

Supplementary Sheet

Revision history

This supplementary sheet was written in German, all other language versions are translations of this supplementary sheet.

This supplementary sheet(s) is/are exclusively valid for

Product:

Product Designation: FlexxPump4 NDXXX-OIL (FP4 NDXXX-OIL)
Product revision: ---

with the item number(s):

215358 FlexxPump4 ND411-OIL
215359 FlexxPump4 ND412-OIL
215360 FlexxPump4 ND411A-OIL
215361 FlexxPump4 ND412A-OIL

The chapters described in this supplementary sheet(s) replace the chapters in

User Manual:

Date of creation: 03.2022
Revision of the User Manual: 0

for the

Product:

Product Designation: FlexxPump4 ND (FP4 ND)
Product revision: ---

Chapters not replaced by this supplementary sheet(s) in the original user manual remain valid without exception. Further supplementary sheets to the original instruction manual are valid in addition to this supplementary sheet.

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The content and technical specifications are subject to change without notice.

3. Description of function

3.1 General information

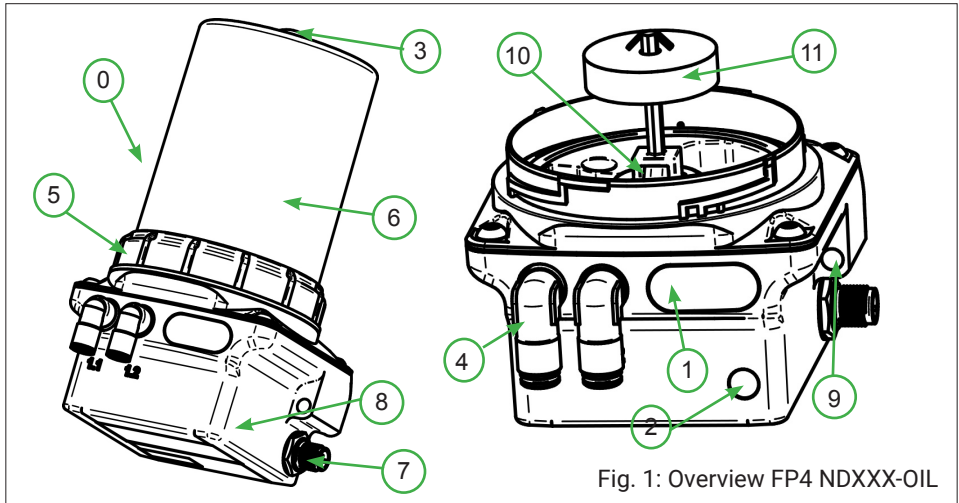


Fig. 1: Overview FP4 NDXXX-OIL

Nr.	Description
0	FlexxPump4 N (FP4 NDXXX-OIL)
1	OLED-Display
2	Action area (for actions with the activation and programming key)
3	Activation and programming key
4	Lubricant outlet, outlets (different version possible)
5	Retaining ring
6	Upper housing
7	M12x1 electrical interface
8	Nameplate with designation, CE mark and serial number
9	Through hole for assembly
10	Lubricant inlet
11	Oil floater for empty level display

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The FP4 NDXXX-OIL is designed as an extremely compact double piston pump for autonomous operation with oil as the lubricant. The two pistons run force-controlled and counter-rotating. The FP4 NDXXX-OIL is available as a version with one lubricant outlet or as a version with two lubricant outlets. The outlets are secured by an integrated non-return valve. Approx. 0.15 ml of lubricant is pumped during each dispensing operation; multiple dispensers can be set one after the other.

The display on the front panel displays the various operating states; further information (empty level tracking, empty cartridge, error) can be read.

The present FlexxPump4 as power supply version has an electrical interface. The supplied activation and programming key can be used to adjust the operation mode and the quantity of lubricant pumped per time in order to supply the lubrication point with the ideal quantity of lubricant.

3.3 Scope of delivery

The FP4 NDXXX-OIL is available in several different versions. They differ in the number and type of lubricant outlets and the scope of accessories supplied.

3.4 Technical data

Housing			
Dimensions		111 x 200 x 108 (B x H x T)	mm
Weight (empty)	appx.	1130	g
Mounting options		through holes for screws M6x35 DIN 912	
Preferred mounting position		upright	
Material		Zinc die-cast / PA 6.6 GF30 / POM	
Material outlet		Nickel-plated brass	
Operating temperature		- 20 ... + 70	°C
Lubricant and hydraulics			
Cartridge volume		400	ml
Lubricant characteristics		Oil from 15 mm ² /s to 1000 mm ² /s (at 40° C)	
Number of outlets		1 / 2	
Hydraulic connection		via PA-tube Ø 6mm	
Number of lubrication points per outlet		depending on the selected accessories	
Max. pressure		70	bar
Grease delivery	per stroke	0,15	ml
Electrics			
Display		OLED-Display	
Operating voltage		24 (+/- 5%)	V DC
Protection		0,75 (slow blow)	A
Protection class		IP 54	
Current consumption		$I_{\max} < 0,3$ $I_{\text{quiescent}} < 0,025$	A

5.4 Mounting of the FP4 NDXXX-OIL

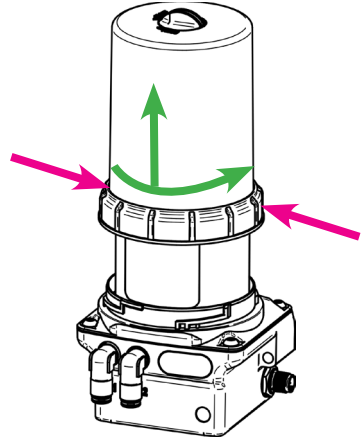
1. Remove the upper housing from the drive unit of the FP4 NDXXX-OIL.

- Loosen the retaining ring from the drive unit by turning it counterclockwise.
- Disconnect the upper housing from the FP4 NDXXX-OIL.

① Grip the retaining ring on the outside right and left for easier loosening, as shown with the pink arrows.

① Make sure that no dirt, water or foreign bodies get into the lubricant inlet.

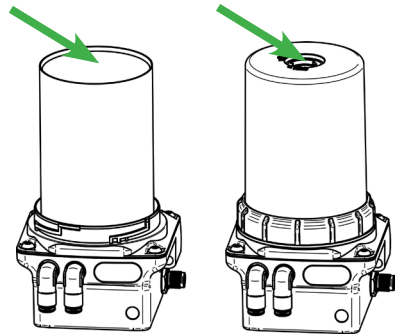
① Alternatively, you can remove the activation and programming key on the upper housing of the FP4 NDXXX-OILXXX-OIL to expose the oil reservoir. Turn the action pin to the OPEN position and pull it off.



2. Filling the oil cartridge

- Fill the cartridge with oil in the direction of the arrow until the mark „max. level“ on the oil cartridge is reached

① Pay attention to cleanliness when carrying out the work. It is imperative that dirt and foreign bodies do not enter the cartridge.



FlexxPump4 NDXXX-OIL

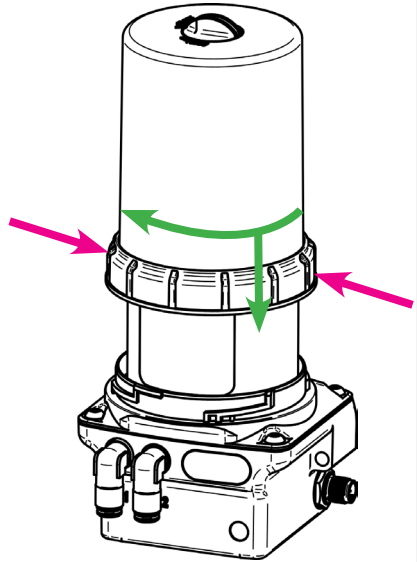
3. Mounting the upper housing of the drive unit of the FP4 NDXXX-OIL.

- Place the disassembled upper housing on the FP4 NDXXX-OIL and press it onto the drive unit.
- Fasten the upper housing to the drive unit by turning the retaining ring clockwise.

① Grip the retaining ring on the outside right and left for easier loosening, as shown with the pink arrows.

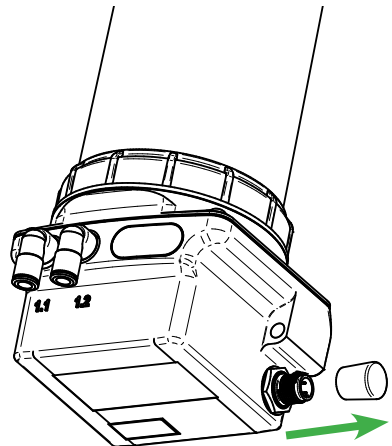
① The retaining ring must engage noticeably when turned and be completely tightened.

① If you have only removed the activation and programming key to fill the oil cartridge, remount it in the upper housing of the FP4 NDXXX-OILXXX-OIL. Note the CLOSE position.



4. Remove the protective cap on the side of the FP4 NDXXX-OIL.

- Remove the black protective cap in the direction of the arrow from the side of the electrical M12x1 interface.



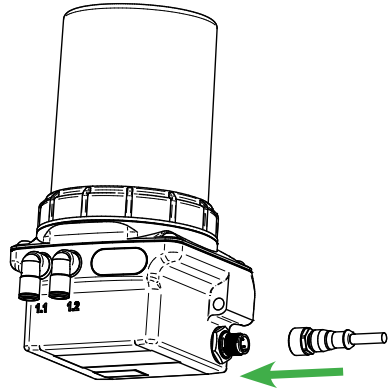
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5. Connect the electrical interface

● Connect the FP4 NDXXX-OIL to the external power supply or controller via the M12x1 interface on the side of the FP4 NDXXX-OIL using a suitable connecting cable.

① Depending on the application, connection cables with straight or angled socket can be used.

① Please refer to chapter 7.1 or chapter 8.1 for the condition of the connection cable.



DANGER

Defective or faulty electrical connections or unauthorized live components can lead to serious injuries or even death.

- ☛ Have all electrical connection work carried out by qualified personnel only.
- ☛ Replace damaged cables or plugs immediately.
- ☛ Before carrying out any electrical installation work, observe the five safety rules of electrical engineering:
 - Unlocking
 - Secure against unintentional restarting.
 - Check that there is no voltage.
 - Ground and short-circuit.
 - Cover adjacent live parts.



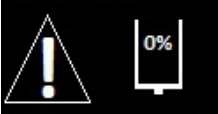
DANGER

Machine elements that are not lubricated can cause failures resulting in serious injury or even death.

- ☛ Never operate the FP4 NDXXX-OIL without the upper housing. Especially when changing the cartridge or during start-up, make sure to remount the upper housing after disassembly.

6.4 Error and information messages on the display

The integrated microelectronic in the FP4 NDXXX-OIL permanently monitors the status. In case of abnormalities, an addressed message is issued and shown on the display. If the FP4 NDXXX-OIL has detected an error and issues an error message for better identification of the error, no more lubricant is pumped. In addition, the screen saver changes and gives an indication of the type of error by displaying the error number. The errors must be eliminated after they occur. If you operate the FP4 NDXXX-OIL in the operating modes Setting lubrication cycle duration or Setting emptying time, errors must be acknowledged on the display. If the FP4 NDXXX-OIL is operated in pulse control mode, the errors can only be acknowledged by the PLC by sending a specific signal, see Chap. 8.2.

Symbol	Name	Explanation	Remedy
	Note E1	Cartridge empty	<ul style="list-style-type: none">● Refill the oil reservoir on the FP4 NDXXX-OIL (see chapter 9.2) <p>① No need to acknowledge the note; it is automatically cleared after the shutdown action.</p>

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9.1 Maintenance schedule

Wartung	Inbetriebnahme	Jährlich	Bei Bedarf
Cleaning	x	x	x*
Visual check	x	x	x*
Oil refill		x**	x*

* Depending on operating conditions and lubricant consumption.

** Recommendation after 2 years at the latest

9.2 Cartridge change



HINWEIS

Make sure that you use the same lubricant which is already in use. Make sure that you only use cartridges with the same filling quantity.

- Compare the information on the lubricant cartridge with the information on the refilling cartridge.



DANGER

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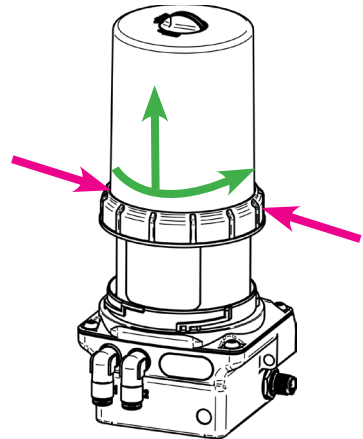
1. Remove the upper housing from the drive unit of the FP4 NDXXX-OIL.

- Loosen the retaining ring from the drive unit by turning it counterclockwise.
- Disconnect the upper housing from the FP4 NDXXX-OIL.

① Grip the retaining ring on the outside right and left for easier loosening, as shown with the pink arrows.

① Make sure that no dirt, water or foreign bodies get into the lubricant inlet.

① Alternatively, you can remove the activation and programming key on the upper housing of the FP4 NDXXX-OILXXX-OIL to expose the oil reservoir. Turn the action pin to the OPEN position and pull it off.

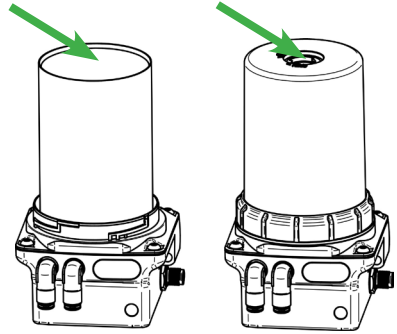


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2. Filling the oil cartridge

- Fill the cartridge with oil in the direction of the arrow until the mark „max. level“ on the oil cartridge is reached

① Pay attention to cleanliness when carrying out the work. It is imperative that dirt and foreign bodies do not enter the cartridge.



3. Mounting the upper housing of the drive unit of the FP4 NDXXX-OIL.

- Place the disassembled upper housing on the FP4 NDXXX-OIL and press it onto the drive unit.
- Fasten the upper housing to the drive unit by turning the retaining ring clockwise.

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① The retaining ring must engage noticeably when turned and be completely tightened.

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