

LOE Lubricators – D Series, NPT

Technical Data

FESTO

Function



Flow rate

160 ... 9000 l/min

Temperature range

-10 ... +60 °C

Input pressure

1 ... 16 bar

The proportional lubricator adds a precision adjustable quantity of oil to the compressed air stream.

The pressure drop that occurs when air flows through a Venturi nozzle is used to convey oil from the container to the drip cap. From here, the oil drips into the air duct directly behind the proportional valve, where it is atomised. The oil mist component is proportional to the compressed air flow rate.



- Proportional lubricator with precision oil metering
- Reduces wear on drive units subject to high loading
- High flow rate
- Quick and easy oil top-up
- Robust metal housing
- Transparent lubricator bowl with metallic bowl guard

The following oils are recommended for Festo components:

Viscosity range to
ISO 3448, ISO class VG 32
32 mm²/s (= cSt) at 40 °C

- Festo special oil → page 9
- ARAL Vitam GF 32
- BP Energol HLP 32
- Esso Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

General technical data									
Size	Micro	Mini			Midi			Maxi	
Pneumatic connection	1/8 NPT	1/8 NPT	1/4 NPT	3/8 NPT	3/8 NPT	1/2 NPT	3/4 NPT	3/4 NPT	1 NPT
Operating medium	Filtered compressed air, unlubricated								
Grade of filtration [µm]	5	40							
Design	Proportional standard mist lubricator								
Type of mounting	Via accessories								
	In-line installation								
Assembly position	Vertical ±5°								
Input pressure [bar]	0 ... 10	0 ... 16							
Minimum flow for lubricator operation [l/min]	3				8			10	
Maximum oil capacity [cm³]	6.5	45			110			190	

Note: This product conforms to ISO 1179-1 and ISO 228-1

Standard nominal flow rate ¹⁾ qnN [l/min]			
Connection	Port block		
	1/8NPT	QS4	QS6
Micro			
LOE	410	160	330

1) Measured at p1 = 6 bar and Δp = 1 bar.

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Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT
Mini						
LOE	1300	2300	2700	–	–	–
Midi						
LOE	–	2800	5500	6100	6300	–
Maxi						
LOE	–	–	–	8300	8400	9000

1) Measured at p1 = 6 bar and Δp = 1 bar.

Screw-in depth of connecting thread [mm]					
Connection	M5	M7	G1/8	QS4	QS6
Micro					
In housing	5	6	–	–	–
In port blocks	–	–	8	–	–

Ambient conditions				
Size	Micro	Mini	Midi	Maxi
Ambient temperature [°C]	–10 ... +60			
Temperature of medium [°C]	–10 ... +60			
Corrosion resistance class CRC ²⁾	2			

2) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Weight [g]						
Size	Micro		Mini	Midi	Maxi	
	Female thread	Port block			Connection 3/4 NPT	Connection 1 NPT
LOE	39	59	270	630	1100	1200

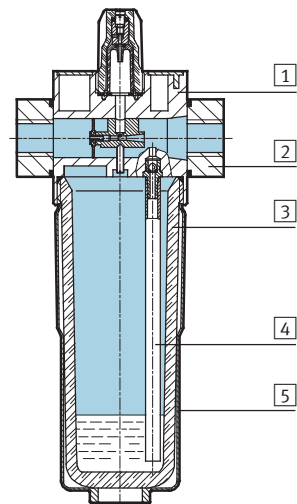
LOE Lubricators – D Series, NPT

Technical Data

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Materials

Sectional view



Lubricator	Micro	Mini/Midi/Maxi
1 Housing	Wrought aluminum alloy	Die-cast zinc/aluminum
2 Port blocks	Wrought aluminum alloy	Die-cast zinc/aluminum
3 Bowl	Polycarbonate	Polycarbonate
4 Tubing	Polyethylene	Polyethylene
5 Metal bowl guard	–	Aluminum
– Seals	Nitrile rubber	Nitrile rubber

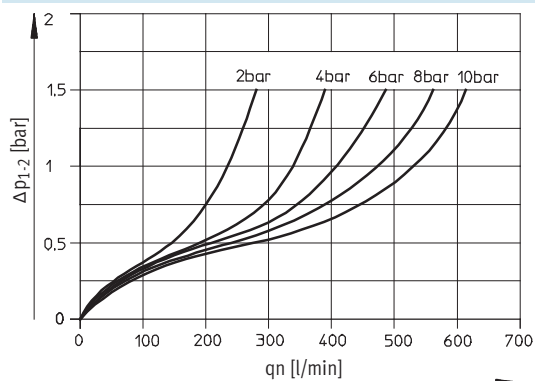
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Technical Data

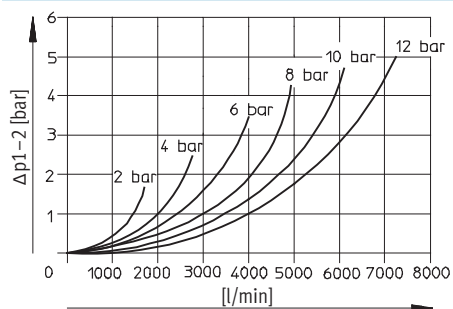
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Standard flow rate q_n as a function of the differential pressure Δp_{1-2}

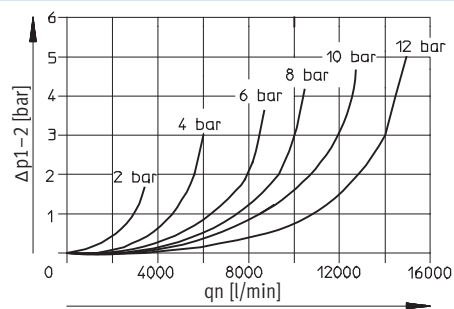
LOE-1/8-D-MICRO



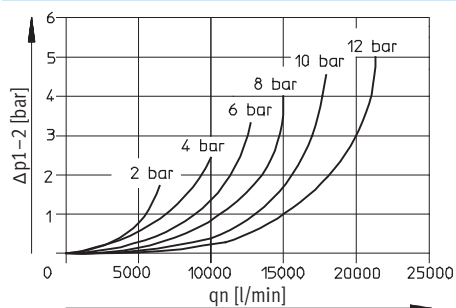
LOE-1/4-D-MINI



LOE-1/2-D-MIDI



LOE-1-D-MAXI



Primary pressure $p_1 = 10$ bar

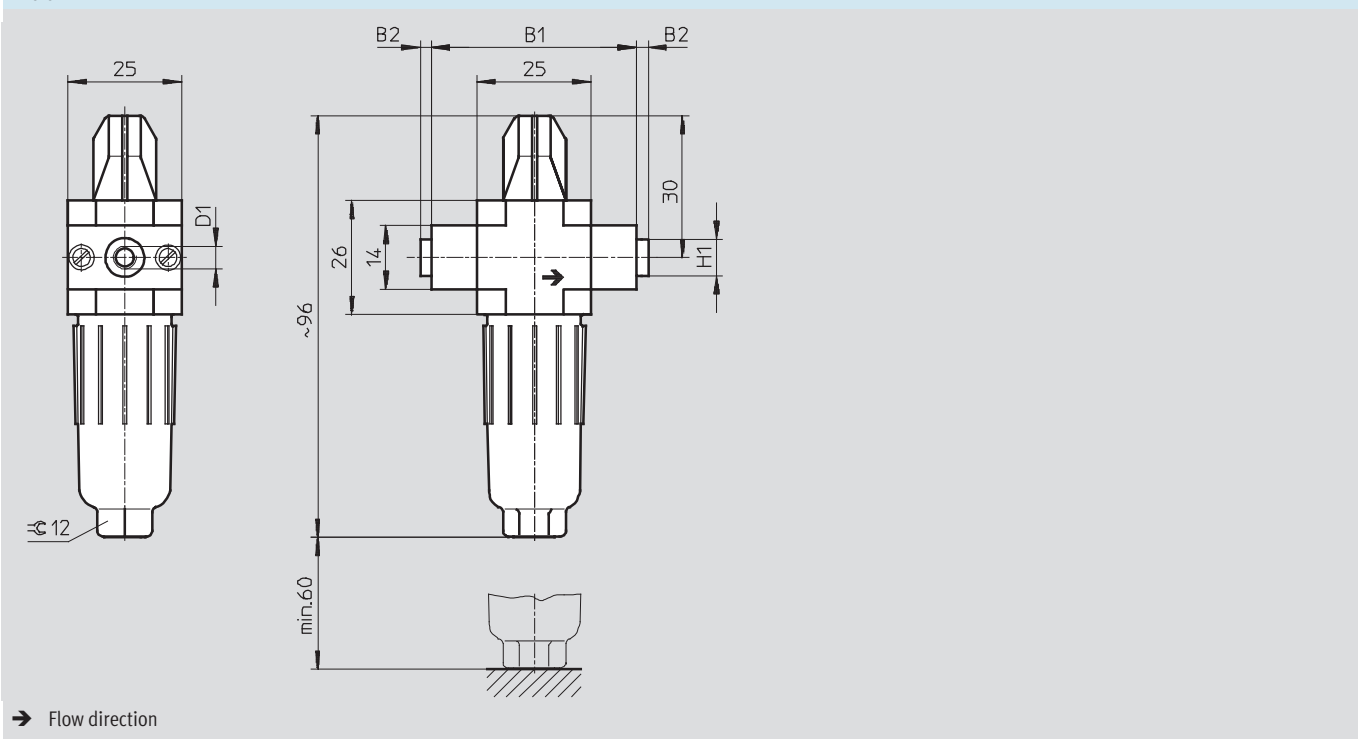
Technical Data – Dimensional Drawings

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Dimensions

Download CAD Data → www.festo.com/us/cad

Micro



Type	B1	B2	D1	H1
MICRO				
LOE-1/8"-D-MICRO	45	–	1/8 NPT	–

Note: This product conforms to ISO 1179-1 and ISO 228-1

LOE Lubricators – D Series, NPT

Technical Data – Dimensional Drawings

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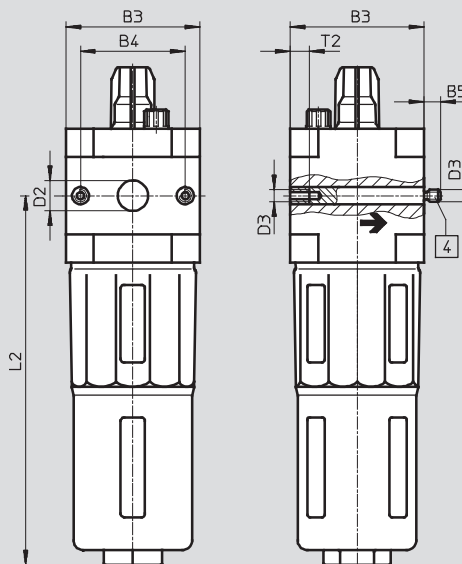
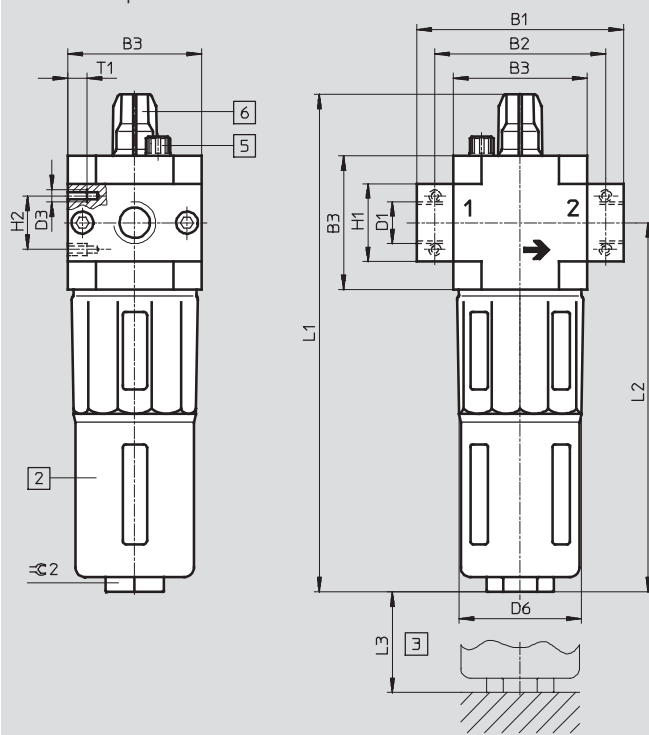
Dimensions

Download CAD Data → www.festo.com/us/cad

Mini/Midi/Maxi

With threaded port blocks

Without threaded port blocks



- 2 Metal bowl guard
- 3 Installation dimensions
- 4 Threaded pin (exchangeable)
- 5 Bleed screw for oil reservoir
- 6 Oil adjusting screw
- Flow direction

Type	B1	B2	B3	B4	B5	D1	D2 Ø	D3	D6 Ø	H1	H2	L1	L2	L3	T1	T2	≈ 2
Mini																	
LOE-1/8-D-MINI	64	52	40	30	–	1/8 NPT	–	M4	38	20	11	169	124	100	7	–	22
LOE-1/4-D-MINI						1/4 NPT											
LOE-3/8-D-MINI						3/8 NPT											
LOE-D-MINI	–	–			5.8	–	11			–	–				–	10	
Midi																	
LOE-3/8-D-MIDI	85	70	55	43	–	3/8 NPT	–	M5	52	32	22	204	151	120	8	–	24
LOE-1/2-D-MIDI						1/2 NPT											
LOE-3/4-D-MIDI						3/4 NPT											
LOE-D-MIDI	–	–			6.8	–	24			–	–				–	11	
Maxi																	
LOE-3/4-D-MAXI	96	80	66	46	–	3/4 NPT	–	M5	65	32	22	228	170	150	8	–	24
LOE-1-D-MAXI	116	91				1 NPT											
LOE-D-MAXI	–	–				6.8	–			–	–				–	11	

Note: This product conforms to ISO 1179-1 and ISO 228-1

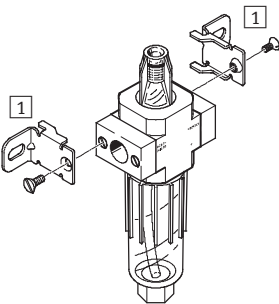
LOE Lubricators – D Series, NPT

Accessories Overview

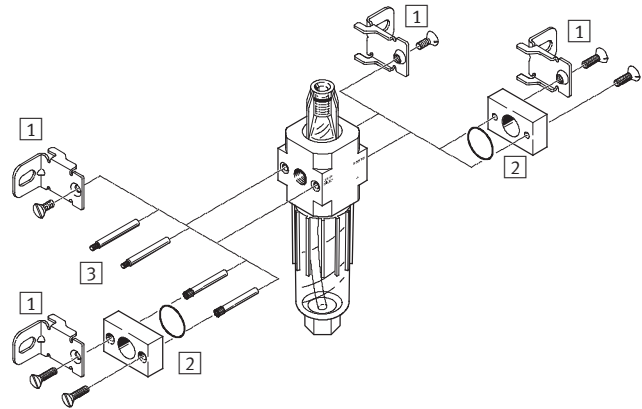
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Micro

Individual unit with port blocks



Individual unit without port blocks, for combination unit

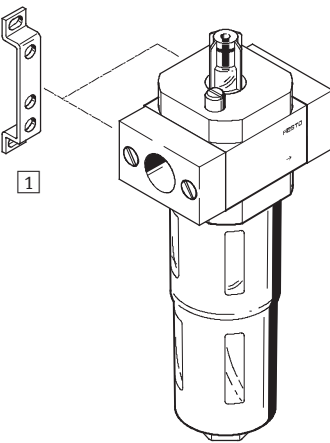


Mounting attachments and accessories

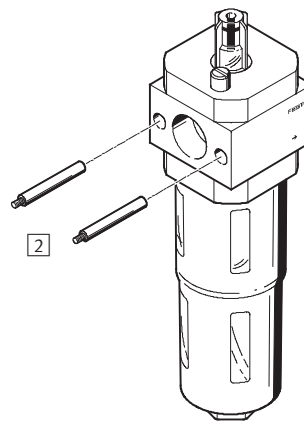
	Individual unit		Combination		→ Page/Internet
	with port blocks	without port blocks	with port blocks	without port blocks	
1 Mounting bracket HFOE	■	■	■	■	hfoe
2 Connecting plate kit PBL	–	■	–	■	pbl
3 Threaded pin FRB	–	–	■	■	frb

Mini/Midi/Maxi

Individual unit with port blocks



Individual unit without port blocks, for combination unit



Mounting attachments and accessories

	Individual unit		Combination		→ Page/Internet
	with port blocks	without port blocks	with port blocks	without port blocks	
1 Mounting bracket HFOE	■	–	■	–	hfoe
2 Threaded pin (included in scope of delivery) FRB	–	–	■	■	frb

Note

For Custom Combinations → FAST Program Selector Guide starting page 10

LOE Lubricators – D Series, NPT

Type Codes

		LOE	–	3/8	–	D	–	MIDI	–	NPT
Basic function										
LOE	Lubricator									
Pneumatic connection										
N1/8	1/8 NPT Thread (for Micro only)									
1/8	1/8 NPT Thread									
1/4	1/4 NPT Thread									
3/8	3/8 NPT Thread									
3/4	3/4 NPT Thread									
1	1 NPT Thread									
Series										
D	Series									
Size										
MICRO	Grid dimension 25 mm (without port blocks)									
MINI	Grid dimension 40 mm (without port blocks)									
MIDI	Grid dimension 55 mm (without port blocks)									
MAXI	Grid dimension 60 mm (without port blocks)									
NPT connection (where available)										
NPT	NPT threaded connection (not in typecode for Micro)									

LOE Lubricators – D Series, NPT

Ordering Data

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Ordering data			
Lubricator, input pressure 0 ... 10 bar			
Size	Connection	Part No.	Type
Micro	With threaded connecting plates		
	1/8 NPT	526311	LOE-N1/8-D-MICRO

Ordering data			
Lubricator, input pressure 0 ... 16 bar, metal bowl guard			
Size		Part No.	Type
Without threaded port blocks			
Mini		192575	LOE-D-MINI
Midi		192576	LOE-D-MIDI
Maxi		192577	LOE-D-MAXI

Ordering data			
Lubricator, input pressure 0 ... 16 bar, metal bowl guard			
Size	Connection	Part No.	Type
With threaded port blocks			
Mini	1/8 NPT	173820	LOE-1/8-D-MINI-NPT
	1/4 NPT	173821	LOE-1/4-D-MINI-NPT
	3/8 NPT	173822	LOE-3/8-D-MINI-NPT
Midi	3/8 NPT	173823	LOE-3/8-D-MIDI-NPT
	1/2 NPT	173824	LOE-1/2-D-MIDI-NPT
	3/4 NPT	173825	LOE-3/4-D-MIDI-NPT
Maxi	3/4 NPT	173826	LOE-3/4-D-MAXI-NPT
	1 NPT	173827	LOE-1-D-MAXI-NPT

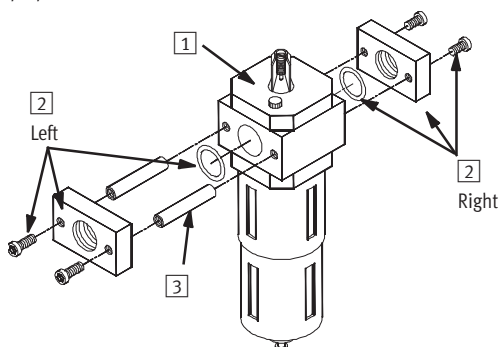
Ordering data – Special Oil			
	Scope of delivery	Part No.	Type
	1 liter	152811	OFSW-32

FAST* Program – LOE Lubricator Selector Guide

LOE Lubricators – D Series, NPT



*FAST = Festo Assured Shipping Time. Ordering via the FAST program means same day / next day shipping from our warehouse of the parts required to assemble a complete air preparation unit.



A complete Lubricator assembly consists of the following items:

Item	Description	Qty Required per Assy
1	Main Unit	1
2	Port Block Kit	2 (one left, one right)
3	Single Unit Joining Rod	2
4	Mounting Bracket Kit (Optional) (Not shown)	1

Step 1: Based upon the required Port Size, Maximum Flow, and Thread Type, select the Main Unit (Item 1) and the Left and Right Port Block Kits (Item 2).

		Item					
		1		2			
Port size	Max. Flow (l/min/scfm)	Product Type / Description	Main Unit	NPT Thread		BSP Thread	
				Left Port Block Kit	Right Port Block Kit	Left Port Block Kit	Right Port Block Kit
1/8	1300/45.9	LOE-...-D-MINI-...	546431	546520	546521	546495	546496
1/4	2300/81.2	LOE-...-D-MIDI-...	546427	546522	546523	546497	546498
	2800/98.9			546536	546537	546532	546533
3/8	2700/95.4	LOE-...-D-MINI-...	546431	546524	546525	546499	546500
	5500/194.2	LOE-...-D-MIDI-...	546427	546530	546531	546501	546502
1/2	6100/215.4	LOE-...-D-MIDI-...	546517	546526	546527	546503	546504
	8300/293.1	LOE-...-D-MAXI-...		546538	546539	546534	546535
3/4	6300/222.5	LOE-...-D-MIDI-...	546427	546528	546529	546505	546506
	8400/296.6	LOE-...-D-MAXI-...	546517	546490	546492	546507	546508
1	9000/317.8			546491	546493	546509	546510

Step 2: Based upon the Product Type/Description from Step 1, select the Joining Rods (Item 3) and the (optional) Mounting Bracket Kit (Item 4).

		Item	
		3	4 (Optional)
Product Type/ Description		Single Unit Joining Rod	Mounting Bracket Kit (not shown)
LOE-...-D-MINI-...	546483		159638
LOE-...-D-MIDI-...	546489		159593
LOE-...-D-MAXI-...	546494		

Step3: Determine the appropriate quantity of each Item.

Ordering Example:

Required: 3/8 port size, 5000 l/min flow, BSP threads, and Mounting Bracket Kit.

	Item	Part No.	Qty	Description
Order:	1	546427	1	Main Unit
	2	546501	1	Left Port Block Kit
		546502	1	Right Port Block Kit
	3	546489	2	Single Unit Joining Rod
	4	159593	1	Mounting Bracket Kit

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Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



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Electromechanical actuators, motors, controllers & drives



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