perma CWL (Crane Wheel Lubrication) PLUS SET

Translation of the Original Operating Instructions

The Expert in Lubrication Solutions

perma

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We have taken great care when compiling all the details contained in this documentation.
However, we cannot rule out discrepancies and we reserve the right to make technical changes to the product without giving advance notice.
We do not assume any judicial responsibility or liability for damages which may ensue as a result.
We will include any necessary changes in the next edition.

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1 | DESCRIPTION OF SYSTEM

The perma CWL (Crane Wheel Lubrication) PLUS SET provides lubrication directly to the crane wheel flange face in contact with the rail head reducing the coefficient of friction.

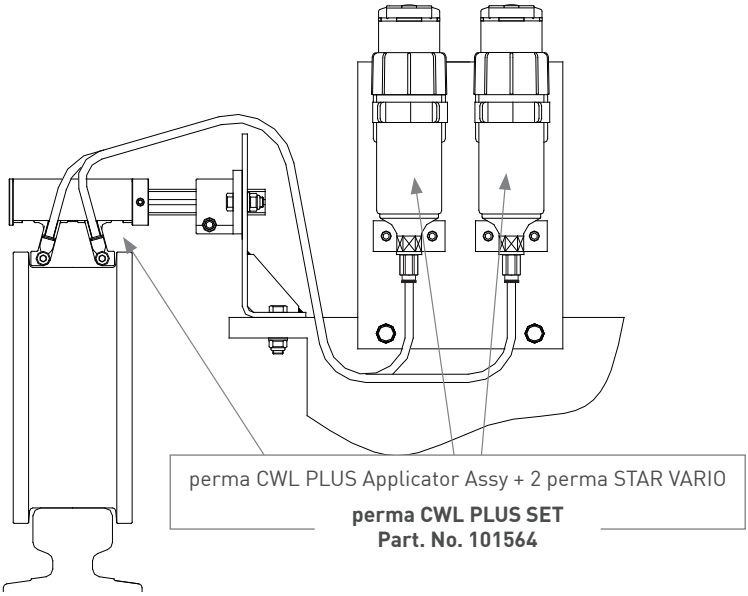

Fig. 1

The specially formulated lubricant developed for this application is delivered to the flange face through a feed tube at a predetermined rate to suit the application and duty.

This publication provides instruction and information on the set-up and operation of the system.

1.1 THE PERMA CWL PLUS SET OFFERS THE FOLLOWING ADVANTAGES

- Reduced wear on wheel flanges and rail running edge.
- The lubricant can be discharged to individually selected wheels flanges.
- Reduced maintenance costs and risk by increasing the service life of wheel flanges and rail.
- Controls the amount of lubricant used over a predetermined period.
- Reduced energy costs.
- Reduced structural borne noise and vibration.
- Reduced crane down-time, caused by unscheduled maintenance, resulting improved system reliability and longer operating periods.
- Quick and easy installation.
- Quick and easy exchange of Lubrication Canister (LC) without the use of tools.
- Battery powered so no external power supply required.

This system can also be used to lubricate rotating machinery and linear slides. Its design allows for easy installation and exchange.

1.2 LEGAL REQUIREMENTS

1.2.1 Liability

- The information, data and tips stated in this operating manual were up-to-date as of the printing date. No claims for already delivered lubrication systems can be made based on the information, pictures and descriptions.
- perma-tec GmbH & Co. KG can not be held liable for damages and malfunctions caused by
  ... violation and | or non-observance of the safety instructions,
  ... inappropriate usage,
  ... unauthorized alterations of the lubrication system,
  ... inappropriate operations on or with the lubrication system,
  ... incorrect operation and settings of the lubrication system,
  ... ignoring the operating manual.

1.2.2 Warranty

- Warranty terms and conditions: see terms and conditions of sale and delivery appertaining to perma-tec GmbH & Co. KG.
- Lodge any warranty claims with your local supplier immediately after the defect or error has been identified.
- The warranty expires in all instances where no liability claims can be enforced.

2 SYSTEM CHARACTERISTICS

LC capacity	250 cm^3
Battery pack	Battery pack STAR VARIO 4.5 V | 3.0 Ah
Delivery pressure	7.5 bar | 109 psi
Feed tube length max.	2.5 m
Operating temperature	-20 °C to +60 °C | -4 °F to +140 °F (Alkaline) -40 °C to +60 °C | -40 °F to +140 °F (Lithium)
For crane wheel widths	50 to 170 mm (A45 to A150 crain rail)
Lubricant	GRAFLOSCON C-SG 0 ULTRA (see date sheet)
Mounting position	vertical & horizontal
Index of protection	IP 67 | 65 (EN 60529)
Emission sound pressure level	< 70 dB(A)

3 | GENERAL NOTES | SAFETY INSTRUCTIONS

Before mounting the perma CWL PLUS SET, ensure that the kit is complete (refer to parts list, chart 1) and check for any damage that may have occurred during transport.

Read the operating instructions carefully and store them in a safe and easy to access place for future reference.

Do not over tighten the plastic threads of the LC when screwing into the support flange (No. 17).

The perma CWL PLUS SET should only be used for purposes outlined in this document and perma's STAR VARIO operating instructions. The system should only be installed and operated by authorized staff in accordance with these instructions.

3.1 STAFF RESPONSIBLE FOR SAFETY

3.1.1 Operator

- The operator is every natural or legal entity who or which uses the lubrication system or on whose authority the lubrication system is used.
- For operation on and with the lubrication system, the operator and | or his safety officer must warrant
  ... that for all tasks to be done the relevant laws, regulations, rules for prevention of accidents and safety instructions are observed.
  ... that only qualified personnel will work with and on the lubrication system.
  ... that all personnel has access to and also adheres to this operating manual when carrying out relevant tasks.
  ... that unauthorized personnel is not allowed to work with and on the lubrication system.

3.1.2 Qualified personnel

Qualified personnel are persons who have been authorized by the safety officer of the plant to carry out the required tasks and who are able to recognize possible dangers and to avoid them due to their training, experience and the instructions they have been given as well as due to their knowledge of relevant standards, regulations, rules for prevention of accidents and working conditions.

3.2 General safety instructions

- We are not laying claim to completeness regarding these safety instructions. Please contact your local supplier if you have any queries or problems.
- All work stations and traffic routes must be kept clean and safe to access.
- Ensure that lighting is sufficient for safe operation.
- Ensure that the relevant regulations and guidelines are adhered to when installation or maintenance work is carried out in places where danger of falling exists.
- Ensure that the relevant safety and operating instructions are observed when the lubrication system is installed or serviced on machines or in factories (e. g. stop the machine).

3.3 SAFETY INSTRUCTIONS FOR PERMA CWL PLUS SET

At the time of delivery the lubrication system is in line with state-of- the-art technology and is basically considered to be safe to operate.

Dangers emanate from the lubrication system for persons, the lubrication system itself and for other material assets of the operator if:
... unqualified personnel operates the lubrication system!
... the lubrication system is used inappropriately and for operations that it was not intended to be used for!
... the lubrication system setting | variation is incorrect!

- Operate the lubrication system only when it is in perfect condition.
- Retrofitting, changing, or reconstructing the lubrication system is not allowed.
- If you are planning to modify the lubrication system, perma-tec must be consulted first.

- **The safety instructions also apply to the operation with the complete equipment and its lubrication points!**
- **Ensure with appropriate measures that no material damage arises in the case of a failure with the lubrication system!**

3.4 SAFETY WHEN HANDLING LUBRICANTS

Lubricants may cause injuries to persons and may endanger your health!
Consult a doctor immediately in case there is a risk of health damage!

- Avoid swallowing lubricant!
- Do not inhale lubricant vapors!
- Avoid any contact of lubricant with eyes, skin and clothing!
- Wear safety gloves and safety clothing!
- Lubricants on traffic ways will increase the danger of slipping. Therefore, the floor must be cleaned immediately with special cleaner!
- Observe safety data sheets of lubricants!
- Lubricants must be transported or stored in approved containers!
- Do not misuse lubricant containers and do not fill with other substances!
- Do not use damaged lubricant containers!
- Prevent lubricant from getting into soil or sewer system!
- For the disposal of lubricants, follow the individual waste disposal regulations in your country!
- Only use genuine spare-parts from perma-tec!

4 PREVENTIVE MAINTENANCE

The primary goal of preventive maintenance is to prevent the failure of equipment before it actually occurs. Preventive maintenance activities include equipment checks, partial or complete overhauls at specified periods, oil changes, lubrication and so on. The ideal preventive maintenance program would prevent all equipment failure before it occurs.

A large percentage of wheel replacements are due to excessive flange wear and breakage usually caused by friction due to an unfavorable relation of track and wheel base.

Wheel flanges and rails of track mounted cranes are subjected to lateral forces which lead to high wear from friction.

The one-sided load during lifting and driving causes a one-sided wear of the wheel flanges.

As part of your preventive maintenance program, the perma CWL PLUS SET will reduce the amount of friction and improve productivity.

5 perma CWL PLUS SET FUNCTION

The battery operated motor unit is connected to the Lubrication Canister (LC) by a driven shaft which rotates at a predetermined speed. This moves the LC piston which pushes the lubricant out of the unit at 6 bars into a connecting feed tube to the probe discharge point and onto the wheel flange.

When an operating failure occurs (e.g. blocked line | pressure build-up to over 6 bar), the drive unit will automatically shut off. The display will show „OL“ and the red LED blinks to indicate the error.

The discharge period (1-12 months) can be programmed with the SET button. In order to prime the system we recommend that the initial discharge period is set to 1 month. The discharge period can be changed at any time to accommodate changes in operating conditions and duty cycle. See the enclosed operating instruction from perma-tec for further information.

When the first wheel of the crane turns, the lubricant is transported from the lubricated wheel flange to the other side of the rail and from there to all wheels that follow. It is normally sufficient to lubricate the drive wheels only; however some operators prefer to fit perma CWL PLUS SET to all wheels.

During shut down periods (holidays etc.) the drive unit should be turned off with the SET button on the drive unit to prevent over lubrication.

6 GENERAL ASSEMBLY DRAWING

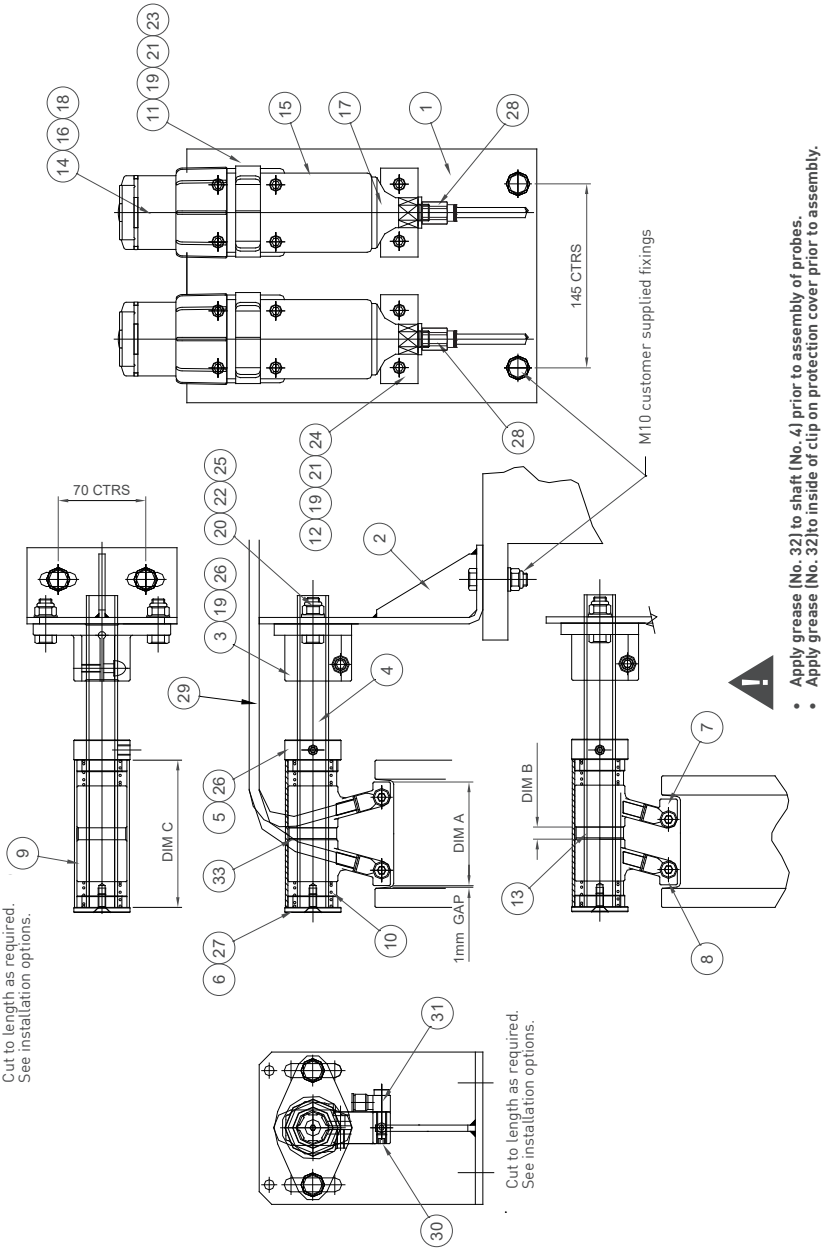

Fig. 2

7 | perma CWL PLUS SET PARTS LIST

Item No.	Description	Spec|Drawing No.	QTY
1	Lub pot MTG plate	RR 93823	1
2	Lubricator MTG bracket	RR 93871	1
3	Shaft MTG bracket	RR 93812	1
4	Shaft	RR 93816	1
5	Shaft clamp collar	RR 93851	1
6	End stop	RR 93817	1
7	Standard probe CWL PLUS	101580	4
8	Off-set probe CWL PLUS	101581	2
9	Clip on protection cover	RR 93852	1
10	Spring	LEE LP 072T 02 S316	2
11	Multipurpose clip (plastic)	101388	2
12	Bracket (stainless steel)	104864	2
13	Spacer	RR 93882	1
14	perma STAR VARIO Drive	117222	2
15	perma STAR LC 250 with GRAFLOSCON C-SG 0 ULTRA	104617	2
16	Battery pack STAR VARIO	101351	2
17	Support flange STAR G1/4 male x G1/4 female (brass | plastic)	109420	2
18	Protection cap STAR Standard Duty 250 (plastic)	109519	2
19	M6 Plain washer STN STL	DIN 125	9
20	M10 Plain washer STN STL	DIN 125	2
21	M6 Nyloc STN STL	DIN 985	8
22	M10 Nyloc STN STL	DIN 985	2
23	M6x25 LG SOC HD SCR STN STL	DIN 912	5
24	M6x15 LG SOC HD SCR STN STL	DIN 912	4
25	M10x30 LG HEX HD SCR GR 8.8 STN STL	DIN 933	2
26	M8x12 LG SOC Setscrew dog point STN STL	DIN 916	1
27	M6x14 LG CSK SOC HD SCR GR 8.8 STN STL	DIN 7991	1
28	Tube connector G1/4 female for tube oØ 8 mm straight (brass nickel-plated)	101502	2
29	Twin tubing	98BTE5.5X8AN	2.5 m
30	1/8" BSPT male plug	3025-1/8	2
31	1/8" BSPT Ø8 pipe swivel banjo	POL08-01	2
32	400 g Cartridge with GRAFLOSCON C-SG 0 ULTRA	101663	1
33	Wear spacer	RR 93936	2

Chart 1

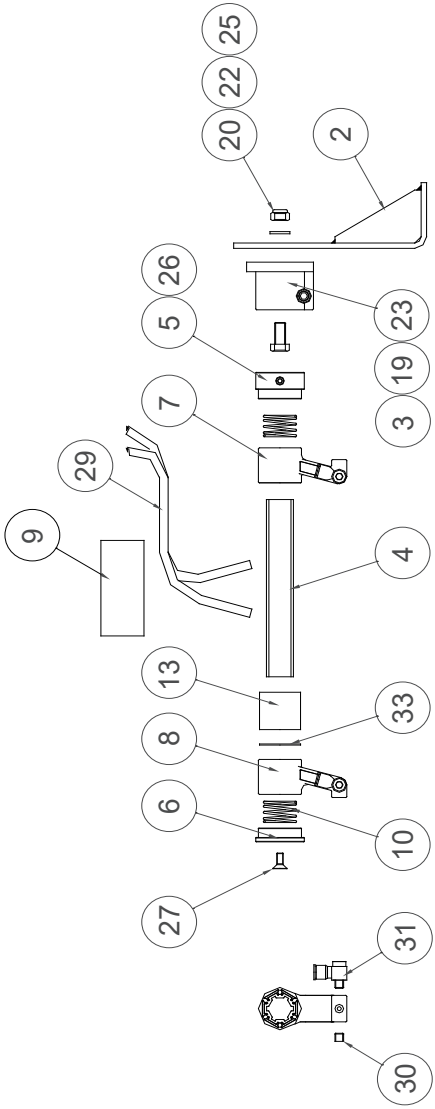

Fig. 3

- The perma CWL PLUS SET can be mounted on the side or above the axle of the drive wheel on a rigid part of the crane structure.
- Select the required probe configuration to suit your installation as shown below:

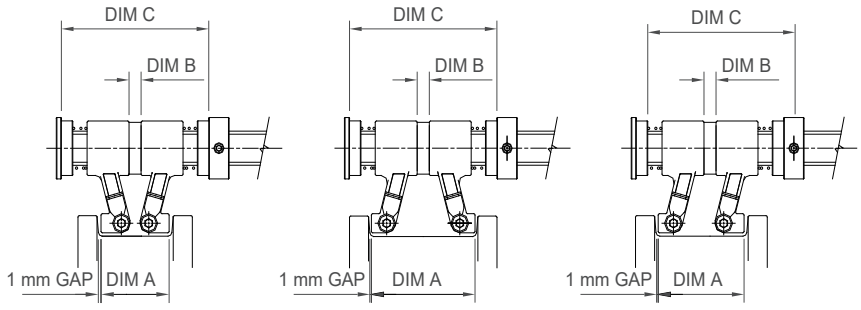

Fig. 4

- Measure the gap between the wheel flanges at dimension A, allowing a 1 mm gap between flange and probe faces as shown above.
- Find out the measurement of B & C. Cut spacer (No. 13) to size B length and cut clip on protection cover (No. 9) to size C length. Ensure that the cuts are straight and deburred prior to assembly. Use wear spacer (No. 33) to maintain 1 mm gap if necessary.

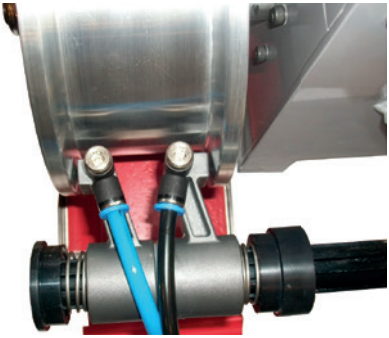

Fig. 5

- Prior to assembly, ensure that the splined shaft and mating sliding components contact faces are liberally coated with the supplied GRAFLOSCON C-SG 0 ULTRA lubricant.
- Assemble all parts of the perma CWL PLUS SET in accordance with the drawing (Fig. 2 + chart 1).
- Position the perma CWL PLUS Applicator Assy and mark out the mounting bracket holes (No. 2, Fig. 2). Drill and tap to suit M10 fixing.
- When installing the perma CWL PLUS Applicator Assy, please consider that the axial bearing clearance of the wheel can be accommodated by the compression spring.
- Select a position for the LC mounting plate which is easy and safe to access and is protected from high pressure water jets, falling material, corrosive chemicals and extreme temperatures above 60 °C.

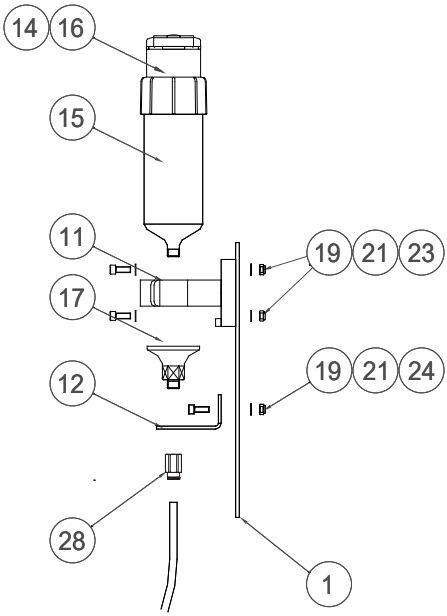

Fig. 6

- Mount the drive LC unit on the mounting plate (No. 1) with the brackets and fixings provided (Fig. 6) and attach to a suitable rigid structure ensuring that the distance can accommodate the 2.5 meter long twin tube.
- After installation, check the correct position of the perma CWL PLUS Applicator Assy. Adjustments are possible with the oblong holes in the mounting bracket. Loosen the grub screw in the shaft mounting bracket to adjust the shaft position.
- Ensure that all fixings are tightened and tie wrap the feed tubes to prevent snagging and damage.
- Before you turn the drive unit on for the first time, fill the twin tube with the GRAFLOSCON C-SG 0 ULTRA lubricate using a commercialy available grease gun as shown below and the enclosed 400g lubricant cartridge (Fig. 7). Without this pre-filling, the LC cannot immediately supply the discharge point with lubricant as it would first have to fill the feed tube and fittings. For example, it would take several days to fill a 1 meter long tube with a 1 month setting.

Fig. 7

- When you exchange the LC unit, check the position of the perma CWL PLUS Applicator Assy and for signs of excessive probe wear, if necessary replace it with the spare probe enclosed in the kit.

9 INSPECTION PROCEDURE

The following inspection procedures are recommended to help ensure proper operation of the perma CWL PLUS SET. During the initial discharge period check weekly, then every month. Ensure this check becomes part of your preventative maintain schedule:

- Check the status of the drive unit LED function display. See perma STAR VARIO operating instructions for meaning.
- Inspect all lubrication points for signs of fresh lubricant.
- Check gap between wheel flange and rail head. Reset to 1 mm if necessary by adjusting probe positions, replacing probes or inserting wear washer between probes.
- Check the condition of the tube and fittings. Tighten and replace loose or damaged fitting and check for chaffing of the tube that may lead to leakage.

Spare Parts
Refer to item number of the perma CWL PLUS SET Parts List (chart 1) when ordering spare parts.

10 DISPOSAL

Protect the environment by recycling valuable raw material according to local regulations.

11 DECLARATION OF CONFORMITY

CE

EG/EU-Konformitätserklärung nach Richtlinie 2006/42/EG[1], und Verordnung (EU) 2023/1230[2]	EC/EU Declaration of Conformity according to Directive 2006/42/EC[1] and Regulation (EU) 2023/1230[2]	Déclaration CE/UE de conformité selon la Directive 2006/42/CE[1] et Règlement (UE) 2023/1230[2]	Declaración CE/UE de conformidad según la Directiva 2006/42/CE[1] y Reglamento (UE) 2023/1230[2]	Dichiarazione di conformità CE/UE secondo la Direttiva 2006/42/CE[1] e Regolamento (UE) 2023/1230[2]

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Produktbezeichnung:	**Product description:**	**Désignation du produit:**	**Tipo de producto:**	**Descrizione del prodotto:**
Automatisches Schmiersystem	Automatic lubrication system	Système de lubrification automatique	Sistema de lubricación automático	Sistema di lubrificazione automatica
Produktname:	**Product name:**	**Nom du produit:**	**Denominación producto:**	**Nome del prodotto:**
CWL PLUS Vorrichtung	**CWL PLUS Applicator Assy**	**CWL PLUS Dispositif**	**CWL PLUS Dispositivo**	**CWL PLUS Dispositivo**
Folgende harmonisierte Normen wurden angewandt:	**The following harmonised standards were applied:**	**Les normes associées suivantes ont été utilisées:**	**Se han aplicado las siguientes normas de armonización:**	**Sono state recepite le seguenti norme di standardizzazione:**

EN ISO 12100:2010

Euerdorf, 6 May 2026

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[1] → 19|01|2027 [2] 20|01|2027 →

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