



PRODUCT CATALOGUE

The Expert in Lubrication Solutions

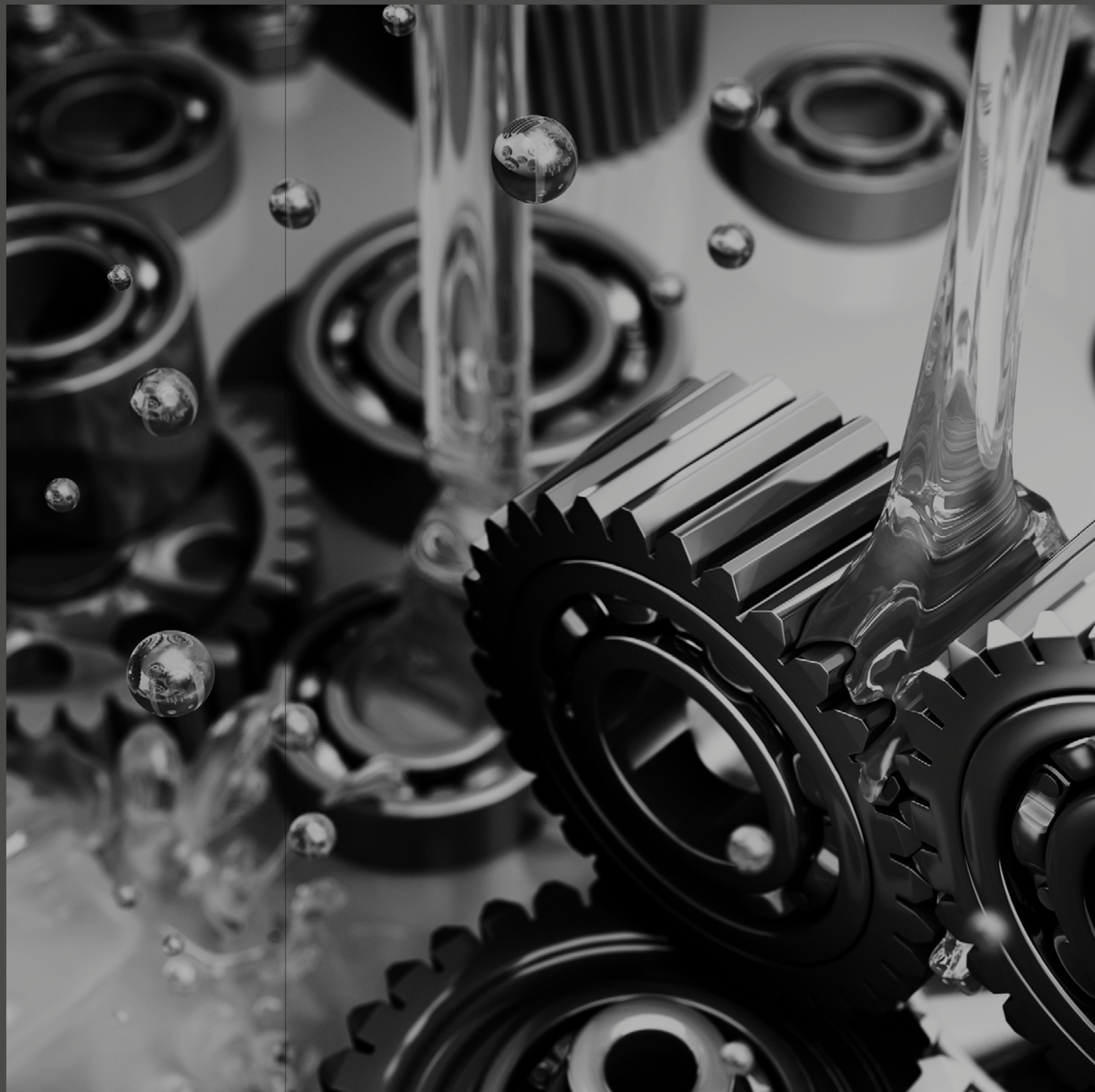
perma

CONTENT

Find out everything about our product portfolio and the innovative perma lubrication solutions. In addition to product features and advantages, you will find a large selection of accessories and application examples.

Our goal is to offer you the best possible lubrication solution. Our priority is quality, functionality and connectivity so that we can ensure the products you choose are perfectly tailored to meet your needs.

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THE EXPERT IN LUBRICATION SOLUTIONS

When it comes to profitability and optimisation in production plants, efficient maintenance with perma lubrication systems is an absolute must.

perma lubrication systems have been around for 60 years and have been continuously developed to meet the latest technical challenges and customer needs. The result: innovative and tailored lubrication solutions that are used worldwide across almost every industry. perma products hold multiple patents and certifications.

All perma products are developed and manufactured in Germany before being distributed worldwide by a network of perma subsidiaries and authorised partners. perma has a wide range of single- and multi-point lubrication systems, offering the appropriate lubrication solution for every application.

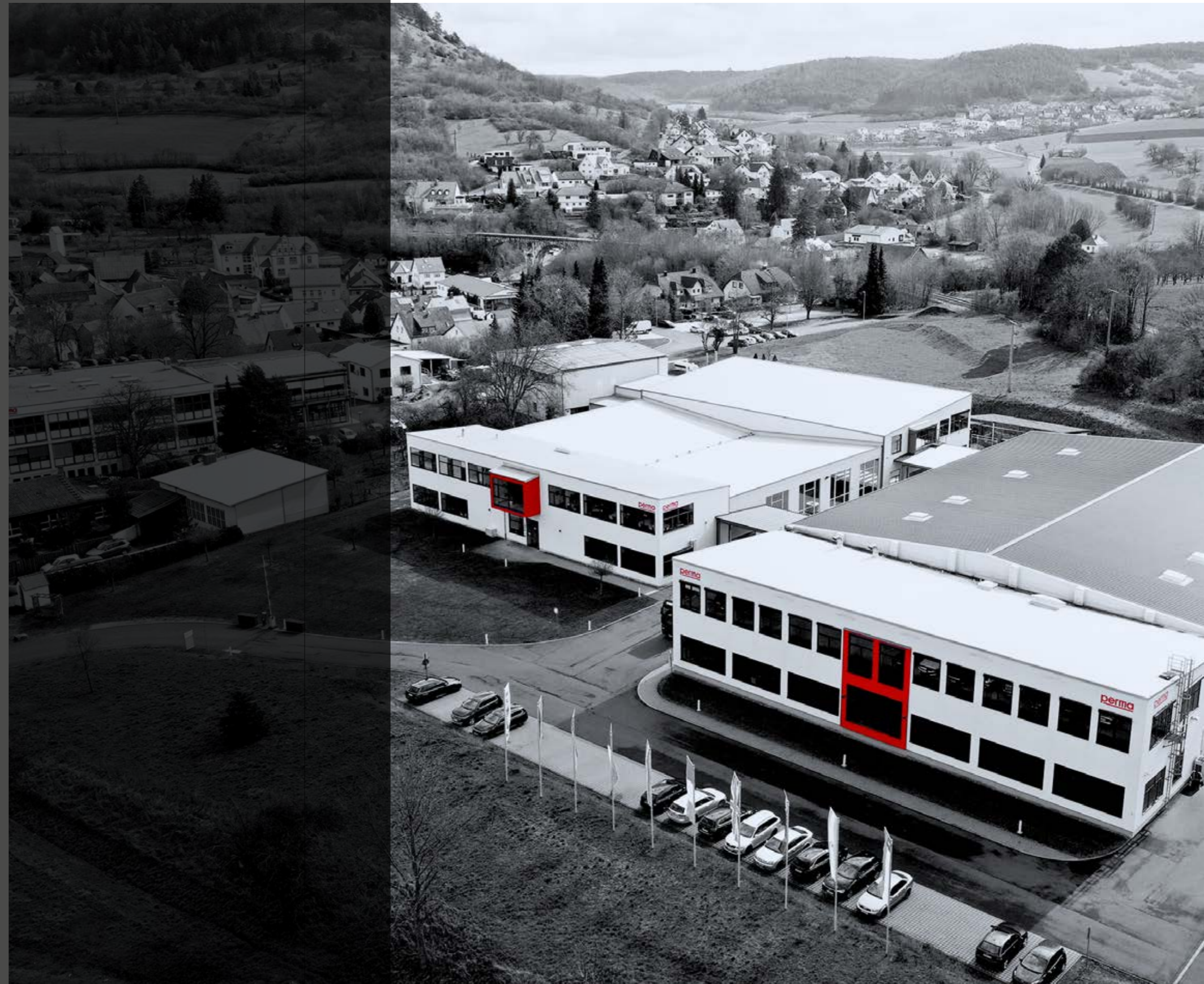
As the global market leader in single-point lubrication, perma is renowned for its innovative and reliable lubrication solutions and is globally recognised the world for excellent quality and technical expertise.



Dr. Abassin Aryobsei
CEO



Peter Mayr
CFO



ADVANTAGES FOR OUR CUSTOMERS

At perma, the customer is at the centre. We believe that satisfied customers are the key to our success. That's why we strive to prioritise your needs and expectations in all our actions.

Our customers take advantage of a wide range of benefits:

- » High-quality products made in Germany
- » State-of-the-art technology
- » Worldwide subsidiaries and partners
- » Custom lubrication solutions
- » Fast and reliable delivery
- » Professional customer service and support, including aftersales support

Maximising their production output is crucial for our customers in order to remain competitive on a global scale. At the same time, they need to keep operating costs down in the long term while ensuring compliance with high workplace safety requirements. The key to this lies in the use of suitable lubrication solutions that extend equipment service life and minimise downtime.

Automatic lubrication systems from perma help businesses around the world to achieve these goals.



We make maintenance work easier

perma lubrication systems are used to lubricate a variety of machine elements in common applications such as conveyors, pumps, fans and electric motors. Our product portfolio provides reliable solutions which are easy to implement and incorporate into your existing maintenance plans.

No more roller bearing failures with perma products

perma lubrication systems allow you to perfectly lubricate your equipment to avoid premature bearing failures and reduce downtime.



Prevent contamination from liquids and dirt particles

Contamination from water and solids speeds up wear and shortens bearing service life. By applying fresh in small amounts regularly, perma automatic lubrication systems prevent ingress of liquids, dirt and dust, thus increasing bearing service life.

Manual vs. automatic lubrication

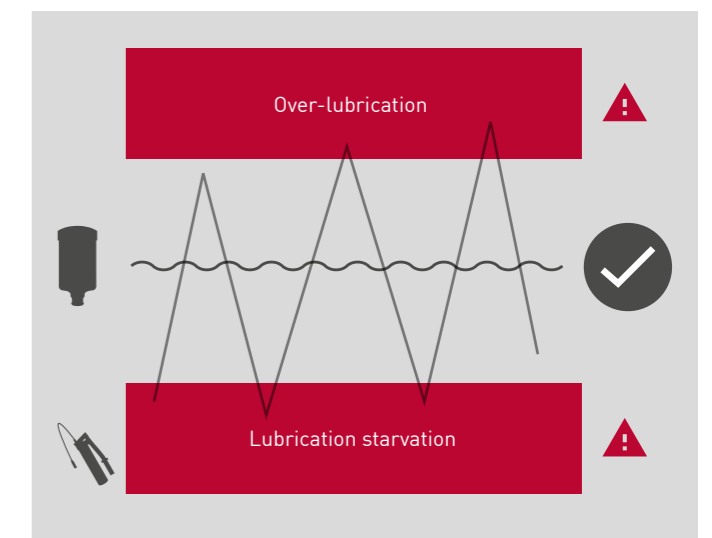
Over-lubrication with manual lubrication

- » Increase in operating temperature
- » Damage to contact seals
- » Excessive lubricant consumption

Lubrication starvation with manual lubrication

- » Increase in friction and wear
- » Contamination ingress

Automatic lubrication with perma lubrication systems ensures constant supply of the ideal lubricant quantity. Unlike manual lubrication, over-lubrication or lubrication starvation can be prevented.



EQUIPMENT AVAILABILITY — **YO UR**

ADD ED — WORKPLACE SAFETY

COST EFFECTIVENESS — **VA LUE** — SUSTAINABILITY

EQUIPMENT AVAILABILITY

PERMA HELPS PREVENT ROLLER BEARING FAILURES

- » High equipment availability with permanent relubrication
- » Maintenance intervals can be scheduled during downtimes
- » Reduction in repair and maintenance costs
- » Lubricant discharge during running system operation

CAUSES OF FAILURE IN ROLLER BEARINGS

- » Insufficient lubricant quantity
- » Aged lubricant
- » Unsuitable lubricants
- » Solid contamination

PERMA PREVENTS CONTAMINATION FROM LIQUIDS AND DIRT PARTICLES

- » Permanent lubrication prevents ingress of dirt particles and liquids
- » Protection against friction and wear
- » Increase in bearing service life



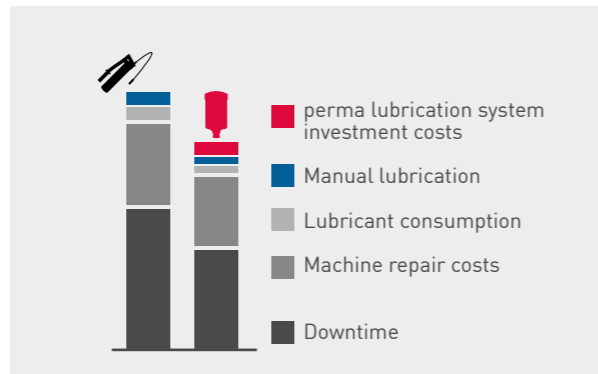
COST EFFECTIVENESS

Comparing manual lubrication with perma lubrication shows savings potential in different areas.

The following areas have the biggest savings potential:

- » Reduction in downtimes
- » Machine repair costs

Sources: Internal calculations: Material, time and maintenance requirements / figures from the roller bearing industry and insurance companies.



WORKPLACE SAFETY

perma lubrication systems minimise contact between human and machine and make an important contribution to workplace safety. perma is a member of the German Association for Safety, Health and Environmental Protection at Work (German: *Verband für Sicherheit, Gesundheit und Umweltschutz bei der Arbeit*).

- » Reduction of time spent in hard-to-access dangerous areas
- » Lubrication systems prevent direct contact with hazardous lubricants
- » Reduction of slipping accidents caused by lubricant contamination



SUSTAINABILITY

The UN Sustainable Development Goals are a call to combat poverty, inequality and climate change. They provide the blueprint for sustainable development to create a better future for everyone. Businesses can make a significant contribution by implementing sustainable business practices, increasing resource efficiency, taking on social responsibility and seeking out partnerships to shape a sustainable future in line with the 2030 Agenda.

“As a business, together we can drive forward the UN Sustainable Development Goals and create a sustainable future for everyone. Let’s do our part for the 2030 Agenda.”
Dr Abassin Aryobsei, CEO perma-tec

OUR PART

- » **Health and well-being:** Programs to promote the health and well-being of our employees, including healthcare, work-life balance measures and individual support (Goal 3).
- » **Energy efficiency:** Our lubrication systems prevent up to 75% of bearing failures, allowing plants to operate longer and reducing energy costs for new productions. This contributes to achieving the UN goal of affordable and clean energy (Goal 7).
- » **Sustainable procurement:** Implementation of a sustainable procurement policy and ensuring that raw materials and ingredients come from environmentally friendly sources. This supports the goal responsible consumption and production (Goal 12).
- » **Circular economy:** Promotion of a circular economy through the development of recyclable and reusable options for our products and packaging. In doing so, we support the goal of sustainable cities and communities (Goal 11) and reduce resource consumption.
- » **Reduction of greenhouse gas emissions:** Implementation of measures to reduce our own greenhouse gas emissions. For example, we support climate protection (Goal 13) through the use of photovoltaic systems, electric and hybrid vehicles, or our certification according to DIN ISO 50001.
- » **Partnerships and collaboration:** Cooperation with other companies and organisations for joint development and implementation of sustainable solutions. This helps us contribute to the goal for global partnerships (Goal 17).

SERVICE PORTFOLIO

perma SERVICES

The perma Services team is made up of highly qualified professionals who are on hand to help you find the right lubrication solution.



Pre-sales services

Perfect lubrication solutions

Equipping your machinery with optimal lubrication solutions by support from perma ensures high equipment availability.

- » perma ACADEMY
- » Survey
- » Technical support



After-sales services

Extended service life

Extend equipment service life with lubrication solutions and all-round service from perma.

- » Installation
- » Instruction
- » Commissioning
- » Inspection
- » Exchange
- » Digital lubrication and maintenance plan via perma CONNECT
- » Technical support



Reactive services

Fast and competent support

Take advantage of the longstanding experience of the perma Services team for all questions concerning lubrication.

- » Lubricant tests
- » Technical support

perma SELECT APP

Application oriented calculation tool for relubrication

perma SELECT calculates the required lubricant amount and discharge setting for your perma lubrication system based on your entry of existing operating conditions.

perma SELECT can easily be installed on all common iOS and Android mobile devices. A browser version is also available. Use your mobile system as a platform for optimised lubrication with perma lubrication systems.

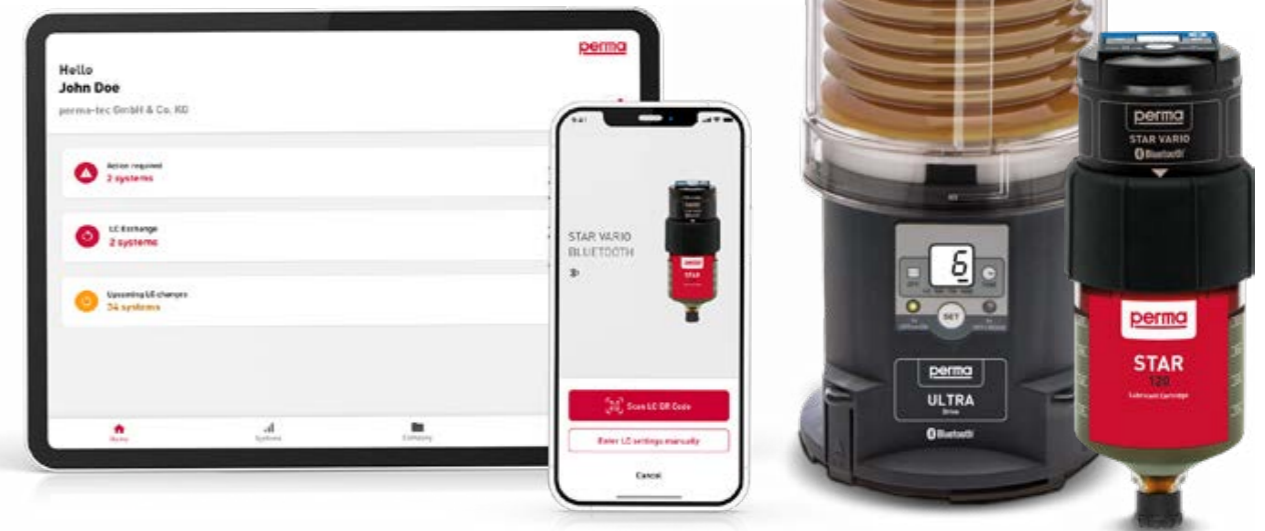
Optimal lubrication with the right lubricant and the right amount is one of the most important maintenance tasks. Wrong dosage can lead to costly unscheduled equipment downtimes. Calculating the right relubrication amount is therefore an important factor for uninterrupted operation and an active contribution to economic success.

More about our perma products can be found on our website www.perma-tec.com



EASY. SMART. CONNECTED.

Create your own network



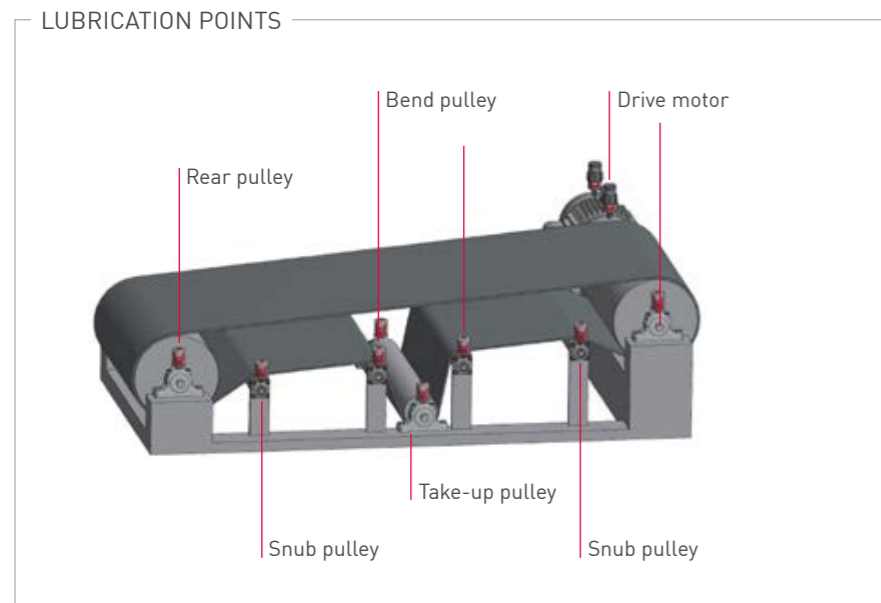
perma CONNECT lets you easily and reliably monitor and manage your perma lubrication systems in hard-to-reach work areas and dangerous areas remotely. This allows you to increase efficiency, save valuable time and boosts the productivity of your business. perma CONNECT lets you design your own network and gives you access to information about your lubrication points from the comfort of your workstation.

perma will show you how it works!



MAIN APPLICATIONS

CONVEYORS



Pillow block housings with spherical roller bearings are mainly used for drive and bend pulleys.

Bearings and bearing housing seals must be permanently supplied with lubricant.

Information about drive motor lubrication can be found on page 17 *Electric motors*.

CHALLENGES



- » Dirt, water and process media must not enter the lubrication points
- » No unnecessary equipment downtimes due to relubrication
- » Workplace safety must be ensured

Large conveyors often extend over long distances and several levels and are difficult to access. Relubrication should ideally take place while the equipment is running. Many transfer points can only be lubricated with the help of catwalk grating or work platforms and are therefore often neglected. Accident prevention and workplace safety must be ensured at all times.

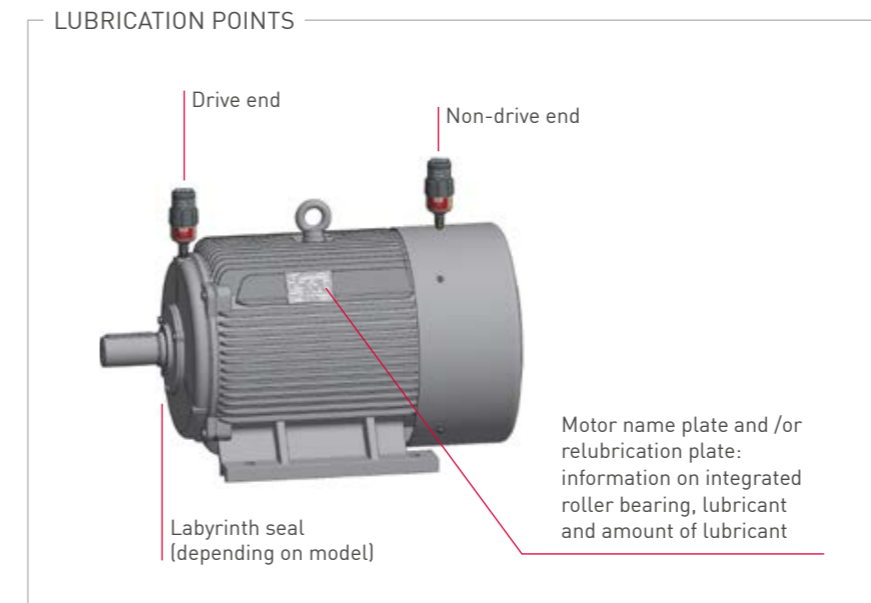
Lubrication starvation results in wear, leads to failure of equipment components and reduces productivity and cost effectiveness.


SOLUTIONS



- » Continuous supply of shaft seals with fresh lubricant prevents the ingress of contamination
- » Lubrication system exchange outside of dangerous area. No system downtime necessary
- » Mounting outside of dangerous areas or at easy-to-reach locations increases workplace safety
- » Optimised use of lubricant as regularly dispensed in small quantities

ELECTRIC MOTORS

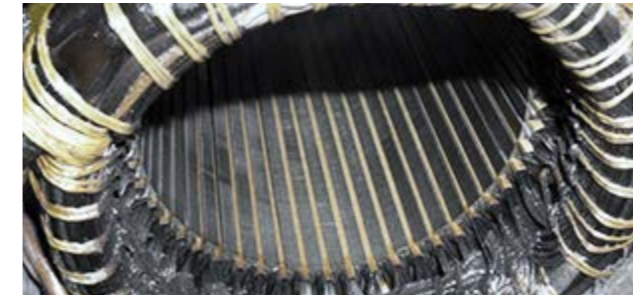


Speed: high	=	low base oil viscosity	NLGI 0-2	→ 
Speed: low	=	high base oil viscosity		

Lubrication points are located on the drive and non-drive end of electric motors. When relubricating, you must ensure that excess grease is discharged through the discharge openings, grease relief ports or grease traps.

Bearings will overheat if grease cannot escape and / or if grease traps are filled up with used grease.

CHALLENGES



- » Bearing heating and possible fire hazard since it takes hours to distribute excess grease
- » Bearing damage due to lubrication starvation results in unscheduled machine downtimes and higher production costs
- » High accident risk
- » Possible shut-off with temperature monitoring
- » Increasing maintenance costs caused by premature wear
- » Motor shut-down when entering secured areas

During manual lubrication, the grease is applied in uneven amounts. A large quantity of lubricant is introduced at one time. This leads to a temporary over-lubrication of bearings. Ignoring the recommended relubrication intervals leads to lubrication starvation.

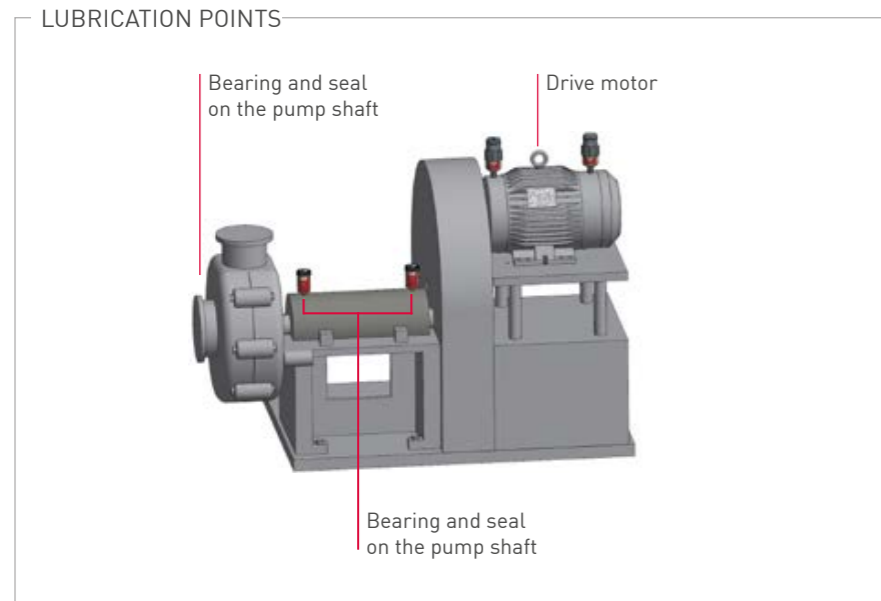
Relubrication during running operations (manufacturer recommendations) jeopardises maintenance staff. The risk of accidents increases when people spend time in dangerous or hard-to-reach areas.

SOLUTIONS



- » Relubrication during running operation minimises overheating of bearings
- » Predictable exchange intervals with reduced material and personnel expenditure
- » Increased workplace safety due to automatic lubrication of hard-to-reach lubrication points
- » Precise lubricant discharge can lower lubricant consumption, thereby reducing environmental impacts

PUMPS

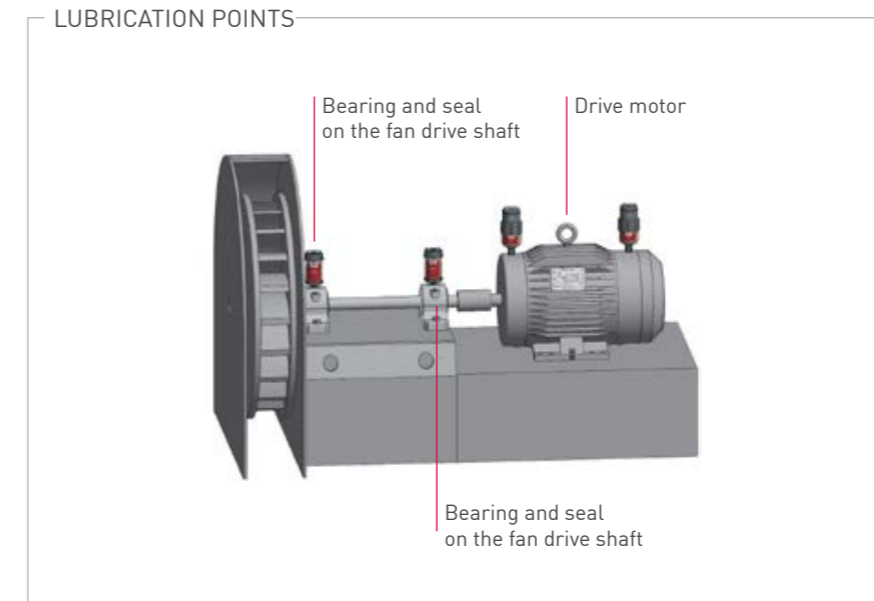


Lubrication points (roller bearings) are located on the drive shaft between drive motor and pump body or in the pump housing.

Lubrication of gland seal and labyrinth seal prevents the ingress of dirt and / or pumped media into the bearing. Seals of bearings and bearing housings must be permanently supplied with the specified amount of the right lubricant.

Information about drive motor lubrication can be found on page 17 *Electric motors*.

BLOWERS & FANS



The lubrication points (roller bearings) are located at the drive shaft between drive motor and fan impeller.

Bearing and sealing of fan drive shaft is normally done by means of a pillow block housing or a bearing unit. These must be permanently supplied with the specified amount of the right lubricant.

Information about drive motor lubrication can be found on page 17 *Electric motors*.

CHALLENGES



- » Dirt, water or other contaminants must not enter the bearing points
- » Lubrication while the machine is in operation must be ensured
- » Workplace safety must be ensured
- » Operation in potentially explosive areas

Pumps are normally operated under extreme conditions. These can include heavy contamination from slurry or dust and hazardous materials such as alkali solutions and weak acids.

Many lubrication points can only be accessed with extreme protective measures (safety gloves and mask). This frequently leads to neglect of the prescribed lubrication.

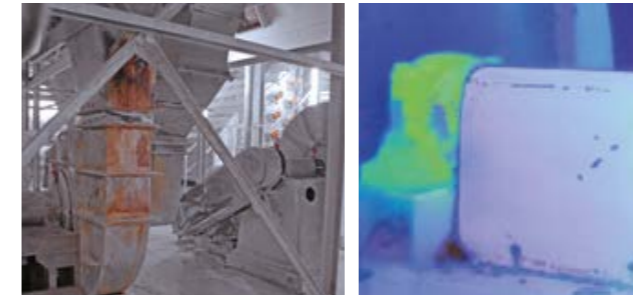
Lubrication starvation results in wear and leads to failure of equipment components or pump leakages.

SOLUTIONS



- » Increased workplace safety due to automatic lubrication of hard-to-reach lubrication points
- » A precise lubricant discharge lowers lubricant consumption and reduces environmental impacts
- » Fewer maintenance runs minimise the time spent in dangerous areas
- » If a certified lubrication system is selected, it may be used underground or in potentially explosive atmospheres

CHALLENGES



- » Contaminants (e.g. dust) raised in the air must not enter the lubrication points
- » Excessive overheating of bearing points due to lubrication starvation
- » Lubricants must be able to withstand demands, such as vibrations and high speeds
- » Compliance with relubrication intervals, depending on bearing type, bearing size and ambient conditions

Blowers & fans are normally operated under extreme conditions. Contaminants such as dust or pumped media are raised and may infiltrate the bearing system. This causes increased wear in individual components and reduces service life.

Regular lubrication of bearings and seals is imperative. Lubrication points are often extremely dirty and hard to reach, which makes maintenance even more difficult. Specified lubrication intervals are neglected or not observed for this reason. The resulting lubrication starvation leads to increased wear and in extreme cases to failure of the blowers and fans.

SOLUTIONS

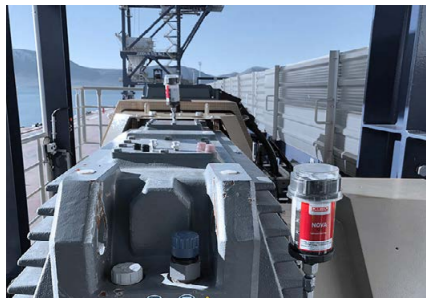


- » perma lubrication systems seal lubrication points and protect them against contamination
- » Precise metering of lubricant amount reduces lubricant consumption
- » Safe and reliable lubrication, also in areas with potentially explosive atmospheres
- » Different lubricant volumes for exact adjustment to lubrication point

CONVEYORS



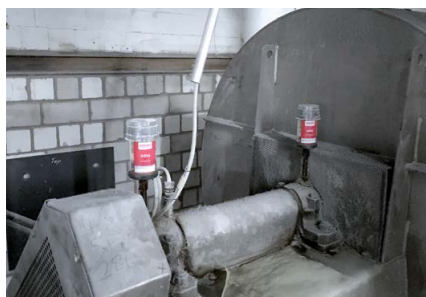
ELECTRIC MOTORS



PUMPS



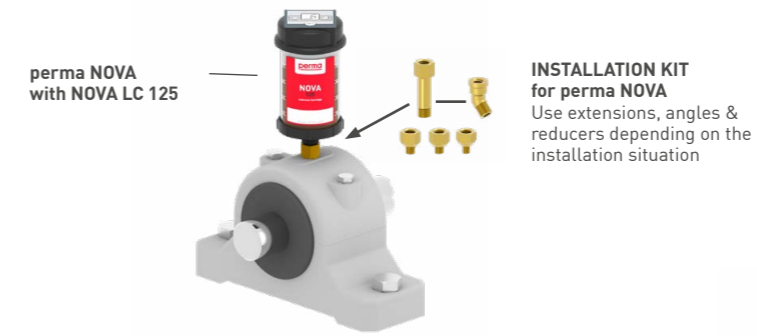
BLOWERS & FANS



SOLUTIONS

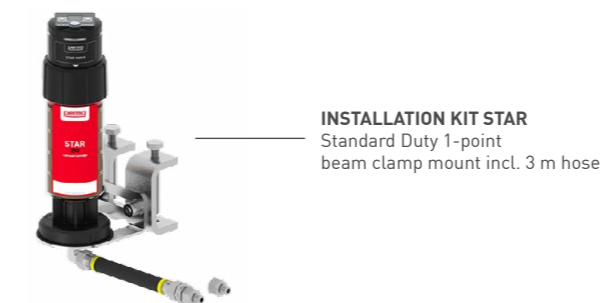
Direct mounting on the lubrication point: e.g. with perma NOVA or perma STAR VARIO

- » Easy, quick mounting
- » For lubrication points with little vibration | shocks
- » For easy-to-reach, safe lubrication points



Remote mounting at lubrication point: e.g. with perma STAR VARIO

- » For lubrication points with strong vibration | shocks (isolation of lubrication system)
- » For lubrication points which are unsafe to access: Mounting in safe areas
- » For hard-to-reach lubrication points



THE EXPERT IN LUBRICATION SOLUTIONS



perma lubrication systems at a glance

	perma STAR VARIO	perma STAR VARIO BLUETOOTH	perma STAR CONTROL	perma ULTRA
	Push button + LCD display + LED signals	Push button + LCD display + LED signals	Push button + LCD display + LED signals	Push button + LCD display + LED signals
	Drive Reusable			
	-40 °C to +60 °C -40 °F to +140 °F			
	7.5 bar 109 psi		Up to 50 bar 725 psi	
	60, 120, 250, 500 cm ³ 2.03, 4.06, 8.45, 16.91 oz		500, 1,000 cm ³ 16.91, 33.81 oz	
	Greases up to NLGI 2 Oils		Greases up to NLGI 2	
	Battery pack STAR VARIO or Battery pack STAR VARIO low temperature		External power supply: 9 - 30 V DC	Battery pack ULTRA or Battery pack ULTRA low temperature
	Discharge period can be altered at any time / system can be shut down			
	1, 2, 3 ... 12 months / 1, 2, 3 ... 52 weeks STAR LC 60: + 15, 18, 21, 24 months STAR LC 500: max. 6 months		1, 2, 3 ... 12 months / 1, 2, 3 ... 26 weeks STAR LC 60: + 15, 18, 21, 24 months STAR LC 500: max. 6 months	
	-		0.1-9.5 cm ³ per impulse Independent of operating temperature and counter pressure	-
	IP 67 IP 65		IP 65	IP 67 IP 65
	CE		CE	CE
	Special operating conditions			
	Minor to heavy vibration			
	We recommend remote mounting with a grease line if there are vibrations at the lubrication point		Remote mounting with grease line only	
	< 5 meters grease line		< 20 meters grease line	

	perma NOVA	perma FLEX	perma FLEX PLUS	perma CLASSIC perma FUTURA	perma FUTURA PLUS
	Push button + LCD display NOVA Control unit Reusable	Rotary switch Complete system	Drehschalter Complete system	Activator Order activator separately	Activation cap Complete system
	-20 °C to +60 °C -4 °F to +140 °F	-20 °C to +60 °C -4 °F to +140 °F	-20 °C to +55 °C -4 °F to +131 °F	0 °C to +40 °C 32 °F to +104 °F	
	Max. 6 bar 87 psi	Max. 5 bar 75 psi		Max. 4 bar 58 psi	
	65, 125 cm ³ 2.20, 4.23 oz	60, 125 cm ³ 2.03, 4.23 oz	30, 60, 125 cm ³ 1.01, 2.03, 4.23 oz	120 cm ³ 4.06 oz	
	Greases up to NLGI 2 Oils				
	Electrochemical				
	Discharge period can be altered at any time / system can be shut down			Tamper-proof	
	1, 2, 3 ... 12 months independent of operating temperature	1, 2, 3 ... 12 months at +20 °C perma MULTI LC 150 - 2 (SF01)		1, 3, 6, 12 months at +20 °C perma MULTI LC 150 - 2 (SF01)	
	IP 65	IP 68		-	
	 ANZEx	 FM APPROVED JPEX	 ANZEx		
	Special operating conditions				
	Minor to moderate vibration			Low vibration	
	We recommend remote mounting with a grease line if there are vibrations at the lubrication point				
	< 2 meters grease line			< 1 meter grease line	

	perma PRO MP-6	perma PRO C MP-6	perma PRO LINE	perma PRO C LINE	perma ECOSY
	 perma PRO MP-6	Push button + LCD display + LED signals PRO Drive & Distributor MP-6 Reusable	 perma PRO LINE	 perma PRO C LINE	Push button + LCD display perma ECOSY Refillable
	-20 °C to +60 °C -4 °F to +140 °F				
	Max. 25 bar Max. 360 psi				Max. 10 bar Max. 145 psi
	250, 500 cm ³ 8.45, 16.91 oz (greases up to NLGI 2)				7 litres (oils)
	Battery PRO B	15 - 30 V DC	Battery PRO B	15 - 30 V DC	24 V DC / 85-240 V AC
	Discharge period can be altered at any time system can be shut down				
	1 day to 24 months Number of active outlets selectable		Individual discharge quantity Number of active outlets selectable		-
	LC 250: 1 day - 24 months LC 500: 1 day - 12 months	1 day - 24 months (Depending on operating hours)	1 to 99 days pause period 1-9 discharge strokes (Depending on operating hours)		0-9,999 ml per 1,000 operating hours
	-	Discharge quantity 1.0 cm ³ per impulse / outlet Same discharge quantity per outlet → 1-6 lubrication points	-	Discharge quantity 0.5 to 4.5 cm ³ per impulse / outlet Individual discharge quantity per outlet → 1-6 lubrication points	Discharge quantity 0.5 cm ³ per impulse / outlet Individual discharge quantity per outlet → 1-6 lubrication points
	IP 54	-	IP 54	-	-
	6 lubrication points				
	Special operating conditions				
	Minor to heavy vibration				
	Remote mounting of lubrication system with grease line allows operation at lubrication points with minor to heavy vibrations				
	< 5 meters grease line				< 10 meters grease line

AUTOMATIC LUBRICATION SOLUTIONS AT A GLANCE

Identify the appropriate lubrication system with the help of our *perma SELECT APP*



1. TYPICAL EXPECTED COUNTER PRESSURE (direct mounting)

Applications	Conveyors	Pumps	Blowers & Fans	Electric motors	Multi-axis systems
		1-3 bar	1-3 bar	1-4 bar	2-6 bar

Machine elements	Chains & open gears	Labyrinth seals & gear racks	Roller- / Y-bearings & spindles	Sliding bearings	Roller- / recirculating ball guides
		0-1 bar	0-2 bar	1-3 bar	1-7 bar



Behaviour in case of untypically high counter pressure:
 Untypically high counter pressure might be an indicator of blocked grease lines, blocked application or unsuitable lubricants. Recommendation: check lubrication point accordingly.

2. TYPICAL APPLICATIONS FOR SINGLE-POINT LUBRICATIONS SYSTEMS (sorted by counter pressure)







Counter pressure 0-1 bar 1-2 bar 2-3 bar 3-4 bar 4-5 bar 5-6 bar 6-40 bar

Direct Mounting	perma FLEX Optional: CLASSIC, FUTURA, NOVA		perma STAR VARIO CONTROL Optional: FLEX, NOVA	perma STAR VARIO CONTROL Optional: NOVA	perma STAR VARIO CONTROL	perma ULTRA	
Remote Mounting additional counter pressure of 0.9 bar per m* 	1 m	perma FLEX Optional: CLASSIC, FUTURA, NOVA		perma STAR VARIO CONTROL Optional: NOVA	perma STAR VARIO CONTROL		
	2 m			perma STAR VARIO CONTROL			
	3 m	perma STAR VARIO CONTROL					
	4 m	perma ULTRA Optional: STAR VARIO CONTROL					
	5 m						
	6-14 m						



Instructions for the use of perma ULTRA:
 The total of the maximum expected counter pressure at the lubrication point and the expected counter pressure of the grease line (length in meters *0.9 bar) should not exceed 40 bar.

3. SPECIAL PRODUCT CHARACTERISTICS OF THE SINGLE-POINT LUBRICATIONS SYSTEMS

Electrochemical reaction / drive			Electromechanical system			
 perma CLASSIC 120 cm ³ 0 to +40 °C	 perma FUTURA 120 cm ³ 0 to +40 °C	 perma FLEX 60 125 cm ³ -20 °C to +60 °C	 perma NOVA 65 125 cm ³ -20 °C to +60 °C	 perma STAR 60 120 250 500 cm ³ -40 °C to +60 °C	 perma ULTRA 500 1,000 cm ³ -40 °C to +60 °C	
● Underwater use	● Permanently visible piston position	● Easy activation (no separate activator required)	● Temperature-independent	● Reusable drive unit	● External control	

*with perma MULTI LC 150-2 (SF01) at +20 °C and hose (aØ 8 mm / iØ 6 mm)

This matrix cannot replace individual advice from a qualified technician. It serves to provide an initial impression about the suitability of single-point lubrication systems for special applications or machine elements, and to simplify the decision-making process for customers and users.

Additional factors, such as ambient temperature, temperatures at the lubrication point, weather conditions, vibrations, lubricant requirements etc., have to be taken into account. These are not included in the matrix and will be covered by individual technical advice.



perma STAR VARIO




Four different sizes for individual lubricant metering

perma STAR VARIO operates fully automatically, independent of temperature and pressure with a very precise discharge. The system consists of an electromechanical drive, an LC with 60, 120, 250 or 500 cc / 2.03 oz, 4.06 oz, 8.45 oz or 16.91 oz of lubricant and a battery pack. perma STAR VARIO provides pressure build-up of 7.5 bar / 109 psi and is used for single-point lubrication of roller and sliding bearings, sliding guides, open gears, gear racks, spindles, shaft seals and chains. Thanks to precise lubricant metering, perma STAR VARIO is ideal for lubrication of electric motors with specified lubricant quantities.








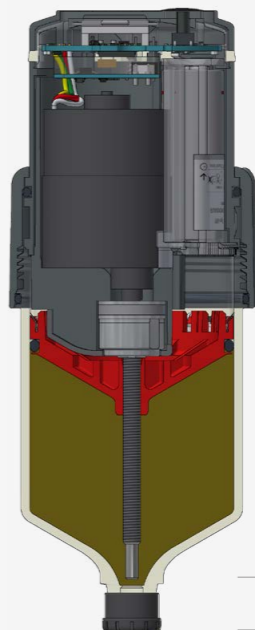
More about our perma products can be found on our website www.perma-tec.com



MADE IN GERMANY

 <p>LCD display with push button displays discharge period, LC size and operating status</p>	 <p>Electromechanical, reusable drive with battery pack</p> <p>LED (green / red) visible all round signals functioning and any errors</p>	 <p>Pressure build-up of 7.5 bar allows remote mounting up to 5 m / 14.4 ft</p> <p>Lubrication system operates reliably from -40 °C to +60 °C</p>
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 <p>Enhanced equipment availability</p>	 <p>Increased workplace safety</p>	 <p>One drive for all LC sizes</p>	 <p>Optimised lubrication</p>
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 <p>Drive – reusable Electromechanical function with Battery pack STAR VARIO (Alkaline) or with Battery pack STAR VARIO low temperature (Lithium)</p>	 <p>Discharge period 1, 2, 3 ... 12 months 1, 2, 3 ... 52 weeks STAR LC 60: + 15, 18, 21, 24 months STAR LC 500: max. 6 months</p>	 <p>Lubricant volume 60, 120, 250, 500 cm³ 2.03, 4.06, 8.45, 16.91 oz</p>	 <p>Operating temperature* -40 °C** to +60 °C -40 °F** to +140 °F</p>	 <p>Pressure build-up 7.5 bar 109 psi</p>	 <p>Protection class IP 67 IP 65</p>	 <p>Standard & special lubricants Greases up to NLGI 2 Oils</p>	<p>Dimensions LC 60: Ø 75 x 155 mm LC 120: Ø 75 x 178 mm LC 250: Ø 75 x 228 mm LC 500: Ø 75 x 324 mm</p>	 <ul style="list-style-type: none"> — LCD display with push button — STAR VARIO Drive (PA GF) — Battery pack STAR VARIO — Gearmotor — Piston — Lubricant — STAR LC (Copolyester) — Oil-filled units (PA) have an integrated oil retaining valve (red plug) — Outside thread R1/4
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*To achieve functionality below -20° C / -4° F, Battery pack STAR VARIO low temperature (Lithium) must be used.
**Only use with suitable low temperature lubricants!



perma STAR VARIO BLUETOOTH

Convenient operation via perma CONNECT

perma STAR VARIO BLUETOOTH operates fully automatically, independent of temperature and pressure with a very precise discharge. The system consists of an electromechanical drive, an LC with 60, 120, 250 or 500 cm³ lubricant and a battery pack. perma STAR VARIO BLUETOOTH provides pressure build-up of 7.5 bar and can be conveniently operated via perma CONNECT. The bluetooth-enabled lubrication system is used for single-point lubrication of roller and sliding bearings, sliding guides, open gears, gear racks, spindles, shaft seals and chains and is ideal for lubricating electric motors with specified lubricant quantities thanks to extremely precise lubricant metering.

More about our perma products can be found on our website www.perma-tec.com



MADE IN GERMANY



LCD display with push button displays discharge period, LC size and operating status

Electromechanical, reusable drive with battery pack



Bluetooth functionality

Simple operation via perma CONNECT



Pressure build-up of 7.5 bar allows remote mounting up to 5 m / 14.4 ft

Lubrication system works reliably from -40 °C to +60 °C



Enhanced equipment availability



Increased workplace safety



Bluetooth functionality



Optimised lubrication



Drive – reusable

Electromechanical function with Battery pack STAR VARIO (Alkaline) or with Battery pack STAR VARIO low temperature (Lithium)



Discharge period

1, 2, 3 ... 12 months | 1, 2, 3 ... 52 weeks
STAR LC 500: max. 6 months



Lubricant volume

60, 120, 250, 500 cm³ | 2.03, 4.06, 8.45, 16.91 oz



Operating temperature*

-40 °C** to +60 °C | -40 °F** to +140 °F



Pressure build-up

7,5 bar | 109 psi



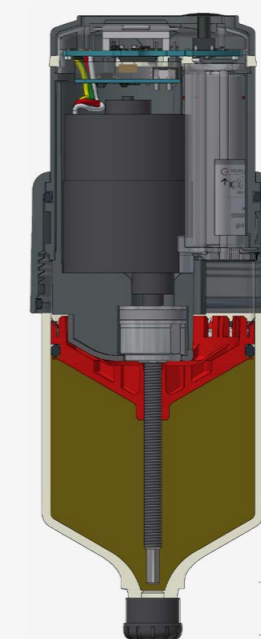
Protection class

IP 67 | IP 65



Standard & special lubricants

Greases up to NLGI 2 / Oils



LCD display with push button

STAR VARIO BLUETOOTH Drive (PA GF)

Battery pack STAR VARIO

Gearmotor

Piston

Lubricant

STAR LC (Copolyester)

Oil-filled units (PA) have an integrated oil retaining valve (red plug)

Outside thread R1/4

Dimensions

LC 60: Ø 75 x 155 mm | LC 120: Ø 75 x 178 mm
LC 250: Ø 75 x 228 mm | LC 500: Ø 75 x 324 mm

*To achieve functionality below -20 °C | -4 °F, Battery pack STAR VARIO low temperature (Lithium) must be used.
**Only use with suitable low temperature lubricants!



perma ULTRA


Bluetooth-enabled lubrication system with high pressure build-up and wide temperature range

perma ULTRA is a fully automatic lubrication system, independent of temperature and counter pressure with a very precise discharge. With two cartridge sizes, pressure build-up to 50 bar and options of weekly and monthly time settings, perma ULTRA is an extremely versatile and capable lubrication system. It is suited to a wide range of applications which demand high lubrication rates and where long remote grease lines are necessary to ensure safe access, e.g. drag conveyors, shaker screens, rotary kilns and belt conveyors.


More about our perma products can be found on our website www.perma-tec.com




MADE IN GERMANY



LCD display with backlighting and push button operation displays discharge period, LC size and operating status



Bluetooth functionality
Allows simplified operation via perma CONNECT



Pressure build-up, up to 50 bar
Lubrication system works reliably from -40 °C to +60 °C



Bluetooth functionality










Increased workplace safety

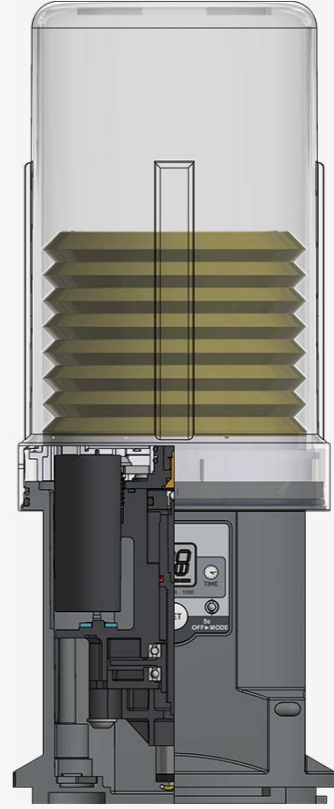


Large discharge amounts



High pressure build-up

-  **Drive - reusable**
Electromechanical drive with Battery pack ULTRA (Alkaline) or with Battery pack ULTRA low temperature (Lithium)
-  **Discharge period**
1, 2, 3 ... 12 months | 1, 2, 3 ... 52 weeks
-  **Lubricant volume**
500, 1,000 cm³ | 16.91, 33.81 oz
-  **Operating temperature***
-40 °C** to +60 °C | -40 °F** to +140 °F
-  **Pressure build-up**
Up to 50 bar | 725 psi
-  **Protection class**
IP 67 | IP 65
-  **Standard & special lubricants**
Greases up to NLGI 2



- ULTRA LC
- Battery pack ULTRA
- LCD display with backlighting and push button
- Pump
- Inside thread R1/4

Dimensions
perma ULTRA: Ø 120 x 300 mm

*To achieve functionality below -20° C | -4° F, Battery pack ULTRA low temperature (Lithium) must be used.
**Only use with suitable low temperature lubricants!

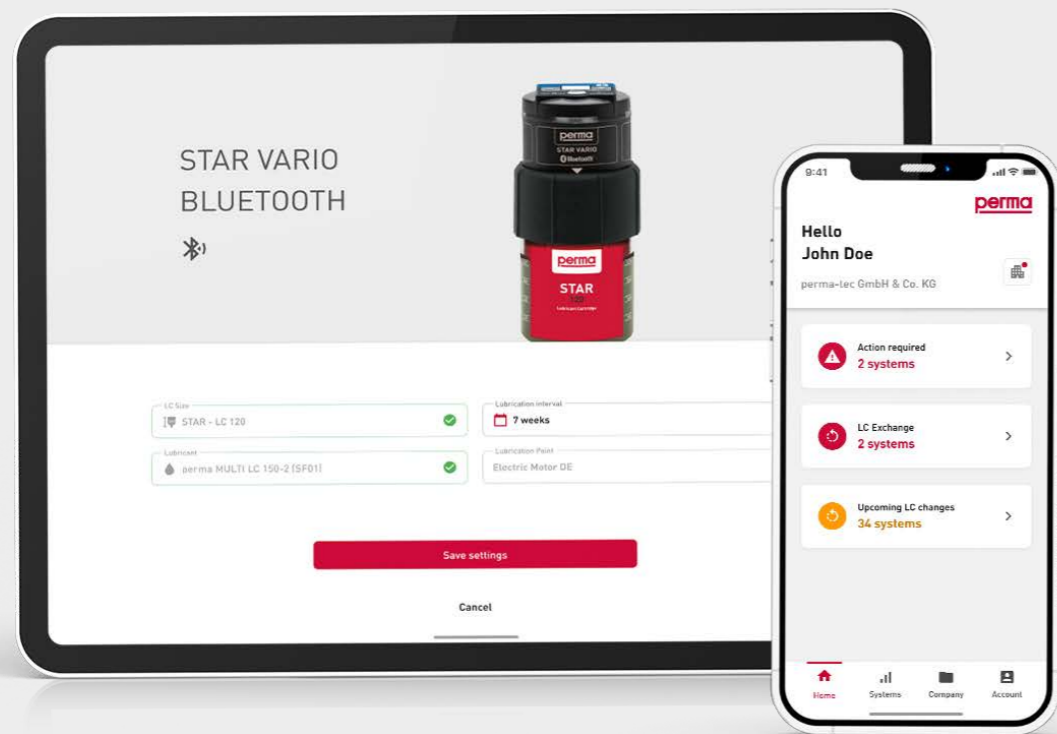
perma CONNECT

Simple and intuitive - configure and maintain all perma Bluetooth lubrication systems via mobile devices

With perma CONNECT lets your easily and reliably monitor your perma lubrication systems in hard-to-reach and dangerous areas from a distance. The app allows you to adjust the discharge period or trigger an additional discharge (Purge) during operation. Error messages, e.g. overpressure or empty LC, are shown in real time, and you can also switch perma lubrication systems on & off and locate them via your mobile device.

perma CONNECT ensures clear management easy maintenance of your lubrication systems, even in hard-to-reach areas. Monitor operational status, adjust settings, and streamline maintenance with efficiency. Trust in advanced technology from perma to optimise your lubrication processes and enhance operational workflows.

More about our perma products can be found on our website www.perma-tec.com

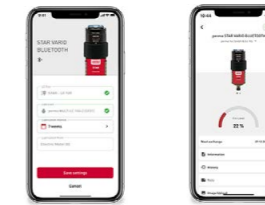


Why perma CONNECT?

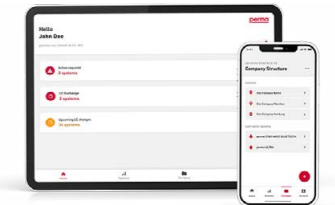
BLUETOOTH CONNECTION



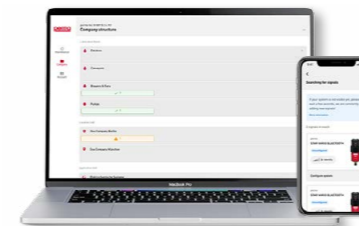
REMOTE CONTROL



REMOTE MAINTENANCE



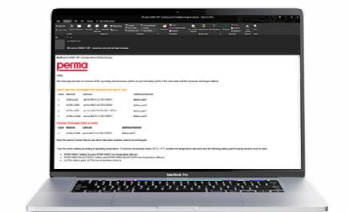
REMOTE MONITORING



DIGITALISATION OF NON-BLUETOOTH LUBRICATION SYSTEMS



NOTIFICATION VIA E-MAIL



Interaction of web application and app

Registration is possible via app or web application

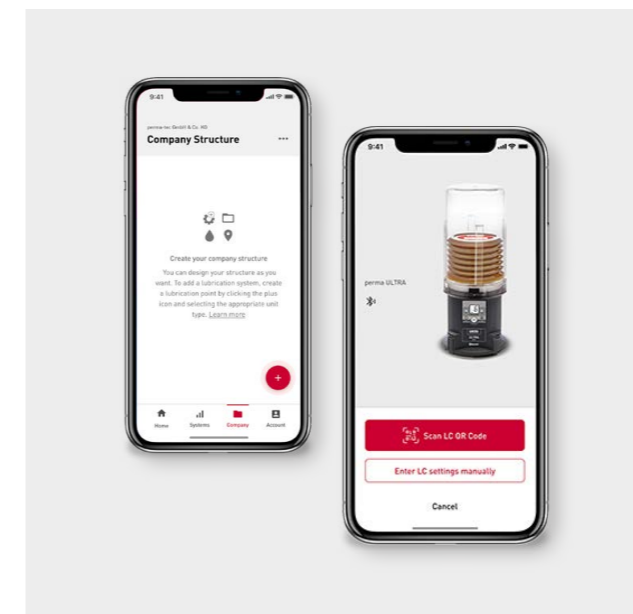
User data is stored in perma CONNECT database

Information about the lubrication point is stored both in the app and web application

Company structure | User management | Lubrication system & associated information

Direct interaction with perma Bluetooth lubrication systems is only possible via the app

For any changes, an existing connection to the lubrication system is required



Get perma CONNECT now!

Download it to your smartphone or open web application under: <https://perma-connect.com>





perma STAR CONTROL

Optimal lubricant metering based on operating hours or lubrication impulse

In contrast to the perma STAR VARIO (with battery pack), the perma STAR CONTROL is supplied with external power via cable. The operating status can be transmitted to a PLC and evaluated. The two integrated operating modes TIME and IMPULSE offer flexible use. In TIME mode, lubricant discharge is based on operating hours. In IMPULSE mode, a precisely defined quantity is dispensed as soon as voltage is supplied. The perma STAR CONTROL consists of an electromechanical drive and an LC with 60, 120, 250 or 500 cm³ of lubricant. The required mode is set on the drive. Lubrication is precise and temperature-independent at a counter pressure up to 7.5 bar.

More about our perma products can be found on our website www.perma-tec.com



MADE IN GERMANY



LCD display with push button shows discharge settings, LC size and operating status



Electromechanical drive with external power supply
LED visible all round signals functioning and errors



Pressure build-up to 7.5 bar allows remote mounting up to 5 m / 14.4 ft
Manual additional discharge via push button on display (Purge)



Needs-based lubricant discharge



Versatile configuration



External power supply



Temperature-independent



Drive - reusable
Electromechanical drive with external power supply: 9 - 30 V DC, I_{max} 0.5 A



Discharge period
Time-controlled (TIME)
Impulse-controlled (IMPULSE)



Lubricant volume
60, 120, 250, 500 cm³ | 2.03, 4.06, 8.45, 16.91 oz



Operating temperature
-40° °C to +60° °C | -40° °F to +140° °F



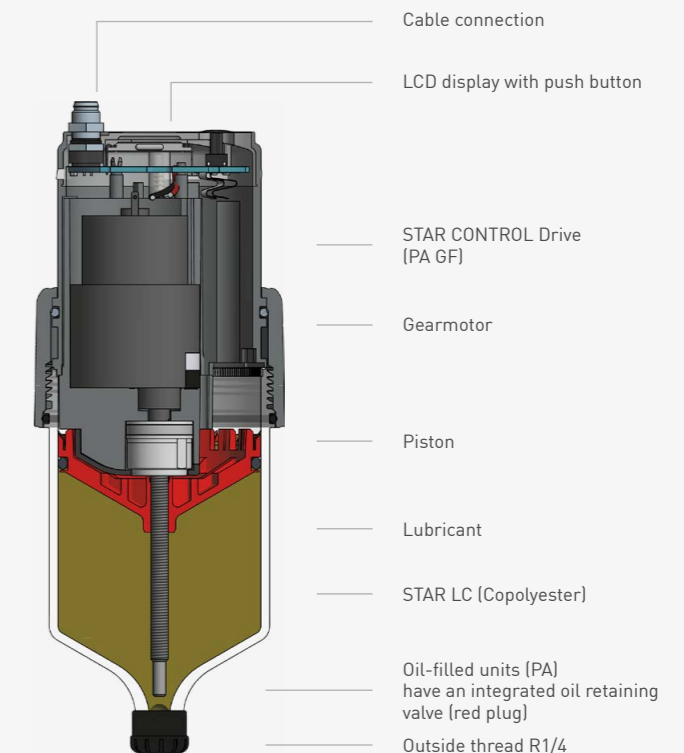
Pressure build-up
7.5 bar | 109 psi



Protection class
IP 65



Standard & special lubricants
Greases up to NLGI 2 | Oils



Dimensions
LC 60: Ø 72 x 160 mm | LC 120: Ø 72 x 183 mm
LC 250: Ø 72 x 233 mm | LC 500: Ø 72 x 329 mm

*Only use with suitable low temperature lubricants!

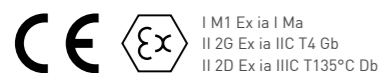


perma NOVA

For applications with high temperature fluctuations

perma NOVA can be used in all application areas from -20 °C to +60 °C. A discharge period from 1 to 12 months can be entered via the setting button on the NOVA Control unit. The control unit then calculates the required quantity of gas for constant and reliable discharge while taking into account the ambient temperature. perma NOVA consists of a reusable control unit, a NOVA LC filled with grease or oil and a protective cover. NOVA LC is available in 65 cm³ and 125 cm³. perma NOVA was specifically developed for single-point lubrication of roller and sliding bearings, sliding guides, open gears, gear racks, shaft seals and chains located in areas with considerable temperature variations (e.g. outside installations). The lubrication system is protected against dust and water jets, subject to correct assembly of the individual parts (IP65). perma NOVA with LC 65 cm³ is ideal for the lubrication of electric motors.

More about our perma products can be found on our website www.perma-tec.com



I M1 Ex ia I Ma
II 2G Ex ia IIC T4 Gb
II 2D Ex ia IIIC T135°C Db



MADE IN GERMANY



Electronic control unit with temperature compensation displays discharge period & operating status



System operates reliably from -20 °C to +60 °C



EX-proof certification



Increased workplace safety



Reusable control unit



Safe lubrication in EX zones



Temperature-independent



Drive - reusable
Electrochemical reaction from gas generating cells with electronic temperature compensation



Discharge period
1, 2, 3 ... 12 months



Lubricant volume
65, 125 cm³ | 2.20, 4.23 oz



Operating temperature
-20 °C to +60 °C | -4 °F to +140 °F



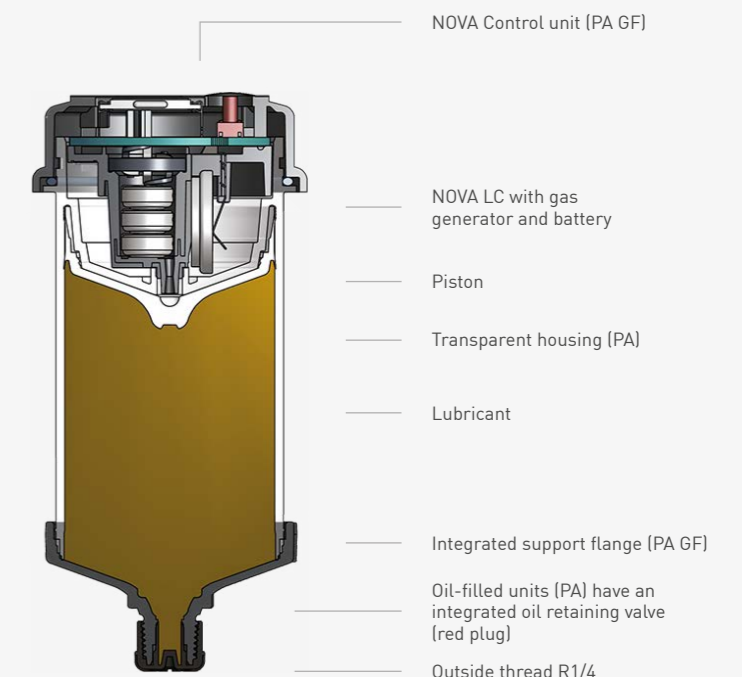
Pressure build-up
Max. 6 bar | 87 psi



Protection class
IP 65



Standard & special lubricants
Greases up to NLGI 2 | Oils



Dimensions
LC 65: Ø 65 x 101 mm
LC 125: Ø 65 x 132 mm

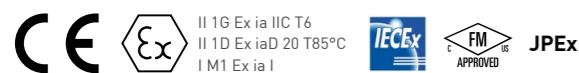


perma FLEX

Flexible use - even on lubrication points with challenging requirements

The automatic lubrication system perma FLEX is available in two convenient sizes (60 cm³ | 125 cm³). It can be used for inside or outside applications at temperatures ranging from -20 °C to +60 °C. Discharge period setting is flexible and can be adjusted from 1 – 12 months using the dial on top of the lubricator. perma FLEX comes fully assembled and ready-to-use. Simply turn the dial to the desired discharge period and the system is activated. The electronically controlled chemical reaction will build up the pressure that is necessary to continually supply the lubrication point with fresh lubricant. perma FLEX is a single-point lubrication system for all types of applications and industries. Ingress protection to IP 68 level guarantees reliable lubrication in extremely dusty and moist environments. The wide operating temperature range makes it suitable for many applications indoors and outdoors. If necessary, the discharge period can be adjusted even after activation. It can be switched off during longer non-operation periods.

More about our perma products can be found on our website www.perma-tec.com



MADE IN GERMANY



All-in-one system with rotary switch for discharge period setting



Can be used in very moist and dusty environments



EX-proof certification



Ready-to-use system



Compact dimensions



Safe lubrication in EX zones



Increased workplace safety



Drive
Electrochemical reaction



Discharge period at +20 °C | 68 °F
perma MULTI LC 150-2 (SF01)
1, 2, 3, ... 12 months



Lubricant volume
60, 125 cm³ | 2.03, 4.23 oz



Operating temperature
-20 to +60 °C | -4 to +140 °F



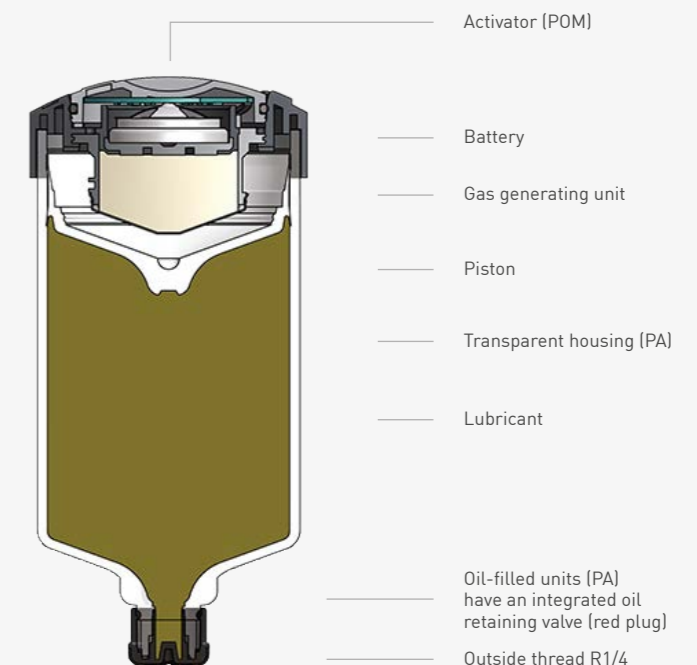
Pressure build-up
Max. 5 bar | 75 psi



Protection class
IP 68



Standard & special lubricants
Greases up to NLGI 2 | Oils



Dimensions
perma FLEX 60: Ø 58 x 86.5 mm
perma FLEX 125: Ø 58 x 117 mm

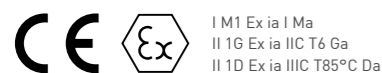


perma FLEX PLUS

Flexible, compact and ready for immediate use

perma FLEX PLUS is a compact, ready-to-use lubrication system supplied as a complete unit. It can be used in various types of applications at temperatures ranging from -20 °C to +55 °C. The discharge period is electronically controlled by the gas generating cells and is freely adjustable in monthly steps. The lubrication point is continuously supplied with fresh lubricant throughout the selected discharge period. perma FLEX PLUS has a boost function to quickly provide fresh lubricant, and is suitable for single-point lubrication in all types of applications. It fulfils the requirements of IP 68 (ingress of water | contamination) and functions reliably in extremely dusty and moist environments. It can furthermore be used at various temperatures, also outdoors. The discharge period can also be adjusted after activation.

More about our perma products can be found on our website www.perma-tec.com



I M1 Ex ia I Ma
II 1G Ex ia IIC T6 Ga
II 1D Ex ia IIC T85°C Da



MADE IN GERMANY




All-in-one system with rotary switch for discharge period setting




Drive with gas generating cells and boost function




EX-proof certification




Ready-to-use system










Fast lubricant supply

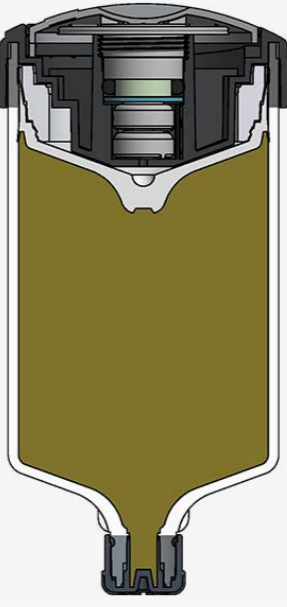


Safe lubrication in EX zones



Increased workplace safety

-  **Drive**
Electrochemical reaction
-  **Discharge period at +20 °C | 68 °F**
perma MULTI LC 150-2 (SF01)
1, 2, 3 ... 12 months
-  **Lubricant volume**
30, 60, 125 cm³ | 1.01, 2.03, 4.23 oz
-  **Operating temperature**
-20 to +55 °C | -4 to +131 °F
-  **Pressure build-up**
Max. 5 bar | 75 psi
-  **Protection class**
IP 68
-  **Standard & special lubricants**
Greases up to NLGI 2 | Oils



- Activator (POM)
- Battery
- Gas generating cells
- Piston
- Transparent housing (PA)
- Lubricant
- Oil-filled units (PA) have an integrated oil retaining valve (red plug)
- Outside thread R1/4

Dimensions
perma FLEX PLUS 30: Ø 60 x 70 mm
perma FLEX PLUS 60: Ø 60 x 86 mm
perma FLEX PLUS 125: Ø 60 x 116 mm

perma CLASSIC | perma FUTURA

Simple - robust - reliable

perma CLASSIC and perma FUTURA can be used in all types of applications with ambient temperatures from 0 °C to +40 °C. Depending on operating conditions, a lubricant volume of 120 cm³ is used up in 1, 3, 6 or 12 months. Reliable function is based on an electrochemical reaction. The activator is screwed into the lubrication system until the eyelet comes off. The contained gas generator builds up a pressure of max. 4 bar, which moves the piston forward and transports lubricant into the lubrication point. These lubrication systems are suitable for single-point lubrication of roller- and sliding bearings, sliding guides, open gears, gear racks, spindles, shaft seals and chains. Typical applications for perma CLASSIC can be found in mining, steel, automotive and mechanical engineering. perma FUTURA is ideal for areas that must be kept hygienically clean. Due to its resistance to corrosion, perma FUTURA is especially suited for applications in the food industry.

More about our perma products can be found on our website www.perma-tec.com



CE **Ex**
 I M2 h Mb X
 II 2G h IIC T6 Gb X
 II 2D h IIC T80°C Db X

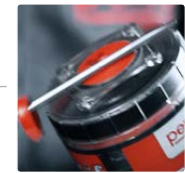
MADE IN GERMANY



perma CLASSIC
Metal housing



perma FUTURA
Transparent plastic housing with
integrated support flange



Simple activation
One-time activation:
1, 3, 6 or 12 months



Increased
workplace safety



Enhanced
equipment availability



Safe lubrication
in EX zones



Optimised
lubrication



Drive
Electrochemical reaction
via gas generator



Discharge period at +20 °C | 68 °F
perma MULTI LC 150-2 (SF01)
1, 3, 6 or 12 months



Lubricant volume
120 cm³ | 4.06 oz



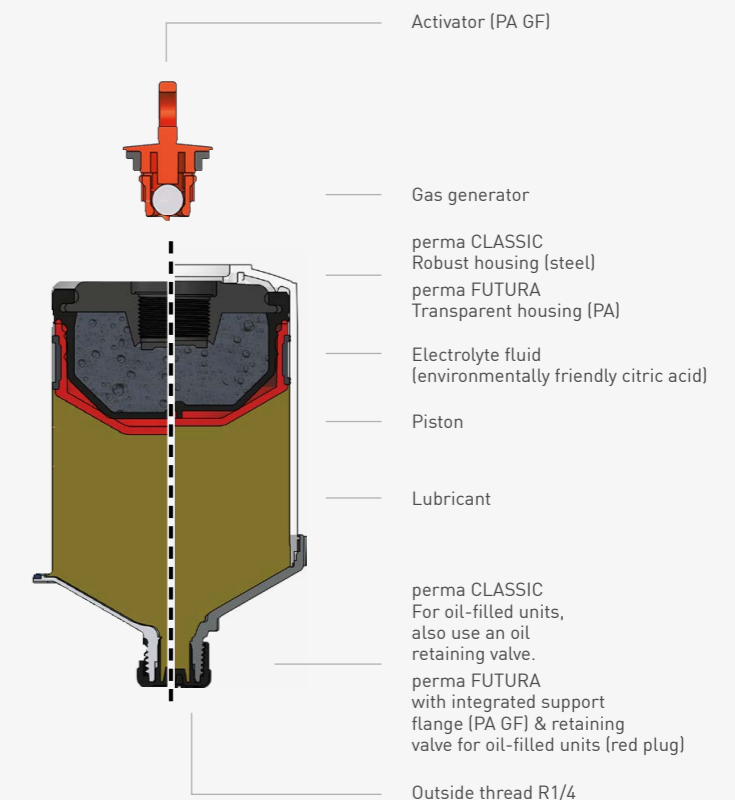
Operating temperature
0 °C to +40 °C | 32 °F to +104 °F



Pressure build-up
Max. 4 bar | 58 psi



Standard & special lubricants
Greases up to NLGI 2 | Oils



Dimensions
perma CLASSIC: Ø 70 x 99 mm
perma FUTURA: Ø 67 x 111 mm




perma FUTURA PLUS

Ideal for use in wind turbines

perma FUTURA PLUS can be used in all types of applications with ambient temperatures from 0 °C to +40 °C. Depending on operating conditions, a lubricant volume of 120 cm³ is dispensed in 1, 3, 6 or 12 months. Reliable function is based on an electrochemical reaction, which is started by simply turning the activation cap. The contained gas generator generates a pressure of max. 4 bar, which moves the piston forward and transports lubricant into the lubrication point. perma FUTURA PLUS is used for single-point lubrication of roller and sliding bearings, sliding guides, open gears, gear racks, spindles, shaft seals, chains etc. Main application areas are wind turbines and the food industry. perma FUTURA PLUS has a corrosion-proof plastic housing, which makes it ideal for hygienically clean environments.

More about our perma products can be found on our website www.perma-tec.com



CE  I M2 h Mb X
II 2G h IIC T6 Gb X
II 2D h IIC T80°C Db X

MADE IN GERMANY



Transparent plastic housing with integrated support flange



No tools needed for activation:
Activation cap with integrated gas generator
Discharge period
1, 3, 6 or 12 months



EX-proof certification



Ready-to-use system



Easy disposal



Safe lubrication in EX zones



Increased workplace safety



Drive
Electrochemical reaction via gas generator



Discharge period at +20 °C | 68 °F
perma MULTI LC 150-2 (SF01)
1, 3, 6 or 12 months



Lubricant volume
120 cm³ | 4.06 oz



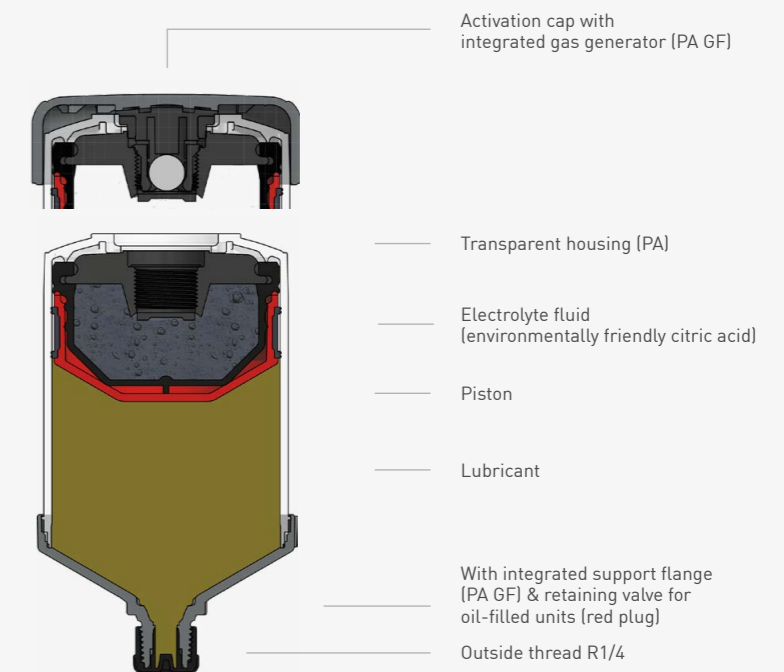
Operating temperature
0 °C to +40 °C | 32 °F to +104 °F



Pressure build-up
Max. 4 bar | 58 psi



Standard & special lubricants
Greases up to NLGI 2 | Oils



Dimensions
perma FUTURA PLUS: Ø 70 x 117 mm



perma PRO MP-6* | perma PRO C MP-6


Precise lubricant supply for 1 to 6 lubrication points

The perma PRO MP-6 is available as a self-sufficient, battery operated multi-point lubrication system or as perma PRO C MP-6 with external power supply (PLC or machine controlled). Depending on the discharge period (1 day to 24 months), the system discharges 250 or 500 cm³ from a maximum of six outlets into the lubrication points. Due to the maximum pressure build-up of 25 bar in the MP-6 distributor, the lubricant is evenly and precisely distributed using up to 5 m of grease line per outlet. Applications for perma PRO MP-6 and perma PRO C MP-6 multi-point lubrication system include roller and sliding bearings, linear guides, open gears, spindles as well as shaft seals on motors, generators, pumps and fans. Applications range from the automotive industry and combined heat and power stations, to the paper industry and mining, and steel industry sectors.


More about our perma products can be found on our website www.perma-tec.com



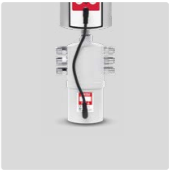
MADE IN GERMANY



Setting via push button with display and LED
Display of outlets
LED red / green = function





Pressure build-up to 25 bar allows remote mounting up to 5 m per outlet
Additional discharge (Purge)





MP-6 distributor with 6 outlets
Number of active outlets can be user-defined


- 
Supply of up to 6 lubrication points
- 
Enhanced equipment availability
- 
External power supply (PRO C MP-6)
- 
Increased workplace safety


- 

Drive - reusable
PRO MP-6: Battery operation with Battery PRO B (Alkaline)
PRO C MP-6: External power supply 15-30 V | 120 mA
- 

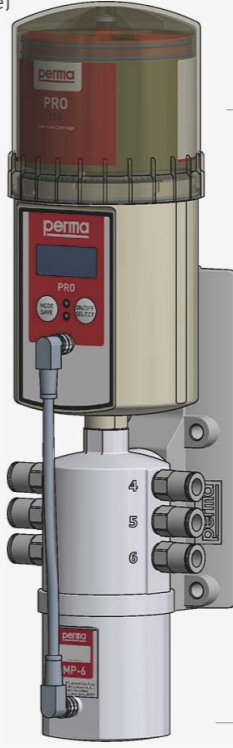
Discharge period
1 day to 24 months
- 

Lubricant volume
250, 500 cm³ | 8.45, 16.91 oz
- 

Operating temperature
-20 °C to +60 °C | -4 °F to +140 °F
- 

Pressure build-up
Max. 25 bar | 360 psi
Mounting with < 5 m grease line per outlet
- 

Standard & special lubricants
Greases up to NLGI 2



- PRO LC (PC Polyester)
- PRO Drive (Zn)
- Mounting device PRO
- Tube connectors for tube ø8 mm
- Distributor PRO MP-6 (Zn)
- Connecting cable PRO MP-6 14 cm

Dimensions
perma PRO MP-6 LC 250: ø 92 x 350 x 107 mm | LC 500: ø 92 x 401 x 107 mm
perma PRO C MP-6 LC 250: ø 92 x 350 x 111 mm | LC 500: ø 92 x 401 x 111 mm



perma PRO LINE | perma PRO C LINE


Precise lubrication system for linear guides

perma PRO LINE and perma PRO C LINE are flexible multi-point lubrication systems for linear guides. The discharge can be adapted precisely to the manufacturer's specifications. The lubricant quantity and relubrication interval can be set flexibly for each of the six outlets. The PRO LC is filled with 250 or 500 cm³ of grease. The high pressure build-up enables remote mounting using grease lines of up to 5 meters per outlet. This increases workplace safety, at the same time allowing reliable lubrication of the running system. Main applications for the multi-point lubrication systems perma PRO LINE and perma PRO C LINE are linear guides. Applications range from linear components, screw drives and gear racks in machine tools to handling systems and traversing axes on industrial robots. Other applications are roller and sliding bearings, open gears and spindles.


More about our perma products can be found on our website www.perma-tec.com




MADE IN GERMANY



Setting via push button with display and LED
Display of remaining discharge time
Display of outlets
Status control on display





Flexible setting options for every outlet





Dual operation: Mixture of time and impulse operation


- 
Supply of up to 6 lubrication points
- 
High flexibility
- 
External power supply (PRO C LINE)
- 
Increased workplace safety


- 

Drive - reusable
PRO LINE: Battery operation with Battery PRO B (Alkaline)
PRO C LINE: External power supply 15-30 V | 120 mA
- 

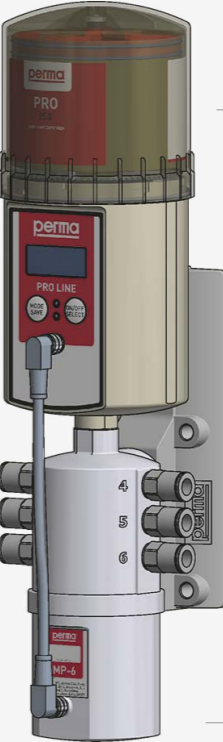
Discharge period
Pause times in days (24 h) |
Discharge quantity per outlet
Impulse mode
- 

Lubricant volume
250, 500 cm³ | 8.45, 16.91 oz
- 

Operating temperature
-20 °C to +60 °C | -4 °F to +140 °F
- 

Pressure build-up
Max. 25 bar | 360 psi
Mounting with < 5 m grease line per outlet
- 

Standard & special lubricants
Greases up to NLGI 2



- PRO LC (PC Polyester)
- PRO LINE Drive (Zn)
- Mounting device PRO
- Tube connectors for tube ø8 mm
- Distributor PRO MP-6 (Zn)
- Connecting cable PRO MP-6 14 cm

Dimensions
perma PRO LINE LC 250: ø 92 x 350 x 107 mm | LC 500: ø 92 x 401 x 107 mm
perma PRO C LINE LC 250: ø 92 x 350 x 111 mm | LC 500: ø 92 x 401 x 111 mm



perma ECOSY

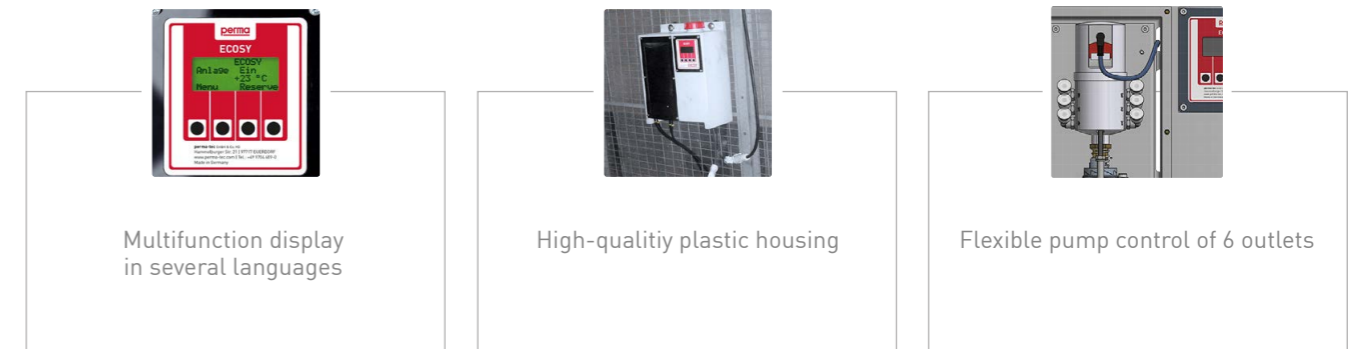
Perfectly suited for use in escalators

perma ECOSY is a multi-point lubrication system and supplies up to 6 lubrication points with a predefined quantity of oil. The control of perma ECOSY allows time (TIME), sensor (SENSOR) or impulse mode (CONTROL) and can be adapted to varying demands. Lubrication pump and control are integrated into a 7-litre plastic tank. The high-performance perma ECOSY pump allows lubrication points up to 10 m away to be supplied with lubricant, e.g. in difficult-to-access and soiled areas. perma ECOSY can be used to lubricate guideways as well as drive and transport chains. The system supplies lubrication points with the defined lubricant quantity via special brushes and prevents friction and wear at the contact points. This increases the service life and reduces maintenance costs. Typical applications include escalators, moving walkways and conveyors.

More about our perma products can be found on our website www.perma-tec.com



MADE IN GERMANY



Multifunction display in several languages

High-quality plastic housing

Flexible pump control of 6 outlets



Supply of up to 6 lubrication points



Long maintenance intervals



External power supply



Increased workplace safety



Number of outlets
1-6 | individual | electronically activatable



Discharge period
Machine controlled | time controlled
Feed rate
0 - 9,999 ml | 1,000 h per outlet*



Fill volume
7 litres



Operating temperature
-20 °C to +60 °C / -4 °F to +140 °F



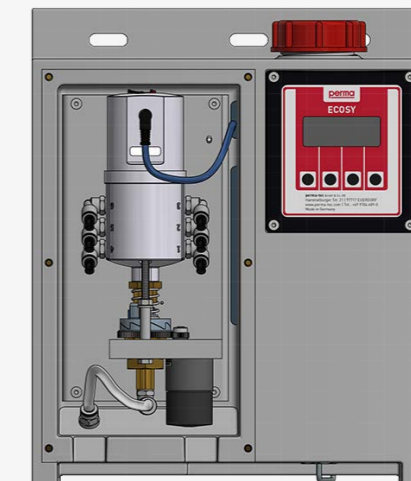
Pressure build-up
Max. 10 bar | 145 psi



Supply voltage
85-240 V AC | 50-60 Hz | 24 V DC | 25 W



Standard & special lubricants
Oils



Filter, filling hole, screw cap (PA GF)

ECOSY housing (PE)

Distributor

Tube connections for tube $\varnothing 6$ mm

Pump

Motor

Dimensions
perma ECOSY: 310 x 380 x 170 mm

*For details see perma ECOSY operating instructions page 13



For more than 60 years, perma has stood for innovative and creative lubrication solutions. Now, we are expanding our exclusive range of perma lubricants to offer you even more products. Thanks to many years of experience, we are able to offer a wide range of high-quality lubricants that are tailored to your needs. Our lubricants are specially developed to meet

our customers' needs while ensuring excellent protection for critical rotating equipment such as conveyors, pumps, fans and electric motors. The perma range includes universal, food-grade, heavy-duty and high-temperature lubricants made using mineral or synthetic base oils.

perma lubricant	Key figures							Applications				Machine elements					Properties					
	Thickener	Base oil	Viscosity at cSt @ 40 °C	NLGI	Operating temperature	Colour	Speed value	Electric motors	Blowers / Fans	Pumps	Conveyors	Roller bearings	Sliding bearings	Linear guides	Open gears	Spindles	High speed	Low speed	Heavy load	Light load	High temperature	Low temperature
Multipurpose greases																						
perma MULTI LC 150-2 (SF01)	Lithium Calcium	Mineral oil	150	2	-30 °C to +130 °C -22 °F to +266 °F	Beige	300000	*	**	**	***	***	**	**	**	**	**	**	*	**	*	**
perma MULTI AX 220-0 (SF06)	Aluminium complex	Mineral oil	220	0	-20 °C to +130 °C -4 °F to +266 °F	Brown	300000	*	*	*	*	**	**	**	*	*	**	**	*	**	*	**
Heavy-duty grease																						
perma LOAD L-M 100-2 (SF02)	Lithium + MoS2	Mineral oil	100	2	-30 °C to +120 °C -22 °F to +248 °F	Black	350000	-	-	-	**	-	***	-	***	**	*	***	**	*	*	**
High-temperature grease																						
perma TEMP PU-P SYN 420-2 (SF03)	Polyurea + PTFE	Ester + PFPE	420	2	-20 °C to +220 °C -4 °F to +428 °F	Beige	300000	*	*	*	*	***	**	**	**	**	*	**	*	**	***	***
Heavy-duty/high-temperature grease																						
perma LOAD PU SYN 500-1 (SF04)	Polyurea	Synthetic	500	0 / 1	-20 °C to +160 °C -4 °F to +320 °F	Yellow	200000	*	*	*	***	**	**	**	**	**	*	**	**	**	**	**
perma LOAD PU-M SYN 500-1 (SF05)	Polyurea + MoS2	Synthetic	500	0 / 1	-20 °C to +160 °C -4 °F to +320 °F	Black	200000	-	-	-	**	-	***	-	***	*	*	***	***	**	**	**
High-speed grease																						
perma SPEED CX SYN 100-2 (SF08)	Calcium complex	Synthetic	100	2	-40 °C to +140 °C -40 °F to +284 °F	Beige	600000	***	**	*	-	***	*	*	-	**	***	*	*	***	**	**
Biodegradable grease																						
perma BIO PU SYN 120-2 (SF09)	Polyurea	Synthetic	120	2	-40 °C to +140 °C -40 °F to +284 °F	Brown	300000	**	**	**	**	**	**	**	**	**	*	**	*	*	*	**
Food-grade grease																						
perma FOOD AX SYN 150-1 (SF10)	Aluminium complex	Synthetic	150	1	-45 °C to +120 °C -49 °F to +248 °F	Beige	500000	**	**	**	**	**	**	**	**	**	**	**	**	*	*	***

Not recommended: - | Ok: * | Good: ** | Recommended: ***

Lubricants | Oils

perma lubricant name	Key figures			Machine elements				Properties					
	Base oil	Viscosity at +40 °C [mm ² /s]	Operating temperature	Sliding bearings	Open gears	Spindles	Chains	High speed	High Adhesion	Heavy load	Light load	High temperature	Low temperature
Multipurpose oil													
perma MULTI 100 (SO32)	Mineral oil	100	-5°C to +100°C +23°F to +212°F	**	**	**	**	**	**	*	**	*	*
High-temperature oil													
perma TEMP SYN 320 (SO14)	Synthetic	320	-20°C to +250°C -4°F to +482°F	*	*	*	***	***	***	***	*	***	*
Biodegradable oil													
perma BIO SYN 100 (SO64)	Synthetic	100	-30°C to +110°C -22°F to +230°F	**	**	**	***	**	**	*	**	*	**
perma BIO SYN 320 (SO69)	Synthetic	320	-20°C to +110°C -4°F to +230°F	***	***	***	***	***	***	***	*	*	**
Food-grade oils													
perma FOOD SYN 220 (SO70)	Synthetic	220	-30°C to +120°C -22°F to +248°F	***	***	***	***	**	**	**	**	*	**
perma FOOD LOWTEMP SYN 32 (SO78)	Synthetic	32	-50°C to +140°C -58°F to +284°F	*	*	*	***	*	***	*	***	*	***

Not recommended: - | Ok:* | Good: ** | Recommended: ***

Base oil

Grease consists of between 70 % and 95 % of oil. The type of oil influences the lubricating properties of the grease and also determines the applications the grease is best suited for.

Base oil viscosity

The viscosity indicates the flowability of the base oil. Greases with a low viscosity base oil are usually used for bearings with a high speed factor whereas slow moving bearings will use a high viscosity base oil..

NLGI grade

The NLGI grade (consistency number) indicates a grease's relative hardness. Grades range from 000 (very fluid) to 6 (very hard). Greases up to NLGI grade 2 can be used in perma lubrication systems.

Thickener

A thickener is a component of the grease that gives it a semi-fluid consistency. This ensures that the grease stays in the bearing and does not leak out, as would be the case for oil alone. Different thickeners are not always compatible which means that different greases should be checked before being mixed.

NSF

One requirement of the food and beverage industry is that lubricants must be registered with the US organisation NSF. All lubricants that (occasionally) come into direct contact with food must be tested and registered in accordance with the NSF H1 criteria.

Halal and Kosher

Other requirements include the dietary rules of the Jewish and Muslim population relating to the use of machines and surroundings during the food production. Appropriate certification confirms that the strict requirements for halal and kosher have been met and complies with the religious requirements.

Miscibility

When relubricating a lubrication point, the same lubricant should always be used to avoid mixing different lubricants. If this is not possible, it must be ensured that the base oil and thickener are compatible. The compatibility of these components must be checked and taken into account using specified miscibility tables.

WE GUARANTEE



CONTAMINATION-FREE LUBRICANTS

Based on many years of experience and technical expertise, perma lubrication systems are reliably filled with clean lubricant and free of air pockets.



CORRECT LUBRICANT DESIGNATION

perma lubrication systems always have the correct lubricant designation. This helps to avoid unwanted mixing of lubricants.



RELIABLE OPERATION OF THE LUBRICATION SYSTEMS

Our lubrication systems and exchangeable cartridges (LC units) meet high quality standards and therefore guarantee reliable lubrication.



LUBRICANT DURABILITY

The serial number on our products shows the year and week of manufacture. This makes it easy to ensure that only fresh lubricants are used.



CLP | GHS-COMPLIANT MARKINGS

perma lubrication systems are correctly labelled and immediately show the user the relevant danger and safety instructions.



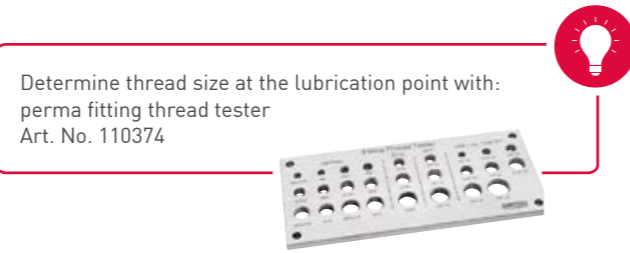
NSF-CERTIFIED FILLING

We offer a wide range of suitable lubricants in our automatic lubrication systems, especially for the food & beverage industry. Filling at perma is NSF-certified according to DIN ISO 21469.

MOUNTING

The correct kits and accessories for your mounting solution

For many lubrication points it is beneficial to mount the lubricating system with a grease line at a location that can be safely accessed during plant operation.



DECIDE WHAT MOUNTING TYPE IS SUITABLE FOR YOU...

YES NO Is it difficult or dangerous to reach the lubrication point during plant operation?

YES NO Is access permission required to reach lubrication points in secured areas or at great heights?

YES NO Is the lubrication point subject to strong vibrations or high temperatures which may impair or damage the lubrication system?

YES NO Is the lubrication point exposed to large quantities of water, pumped media, media from the manufacturing process or impact from solids?

→ If you answer yes to one of the questions, we recommend that you use indirect / remote mounting.

BENEFITS: DIRECT MOUNTING

- » Immediate supply of lubrication points with fresh lubricant
- » Grease has the shortest supply path meaning it does not age before entering the bearing
- » Lowest cost, quickest and most simple installation method



BENEFITS: REMOTE MOUNTING

- » Relocate lubrication point to a safe area
- » Vibrations at the lubrication point can be disregarded
- » Automatic lubrication systems can be exchanged while the machine is in operation



INSTALLATION KITS

Direct mounting

More about perma mounting solutions and kits can be found on our website www.perma-tec.com



INSTALLATION KITS STAR

- 1 x Reducer G1/8 male x G1/4 female
- 1 x Reducer M6 male x G1/4i female
- 1 x Reducer M8x1 male x G1/4i female
- 1 x Reducer M10x1 male x G1/4i female
- 1 x Extension G1/4 male x G1/4i - 45 mm
- 1 x Angle 45° G1/4 male x G1/4 female
- 1 x Support flange STAR G1/4 male x G1/4 female



perma STAR VARIO
perma STAR CONTROL

Art. No. 101477



INSTALLATION KITS CLASSIC, FUTURA, FLEX, NOVA

- 1 x Reducer G1/8 male x G1/4 female
- 1 x Reducer M6 male x G1/4 female
- 1 x Reducer M8x1 male x G1/4 female
- 1 x Reducer M10x1 male x G1/4 female
- 1 x Extension G1/4 male x G1/4 female - 45 mm
- 1 x Angle 45° G1/4 male x G1/4 female



perma CLASSIC
perma FUTURA
perma FUTURA PLUS
perma FLEX
perma FLEX PLUS
perma NOVA

Art. No. 101476

ACCESSORY KITS and INSTALLATION KITS STAR

Remote mounting | Standard and Heavy Duty

INSTALLATION KITS contain all necessary parts for the complete mounting of the lubrication system to the lubrication point: mounting bracket with mounting support, support flange, hose connectors, reducers and Heavy Duty hose.

The only difference between the ACCESSORY KITS and the INSTALLATION KITS is that no hose is included.



STANDARD DUTY KIT

These kits are very versatile and can be used in areas with normal ambient conditions. The kits contain all necessary parts, including a reducer M10x1 and G1/8 per lubrication point.



HEAVY DUTY KIT

Heavy Duty kits have been specifically designed for use in operational areas with harsh ambient conditions which are subject to regular wash down and water impact, such as the conditions found in coal handling preparation plants.

ACCESSORY KITS and INSTALLATION KITS STAR Standard Duty

ACCESSORY KITS and INSTALLATION KITS STAR Standard Duty have been especially designed for operation under normal ambient conditions. The kits contain all necessary parts, including a reducer M10x1 and G1/8 per lubrication point. Unlike the ACCESSORY KITS, the INSTALLATION KITS do already contain the hose.

Beam clamp mount



INSTALLATION KIT STAR Standard Duty
1-point 65 mm beam clamp mount
incl. 3 m hose
Art. No. 116961

ACCESSORY KIT STAR Standard Duty
1-point 65 mm beam clamp mount
without hose | Art. No. 116951



INSTALLATION KIT STAR Standard Duty
2-point 65 mm beam clamp mount
incl. 5 m hose
Art. No. 116963

ACCESSORY KIT STAR Standard Duty
2-point 65 mm beam clamp mount
without hose | Art. No. 116953

Cage hanger mount



INSTALLATION KIT STAR Standard Duty
1-point cage hanger mount
incl. 3 m hose
Art. No. 116962

ACCESSORY KIT STAR Standard Duty
1-point cage hanger mount
without hose | Art. No. 116952



INSTALLATION KIT STAR Standard Duty
2-point cage hanger mount
incl. 5 m hose
Art. No. 116964

ACCESSORY KIT STAR Standard Duty
2-point cage hanger mount
without hose | Art. No. 116954

ACCESSORY KITS and INSTALLATION KITS STAR Heavy Duty

ACCESSORY KITS and INSTALLATION KITS STAR Heavy Duty have been specifically designed for use in operational areas with harsh ambient conditions. The kits contain all necessary parts, including a protection cap STAR Heavy Duty, a Purge connection with manual valve and a reducer M10x1 and G1/8 per lubrication point. Unlike the ACCESSORY KITS, the INSTALLATION KITS do already contain the hose.

Beam clamp mount



INSTALLATION KIT STAR Heavy Duty
1-point 65 mm beam clamp mount
incl. 3 m hose
Art. No. 116965

ACCESSORY KIT STAR Heavy Duty
1-point 65 mm beam clamp mount
without hose | Art. No. 116955



INSTALLATION KIT STAR Heavy Duty
2-point 65 mm beam clamp mount
incl. 5 m hose
Art. No. 116967

ACCESSORY KIT STAR Heavy Duty
2-point 65 mm beam clamp mount
without hose | Art. No. 116957

Cage hanger mount



INSTALLATION KIT STAR Heavy Duty
1-point cage hanger mount
incl. 3 m hose
Art. No. 116966

ACCESSORY KIT STAR Heavy Duty
1-point cage hanger mount
without hose | Art. No. 116956



INSTALLATION KIT STAR Heavy Duty
2-point cage hanger mount
incl. 5 m hose
Art. No. 116968

ACCESSORY KIT STAR Heavy Duty
2-point cage hanger mount
without hose | Art. No. 116958

perma STAR Components

Complete your solution with the following components

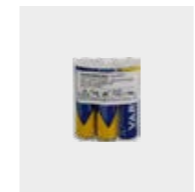


perma STAR VARIO Drive
Art. No. 117222

perma STAR VARIO BLUETOOTH Drive
Art. No. 117223



perma STAR CONTROL Drive
TIME- or IMPULSE Modus
Art.No. 118216



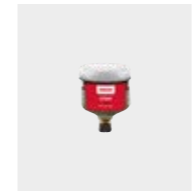
Battery pack STAR VARIO (Alkaline)
Art. No. 101351



Cable STAR CONTROL
5 m Art. No. 108432
10 m Art. No. 108431
20 m Art. No. 110512



Battery pack STAR VARIO low temperature (Lithium)
Art. No. 116901



perma STAR LC 60 cm³



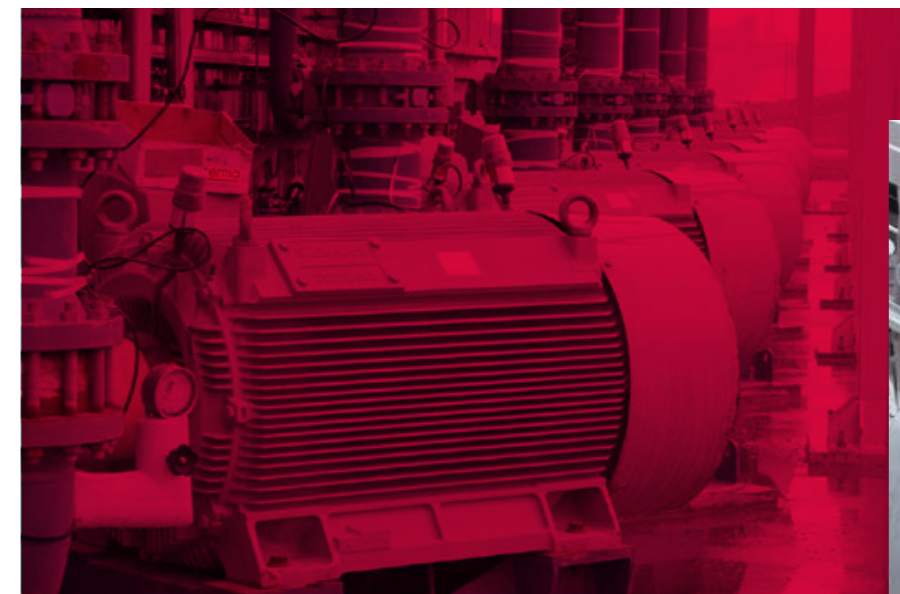
perma STAR LC 120 cm³



perma STAR LC 250 cm³



perma STAR LC 500 cm³



ACCESSORY KITS and INSTALLATION KITS ULTRA Standard Duty & Heavy Duty

Beam clamp mount



INSTALLATION KIT ULTRA Standard Duty

1-point 65 mm beam clamp mount
incl. 5 m hose | Art. No. 116339

ACCESSORY KIT ULTRA Standard Duty

1-point 65 mm beam clamp mount
without hose | Art. No. 116335



INSTALLATION KIT ULTRA Heavy Duty

1-point 65 mm beam clamp mount
incl. 5 m hose | Art. No. 116341

ACCESSORY KIT ULTRA Heavy Duty

1-point 65 mm beam clamp mount
without hose | Art. No. 116337

Cage hanger mount



INSTALLATION KIT ULTRA Standard Duty

1-point cage hanger mount
incl. 5 m hose | Art. No. 116340

Accessory Kit ULTRA Standard Duty

1-point cage hanger mount
without hose | Art. No. 116336



INSTALLATION KIT ULTRA Heavy Duty

1-point cage hanger mount
incl. 5 m hose | Art. No. 116342

ACCESSORY KIT ULTRA Heavy Duty

1-point cage hanger mount
without hose | Art. No. 116338

perma ULTRA Components

Complete your solution with the following components



perma ULTRA Drive
with cover

Art. No. 116159



For extreme operating conditions:

Protection cap ULTRA
Heavy Duty (plastic)

Art. No. 116149



Battery pack ULTRA
(Alkaline)

Art. No. 116147

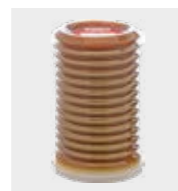


Battery pack ULTRA
low temperature
(Lithium)

Art. No. 116148



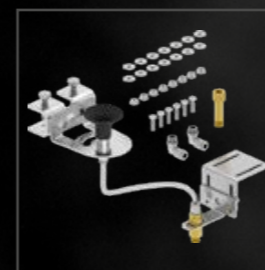
perma ULTRA LC
500 cm³



perma ULTRA LC
1,000 cm³

ACCESSORY KITS and INSTALLATION KITS chains

Solutions for electrochemical and electromechanical lubrication systems



INSTALLATION KIT STAR
Chains

Art. No. 117983



ACCESSORY KIT STAR
Chains

Art. No. 117982



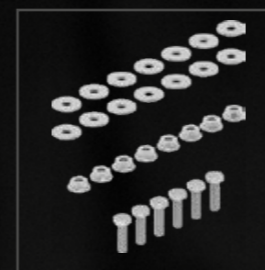
INSTALLATION KIT CLASSIC,
FUTURA, FLEX, NOVA
Chains

Art. No. 117984



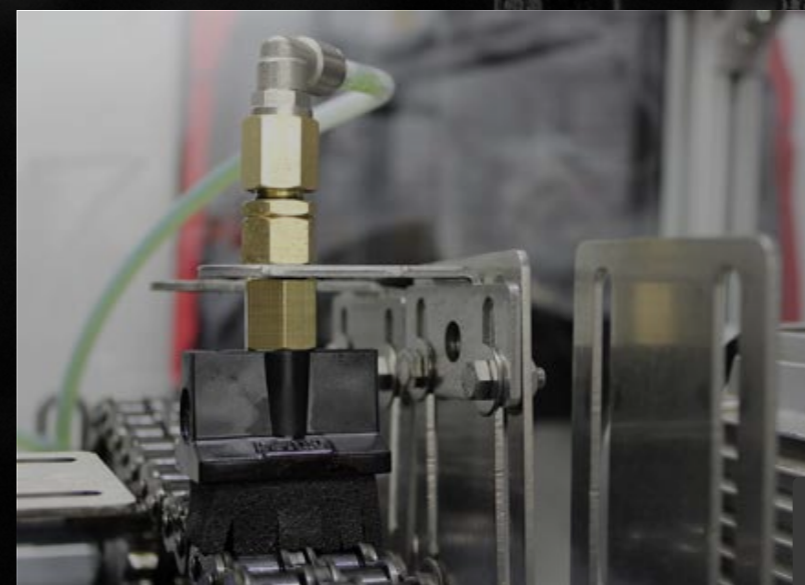
ACCESSORY KIT CLASSIC,
FUTURA, FLEX, NOVA
Chains

Art. No. 117981



SET small parts for installation kit
Chains

Art. No. 117977



Please note that oil brushes are not included in the kits. These can be found from page 78

PREPARE LUBRICATION POINT

Always pre-fill lubrication point,
connecting parts and grease lines!

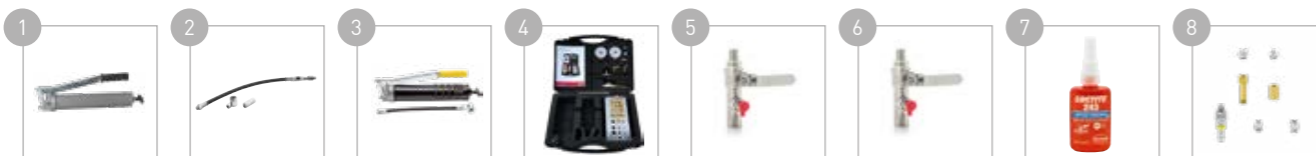


Greases	Cartridge 400 g for grease gun	Pail 1 kg	Pail 5 kg
	Pic.: 1	Pic.: 2	Pic.: 3
perma MULTI LC 150-2 (SF01)	101585	107494	107508
perma LOAD L-M 100-2 (SF02)	101588	107495	107509
perma TEMP PU-P SYN 420-2 (SF03)	101589	107496	107510
perma LOAD PU SYN 500-1 (SF04)	101590	107497	107511
perma LOAD PU-M SYN 500-1 (SF05)	101591	107498	107512
perma MULTI AX 220-0 (SF06)	101592	107499	107513
perma SPEED CX SYN 100-2 (SF08)	101593	107500	107514
perma BIO PU SYN 120-2 (SF09)	101594	107501	107515
perma FOOD AX SYN 150-1 (SF10)	101595	107502	107516

Oils	Bottle 1 Litre	Canister 5 Litre
	Pic.: 4	Pic.: 5
perma TEMP SYN 320 (S014)	107463	107520
perma MULTI 100 (S032)	107465	107521
perma BIO SYN 100 (S064)	107469	107523
perma BIO SYN 320 (S069)	107472	107525
perma FOOD SYN 220 (S070)	107473	107526
perma FOOD LOWTEMP SYN 32 (S078)	118630	118631



Accessories for preparing the lubrication point	Pic.	Art. No.
Grease gun (operating pressure 400 bar / 1.9 cm ³ stroke)	1	101455
Hose with rotary joint, slide and hydraulic coupling for grease gun	2	110199
Oil gun with rotary joint (operating pressure 400 bar / 1.9 cm ³ stroke)	3	109009
Accessory Set for pressure test (order lubrication system separately)	4	101480
Purge connection with manual valve R1/4 male x G1/4 female (brass nickel plated)	5	113972
Purge connection with manual valve R1/4 male x G1/4 female (stainless steel)	6	113973
50 ml Bottle Loctite® 243™ thread sealant (medium strength)	7	110278
KIT TUBE PREFILL ADAPTERS	8	117907



BRACKETS

It has never been so easy to integrate automatic lubrication systems in existing production processes. Our expertise is based on many years of experience and global know-how. perma customers obtain all necessary components from a single supplier and also benefit from service and support to implement customised lubrication solutions.



Mounting brackets for perma CLASSIC, FUTURA, FUTURA PLUS, FLEX, FLEX PLUS & NOVA

	Pic.	Material	Art. No.
Mounting bracket 1-point G1/4 female	1	Stainless steel	109685
Mounting bracket 2-point G1/4 female	2	Stainless steel	109686
Mounting bracket cage hanger 1-point G1/4 female	3	Stainless steel	109689
Mounting bracket cage hanger 2-point G1/4 female	4	Stainless steel	109690



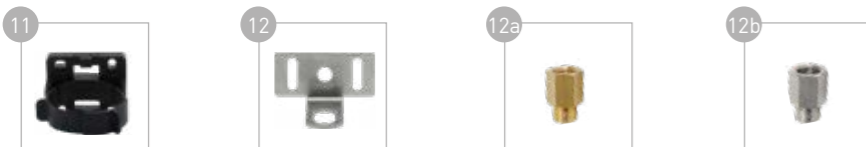
Mounting brackets for perma STAR VARIO & STAR CONTROL

	Pic.	Material	Art. No.
Mounting bracket STAR Standard Duty 1-point G1/4 female	5	Stainless steel	109663
Mounting bracket STAR Standard Duty 2-point G1/4 female	6	Stainless steel	109667
Mounting bracket STAR Heavy Duty C-section 1-point G1/4 female	7	Stainless steel	109664
Mounting bracket STAR Heavy Duty C-section 2-point G1/4 female	8	Stainless steel	108648
Mounting bracket STAR Standard Duty cage hanger 1-point G1/4 female	9	Stainless steel	109665
Mounting bracket STAR Standard Duty cage hanger 2-point G1/4 female	10	Stainless steel	109668



Additional brackets

	Pic.	Material	Art. No.
Multipurpose clip CLASSIC, FUTURA, FLEX, NOVA, STAR	11	Plastic	110031
Bracket	12	Stainless steel	104864
Insert for bracket G1/4a x G1/4 female	12a	Brass	104820
	12b	Stainless steel	104865



Mounting plate | Mounting angle

	Pic.	Material	Art. No.
Mounting plate 110 x 70 x 2.5 mm	1	Stainless steel	101432
Mounting angle 50 x 50 x 70 x 2.5 mm	2	Stainless steel	101429
Mounting angle 50 x 70 x 70 x 2.5 mm	3	Stainless steel	101430
Mounting angle 50 x 100 x 70 x 2.5 mm	4	Stainless steel	101431
Mounting angle 50 x 180 x 70 x 5 mm	5	Stainless steel	101433



Support flanges | Protection caps Standard Duty and Heavy Duty

	Pic.	Material	Art. No.
Support flange STAR G1/4 male x G1/4 female	1	Brass Plastic	109420
Support flange FLEX G1/4 male x G1/4 female	2	Brass Plastic	101427
Protection cap incl. support flange FLEX G1/4 male x G1/4 female	3	Stainless steel / Alu	101428
Support flange STAR with cover clip for protection cap	4	Plastic	116602
Support flange STAR Heavy Duty	5	Plastic	110757
Protection cap STAR Standard Duty 60 / 120	6	Plastic	115898
Protection cap STAR CONTROL Standard Duty 250	7	Plastic	115899
Protection cap STAR Heavy Duty 250	8	Plastic	109999
Protection cap STAR Heavy Duty 500	9	Plastic	113595
Adapter cable STAR CONTROL 50 cm	10	-	115505



More about the perma brackets can be found on our website www.perma-tec.com



TUBES


Name Material Properties	Art. No. (meter goods)	iØ/oØ [mm]	Operating temperature range [°C]	Minimum bending radius [mm]	Max. operating pressure [bar]	Initial filling amount per m [cm³]	Silicone-free / halogen-free	Max. grease line* [m]					
								perma CLASSIC FUTURA PLUS	perma FLEX FLEX PLUS NOVA	perma STAR	perma ULTRA	perma PRO	perma ECOSY
Heavy Duty hose with NBR lining and fabric insert » Synthetic rubber with fabric insert » Oil and weather resistant outer layer	101555	9,5 / 16	-40 to +100	76	25	75	-	1	2	5	*	*	*
VA-Flex tube stainless steel / PTFE » High resistance to fractures and impacts » High temperature resistance	113864 (500 mm) 101549 (1000 mm) 101550 (1500 mm)	8 / 11	-150 to +260	70	220	55	✓	1	2	5	*	5	*
Tube PA » UV-resistant » Resistant to water » Translucent	101393	6 / 8	-40 to +80	40	19	33	✓	1	2	3	*	*	*
Tube PTFE » Good temperature resistance » Noncombustible (flammability class V-0) » Suitable for food and beverage » Translucent	101394	6 / 8	-70 to +260	50	9	33	-	1	2	3	*	*	*
Extreme Heavy Duty hose » Resistant to oils and lubricants » UV-stabilised and resistant to micro-organisms	116283	6,4 / 11,8	-40 to +100	35	200	35	✓	*	*	*	20	*	*
Tube PA » Highly resistant to stress cracking, pressure and impact » High mechanical strength	101569	5 / 8	-35 to +100	45	31	25	✓	*	*	*	*	5	*
Tube PA » Highly resistant to stress cracking, pressure and impact » High mechanical strength » Translucent	101494	4 / 6	-35 to +100	35	27	15	✓	*	*	*	*	*	10
Hose spiral guard 25 mm Plastic	109695												

*The maximum length of the grease line depends on the lubrication system, lubricant and operating temperature. Information applies at +20 °C using perma MULTI LC 150-2 (SF01) or perma TEMP SYN 320 (S014).

More offers for tubes you will find on our website www.perma-tec.com



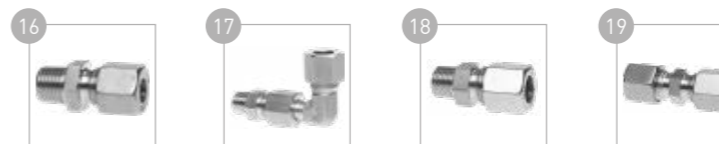
TUBE CONNECTORS

	Pic.	Material	Art. No.		
Heavy duty hose connector suitable for tube oØ 9.5 / oØ 16 mm 101555 Tube connector G1/4 male - push-lock		max. +100 °C	1	Steel, zinc-plated	116624

	Pic.	Material	Art. No.
Tube connector push-lock up to 25 bar suitable for tube oØ 8 mm 101393, 101394 and 101569 Tube connector G1/8 male	2	Brass nickel-plated	101570
Tube connector G1/8 male 90°	3		101571
Tube connector G1/4 male	4		101496
Tube connector G1/4 female	5		101502
Tube connector G1/4 male 90°	6		101497
Tube connector G3/8 male	7		101498
Tube connector M6 male	8		111954
Tube connector M6 male 90°	9		111957
Tube connector M8x1 male	10		111955
Tube connector M8x1 male 90°	11		111958
Tube connector M10x1 male	12		111956
Tube connector M10x1 male 90°	13		111959
Y-connector	14		101513
Tube connection for tube oØ 8 mm	15		110191



	Pic.	Material	Art. No.
VA-Flex tube connector suitable for tube oØ 8 / oØ 11 mm 113864, 101549, 101550 Cutting ring coupling R1/4 male straight	16	Stainless steel	104868
Cutting ring coupling R1/8 male 90° adjustable	17		104869
Cutting ring coupling R1/8 male straight	18		104870
Cutting ring coupling straight – connector for oØ 8 mm	19		104871



TUBE CONNECTORS

Tube connector push-lock suitable for tube \varnothing 6 mm up to 25 bar 101494		Pic.	Material	Art. No.
Tube connector G1/8 male	straight	20	Brass nickel-plated	101446
Tube connector G1/8 male 90°	rotating	21		101449
Tube connector G1/4 male	straight	22		101447
Tube connector G1/4 female	straight	23		101511
Tube connector G1/4 male 90°	rotating	24		101551
Tube connector M5 male	straight	25		101448
Tube connector M5 male 90°	rotating	26		101450
Tube connector M6 male	straight	27		101509
Tube connector M6 male 90°	swivelling	28		101515
Tube connector M6x0.75 male 90°	swivelling	29		101516
Tube connector M8x1 male	straight	30		101517
Tube connector M8x1 male 90°	rotating	31		101507
Tube connector M10x1 male	straight	32		101510
Tube connector M10x1 male 90°	rotating	33		101508
Extension for tube \varnothing 6 mm to \varnothing 8 mm		34		101512
Y-connector		35	101514	

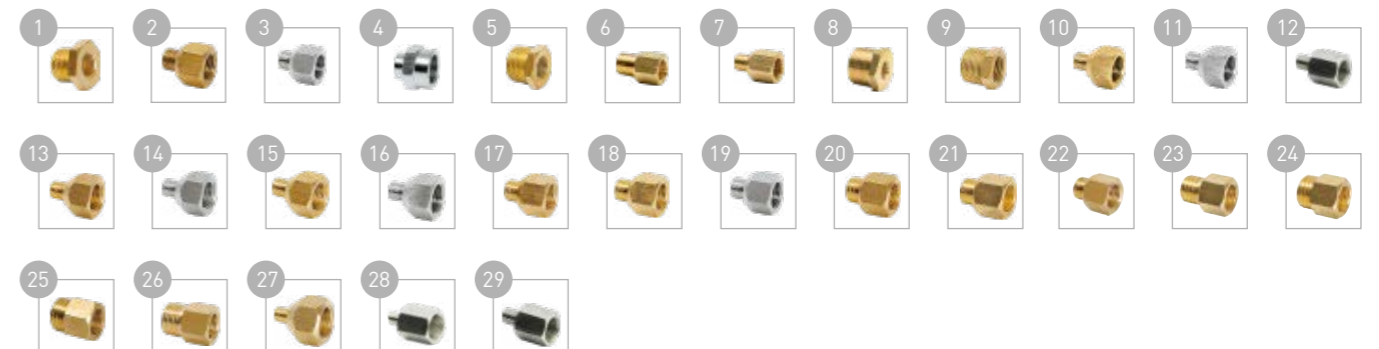


Tube connector up to 6 bar suitable for tube \varnothing 6 mm / \varnothing 8 mm 101393		Pic.	Material	Art. No.
Tube connector G1/4 female	max. +80 °C	36	Alu / plastic	101390
Tube connector G1/4 male	max. +80 °C	37		101391
Tube connector G1/8 male	max. +80 °C	38		101392
Tube connector G1/4 female	max. +100 °C	39	Brass nickel-plated	104821
Tube connector G1/4 male	max. +100 °C	40	Brass	104822
Tube connector G1/4 female	max. +260 °C	41	Stainless steel	104866
Tube connector G1/4 male	max. +260 °C	42		104867



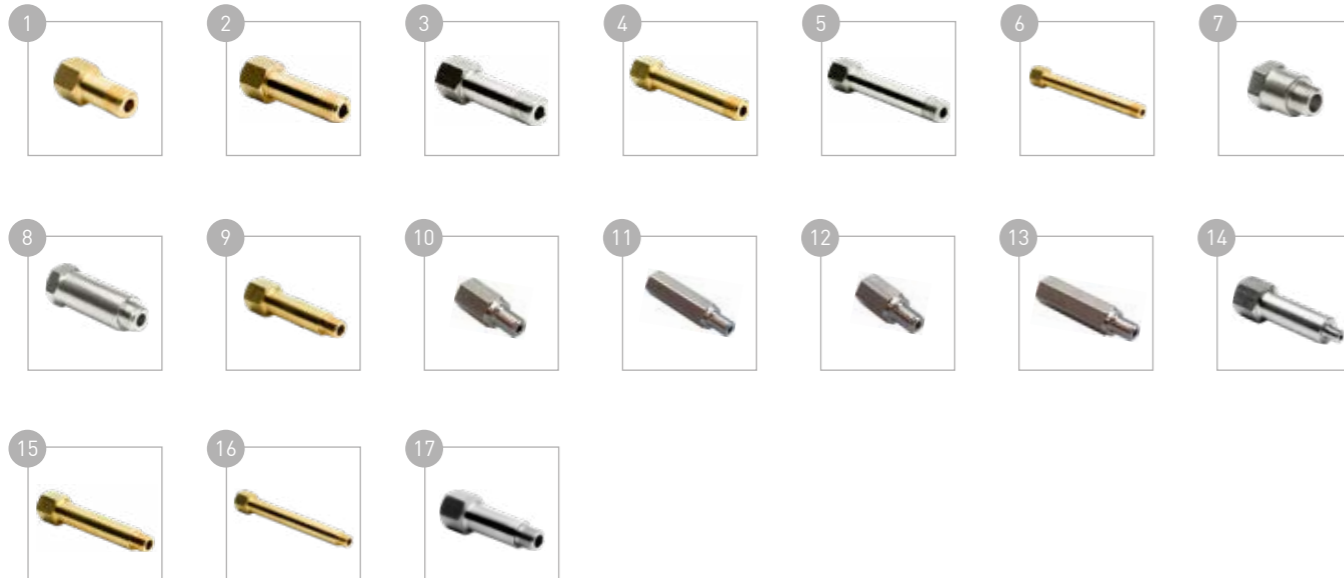
REDUCERS | REDUCER COUPLING

	Pic.	Material	Art. No.
Reducer G1/4 male x G1/8 female	1	Brass	104834
Reducer G1/8 male x G1/4 female	2	Brass	104833
	3	Stainless steel	104875
Reducer coupling G3/8 female x G1/8 female	4	Brass nickel-plated	101545
Reducer R1/2 male x G1/4 female	5	Brass	104832
Reducer R1/4 male x G1/4 female	6	Brass	109954
Reducer R1/8 male x G1/4 female	7	Brass	109953
Reducer R3/4 male x G1/4 female	8	Brass	104835
Reducer R3/8 male x G1/4 female	9	Brass	104836
Reducer M6 male x G1/4 female	10	Brass	104837
	11	Stainless steel	104876
Reducer M6 male x G1/8 female	12	Stainless steel	109847
Reducer M8 male x G1/4 female	13	Brass	104839
	14	Stainless steel	104878
Reducer M8x1 male x G1/4 female	15	Brass	104838
	16	Stainless steel	104877
Reducer M10 male x G1/4 female	17	Brass	104841
Reducer M10x1 male x G1/4 female	18	Brass	104840
	19	Stainless steel	104879
Reducer M12 male x G1/4 female	20	Brass	104842
Reducer M12x1 male x G1/4 female	21	Brass	104843
Reducer M12x1.5 male x G1/4 female	22	Brass	104844
Reducer M14 male x G1/4 female	23	Brass	104846
Reducer M14x1.5 male x G1/4 female	24	Brass	104845
Reducer M16 male x G1/4 female	25	Brass	104847
Reducer M16x1.5 male x G1/4 female	26	Brass	104848
Reducer Whitworth 1/4" male x G1/4 female	27	Brass	104849
Reducer 1/4 UNF male x G1/4 female	28	Stainless steel	109845
Reducer 1/4 UNF male x G1/8 female	29	Stainless steel	109846



EXTENSIONS

	Pic.	Material	Art. No.
Extension 30 mm G1/4 male x G1/4 female	1	Brass	104854
Extension 45 mm G1/4 male x G1/4 female	2	Brass	104855
	3	Stainless steel	104887
Extension 75 mm G1/4 male x G1/4 female	4	Brass	104856
	5	Stainless steel	104888
Extension 115 mm G1/4 male x G1/4 female	6	Brass	104857
Extension 16 mm G1/8 male x G1/8 female	7	Brass nickel-plated	101576
Extension 36 mm G1/8 male x G1/8 female	8		101577
Extension 50 mm R1/8 male x G1/4 female	9	Brass	109848
Extension 14 mm M6x0.75 male x M6 female	10	Stainless steel	116291
Extension 30 mm M6x0.75 male x M6 female	11		116292
Extension 14 mm M6 male x M6 female	12		116293
Extension 30 mm M6 male x M6 female	13		116294
Extension 50 mm M6 male x G1/4 female	14		109697
Extension 75 mm M10x1 male x G1/4 female	15	Brass	108923
Extension 115 mm M10x1 male x G1/4 female	16		108924
Extension 50 mm 1/4 UNF male x G1/4 female	17	Stainless steel	109854



ANGLES

	Pic.	Material	Art. No.
Angle 45° G1/4 male x G1/4 female	1	Brass	104823
Angle 90° G1/4 male x G1/4 female	2		104827
Angle 45° R1/4 male x G1/4 female square	3		109853
Angle 45° R1/4 male x Rp1/4 female	4	Stainless steel	104873
Angle 90° R1/4 male x G1/4 female	5	Brass	109849
Angle 90° R1/4 male x G1/4 female square	6		109850
Angle 90° R1/8 male x G1/4 female	7		109851
Angle 90° R1/8 male x G1/4 female square	8		109852
Angle 90° R1/4 male x Rp1/4 female	9	Stainless steel	104874
Angle 45° M6 male x G1/4 female	10	Brass	104824
Angle 45° M8x1 male x G1/4 female	11		104825
Angle 45° M10x1 male x G1/4 female	12		104826
Angle 90° M6 male x G1/4 female	13		104828
Angle 90° M8x1a male G1/4 female	14		104829
Angle 90° M10x1 male x G1/4 female	15		104830



OTHERS

	Pic.	Material	Art. No.
Swivelling screw fitting G1/4 male x G1/4 female – rotary type	1	Brass	104831
Y-Adapter 2 x G1/4 female x R1/4 male	2	Brass nickel-plated	109002
T-Adapter 2 x G1/4 female x R1/4 male	3	Stainless steel	116282
T-Adapter 3 x G1/4 female	4	Brass	110025
	5	Stainless steel	104880
Bulkhead nipple G3/8 male x G1/4 female	6	Brass	104851
Hexagon-nipple R1/4 male	7	Brass	104852
	8	Stainless steel	104881
Sleeve G1/4 female	9	Brass	104853
	10	Stainless steel	104882



You can find out more about perma accessories on our website at www.perma-tec.com



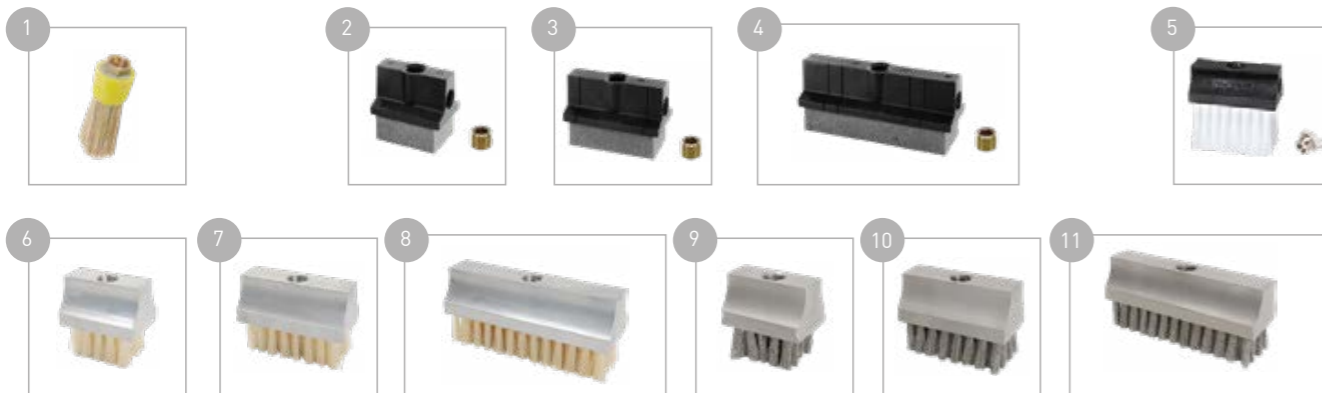
OIL RETAINING VALVES

	Pic.	Material	Art. No.
Oil retaining valve G1/4 male x G1/4 female up to +60 °C	1	Brass with plastic valve	104862
	2	Stainless steel with plastic valve	104889
Oil retaining valve G1/4 male x G1/4 female up to +150 °C	3	Brass with metal valve	104863



OIL BRUSHES

	Connecting thread	Size	Pic.	Material	Art. No.
Oil brush	G1/4 female top connection	Ø 20 mm	1	PA / natural bristles	101396
Oil brush foam 17.5 mm	up to +80 °C G1/4i top connection + side connection	40 x 30 mm	2	PA / foam	117435
		60 x 30 mm	3		117436
		100 x 30 mm	4		117437
Oil brush, bristle height 40 mm	up to +80 °C G1/4 female top + side connection including plug	60 x 30 mm	5	PA / PA	101520
Oil brush, bristle height 20 mm	up to +180 °C G1/4 female top connection	40 x 30 mm	6	Alu / PPS	101402
		60 x 30 mm	7		101403
		100 x 30 mm	8		101404
Oil brush, bristle height 20 mm	up to +350 °C G1/4 female top connection	40 x 30 mm	9	Stainless steel / Stainless steel	101405
		60 x 30 mm	10		101406
		100 x 30 mm	11		101407



You can find special lubricating brushes on our website www.perma-tec.com



OIL BRUSHES | MOUNTING BRACKET

	Connecting thread	Pic.	Material	Art. No.
Oil brush for large chains with tapped bore M6	up to +80 °C incl. Art. No. 101509	1	Alu / Polypropylene	101524
	up to +180 °C M6i	2	Alu / Pekalon	101538
	up to +350 °C M6i	3	Alu / Stainless steel	101540
Oil brush for large chains with through hole	up to +80 °C incl. Art. No. 101509	4	Alu / Polypropylene	101525
	up to +180 °C M6i	5	Alu / Pekalon	101539
	up to +350 °C M6i	6	Alu / Stainless steel	101541
Mounting bracket left for oil brush for large chains		7	Stainless steel	101533
Mounting bracket right for oil brush for large chains	-	8		101534
Spacer for oil brush for large chains, width: 13 mm		9	Alu	101535



SPECIAL ACCESSORIES

	Pic.	Material	Art. No.
Lubrication pocket for gear lubrication Manufactured acc. to specifications	1	Plastic	on request
perma CWL PLUS SET / product information: go to website www.perma-tec.com	2	-	101564
Rail oiler with foam insert – without oil retaining valve (gap widths 5, 9 and 16 mm)	3	Plastic / Foam	101485
perma DRAIN CUP 120 (grease catchment cup)	4	Plastic	112012
perma DRAIN CUP 250 (grease catchment cup)		Plastic	115685



LUBRICATION GEARS



Art. No. 118672 | Lubrication gear felt m3 straight toothing
 Art. No. 118673 | Lubrication gear felt m3 straight toothing with mounting axle
 Art. No. 118674 | Lubrication gear felt m3 helical tooth left
 Art. No. 118675 | Lubrication gear felt m3 helical tooth left with mounting axle
 Art. No. 118676 | Lubrication gear felt m3 helical tooth right
 Art. No. 118677 | Lubrication gear felt m3 helical tooth right with mounting axle



Art. No. 118678 | Lubrication gear felt m4 straight toothing
 Art. No. 118679 | Lubrication gear felt m4 straight toothing with mounting axle
 Art. No. 118680 | Lubrication gear felt m4 helical tooth left
 Art. No. 118681 | Lubrication gear felt m4 helical tooth left with mounting axle
 Art. No. 118682 | Lubrication gear felt m4 helical tooth right
 Art. No. 118683 | Lubrication gear felt m4 helical tooth right with mounting axle



Art. No. 118684 | Lubrication gear felt m5 straight toothing
 Art. No. 118685 | Lubrication gear felt m5 straight toothing with mounting axle
 Art. No. 118686 | Lubrication gear felt m5 helical tooth left
 Art. No. 118687 | Lubrication gear felt m5 helical tooth left with mounting axle
 Art. No. 118688 | Lubrication gear felt m5 helical tooth right
 Art. No. 118689 | Lubrication gear felt m5 helical tooth right with mounting axle



Art. No. 118690 | Lubrication gear felt m6 straight toothing
 Art. No. 118691 | Lubrication gear felt m6 straight toothing with mounting axle
 Art. No. 118692 | Lubrication gear felt m6 helical tooth left
 Art. No. 118693 | Lubrication gear felt m6 helical tooth left with mounting axle
 Art. No. 118694 | Lubrication gear felt m6 helical tooth right
 Art. No. 118695 | Lubrication gear felt m6 helical tooth right with mounting axle



PRO COMPONENTS AND ACCESSORIES

PRO Components / Accessories	Pic.	Art. No.
Battery PRO B	1	106953
Cable PRO C / PRO C LINE M12 (5 m)	2	106942
Cable PRO C / PRO C LINE M12 (10 m)	3	106943
Distributor PRO MP-6 including accessory box PRO MP-6: 6 x Tube connector G1/8 male for tube oØ 8 mm 90° – rotary type 6 x Tube connector G1/8 male for tube oØ 8 mm straight 4 x Plugs for MP-6	4	106939
Connecting cable PRO MP-6 (14 cm)	5	106940
Connecting cable PRO MP-6 (2 m)	6	106941
Mounting device PRO (for wall mounting)	7	101568
Cover for PRO LC 250	8	106959
Cover for PRO LC 500	9	106960



PRO PROTECTION BOXES

	Pic.	Art. No.
Protection box PRO single (steel) including mounting plate & mounting set (cable bushings, blanking plugs and locking nuts) → Bore holes for outlets exist External dimensions (H x W x D): 470 x 240 x 210 mm / IP 66	1	101527
Protection box double (steel) including mounting plate & mounting set (cable bushings, blanking plugs and locking nuts) → Bore holes for outlets exist External dimensions (H x W x D): 500 x 400 x 210 mm / IP 66	2	111153
Protection box PRO single (plastic) including boring template & mounting set (cable bushings, blanking plugs and locking nuts) → Without bore holes for outlets, without cable screw connections External dimensions (H x W x D): 640 x 310 x 215 mm	3	101548



Pic. 1 + 2:
perma PRO are attached to the mounting plate inside the protection box. The protection box is wall-mounted using four screws (not included).

Pic. 3:
The protection box is attached using the PRO wall-mounting bracket, Art. No. 101568.

ACCESSORY KIT PRO

CONTENT	Pic.	Art. No.
30 m Tube up to +100 °C oØ 8 mm x iØ 5 mm (PA) – per outlet <5 m mounting possible	1	101569
1 x KIT TUBE PREFILL ADAPTERS	2	117907
6 x Tube connector G1/4 male straight (brass nickel-plated)	3	101496
6 x Reducer G1/8 male x G1/4 female (brass)	4	104833
6 x Reducer M6 male x G1/4 female (brass)	5	104837
6 x Reducer M8x1 male x G1/4 female (brass)	6	104838
6 x Reducer M10x1 male x G1/4 female (brass)	7	104840
2 x Extension 16 mm G1/8 male x G1/8 female (brass nickel-plated)	8	101576
2 x Extension 36 mm G1/8 male x G1/8 female (brass nickel-plated)	9	101577

ACCESSORY KIT PRO COMPLETE

106937



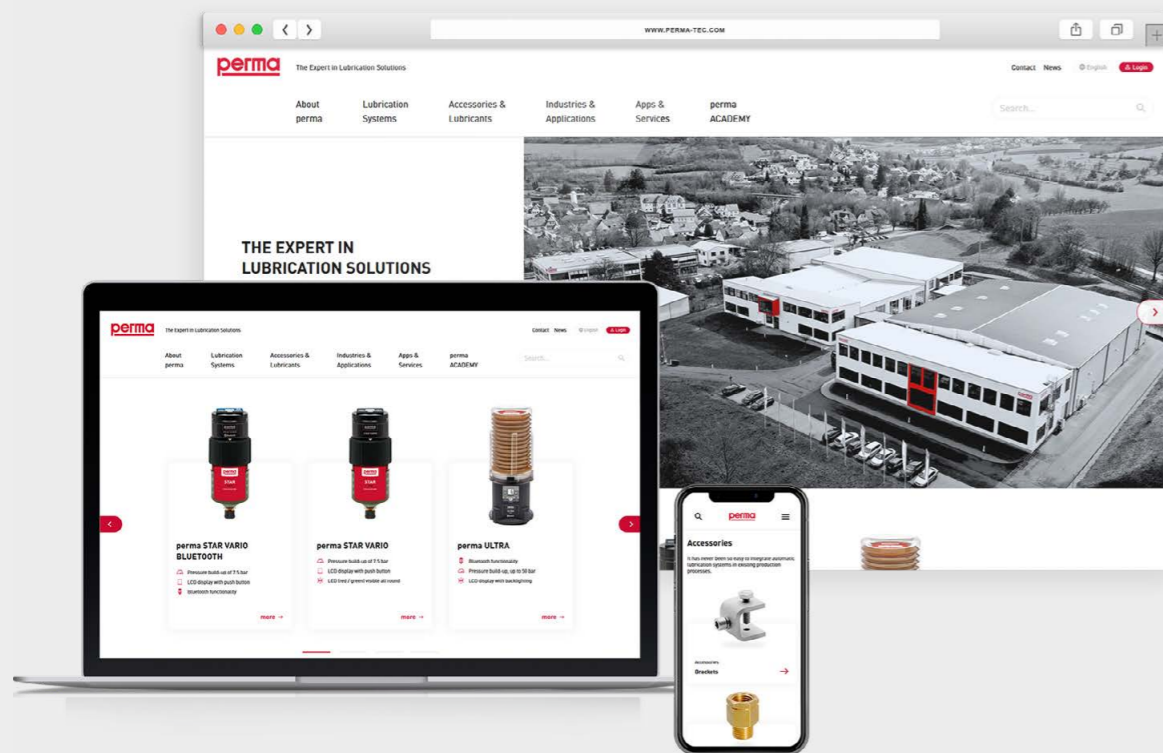
perma ECOSY

perma ECOSY

Control sensor ECOSY

Pic.	Art. No.
1	109401





perma DIGITAL

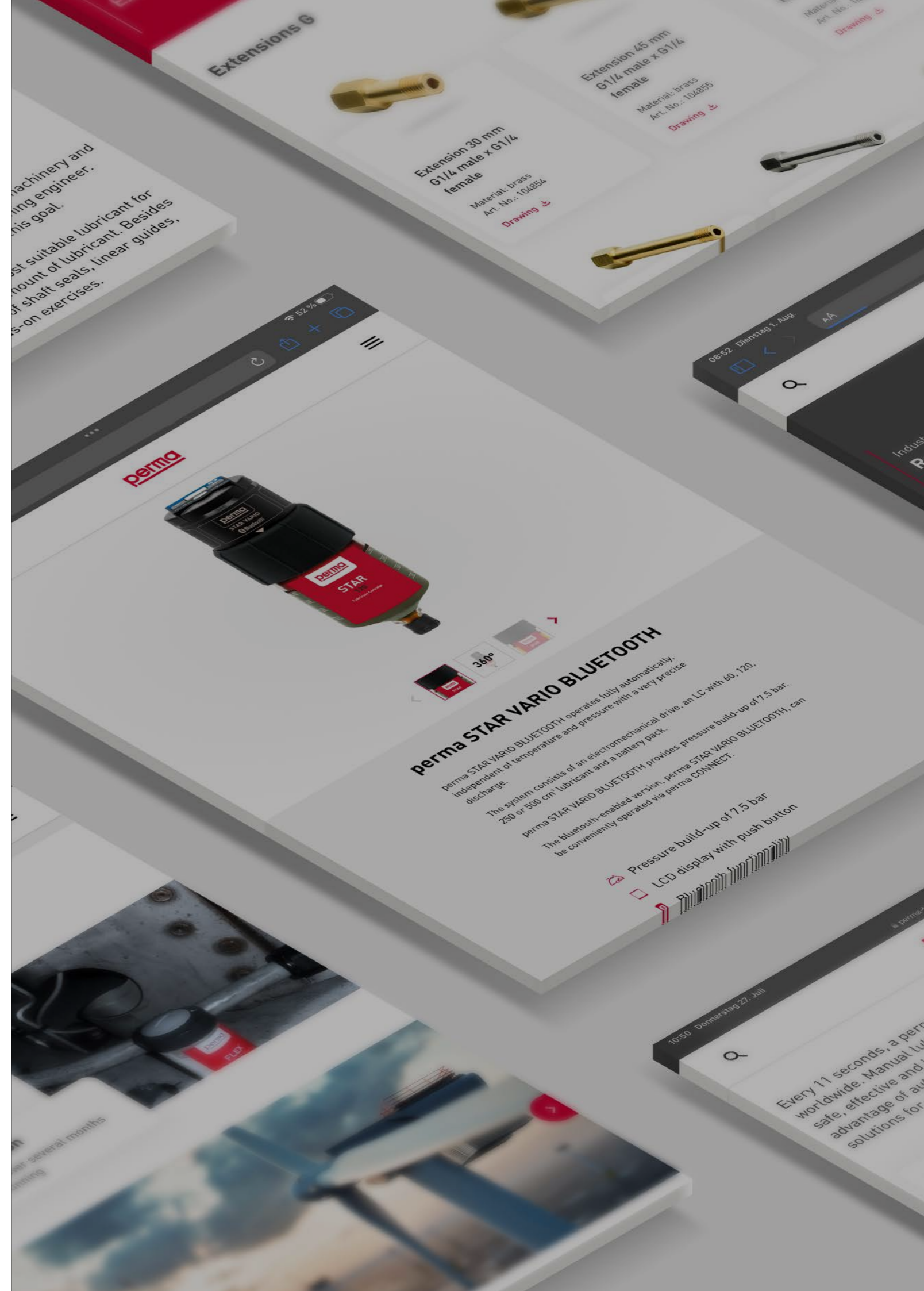
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