

# SKF TLRD

## Automatic lubricant dispenser

Single point lubricator / TLRD series



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## Table of contents

Safety recommendations .....	5
EU Declaration of Conformity .....	6
UK Declaration of conformity .....	7
<b>1. System Overview .....</b>	<b>8</b>
1.1 Lubricator Components.....	8
1.2 Technical data.....	8
<b>2. TLRD preparation.....</b>	<b>10</b>
2.1 Filling the grease cartridge.....	11
2.2 Pressure plate positioning.....	12
2.3 Install/Replace Battery Pack.....	13
2.4 Set / Change the dispense period.....	14
2.5 Test Modes .....	15
2.6 Starting the TLRD .....	16
<b>3. Installation .....</b>	<b>16</b>
3.1 Direct Mount.....	17
3.2 Remote Mount.....	18
3.3 Accessories.....	19
3.4 Spare parts .....	19
<b>4. Troubleshooting .....</b>	<b>20</b>



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## Safety recommendations

Read this instruction for use fully. Follow all safety precautions to avoid personal injury or property damage during equipment operation. SKF cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect equipment operation. In case of any uncertainties as regards the use of the equipment contact SKF.

### **WARNING:**

- Your safety is extremely important.
- Read and follow all warnings in this document before handling and operating the equipment.
- You can be seriously injured, and equipment can be damaged if you do not follow the safety warnings.

### **WARNING:**

- Warning messages can alert you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

### **IMPORTANT:**

- Important messages means that there is a risk of product or property damage if the instruction is not heeded.

## General safety

- The device is designed for and intended to be used in fixed and mobile applications.
- Fixed means the device is physically secured at one location and cannot be easily moved to another location.
- Mobile means the device is used in other than fixed locations.

## Personnel safety

- Dress properly.
- Do not wear loose clothing or jewelry.
- Keep your hair, clothing, and gloves away from moving parts.
- Do not overreach. Keep proper footing and balance at all times to enable better control of the device during unexpected situations.
- Use safety equipment.
- Always wear eye protection.
- Non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

- Do not repair or adjust energized equipment alone, under any circumstances. Someone capable of providing first aid must always be present for your safety.
- To work on or near high voltage, you should be familiar with approved industrial first aid methods.
- Always obtain first aid or medical attention immediately after an injury.
- Never neglect an injury, no matter how slight it seems.

## EU Declaration of Conformity TLRD Series

We, SKF Maintenance Products, Meidoornkade 14, 3992 AE Houten, The Netherlands herewith declare that the products described in these instructions for use, are in accordance with the conditions of the following directive:

MACHINERY DIRECTIVE 2006/42/EC

EMC DIRECTIVE 2014/30/EU

RoHS DIRECTIVE (EU) 2015/863

and are in conformity with the following standards:

EN 61000-6-2:2019, EN 61000-6-4:2019

Electromagnetic compatibility (EMC). Generic standards.

Emission standard for residential, commercial and light industrial environments,

EN61000-4-2:2009, EN61000-4-3:2020,

EN61000-4-8:2009, EN 55032: 2015+A11:2020 (Class B)

EN 301 489-1 V2.2.3: 2019-11

EN 301 489-3 V2.1.1: 2019-03

Houten, The Netherlands, October 2023



Guillaume Dubois  
Manager Quality and Compliance



## UK Declaration of conformity TLRD Series

We, SKF Maintenance Products, Meidoornkade 14, 3992 AE Houten, The Netherlands herewith declare that the products described in these instructions for use, are in accordance with the conditions of the following directive:

Supply of Machinery (Safety) Regulations 2008 (2008 No. 1597)  
Electromagnetic Compatibility Regulations 2016 (2016 No. 1091)  
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (2012 No. 3032)  
and are in conformity with the following standards:  
EN 61000-6-2:2019, EN 61000-6-4:2019

Electromagnetic compatibility (EMC). Generic standards.  
Emission standard for residential, commercial and light industrial environments,  
EN61000-4-2:2009, EN61000-4-3:2020,  
EN61000-4-8:2009, EN 55032: 2015+A11:2020 (Class B)

EN 301 489-1 V2.2.3: 2019-11  
EN 301 489-3 V2.1.1: 2019-03

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Houten, The Netherlands, October 2023



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## 1. System Overview

The SKF TLRD Automatic Lubricant Dispenser automatically supplies a single lubrication point with grease (up to NLGI grade 2) via an electromechanical drive unit. The device is battery powered and dispenses the content of the refillable cartridge which is filled with the use of the appropriate accessories.



### 1.1 Lubricator Components

Item no.	Description
1	Drive Unit Main Body
2	Grease Cartridge
3	Top Cover
4	Indicator LED

Table 1 – Main TLRD components

Fig. 1 – TLRD device and components

### 1.2 Technical data

The lubricator is available in two sizes:

- 150 ml (SKF TLRD 150)
- 250 ml (SKF TLRD 250)

Both sizes have specific grease cartridges and drive units:

	TLRD 150	TLRD 250
Approx. dimensions (HxD, mm)	152 x 89 mm (6.0 x 3.5 in)	196 x 102 mm (7.7 x 4.0 in)
Weight	0.58 kg (1.28 lb)	0.68 kg (1.5 lb)
Lubricator capacity (cartridge)	150 ml	250 ml
Time setting	Adjustable 1 to 12 months	
Outlet interface	G ½	
Operating temperature range	-20 to + 60 °C (-4 to +140 °F)	
Operating pressure range	Up to 5 bar	
Electrical Rating	6V CR-P2 Lithium Battery Pack (1400 mAh)	
Storage temperature range	0 to + 50 °C (32 to +122 °F)	

Table 2 – General TLRD specifications



The SKF TLRD can be set up to dispense the contents of the lubricant cartridge throughout a lubrication cycle that can last between 1 and 12 months.

The amount of lubricant dispensed per cycle depends on the selected setting and can be seen in → **table 1**.

The device dispenses the lubricant in predefined intervals of time (not continuously), emptying the cartridge within the predefined time.

The grease cartridges are provided empty and are destined to be filled with the user's lubricant, according to the application requirements. The user is responsible for the correct selection of the lubricant and respective filling of the lubricator.

Please follow the instructions described in this document for a successful setup and operation of the TLRD.

Dispense Setting (Month)	DIP Switch Setting	Dispensing Interval (Hours)	Amount per Cycle (ml / oz)				Amount per Day (ml / oz)			
			150		250		150		250	
1	1	2	0.417	0.015	0.694	0.024	5.00	0.176	8.33	0.293
2	2	4					2.50	0.088	4.16	0.147
3	1 & 2	6					1.67	0.059	2.77	0.098
4	4	8					1.25	0.044	2.08	0.073
5	1 & 4	10					1.00	0.035	1.66	0.059
6	2 & 4	12					0.83	0.029	1.38	0.049
7	1 & 2 & 4	14					0.71	0.025	1.19	0.042
8	8	16					0.63	0.022	1.04	0.037
9	1 & 8	18					0.56	0.020	0.90	0.032
10	2 & 8	20					0.50	0.018	0.83	0.029
11	1 & 2 & 8	22					0.45	0.016	0.75	0.026
12	4 & 8	24					0.42	0.015	0.69	0.024

**Table 3** – Dispense settings and respective quantities

## 2. TLRD preparation

Please follow the installation instructions below to ensure the correct setup and operation of the TLRD, with the best lubrication results. If there's any problem during operation, please refer to Troubleshooting Chart (see → **table 7**).

Each TLRD lubricator kit includes a TLRD drive unit, an empty reusable grease cartridge, a drive unit protection cover and a battery pack. The empty grease cartridge can be reused after being depleted, while the battery pack should be replaced at the end of each dispensing cycle.

It is recommended that the grease cartridge is replaced after 5 complete discharge cycles or when any visible leakage or excessive wear of the piston is detected by the user. The user should inspect the top of the piston surface and the piston sealing before filling and replace it if premature wear is detected. Additional grease cartridges can be purchased separately (please see → **table 6** for the list of spare parts).

### **IMPORTANT:**

- When replacing the TLRD battery, please make sure to only use batteries of the recommended CR-P2 type, as using the wrong battery type may result in malfunction, damage to the device, or potential hazards.
- It is strongly recommended to use high-quality, branded batteries from reputable manufacturers to ensure optimal performance and safety. Inferior quality or counterfeit batteries may not provide the necessary power or may pose safety risks.
- Use only recommended lubrication grease and fill the device with a grease gun or grease pump.
- Filling cups manually may easily cause air bubbles that could influence greasing accuracy and performance.

## 2.1 Filling the grease cartridge

Before starting a new lubrication cycle, the user must fill a grease cartridge using a grease pump or grease gun, connected to a filling nipple which can be fastened to the cartridge.

1. Remove the lubricator from its system connection or remove the shipping plug from a new grease cartridge.
2. **Screw filling nipple/adaptor** onto the outlet of the cartridge.
3. **Connect the grease gun/pump** hose to the filling adapter.



Fig. 2 – Filling adapter

### **⚠ IMPORTANT:**

- Before starting the filling procedure it is recommended that the user lightly greases the walls of the grease cartridge with the same lubricant that will be introduced. This will facilitate the movement of the piston, especially during the first fill.
4. Initiate the grease filling while **carefully observing the piston position**. The piston should start moving while grease is being pushed into the cartridge and the approximate filled quantity can be checked via the external volume markings on the outside of the cartridge. It is recommended to stop the filling procedure as soon as the piston sealing is at the same level as the external O-ring of the cartridge.

### **⚠ WARNING!:**

- Pay attention to not overfill the cartridge as the piston may become loose and separate from the grease cartridge. A new empty grease cartridge should be used if this happens.
- Do not exceed the maximum pressure rating of the lubricator (5.2 bar, 75 psi). Personal injury can occur.

5. **Carefully unscrew the grease filling nipple** from the cartridge. A small amount of grease may be pushed out of the cartridge due to residual internal pressure.

## 2.2 Pressure plate positioning

The TLRD piston is engaged by a rotating pressure plate which should be correctly positioned prior to filling the device.

### ⚠ **IMPORTANT:**

- Always follow the instructions below when replacing or restarting a grease cartridge before a new lubrication cycle.
1. Turn the **Pressure plate** clockwise until it seats at the top (fully retracted position).
  2. Next, rotate the Pressure Plate **counterclockwise approximately  $\frac{3}{4}$  of a turn** to ensure that it seats properly on the piston when reassembling the device.
  3. Screw the filled **grease cartridge** into the lubricator body and make sure it is properly tightened. Normally, the **Pressure plate** will contact the **Piston** and a small amount of grease will be pushed out.



Fig. 3 – Pressure plate positioning

### ⚠ **WARNING!:**

- If the Pressure Plate fails to contact the Piston, it will idle and result in no grease output for a few cycles. Suitable contact between both components can be verified if grease is pushed out when assembling the cartridge with the lubricator drive unit body.

## 2.3 Install/Replace Battery Pack

The lubricator battery pack must be replaced in the following situations:

- At the end of each dispensing period
- Once the red indicator light begins to flash
- Anytime the Battery Pack's voltage is below 6V

### **⚠ WARNING!:**

- Please make sure to only use batteries of the recommended **CR-P2 type**, as using the wrong battery type may result in malfunction, damage to the device, or potential hazards. The use of inappropriate batteries or failure to follow these guidelines may void the warranty of your device.
- When not in use, **remove batteries** from the device. Store batteries in a cool, dry place away from direct sunlight, heat sources, or humidity. Storing batteries improperly may reduce their performance and pose safety risks.
- **Always recycle** or dispose of the Battery Pack properly. **Do not burn or puncture** the batteries. Toxic materials may be emitted which can cause personal injury.
- **Avoid touching the contact surfaces of the new batteries.** Skin oils can cause deterioration. Clean any suspect battery with alcohol prior to installation.



Fig. 4 – Battery replacement procedure

1. Unscrew top cover from drive unit body assembly.
2. Remove used Battery Pack from the body as required. Discard the Battery Pack according to local regulations and guidelines.

**The removal of the Battery Pack turns off the lubricator.**

3. After removing the battery, a new dispense setting may be configured, if necessary. Please follow the steps described in the next section for restarting the device with a new time setting.

- If no new time setting is required, **a new battery can be installed after a 15 second interval** that fully resets the device.  
Please only use high-quality batteries of the recommended CR-P2 type from a reputable manufacturer to ensure optimal performance and safety.

**⚠ IMPORTANT:**

- The lubricator maintains memory and can remain installed during this procedure. Removing the battery for more than 15 seconds will clear the memory of the previous dispense.

## 2.4 Set / Change the dispense period

The SKF TLRD provides a variety of operating settings from 1 month up to 12 months. Please refer to → **table 1**) for more details. To setup the dispense period, please follow these steps:

- Make sure the Battery Pack is removed from the Body.
- Locate the **DIP (Dual Inline Package)** switch inside the drive unit body assembly, next to the battery compartment.
- Set the levers** on the switch to correspond to the desired time period required.  
For the different available settings, please see → **table 4**.
- Use a small screwdriver, ball point pen or similar tool to switch the levers.
- Put the battery back to activate the lubricator.
- Tighten the top cover.

Item no.	Description
1	1
2	2
3	1 & 2
4	4
5	1 & 4
6	2 & 4
7	1 & 2 & 4
8	8
9	1 & 8
10	2 & 8
11	1 & 2 & 8
12	4 & 8

**Table 4** – Available time settings

**⚠ IMPORTANT:**

- When changing the operating setting, always remember to remove the battery for at least 15 seconds to clear the internal device memory.

## 2.5 Test Modes

The SKF TLRD lubricator is equipped with a test mode which enables users to test the lubricator before use. To start the test mode before operation, please follow the steps below:



Fig. 5 – DIP Switch and respective settings table

1. Remove the top cover and battery. Set the 4 DIP (Dual Inline Package) switches to **ON** (FWD mode).
2. Insert the battery pack to activate the lubricator.
3. During FWD mode, the lubricator will automatically rotate and press the red piston forward in 7 - 8 second cycles. Green LED flashes during movement and a small amount of grease will be pushed out of the cartridge during every shot.  
To stop the test, remove the battery pack from the lubricator.
4. As an alternative, the user may activate the TEST setting, which will perform a perform a single dispense cycle (7 – 8 seconds, flashing green LED), followed by a piston retraction to revert the movement (flashing the red LED) and then stop.  
A backward movement setting (BACK), is also available and can be used to retract the piston (continuous movement, while flashing the red LED).

## 2.6 Starting the TLRD

After setting the desired dispense setting in the lubricator, installing a new battery pack and tightening the top cover, the LED indicator light will auto-blink for 5 seconds to conduct an auto test. When the LED indicator light goes off, it indicates that the lubricator has been started correctly on the defined setting.

On the top cover label some useful information can be recorded:

- Dispensing period setting
- Type of lubricant
- Date of installation

The cover label can be written repeatedly with a pencil.



Fig. 6 – Record useful information about the lubrication cycle

### **⚠ IMPORTANT:**

If the Red Pre-warning Light flashes continuously during operation (dispensing, Test Mode), please be aware of the following potential causes:

- Feed blockage or excessive pressure in the bearing and pipe.
- Empty grease cartridge
- Low battery

Please refer to → **table 7**, for more troubleshooting information.

## 3. Installation

Before installation, completely purge out the old grease with a grease gun until fresh grease can be seen coming out, making sure that the greasing channel is smooth and the old grease is replaced. The purging process must be done slowly and at low pressure with a grease gun.



Make sure the existing lubricant in the bearing is compatible with the lubricant in the cartridge. This Lubricator is suitable for outside applications and should always be installed with the respective protective cover.

**⚠ WARNING!:**

- Please note that when installing the lubricator outdoor or in dusty or rainy conditions, it is highly recommended to install the lubricator vertically, ensuring that the cartridge O-ring is tightened correctly, and that the protection cover is properly fitted.
- Do not discard the drive unit protective cover. Installation of the unit without protective cap may result in moisture damage to the lubricator and voids the warranty.

### 3.1 Direct Mount

Please follow the steps described below for installing the TLRD:

1. Clean grease nipple and remove it from bearing housing
2. Use a reducer or adapter as required (refer to → **table 5** to select an appropriate accessory).
3. Use seal tape to cover all connectors and then tighten the adapter on the bearing housing with tools.
4. Screw the lubricator into the bearing. Do not overtighten.
5. Put back the lubricator cover and make sure the it is properly installed.

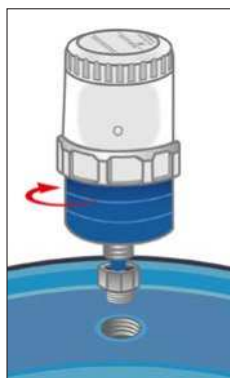


Fig. 7 – Direct mounting of a TLRD

### 3.2 Remote Mount

If a direct connection is not feasible, tubing, hose, or pipe can be used. Remote mounting is especially useful with high vibration or high temperature applications, reducing the risk of damage to the lubricator. Do not install the lubricator at an ambient temperature over 60°C (140°F) or 4.6 m (15 ft) away from the lubrication point. Keep the number of bends and the length of tubing to a minimum.

#### **IMPORTANT:**

Remote mounting is recommended when:

- Grease nipple thread is 6mm, 1/16" or less.
- Difficult-to-access area for replacing grease cartridge
- If the bearing housing surface temperature is exceeding 50°C (122°F).

The pressure rating on any system component must be a minimum of 10.3 bar (150 psi). Please see → **section 3.3** for more information on the available accessories. For remote mounting the LAPC R1/4 support bracket may be used, in combination with other thread adapters and available tubing from SKF.

Should system pressure be greater than 5.2 bar (75 psi) the lubricator is programmed to stop and flash the red indicator light. Should this occur, the system may be clogged and may require cleaning and purging. Additionally, the dispensing period may be too frequent and too much grease is being pushed into the bearing.

### 3.3 Accessories

Designation	Description
TLRD 1-FA	Filling adapter (all cartridges).
LAPR 1/4	Nipple G1/2F – G1/4M
LAPR 1/8	Nipple G1/2F – G1/8M
LAPR A1/4	Angle connection 45°, G1/2F to G1/4M
LAPR A1/8	Angle connection 45°, G1/2F to G1/8M
LAPC R1/4	Support Bracket - 1/2" (F) to 1/4" (M)
LAPA 45	Angle connection 45°, male thread G 1/4
LAPA 90	Angle connection 90°, male thread G 1/4
LAPN 1/4UNF	Nipple G 1/4 – 1/4 UNF
LAPN 1/2	Nipple G 1/4 - G 1/2
LAPN 1/4	Nipple G 1/4 - G 1/4
LAPN 1/8	Nipple G 1/4 - G 1/8
LAPN 3/8	Nipple G 1/4 - G 3/8
LAPN 6	Nipple G 1/4 - M6
LAPN 8	Nipple G 1/4 - M8
LAPN 8	Nipple G 1/4 - M8
LAPN 8x1	Nipple G 1/4 - M8 x 1
LAPN 10	Nipple G 1/4 - M10
LAPN 10x1	Nipple G 1/4 - M10 x 1
LAPN 12	Nipple G 1/4 - M12
LAPN 12x1.5	Nipple G 1/4 - M12 x 1,5
LAPE 50	Extension 50 mm (G1/4F to G1/4M)
LAPE 35	Extension 35 mm (G1/4F to G1/4M)
LAPF F1/4	Tube connection female G 1/4
LAPF M1/8	Tube connection male G 1/8
LAPF M1/4	Tube connection male G 1/4
LAPF M3/8	Tube connection male G 3/8
LAPT 1000	Flexible tube, 1000 mm long, 8 × 6 mm
LAPT 5000	Flexible tube, 5000 mm long, 8 × 6 mm

Table 5 – Available SKF lubricator accessories

### 3.4 Spare parts

Designation	Description
TLRD 150	Drive unit kit (150 ml) incl. correspondent empty cartridge, drive unit cap and battery pack.
TLRD 250	Drive unit kit (250 ml) incl. correspondent empty cartridge, drive unit cap and battery pack.
TLRD 1-RD150	Empty cartridge (150 ml capacity).
TLRD 1-RD250	Empty cartridge (250 ml capacity).

Table 6 – Available TLRD spare parts.

## 4. Troubleshooting

Problem Description	Explanation	Solution
Grease separates	Lubricator lines not completely flushed	Flush the bearing and all lines completely with the same grease as the lubricator
Red indicator light keeps flashing	Incorrect operation	Please refer to section 2 (Lubricator Preparation) to ensure that all steps were properly followed. Start TEST mode prior to installation and verify correct operation.
	Empty grease cartridge	Replace battery and install filled grease cartridge.
	Feed blockage, back pressure exceeds 5.2 bar (75 psi) or tube is not completely purged.	Purge the bearing and tube slowly with a grease gun until blockage is released. Make sure the old grease is completely removed from the housing. Use pressure gauge to measure back pressure. Keep tube length as short as possible.
	Grease that is caked, or oil separation.	Recalculate lubricator setting and confirm grease compatibility.
	Battery Low	Test battery voltage with voltage meter. Ensure a new CR-P2 battery is used for each new cycle.
Lubricator does not dispense	Low Battery	Verify battery output voltage exceeds 6.0V. Always start the lubricator with a new battery (do not reuse). Operate the lubricator in test mode for 1 minute to ensure proper operation prior to installation
	Press plate is not positioned properly	Refer to section 2 and check press plate position. Make sure the press plate contacts the grease cartridge piston.
	Ambient temperature too low for the viscosity of the grease.	Change to a lower viscosity grease. For example, change from NLGI #2 to NLGI #1 or #0.
	Incorrect type of grease.	Verify grease viscosity and compatibility.

Table 7 – Main operating issues and solutions





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