



perma STAR PRODUCT LINE

The Expert in Lubrication Solutions

perma

perma STAR PRODUCT LINE

MADE IN **GERMANY**

Precise single-point lubrication systems for a wide range of applications

With the introduction of the perma STAR VARIO, perma set a milestone in the field of electromechanical lubrication systems. Since then, the system has been continuously refined for maximum reliability, a long service life and proven quality you can depend on for decades.

The perma STAR product line is specifically designed for single-point lubrication and offers a precise, needs-based lubricant supply for a wide range of applications. Potential applications include rolling and sliding bearings, sliding guides, open gears, gear racks, spindles, shaft seals and chains. Typical fields of application include conveyors, pumps, blowers/fans and electric motors with exact lubricant specifications. The wide range of versions offers a suitable solution for every operating environment – from standard operation to potentially explosive atmospheres.

Rely on proven automatic lubrication and put your trust in perma STAR lubrication systems.

Different versions - One basis

Key features of perma STAR VARIO



perma STAR VARIO

- + LCD display with push button displays discharge period, LC size and operating status
- + Easy to handle
- + Manual additional discharge via button on display (purge)
- + One drive for all LC sizes
- + Electromechanical reusable drive
- + Suitable for greases up to NLGI 2 | oils
- + LED (green | red) visible all round signals functioning and any errors
- + Pressure build-up to 7.5 bar allows remote mounting up to 5 m
- + Lubrication system operates reliably from -40 °C to +60 °C

Enhanced product characteristics of the different perma STAR versions



perma STAR VARIO BLUETOOTH

- + Easy handling via perma CONNECT
- + Compatible with Gateway BLUETOOTH
- + Bluetooth function
- + Illuminated LCD display

perma STAR VARIO LONG RANGE

- + Easy handling via perma CONNECT
- + Long range thanks to LoRa® WAN technology
- + Gateway solution for up to 2,000 lubrication points
- + Illuminated LCD display



perma STAR VARIO EX

- + Certification for potentially explosive atmospheres (Zone 0 | Zone 20)
- + Protection mechanism ensures the correct battery pack is used
- + Illuminated LCD display

perma STAR VARIO BLUETOOTH EX






- + Easy handling via perma CONNECT
- + Compatible with Gateway BLUETOOTH
- + Certification for potentially explosive atmospheres (Zone 0 | Zone 20)
- + Protection mechanism ensures the correct battery pack is used
- + Bluetooth function
- + Illuminated LCD display

perma STAR CONTROL

- + Electromechanical drive with external power supply
- + PLC connection for transmission and evaluation of the operating status

TECHNICAL INFORMATION

All perma STAR lubrication systems at a glance

perma STAR VARIO	perma STAR VARIO BLUETOOTH	perma STAR VARIO LONG RANGE	perma STAR VARIO EX	perma STAR VARIO BLUETOOTH EX	perma STAR CONTROL
					
Drive reusable					
-40 °C to +60 °C -40 °F to +140 °F					
7,5 bar 109 psi					
60, 120, 250 & 500 cm³ 2.03, 4.06, 8.45 & 16.91 fl.oz.					
Greases up to NLGI 2 oils					
Battery pack STAR VARIO or battery pack STAR VARIO low temperature			Battery pack STAR VARIO EX		External power supply 9-30 V DC
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 max. 26 weeks			1, 2, 3 ... 12 months 1, 2, 3 ... 52 weeks STAR LC 500: max. 6 months max. 26 weeks		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 cm³ per pulse regardless of operating temperature and counter pressure
IP 67 IP 65			min. IP 54		IP 65
 	 	 	   	    	
Operating conditions					
Minor to heavy vibration					
We recommend remote mounting with a tube if there are vibrations at the lubrication point					
< 5 metres of tube					

CONNECTING BEYOND BOUNDARIES

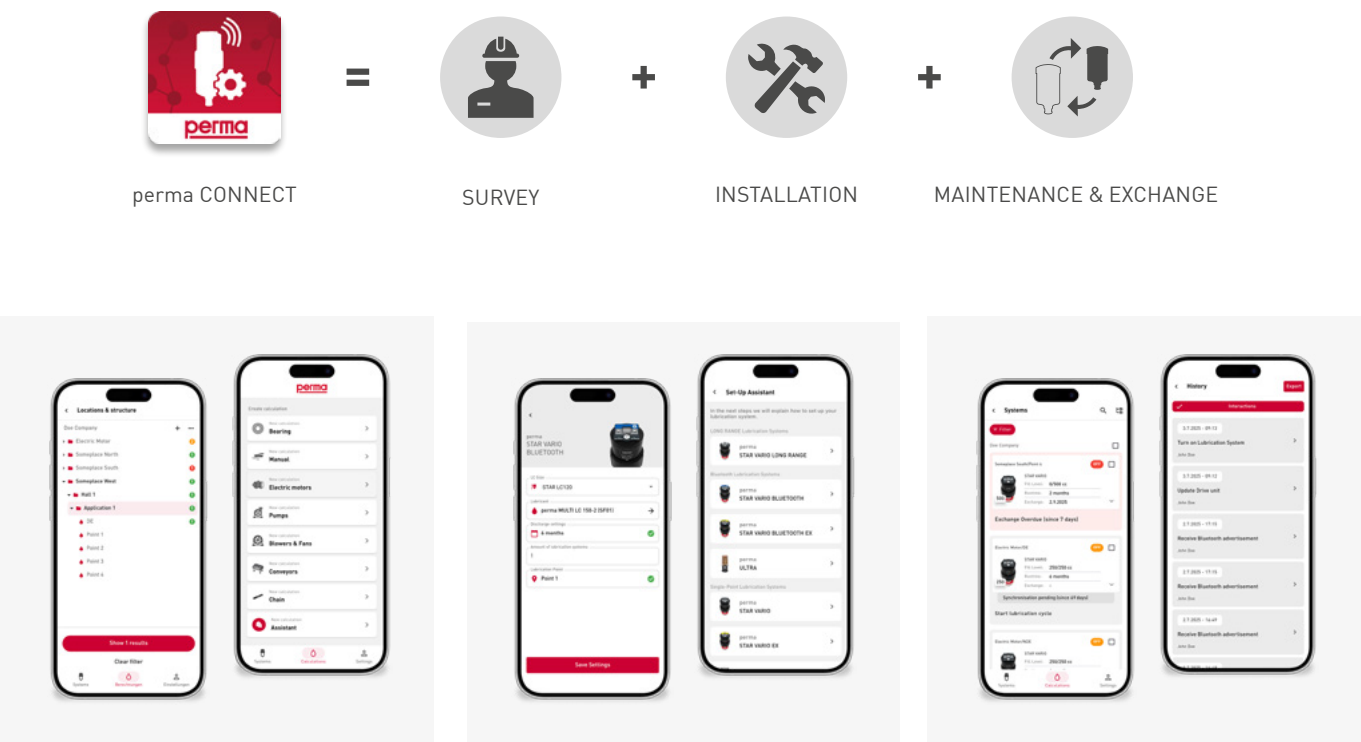


The Expert in Lubrication Solutions

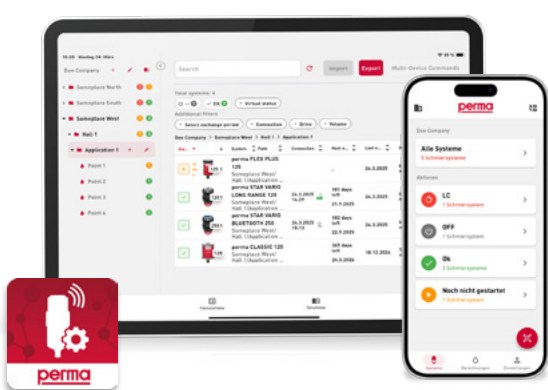


perma CONNECT

The application for digital lubrication point management



- | SURVEY | INSTALLATION | MAINTENANCE & EXCHANGE |
|---|--|--|
| <ul style="list-style-type: none">+ Precise calculation of the relubrication amount+ Reliable determination of the discharge period+ Helpful suggestions for the installation+ Simple creation of the organisational structure | <ul style="list-style-type: none">+ Convenient configuration and remote control via the applications+ Flexible assignment of user roles+ Easy digitalisation | <ul style="list-style-type: none">+ Comprehensive overview of all lubrication points+ Proactive notifications for required actions+ Efficient creation of material lists+ Automatic documentation |



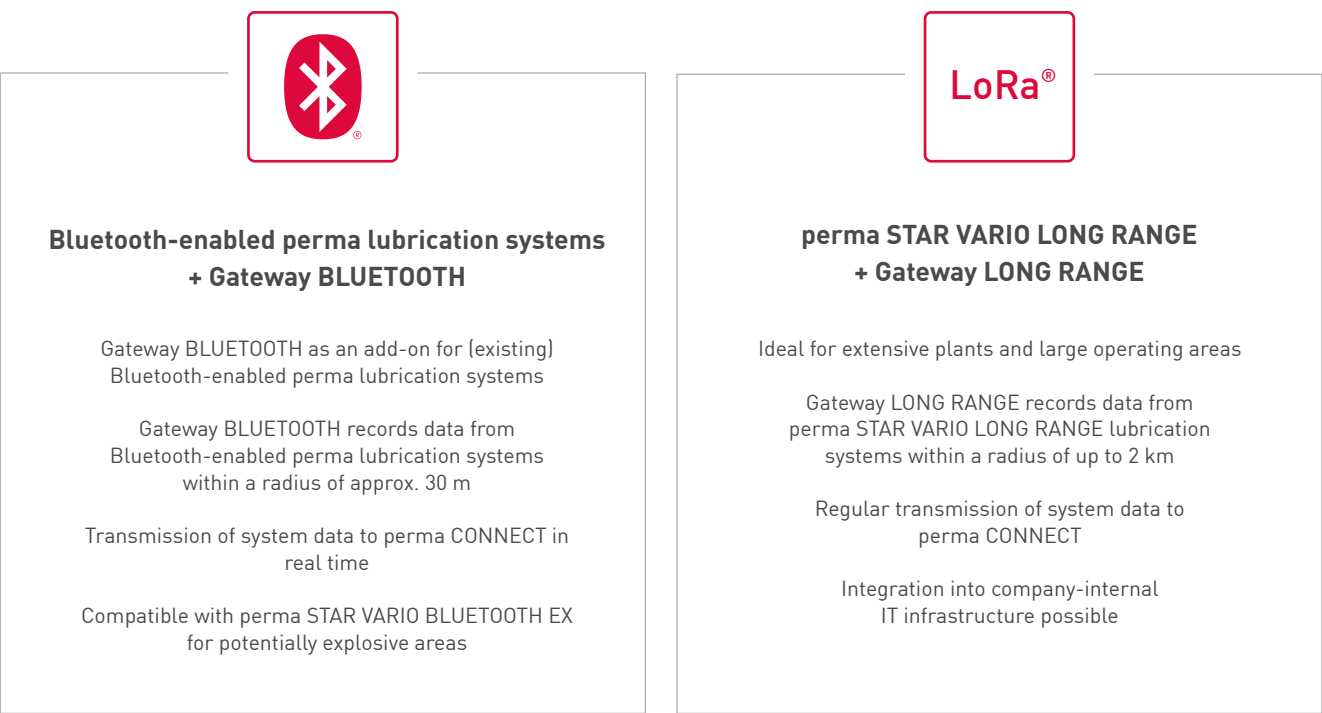
To quickly get started with perma CONNECT, a range of step-by-step tutorial videos are available. Click here to visit the perma YouTube channel!

Get perma CONNECT now!
Download it to your smartphone | tablet or open web application under: <https://perma-connect.com>

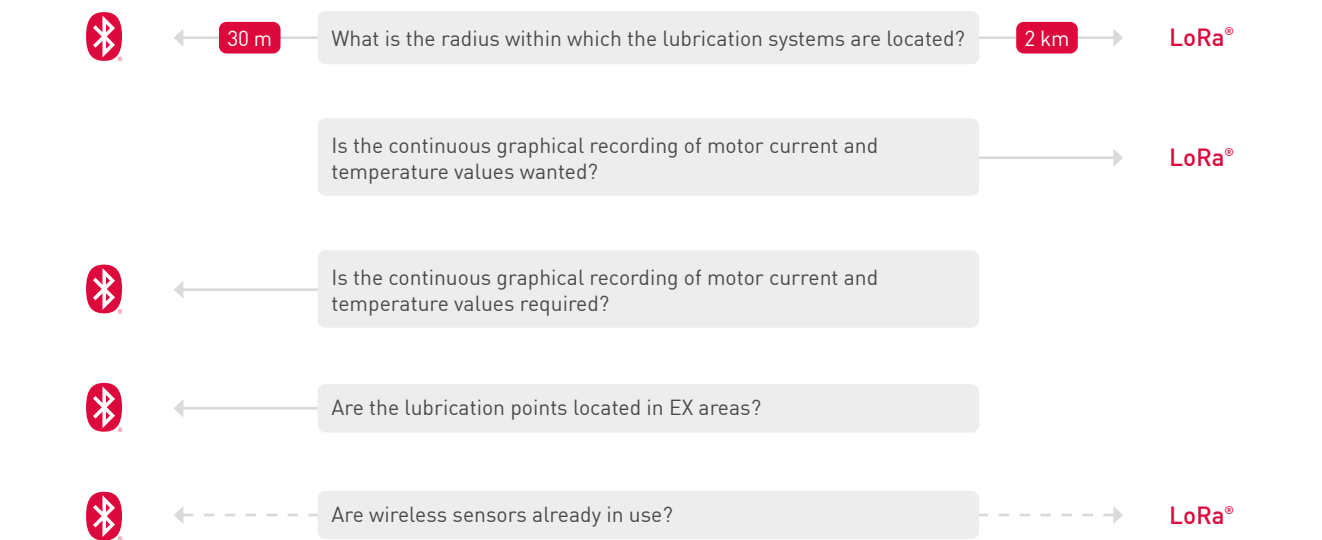


CONNECTED SOLUTIONS

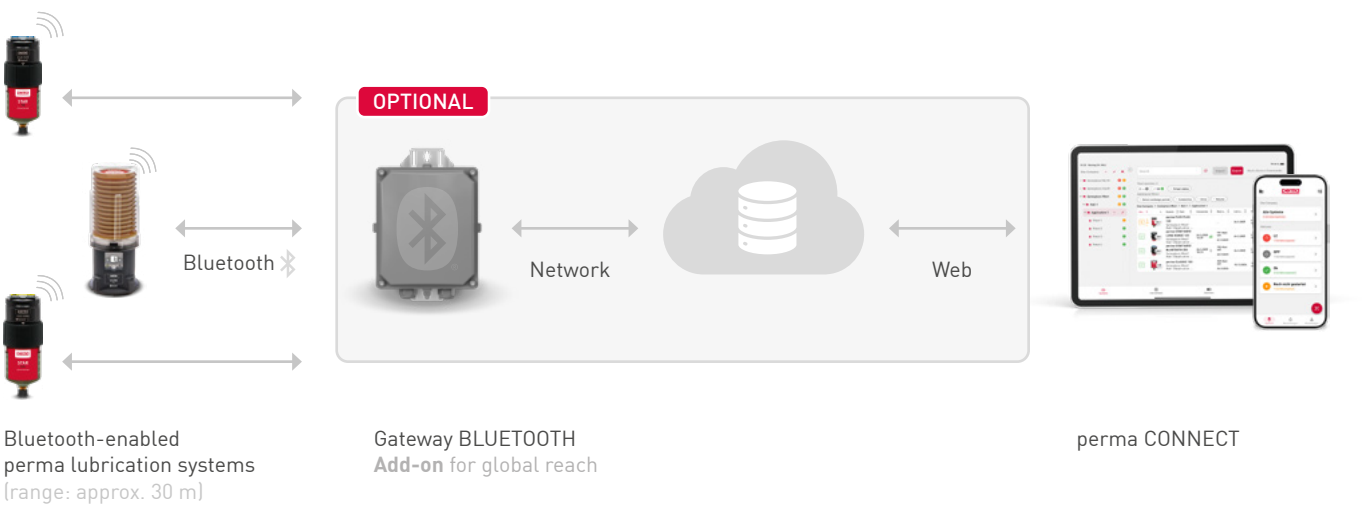
BLUETOOTH vs. LONG RANGE



Which technology is best for you?



perma **BLUETOOTH ARCHITECTURE**

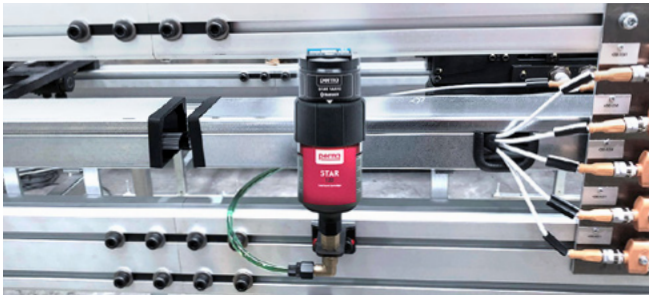


How does it work?

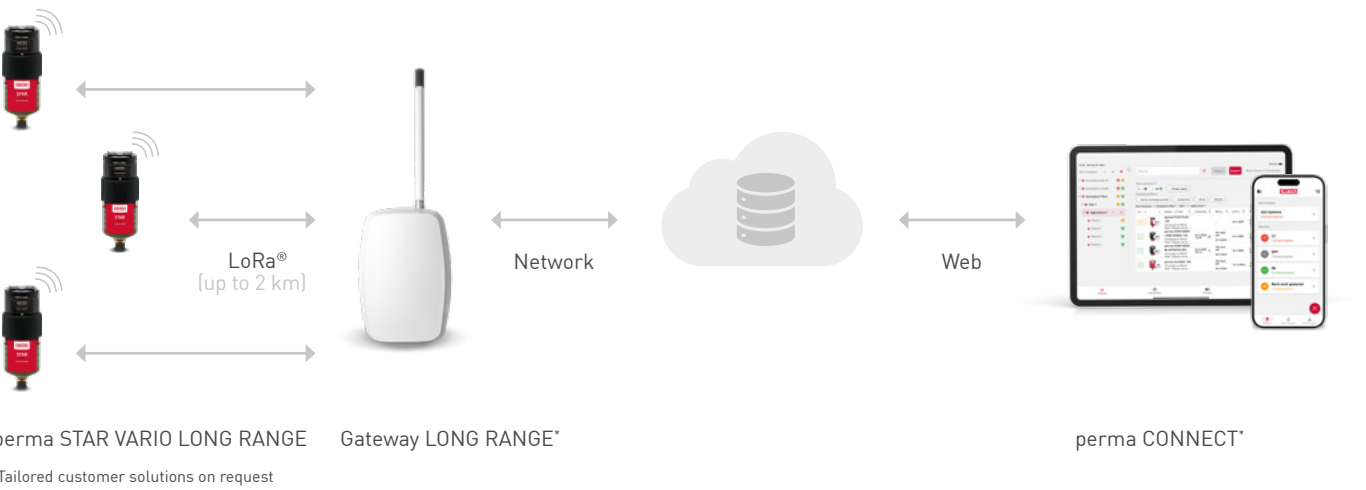
- » Bluetooth-enabled perma lubrication systems send status messages in real time to perma CONNECT via the Gateway BLUETOOTH
- » Bluetooth-enabled perma lubrication systems can receive commands from perma CONNECT via the Gateway BLUETOOTH

Gateway BLUETOOTH specifications

Dimensions	18.4 cm x 26.1 cm x 9.2 cm
Weight	875 g
Operating temperature	-24 °C to 65 °C -11.2 °F to +149 °F
Range	Approx. 30 m
Power supply (PoE)	24 V ~ 1 A
Power supply (DC)	24 V ~ 1 A
Protection class	IP66, IP67



perma **LONG RANGE ARCHITECTURE**



How does it work?

- » perma STAR VARIO LONG RANGE regularly sends status messages to perma CONNECT via the Gateway LONG RANGE
- » perma STAR VARIO LONG RANGE can receive commands from perma CONNECT via the Gateway LONG RANGE

Gateway LONG RANGE specifications





Dimensions	26.5 cm x 16.5 cm x 10.0 cm
Weight	1,400 g
Operating temperature	-40 °C to 60 °C -40 °F to +140 °F
Range	Up to 2 km
Power supply (PoE)	Included
Power supply (DC)	48 V
Protection class	IP67





perma STAR components

Complete your solution with the following components

+ Battery pack | cable

Battery pack STAR VARIO (alkaline) Art. no. 101351		✓	✓
Battery pack STAR VARIO low temperature (lithium) Art. no. 116901			
Battery pack STAR VARIO EX (lithium) Art. no. 118526			
STAR CONTROL cable 5 m, Art. no. 108432 (standard), other lengths on request			

+ Gateway

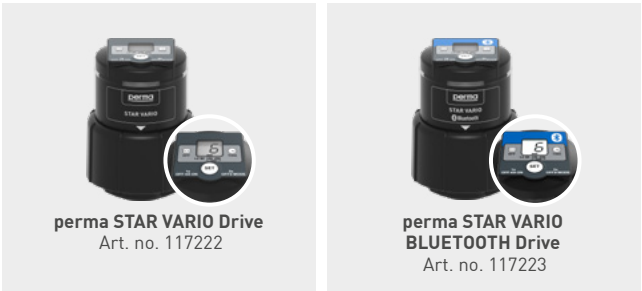
Gateway BLUETOOTH* Art. no. 119580 + Gateway BLUETOOTH power supply (EU) 119892 + Gateway BLUETOOTH power supply (UK) 119893			✓ (OPTIONAL)
Gateway LONG RANGE Art. No. available on request			

+ LC

perma STAR LC 60, 120, 250 & 500 cm³		✓	✓
--------------------------------------	---	---	---

+ MOUNTING SOLUTION

STAR ACCESSORY KIT or STAR INSTALLATION KIT (see page 14)



✓			
	✓	✓	
			✓

		✓ (OPTIONAL)	
✓			

✓	✓	✓	✓
---	---	---	---

MOUNTING

The right kits and accessories for your mounting solution

For many lubrication points, it is advantageous to assemble the lubrication system with a tube in a location that is safely accessible during plant operation.

Determine the size of the connecting thread at the lubrication point: perma thread gauge
Art. no. 110374



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 remote mounting.

BENEFITS: DIRECT MOUNTING

- » Immediate supply of lubrication points with fresh lubricant
- » Cost-effective, quick and easy mounting solution



BENEFITS: REMOTE MOUNTING

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



DIRECT MOUNTING



- STAR INSTALLATION KIT**
- 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
 - 1 x STAR G1/4 male x G1/4 female support flange

+ perma STAR LUBRICATION SYSTEMS

Art. no. 101477

REMOTE MOUNTING

The INSTALLATION KITS contain all the individual parts required for complete mounting of the lubrication system at the lubrication point: mounting bracket with attachment, support flange, tube connectors, reducers and heavy-duty tube.

The ACCESSORY KITS differ from the INSTALLATION KITS only in that they do not include a tube.



STANDARD DUTY SET

These sets are very versatile and can be used under normal environmental conditions. The kits each contain the necessary mounting material and one M10x1 and G1/8 reducer for each lubrication point.

HEAVY DUTY SET

The heavy duty sets have been specially developed for use in operating areas with harsh environmental conditions that are regularly exposed to splash water and water hammers, e.g. at coal preparation plants. One STAR heavy-duty protection cap is included for each lubrication point.

STAR ACCESSORY KITS and INSTALLATION KITS

Standard Duty

All KITS are also available
for STAR LC 500.

The STAR Standard Duty ACCESSORY KITS and INSTALLATION KITS are intended for use in environments with regular conditions. The kits each contain the necessary mounting material and one M10X1 and G1/8 reducer for each lubrication point.

In contrast to the ACCESSORY KITS, the INSTALLATION KITS already include the tube.

Mounting with beam clamp



**STAR INSTALLATION KIT
Standard duty**
1-point 65 mm beam clamp
with 3 m tube
Art. no. 116961

**STAR ACCESSORY KIT
Standard duty**
1-point 65 mm beam clamp
without tube | Art. no. 116951



**STAR INSTALLATION KIT
Standard duty**
2-point 65 mm beam clamp
with 5 m tube
Art. no. 116963

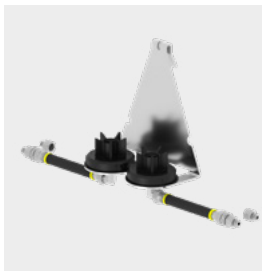
**STAR ACCESSORY KIT
Standard duty**
2-point 65 mm beam clamp
without tube | Art. no. 116953

Cage hanger mounting



**STAR INSTALLATION KIT
Standard duty**
1-point cage hanger
with 3 m tube
Art. no. 116962

**STAR ACCESSORY KIT
Standard duty**
1-point cage hanger
without tube | Art. no. 116952



**STAR INSTALLATION KIT
Standard duty**
2-point cage hanger
with 5 m tube
Art. no. 116964

**STAR ACCESSORY KIT
Standard duty**
2-point cage hanger
without tube | Art. no. 116954

STAR ACCESSORY KITS and INSTALLATION KITS

Heavy Duty

The STAR Heavy Duty ACCESSORY KITS and INSTALLATION KITS are intended for use in harsh environments. The kits each contain the necessary mounting material and one STAR heavy-duty protection cap, one purge connection with manual valve and one M10x1 and G1/8 reducer for each lubrication point.

In contrast to the ACCESSORY KITS, the INSTALLATION KITS already include the tube.

Mounting with beam clamp



**STAR INSTALLATION KIT
Heavy duty**
1-point 65 mm beam clamp
with 3 m tube
Art. no. 116965

**STAR ACCESSORY KIT
Heavy duty**
1-point 65 mm beam clamp
without tube | Art. no. 116955



**STAR INSTALLATION KIT
Heavy duty**
2-point 65 mm beam clamp
with 5 m tube
Art. no. 116967

**STAR ACCESSORY KIT
Heavy duty**
2-point 65 mm beam clamp
without tube | Art. no. 116957

Cage hanger mounting



**STAR INSTALLATION KIT
Heavy duty**
1-point cage hanger
with 3 m tube
Art. no. 116966

**STAR ACCESSORY KIT
Heavy duty**
1-point cage hanger
without tube | Art. no. 116956



**STAR INSTALLATION KIT
Heavy duty**
2-point cage hanger
with 5 m tube
Art. no. 116968

**STAR ACCESSORY KIT
Heavy duty**
2-point cage hanger
without tube | Art. no. 116958

SERVICE OFFER

perma SERVICES

The perma SERVICE team are highly qualified professionals that are on hand to help you find the right lubrication solution.

Pre-sales service

Optimum lubrication solutions

With support from perma, you can equip your plants with optimal lubrication solutions to ensure high equipment availability.

- » perma ACADEMY
- » Survey
- » Technical support

After-sales service

Extension of 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 service

Fast and competent support

Take advantage of the longstanding experience of the perma SERVICE team for your questions on all things lubrication.

- » Lubricant tests
- » Technical support

FIND OUT MORE

Visit our website for all the information on our products and the latest news.

NEW! perma POWERTALK

The podcast for the maintenance industry – featuring expert insights on automatic lubrication, digital lubrication solutions, and the latest innovations from perma.

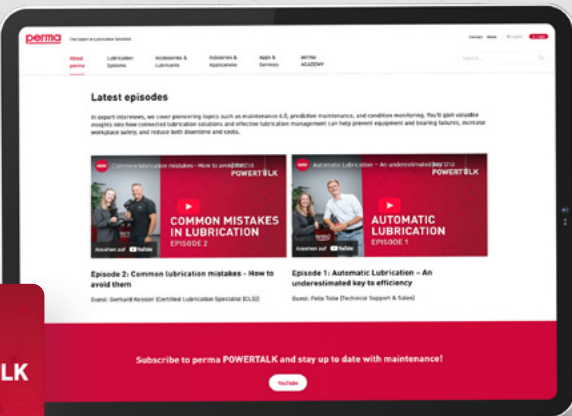


You can find all the episodes on our perma YouTube channel!

More information:
www.perma-tec.com/en/about-perma/podcast



perma-tec.com



perma
POWERTALK

Subscribe to perma POWERTALK and stay up to date with maintenance!



perma-tec GmbH & Co. KG
Hammelburger Str. 21
97717 Euerdorf
GERMANY

Tel.: +49 9704 609 - 0
info@perma-tec.com
www.perma-tec.com