1/4o x G1/4i	1	104887		-
Extension 45 mm R1/4o x G1/4i	2	104888	3	104887
Extension 75 mm R1/4o x G1/4i	4	104887	5	104888
Extension 115 mm R1/4o x G1/4i	6	104888		-
Extension 16 mm G1/8o x G1/8i (brass nickel-plated)	7	104887		-
Extension 36 mm G1/8o x G1/8i (brass nickel-plated)	8	104888		-
Extension 14 mm M6x0.75o x M6i	9	104887		-
Extension 30 mm M6x0.75o x M6i	10	104888		-
Extension 14 mm M6o x M6i	11	104887		-
Extension 30 mm M6o x M6i	12	104888		-

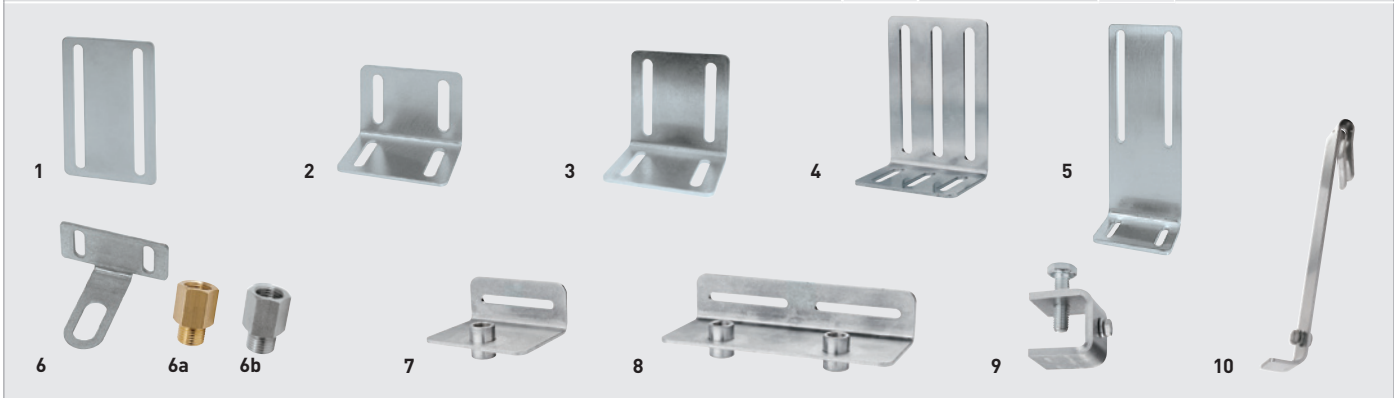


**!** For prefilling of connection parts always use the same lubricant that is filled in the lubrication system  
 → 400 g cartridges on page 21

Brackets	Pic.	Part no.
Clamp (steel, zinc-plated) for grounding the perma CLASSIC in an Ex-zone	1	101384
Clip for CLASSIC, FUTURA, STAR (plastic)	2	101386
Clip for FLEX, NOVA (plastic)	3	101464






Mounting plate / Mounting angles / Mounting brackets	Pic.	Brass	Pic.	Stainless steel 1.4301
Mounting plate 110 x 70 x 2.5 mm - holespacing 45 mm			1	101432
Mounting angle 50 x 50 x 70 x 2.5 mm - holespacing 45 mm			2	101429
Mounting angle 50 x 70 x 70 x 2.5 mm - holespacing 45 mm			3	101430
Mounting angle 50 x 100 x 70 x 2.5 mm - holespacing 45 mm / 22.5 mm			4	101431
Mounting angle 50 x 180 x 70 x 5 mm - holespacing 45 mm			5	101433
Bracket			6	<b>Stainless steel 1.4016</b> 104864
Insert for Bracket G1/4o x G1/4i	6a	104820	6b	<b>Stainless steel 1.4571</b> 104865
1 point bracket G1/4i - for 1 lubrication system			7	104883
2 point bracket G1/4i - for 2 lubrication systems			8	104884
Beam clamp 30 mm - for bracket no. 7 or 8			9	104885
1 point cage hanger - for bracket no. 7 or 8			10	104886



Part Numbers -  
Accessories


# Accessories

Tubes up to 10 bar for ECOSY / 25 bar for PRO	Pic.	Tubes with oØ 6 mm - Oil -	Pic.	Tubes with oØ 8 mm - Grease -
Tube black (PA) up to +80 °C oØ 8 mm x iØ 5 mm - for PRO - up to +100 °C oØ 6 mm x iØ 4 mm - for ECOSY -	1	- for ECOSY - 101499	2	- for PRO - 101569
Tube translucent (PA) up to +80 °C oØ 6 mm x iØ 4 mm - for ECOSY -	3	- for ECOSY - 101494		-

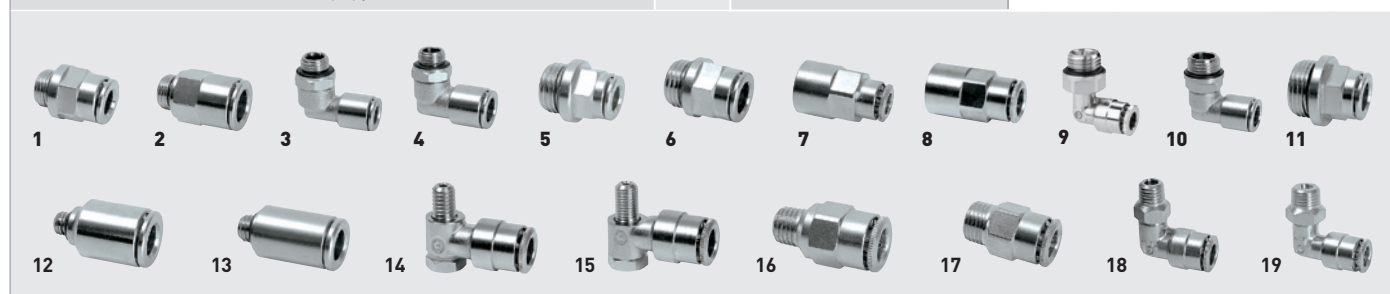




Tube connectors (plug-in) up to 25 bar	Pic.	Tubes with oØ 6 mm - Oil -	Pic.	Tubes with oØ 8 mm - Grease -
Tube connector G1/8o straight	1	101446	2	101570
Tube connector G1/8o 90° - rotary type	3	101449	4	101571
Tube connector G1/4o straight	5	101447	6	101496
Tube connector G1/4i straight	7	101511	8	101502
Tube connector G1/4o 90° - rotary type	9	101551	10	101497
Tube connector G3/8o straight		-	11	101498
Tube connector M5o straight	12	101448		
Tube connector M6o straight	13	101509		
Tube connector M6o 90° - swivel type	14	101515		
Tube connector M6x0.75o 90° - swivel type	15	101516		
Tube connector M8x1o straight	16	101517		
Tube connector M10x1o straight	17	101510		
Tube connector M8x1o 90° - rotary type	18	101507		
Tube connector M10x1o 90° - rotary type	19	101508		






Use Tube connectors together with extension for tube oØ 6 mm to oØ 8 mm



Part no. 101512



Accessories for tube (plug-in)	Pic.	For tubes with oØ 6 mm - Oil -	Pic.	For tubes with oØ 8 mm - Grease -
Y-Connector for tube	20	101514	21	101513
Extension for tube oØ 6 mm to oØ 8 mm	22	101512		-
Tube prefill adapter	23	101532	24	101526

Choose the right tube for your lubrication system	iØ / oØ in mm	max. °C	max. pressure	Part no.	CLASSIC / FUTURA	FLEX / NOVA	STAR	PRO	ECOSY
Standard tube translucent (PA)	6 / 8	+80	6 bar	101393	✓	✓	✓	-	-
Standard tube translucent (PTFE)	6 / 8	+250	6 bar	101394	✓	✓	✓	-	-
Low pressure tube black with NBR lining and fabric insert	9.5 / 16	+100	25 bar	101555	✓	✓	✓	-	-
VA-Flex tubes (stainless steel 1.4571)	8 / 12	+260	25 bar	101549	✓	✓	✓	✓	-
Tube black (PA)	5 / 8	+80	25 bar	101569	-	-	-	✓	-
Tube black (PA)	4 / 6	+100	10 bar	101499	-	-	-	-	✓
Tube translucent (PA)	4 / 6	+80	10 bar	101494	-	-	-	-	✓

Max. tube length depends on lubricant, lubrication system and ambient temperature.

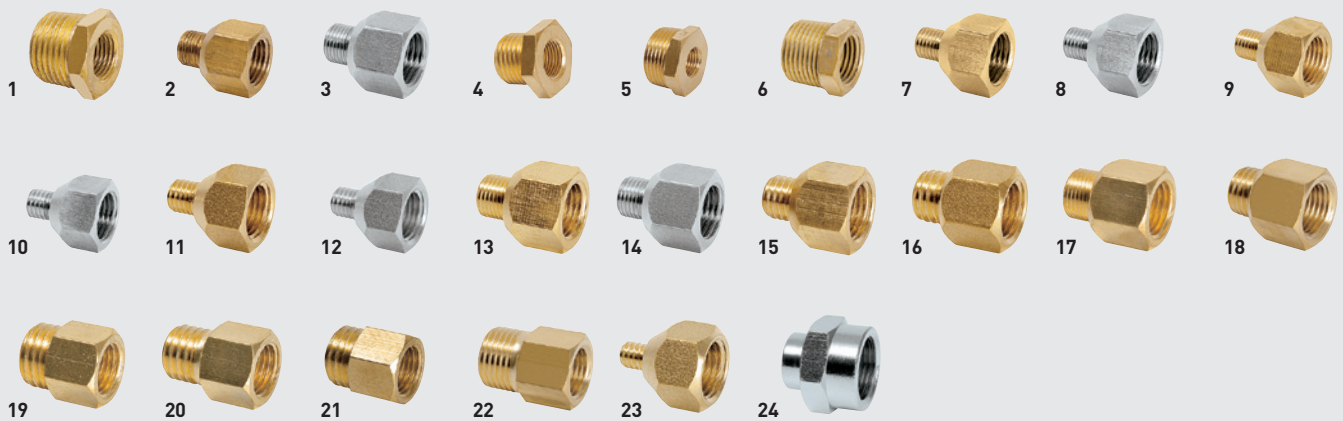
Standard tubes up to 6 bar	Pic.	Tube with <b>oØ 8 mm x iØ 6 mm - Grease / Oil -</b>				
Tube up to +80 °C oØ 8 mm x iØ 6 mm (PA), per meter	1	101393				
Tube up to +250 °C oØ 8 mm x iØ 6 mm (PTFE), per meter	2	101394				
	Pic.	Alu / plastic max. +80 °C	Pic.	Brass max. +100 °C	Pic.	Stainless steel 1.4571 max. +250 °C
Tube connector for perma G1/4i	3	101390	4	104821	5	104866
Tube connector G1/4o	6	101391	7	104822	8	104867
Tube connector G1/8o	9	101392		-		-

Low pressure tube up to 25 bar	Pic.	Tube with <b>oØ 16 mm - Grease / Oil -</b>
Low pressure tube up to +100 °C (with NBR lining and fabric insert)	1	101555
Tube connector G1/4o for tube iØ 9.5 mm (steel, zinc-plated), push-lock	2	101554

VA-Flex tubes / Cutting ring couplings up to +260 °C	Pic.	For tubes with <b>oØ 12 mm - Grease / Oil -</b>
Tube up to +260 °C, length 1000 mm (PTFE / stainless steel 1.4301)	1	101549
Tube up to +260 °C, length 1500 mm (PTFE / stainless steel 1.4301)	2	101550
Cutting ring coupling R1/4o for oØ 8 mm straight (stainless steel 1.4571)	3	104868
Cutting ring coupling R1/8o for oØ 8 mm 90° adjustable (stainless steel 1.4571)	4	104869
Cutting ring coupling R1/8o for oØ 8 mm straight (stainless steel 1.4571)	5	104870
Cutting ring coupling straight - connector for oØ 8 mm (stainless steel 1.4571)	6	104871

# Accessories

Reducers / Reducer coupling	Pic.	Brass	Pic.	Stainless steel 1.4571
Reducer R1/2o x G1/4i	1	104832		-
Reducer G1/8o x G1/4i	2	104833	3	104875
Reducer G1/4o x G1/8i	4	104834		-
Reducer R3/4o x G1/4i	5	104835		-
Reducer R3/8o x G1/4i	6	104836		-
Reducer M6o x G1/4i	7	104837	8	104876
Reducer M8x1o x G1/4i	9	104838	10	104877
Reducer M8o x G1/4i	11	104839	12	104878
Reducer M10x1o x G1/4i	13	104840	14	104879
Reducer M10o x G1/4i	15	104841		-
Reducer M12o x G1/4i	16	104842		-
Reducer M12x1o x G1/4i	17	104843		-
Reducer M12x1.5o x G1/4i	18	104844		-
Reducer M14x1.5o x G1/4i	19	104845		-
Reducer M14o x G1/4i	20	104846		-
Reducer M16o x G1/4i	21	104847		-
Reducer M16x1.5o x G1/4i	22	104848		-
Reducer Whitworth 1/4"o x G1/4i	23	104849		-
Reducer coupling G3/8i to G1/8i for tube oØ 8 mm, nickel plated	24	101545		-

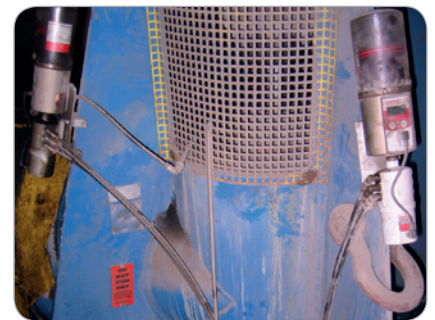
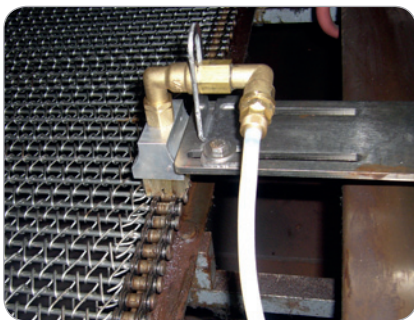


Oil retaining valves	Pic.	Brass	Pic.	Stainless steel 1.4571
Oil retaining valve G1/4o x G1/4i up to +60 °C (with plastic valve)	1	104862	2	104889
Oil retaining valve G1/4o x G1/4i up to +150 °C (with metal valve)	3	104863		-



Seal all connection parts with a metal bonding adhesive (medium)

Angles	Pic.	Brass	Pic.	Stainless steel 1.4401
Angle 45° G1/4o x G1/4i	1	104823	2	104873
Angle 45° M6o x G1/4i	3	104824		-
Angle 45° M8x1o x G1/4i	4	104825		-
Angle 45° M10x1o x G1/4i	5	104826		-
Angle 90° G1/4o x G1/4i	6	104827	7	104874
Angle 90° M6o x G1/4i	8	104828		-
Angle 90° M8x1o x G1/4i	9	104829		-
Angle 90° M10x1o x G1/4i	10	104830		-



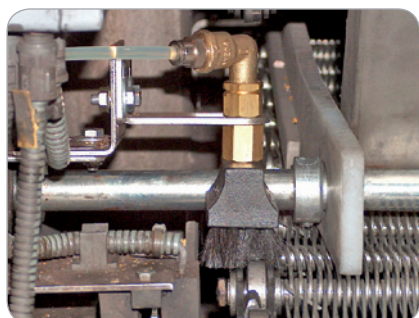
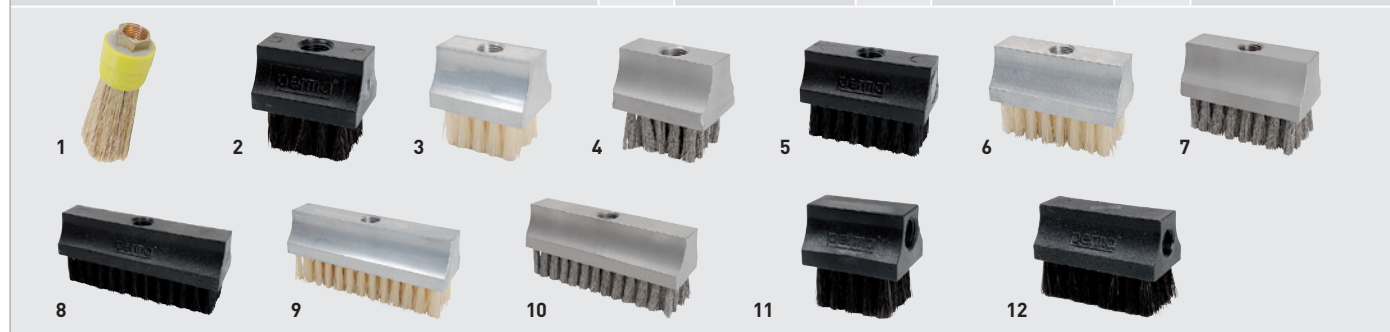
Others	Pic.	Brass	Pic.	Stainless steel 1.4401
Swivelling screw fitting G1/4o x G1/4i - rotary type	11	104831		-
T-Adapter 3 x G1/4i	12	104850	13	104880
Bulkhead nipple G3/8o x G1/4i	14	104851		-
Hexagon nipple R1/4o	15	104852	16	104881
Sleeve G1/4i	17	104853	18	Stainless steel 1.4571 104882



Part Numbers -  
Accessories

# Accessories

Oil brushes	Pic.	Brush with horsehair up to +80 °C	Pic.	High temperature brush with PPS bristles up to +180 °C	Pic.	High temperature brush with stainless steel bristles up to +350 °C
Oil brush Ø20 mm G1/4i	1	101396		-		-
Oil brush 40 x 30 mm G1/4i thread on top	2	101397	3	101402	4	101405
Oil brush 60 x 30 mm G1/4i thread on top	5	101398	6	101403	7	101406
Oil brush 100 x 30 mm G1/4i thread on top	8	101399	9	101404	10	101407
Oil brush 40 x 30 mm G1/4i lateral thread	11	101411		-		
Oil brush 60 x 30 mm G1/4i lateral thread	12	101412		-		



Special brushes / Mounting brackets	Pic.	with tapped bore M6	Pic.	with through hole
Special brush for large chains up to +80 °C	1	101524	2	101525
Special brush for large chains up to +180 °C	3	101538	4	101539
Special brush for large chains up to +350 °C	5	101540	6	101541

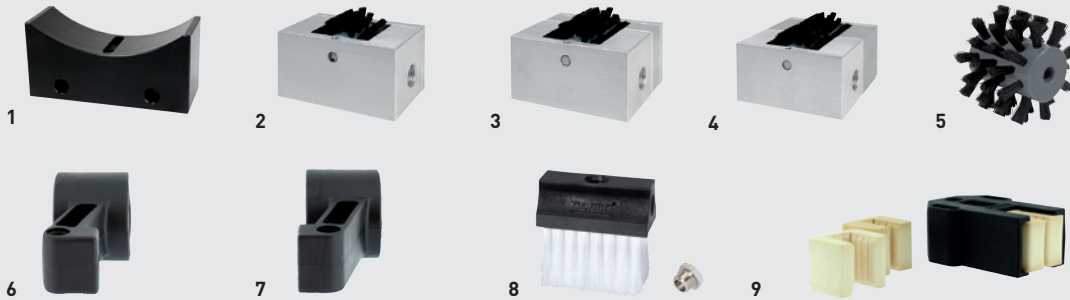


Special mounting bracket left for special brush	7	101533		-
Special mounting bracket right for special brush	8	101534		-
Spacer for special brush, width: 13 mm		-	9	101535



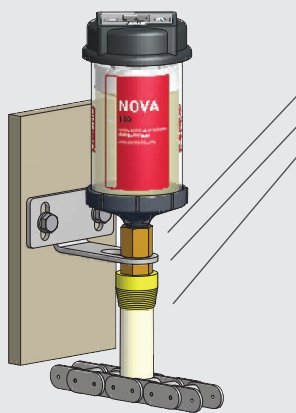


Special connecting parts	Pic.	Part no.	Pic.	Part no.	Pic.	Part no.
<b>Lubrication pocket for gear lubrication</b> For open gear lubrication (grease) Application: Spindles, slew rings, gear racks	1	101444	<b>Custom made to your specification</b> Please provide: Module, no. of teeth, radius (mm) width of gear wheel (mm).			
<b>Lubrication box with rotating brush</b> For chain lubrication from below (oil) Application: Conveyor chains	2	40x75x45 mm	3	40x75x61 mm	4	40x75x77 mm
ReOrder for <b>rotating brush</b> (for chain lubrication box)	5	101434		-		-
<b>CWL PLUS</b> Standard probe	6	101580	For more information → page 34/35.			
<b>CWL PLUS</b> Off-set probe	7	101581				
<b>Oil brush 60 x 30 mm G1/4i</b> thread on top + lateral thread incl. plug	8	101520	With polyamid bristles up to +100 °C Custom-made to your specifications.			
<b>Rail oiler with foam insert - without oil retaining valve</b> For sliding guide lubrication (oil). More information → page 36/37	9	<b>Gap widths 5,9, 16 mm</b> 101485				



## Mounting example for chain lubrication

### Direct mounting



#### perma Lubrication system

→ For part no. go to "General catalogue"

Insert for bracket G1/4o x G1/4i (brass) Part no. 104820

Bracket Part no. 104864

Oil brush Ø20 mm G1/4i Part no. 101396

#### perma Lubrication system

→ For part no. go to "General catalogue"

Insert for bracket G1/4o x G1/4i (brass) Part no. 104820

Bracket Part no. 104864

Tube connector for perma G1/4i Part no. 101390

Tube up to +80 °C oØ 8 mm x iØ 6 mm Part no. 101393

Tube connector G1/4o for tube oØ 8 mm Part no. 101391

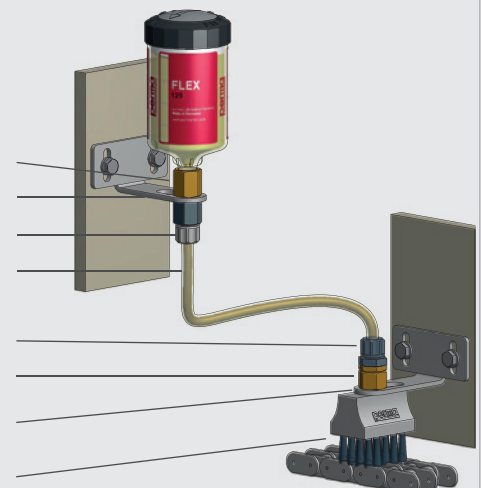
Oil retaining valve G1/4o x G1/4i Part no. 104862

Bracket Part no. 104864

Oil brush 60 x 30 mm G1/4i  
thread on top Part no. 101398

### Remote mounting with tube extension

Max. tube length depends on lubricant,  
lubrication system and ambient temperature.



perma Special solution for crane lubrication

## CWL PLUS SET



TATA STEEL

### perma CWL PLUS SET for crane lubrication

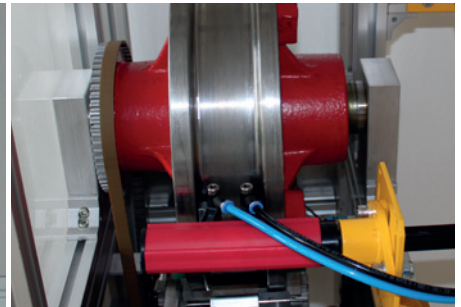
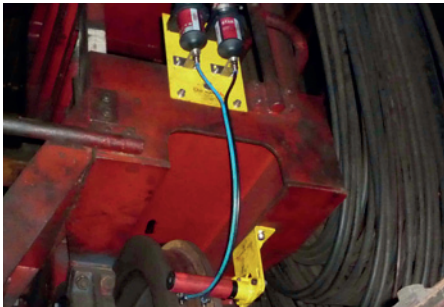
The perma CWL PLUS SET is a special lubrication system designed for the lubrication of crane wheels. It automatically applies a special lubricant directly to the wheel flange. The perma Crane Wheel Lubrication SET minimizes the wear on wheel flanges and rails and lowers energy consumption. Workplace safety increases, since maintenance runs are drastically reduced. The set is easy to install, as all necessary connecting parts are included.

perma

**NEW**

## CWL PLUS SET (Crane Wheel Lubrication)

The lubrication system perma STAR VARIO pushes lubricant into the CWL applicator assy. The applicator applies a thin coat of the special grease to the wheel flanges. When the crane wheel turns, the lubricant is transferred from the wheel flange to the side of the rail. This reduces wear on wheel flanges and rails and extends the service life of cranes.



### Product characteristics

### Benefits



**CWL PLUS Applicator for simultaneous lubricant discharge on 2 flanges**

- Only one wheel on each side of the crane requires a lubrication system
- Reduces maintenance costs, as flanges and rails will last up to 10 times longer
- The direct application reduces lubricant consumption, optimizes crane operation and contributes to environmental protection



**perma STAR LC L250 with special lubricant for wheel flanges**

- Reduces friction and energy costs
- Lowers vibration and noise development
- Quick exchange of empty LC units – no tools required



**perma STAR VARIO Motor Pressure build-up to 6 bar**

- Quick and easy to install since no power cables are required
- Simple programming and exact adjustment of required lubricant amount
- Reusable drive unit saves maintenance costs

→ See our general catalogue for more details about the lubrication system perma STAR VARIO

### Content



**CWL PLUS SET**  
Part no. 101564

- CWL Applicator assy with insert
- + CWL Applicator (2 x spare)
- + 2 x STAR VARIO Drive incl. STAR Battery
- + 2 x STAR LC L250 with grease S250
- + 2.5 m Dual tube connection
- + 400 g Cartridge S250
- + Accessory parts
- + Mounting material



Part Numbers -  
Accessories



perma Special solution for elevators

## SET Rail Oilers

### perma SET for elevators

perma-tec offers retrofit lubrication sets for all types of elevator systems. The sets are easy to install and the exchange of empty systems is done quickly without tools.

The perma SET lubricates elevator guide rails safely, cleanly and efficiently for up to 12 months. No more disturbing noises, vibrations, unscheduled downtimes caused by insufficient lubrication or oil contaminated elevators.

**perma**

**NEW**

## Challenges

System safety and availability are the highest priorities of elevator operators. Elevator guide rails must be permanently supplied with a minimum amount of lubricant to prevent the so-called "stick-slip effect" which causes a jerking movement in the passenger cab. Strong vibrations and noises make passengers feel uneasy and cause frequent complaints, costly repairs and service calls.



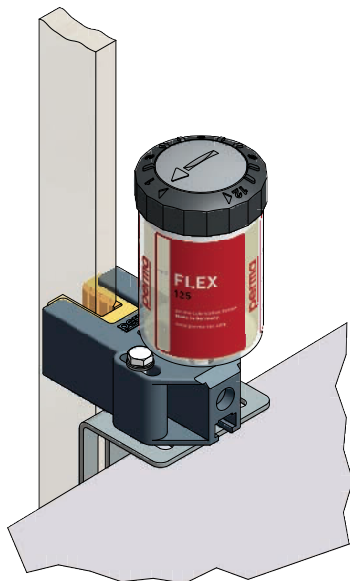
## Solution – SET Rail Oiler



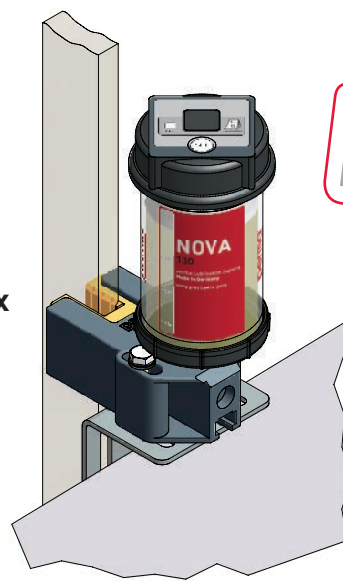
**Rail oiler with foam insert  
for 5, 9 and 16 mm guide rails**

- Permanent guide rail cleaning and lubrication
- Reduces maintenance runs and repairs
- Low oil consumption reduces costs and prevents spills
- Smooth rides, clean cabs and fewer downtimes

2 x



2 x



**Temperature independent discharge**

### SET Rail Oilers FLEX

Part no. 107561

- 2 x Rail oiler with foam insert
- + 2 x perma FLEX 125  
with integrated oil retaining valve  
filled with S032 Multipurpose oil
- + 100 ml S032 Multipurpose oil for pre-filling

→ For product details perma FLEX go to "General catalogue"



### SET Rail Oilers NOVA

Part no. 107441

- 2 x Rail oiler with foam insert
- + 2 x NOVA Control unit
- + 2 x NOVA LC 130  
with integrated oil retaining valve  
filled with S032 Multipurpose oil
- + 100 ml S032 Multipurpose oil for pre-filling

→ For product details perma NOVA go to "General catalogue"



Part Numbers -  
Accessories



Roller bearings



Sliding bearings / guides



Linear guides



Open gears / gear racks



Spindles



Shaft seals



Chains

## perma Lubrication Systems - OVERVIEW

Product	Lubricants	Discharge periods	Time / impulse version	Max. lube-points	Max. pressure [bar]	Operating temp. [°C]	Content [cm³]	Drive / power supply	Operation	Applications							Certifications	Page
										Roller bearings	Sliding bearings / guides	Linear guides	Open gears / gear racks	Spindles	Shaft seals	Chains		
<b>Single-point Lubrication Systems, electrochemical for grease / oil</b>																		
	<b>CLASSIC / FUTURA</b>	Grease up to NLGI 2 / Oil	1, 3, 6, 12 months (1)	Time	1	4	0 to +40	120	Electro-chemical	Activator screw	✓	✓	✓	✓	✓	✓	Ex	GC*
	<b>FLEX</b>	Grease up to NLGI 2 / Oil	1, 2, 3, ..., 12 months (1)	Time	1	5	-20 to +60	60 / 125	Electro-chemical	Dial / Rotary switch	✓	✓	✓	✓	✓	✓	Ex TECEX TIIS FM APPROVED	GC*
	<b>NOVA</b>	Grease up to NLGI 2 / Oil	1, 2, 3, ..., 12 months (2)	Time	1	6	-20 to +60	65 / 130	Electro-chemical	Push button control and display	✓	✓	✓	✓	✓	✓	Ex TIIS TECEX ANZEX FM APPROVED	GC*
<b>Single-point Lubrication Systems, electromechanical for grease / oil</b>																		
	<b>STAR VARIO</b>	Grease up to NLGI 2 / Oil	1, 2, 3, ...12 months	Time	1	6	-10 to +60	60, 120, 250	Drive motor / Battery 4.5 V	Push button control and display	✓	✓	✓	✓	✓	✓	UL US LISTED	GC*
	<b>STAR CONTROL TIME</b>	Grease up to NLGI 2 / Oil	Customized	Time	1	5	-10 to +50	60, 120, 250	Drive motor / 15-30 V DC	Code switch	✓	✓	✓	✓	✓	✓		12-13
	<b>STAR CONTROL IMPULSE</b>	Grease up to NLGI 2 / Oil	Customized	Impulse	1	5	-10 to +50	60, 120, 250	Drive motor / 15-30 V DC	Code switch	✓	✓	✓	✓	✓	✓	EX version available	12-13
<b>Multi-point Lubrication Systems, electromechanical for grease</b>																		
	<b>PRO MP-2</b>	Grease up to NLGI 2	1 day to 24 months	Time	2	25	-20 to +60	250, 500	Drive motor / Pump / Battery	Display with menu navigation	✓	✓	✓	✓	✓	✓		
	<b>PRO C MP-2</b>	Grease up to NLGI 2	Customized	Time or impulse	2	25	-20 to +60	250, 500	Drive motor / Pump / 15-30 V DC	Display with menu navigation	✓	✓	✓	✓	✓	✓		
	<b>PRO MP-6 / PRO LINE</b>	Grease up to NLGI 2	1 day to 24 months	Time (PRO) / Amount (LINE)	6	25	-20 to +60	250, 500	Drive motor / Pump / Battery	Display with menu navigation	✓	✓	✓	✓	✓	✓	UL US LISTED	12-13, 16-17
	<b>PRO C MP-6 / PRO C LINE</b>	Grease up to NLGI 2	Customized	Time or impulse	6	25	-20 to +60	250, 500	Drive motor / Pump / 15-30 V DC	Display with menu navigation	✓	✓	✓	✓	✓	✓		12-13, 16-17
	<b>NET</b>	Grease up to NLGI 2 / Oil	Customized	Time and impulse	<600	25	-20 to +60	60 – 500	Drive motor / Pump / 90-240 V AC	NET Software / PC	✓	✓	✓	✓	✓	✓		
<b>Multi-point Lubrication Systems, electromechanical for oil</b>																		
	<b>ECOSY</b>	Oil	Customized	Time, sensor, impulse	6	10	-20 to +60	7 l	Drive motor / Pump / 85-240 V AC 24 V DC	Display with menu navigation	✓							14-15

CE All perma products are approved according to CE directives.

(1) depending on ambient temperature and counter pressure

(2) depending on counter pressure

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### Videos / Photos Installation Instructions



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Do you need help in selecting the right lubrication system?

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