

Lubricators LOE, D series

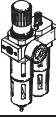
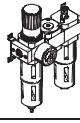
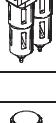
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Lubricators LOE, D series, metal design

Product range overview D series service units, metal design

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Type	Size	Pneumatic connection										Pressure regulation range [bar]			Grade of filtration [μm]								
		M5	M7	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{3}{4}$	G1	QS4	QS6	0.5	0.5	2.5	...	12	12	0.01	1	5	40		
Service units																							
FRC/FRCS		Micro	■	■	■	—	—	—	—	■	■	■	—	—	—	—	—	■	—	—	—	—	
		Mini	—	—	■	■	■	—	—	—	—	—	—	—	—	—	—	■	—	—	■	■	
		Midi	—	—	—	■	■	■	—	—	—	—	—	—	—	—	—	■	—	—	■	■	
		Maxi	—	—	—	—	—	■	■	■	■	—	—	—	—	—	■	—	—	■	■	■	
Service unit combinations																							
FRC-K		Micro	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Mini	—	—	■	■	■	—	—	—	—	—	—	—	—	—	■	■	—	—	—	■	■
		Midi	—	—	—	■	■	■	■	—	—	—	—	—	—	—	■	■	—	—	—	■	■
		Maxi	—	—	—	—	—	■	■	■	■	—	—	—	—	—	■	■	—	—	—	■	■
LFR-K LFRS-K		Micro	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Mini	—	—	■	■	■	—	—	—	—	—	—	—	—	—	■	■	—	—	—	■	■
		Midi	—	—	—	■	■	■	■	—	—	—	—	—	—	—	■	■	—	—	—	■	■
		Maxi	—	—	—	—	—	■	■	■	■	—	—	—	—	—	■	■	—	—	—	■	■
Individual devices																							
Filter regulators LFR/LFRS		Micro	■	■	■	—	—	—	—	—	■	■	■	—	—	—	—	—	■	—	—	—	—
		Mini	—	—	■	■	■	■	—	—	—	—	—	—	—	—	■	■	—	—	■	■	■
		Midi	—	—	—	■	■	■	■	■	—	—	—	—	—	—	■	■	—	—	■	■	■
		Maxi	—	—	—	—	—	—	■	■	■	■	■	—	—	—	■	■	—	—	■	■	■
Filters LF		Micro	■	■	■	—	—	—	—	—	■	■	■	—	—	—	—	—	■	—	—	—	—
		Mini	—	—	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	■	■	■
		Midi	—	—	—	■	■	■	■	■	—	—	—	—	—	—	—	—	—	—	■	■	■
		Maxi	—	—	—	—	—	—	■	■	■	■	■	—	—	—	—	—	—	—	■	■	■
Fine and micro filters LFMA/LFMB		Micro	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Mini	—	—	■	■	■	■	—	—	—	—	—	—	—	—	—	■	■	—	—	■	■
		Midi	—	—	—	■	■	■	■	■	—	—	—	—	—	—	—	■	■	—	—	■	■
		Maxi	—	—	—	—	—	—	■	■	■	■	■	—	—	—	—	■	■	—	—	■	■
Active carbon filters LFX		Micro	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Mini	—	—	■	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—
		Maxi	—	—	—	—	—	—	■	■	■	■	■	—	—	—	—	—	—	—	—	—	—
Filter combinations LFMBA		Micro	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Mini	—	—	■	■	■	■	■	—	—	—	—	—	—	—	■	■	—	—	■	■	■
		Midi	—	—	—	■	■	■	■	■	—	—	—	—	—	—	—	■	■	—	—	■	■
		Maxi	—	—	—	—	—	—	■	■	■	■	■	—	—	—	—	■	■	—	—	■	■
Pressure regulators LR/LRS		Micro	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Mini	—	—	■	■	■	■	■	—	—	—	—	—	—	—	■	■	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	■	—	—	—	—	—	—	■	■	—	—	—	—	—
		Maxi	—	—	—	—	—	—	■	■	■	■	■	—	—	—	■	■	—	—	—	—	—

Lubricators LOE, D series, metal design

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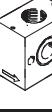
Product range overview D series service units, metal design

Type	Size	Bowl guard		Condensate drain		Pressure indication		Actuator lock	Supply voltage		Options			➔ Page/ Internet	
		Metal bowl guard	Plastic bowl	Manual rotary	Semi-automatic	Fully automatic	With pressure gauge		24 V DC	110 V AC	230 V AC	Directly actuated pressure regulator with integrated return flow function	Pilot actuated pressure regulator with integrated return flow function	Differential pressure indicator	
Service units															
FRC/FRCS	Micro	-	■	■	■	■	-	■	■	■	-	-	-	-	frc
	Mini	■	-	■	-	■	■	■	■	■	-	-	-	-	
	Midi	■	-	■	-	■	■	■	■	■	-	-	-	-	
	Maxi	■	-	■	-	■	■	■	■	■	-	-	■	■	
Service unit combinations															lfr
FRC-K	Micro	-													
	Mini	■	-	■	-	■	■	-	■	-	-	-	-	-	
	Midi	■	-	■	-	■	■	-	■	-	-	-	-	-	
	Maxi	■	-	■	-	■	■	-	■	-	-	-	■	■	
LFR-K LFRS-K	Micro	-													lfr
	Mini	■	-	■	-	■	■	-	■	■	■	-	-	-	
	Midi	■	-	■	-	■	■	-	■	■	■	-	-	-	
	Maxi	■	-	■	-	■	■	-	■	■	■	-	■	■	
Individual devices															lf
Filter regulators LFR/LFRS	Micro	-	■	■	■	■	-	■	■	■	-	-	-	-	
	Mini	■	-	■	-	■	■	■	■	■	-	-	-	-	
	Midi	■	-	■	-	■	■	■	■	■	-	-	-	-	
	Maxi	■	-	■	-	■	■	■	■	■	-	-	■	■	
Filters LF	Micro	-	■	■	■	■	-	-	-	-	-	-	-	-	lf
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	-	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	-	
Fine and micro filters LFMA/LFMB	Micro	-													lfma, lfmb
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	-	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	■	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	■	
Active carbon filters LFX	Micro	-													lfx
	Mini	■	-	-	-	-	-	-	-	-	-	-	-	-	
	Midi	■	-	-	-	-	-	-	-	-	-	-	-	-	
	Maxi	■	-	-	-	-	-	-	-	-	-	-	-	-	
Filter combinations LFMBA	Micro	-													lfmba
	Mini	■	-	■	-	■	-	-	-	-	-	-	-	■	
	Midi	■	-	■	-	■	-	-	-	-	-	-	-	■	
	Maxi	■	-	■	-	■	-	-	-	-	-	-	-	■	
Pressure regulators LR/LRS	Micro	-	-	-	-	-	■	■	■	■	-	-	-	-	lr
	Mini	-	-	-	-	-	■	■	■	■	-	-	■	-	
	Midi	-	-	-	-	-	■	■	■	■	-	-	■	-	
	Maxi	-	-	-	-	-	■	■	■	■	-	-	■	-	

Lubricators LOE, D series, metal design

Product range overview D series service units, metal design

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Type	Size	Pneumatic connection										Pressure regulation range [bar]	
		M5	M7	G1/8	G1/4	G3/8	G1/2	G3/4	G1	QS4	QS6	0.5	0.5
												0.5	0.5
Individual devices													
Pressure regulators LRB/LRBS		Micro	—										
		Mini	—	—	—	■	—	—	—	—	—	■	■
		Midi	—	—	—	—	■	—	—	—	—	■	■
		Maxi	—										
Pressure regulator combinations LRB-K		Micro	—										
		Mini	—	—	—	■	■	—	—	—	—	■	■
		Midi	—	—	—	—	■	■	—	—	—	■	■
		Maxi	—										
Lubricators LOE		Micro	■	■	■	—	—	—	—	■	■	—	—
		Mini	—	—	■	■	■	—	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	—	—	—	—
		Maxi	—	—	—	—	—	■	■	■	—	—	—
On-off valves HE		Micro	—										
		Mini	—	—	■	■	■	—	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	—	—	—	—
		Maxi	—	—	—	—	—	■	■	■	—	—	—
On-off valves, electrical HEE		Micro	—										
		Mini	—	—	■	■	■	—	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	—	—	—	—
		Maxi	—	—	—	—	—	■	■	■	—	—	—
On-off valves, pneumatic HEP		Micro	—										
		Mini	—	—	■	■	■	—	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	—	—	—	—
		Maxi	—	—	—	—	—	■	■	■	—	—	—
Soft-start valves HEL		Micro	—										
		Mini	—	—	■	■	■	—	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	—	—	—	—
		Maxi	—	—	—	—	—	■	■	■	■	—	—
Membrane air dryers LDM1		Micro	—										
		Mini	—										
		Midi	—										
		Maxi	—	—	—	—	—	■	■	■	■	—	—
Branching modules FRM		Micro	—										
		Mini	—	—	■	■	■	—	—	—	—	—	—
		Midi	—	—	—	■	■	■	■	—	—	—	—
		Maxi	—	—	—	—	—	■	■	■	■	—	—
Distributor block FRZ		Micro	—	—	—	—	—	—	—	—	—	—	—
		Mini	—	—	—	—	—	—	—	—	—	—	—
		Midi	—	—	—	—	—	—	—	—	—	—	—
		Maxi	—	—	—	—	—	—	—	—	—	—	—

Lubricators LOE, D series, metal design

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Product range overview D series service units, metal design

Type	Size	Bowl guard		Pressure indication		Actuator lock		Supply voltage			Options		➔ Page/ Internet
		Metal bowl guard	Plastic bowl	With pressure gauge	Without pressure gauge	Rotary knob with detent	Rotary knob with integrated lock	24 V DC	110 VAC	230 VAC	Non-return function	Pressure switch	
Individual devices													
Pressure regulators LRB/LRBS	Micro	–											lrb
	Mini	–	–	–	■	■	■	–	–	–	–	–	
	Midi	–	–	–	■	■	■	–	–	–	–	–	
	Maxi	–	–										
Pressure regulator combinations LRB-K	Micro	–											lrb
	Mini	–	–	–	■	■	–	–	–	–	–	–	
	Midi	–	–	–	■	■	–	–	–	–	–	–	
	Maxi	–	–										
Lubricators LOE	Micro	–	■	–	■	–	–	–	–	–	–	–	6
	Mini	■	–	–	■	–	–	–	–	–	–	–	
	Midi	■	–	–	■	–	–	–	–	–	–	–	
	Maxi	■	–	–	■	–	–	–	–	–	–	–	
On-off valves HE	Micro	–											he
	Mini	–	–	–	■	■	–	–	–	–	–	–	
	Midi	–	–	–	■	■	–	–	–	–	–	–	
	Maxi	–	–	–	■	■	–	–	–	–	–	–	
On-off valves, electrical HEE	Micro	–											hee
	Mini	–	–	–	■	–	–	■	■	■	–	–	
	Midi	–	–	–	■	–	–	■	■	■	–	–	
	Maxi	–	–	–	■	–	–	■	■	■	–	–	
On-off valves, pneumatic HEP	Micro	–											hep
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	
Soft-start valves HEL	Micro	–											hel
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	
Membrane air dryers LDM1	Micro	–											ldm1
	Mini	–											
	Midi	–											
	Maxi	■	–	–	■	–	–	–	–	–	–	–	
Branching modules FRM	Micro	–											frm
	Mini	–	–	–	■	–	–	–	–	–	■	■	
	Midi	–	–	–	■	–	–	–	–	–	■	■	
	Maxi	–	–	–	■	–	–	–	–	–	■	■	
Distributor block FRZ	Micro	–	–	–	■	–	–	–	–	–	–	–	frz
	Mini	–	–	–	■	–	–	–	–	–	–	–	
	Midi	–	–	–	■	–	–	–	–	–	–	–	
	Maxi	–	–	–	■	–	–	–	–	–	–	–	

Lubricators LOE, D series, metal design

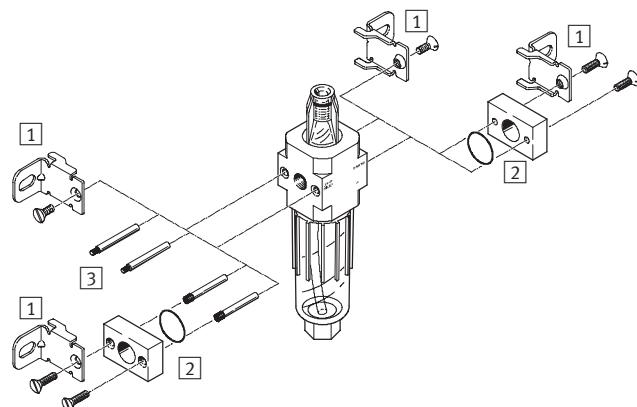
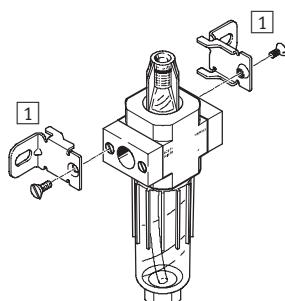
Peripherals overview

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Micro

Individual unit with connection plates,
connection size G1/8, QS4 or QS6

Individual unit without connection plates, for service unit combination
connection size M5 or M7 in housing



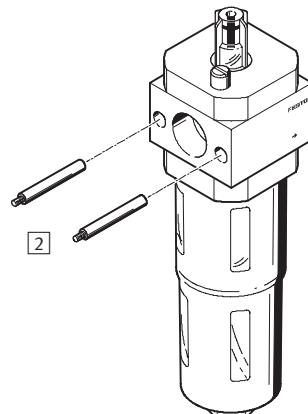
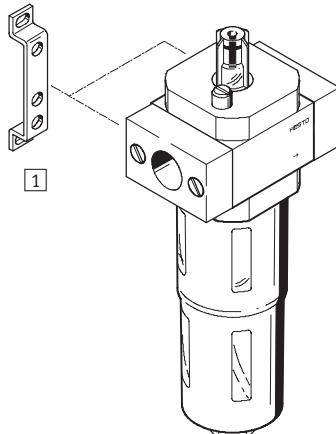
Mounting attachments and accessories

	Individual unit		Combination		→ Page/ Internet
	with connection plates	without connection plates	with connection plates	without connection plates	
[1] Mounting bracket HFOE	■	■	■	■	hfoe-d
[2] Connecting plate kit PBL	-	■	-	■	pbl
[3] Threaded pin FRB	-	-	■	■	frb-d

Mini/Midi/Maxi

Individual unit with connection plates

Individual unit without connection plates, for service unit combination



Mounting attachments and accessories

	Individual unit		Combination		→ Page/ Internet
	with connection plates	without connection plates	with connection plates	without connection plates	
[1] Mounting bracket HFOE	■	-	■	-	hfoe-d
[2] Threaded pin (included in scope of delivery) FRB	-	-	■	■	frb-d

Lubricators LOE, D series, metal design

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Type codes

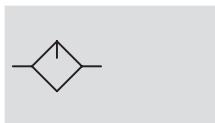
LOE	Lubricator	—	1/8	—	D	—	MIDI
Basic function							
M5	Thread M5						
M7	Thread M7						
QS4	Push-in fitting QS4						
QS6	Push-in fitting QS6						
1/8	Thread G1/8						
1/4	Thread G1/4						
3/8	Thread G3/8						
1/2	Thread G1/2						
3/4	Thread G3/4						
1	Thread G1						
Series							
D	Series						
Size							
MICRO	Grid dimension 25 mm (without connecting plates)						
MINI	Grid dimension 40 mm (without connecting plates)						
MIDI	Grid dimension 55 mm (without connecting plates)						
MAXI	Grid dimension 66 mm (without connecting plates)						

Lubricators LOE, D series, metal design

Technical data

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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 ➔ 15
 - 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	M5	M7	G1/8	QS4	QS6	G1/8	G1/4	G3/8	G1/4	G3/8	G1/2	G3/4	G1/2	G3/4	G1	
Operating medium	Filtered compressed air, unlubricated, grade of filtration 5 µm				Filtered compressed air, unlubricated, grade of filtration 40 µm											
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	3			3			8			10						
Max. oil capacity [cm ³]	6.5			45			110			190						

• Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Standard nominal flow rate ¹⁾ q _N [l/min]					
Connection	Female thread		Connecting plate		
	M5	M7	G1/8	QS4	QS6
Micro					
LOE	200	430	410	160	330

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

Lubricators LOE, D series, metal design

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Technical data

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	G1/8	G1/4	G3/8	G1/2	G3/4	G1
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 connecting plates	-	-	8	-	-

Ambient conditions					
Size	Micro	Mini	Midi	Maxi	
Ambient temperature [°C]	-10 ... +60				
Temperature of medium [°C]	-10 ... +60				
Corrosion resistance class CRC ¹⁾	2				

1) 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	Connecting plate			Connection G1/2, G3/4	Connection G1
LOE	39	59	270	630	1100	1200

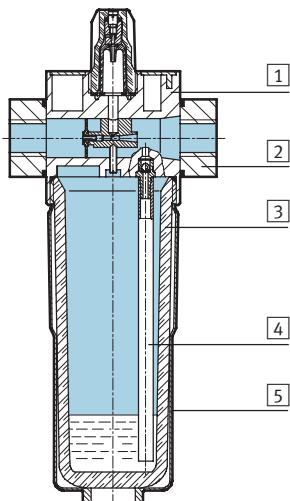
Lubricators LOE, D series, metal design

Technical data

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Materials

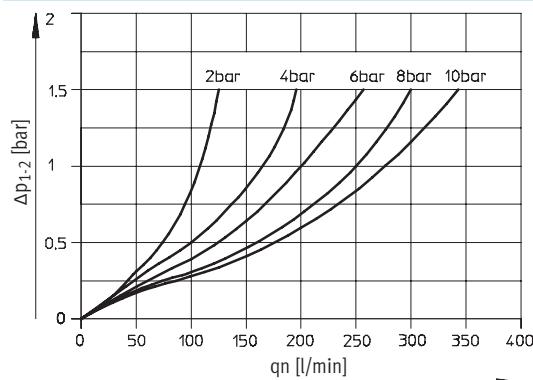
Sectional view



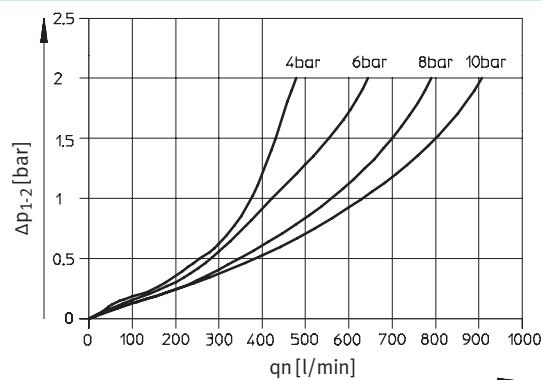
Lubricator	Micro	Mini/Midi/Maxi
[1] Housing	Wrought aluminium alloy	Die-cast zinc/aluminium
[2] Connecting plates	Wrought aluminium alloy	Die-cast zinc/aluminium
[3] Bowl	Polycarbonate	Polycarbonate
[4] Tubing	Polyethylene	Polyethylene
[5] Metal bowl guard	-	Aluminium
- Seals	Nitrile rubber	Nitrile rubber

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

LOE-M5-D-MICRO



LOE-M7-D-MICRO B



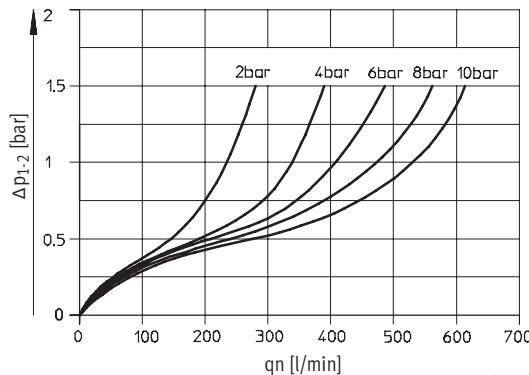
Lubricators LOE, D series, metal design

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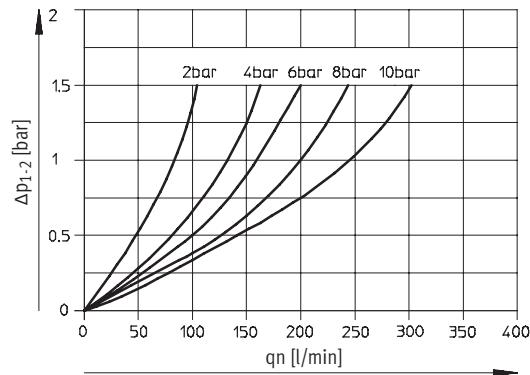
Technical data

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

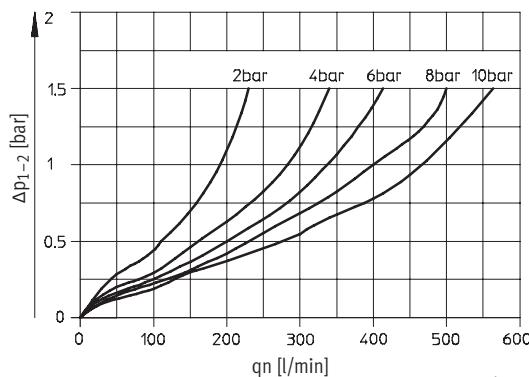
LOE-1/8-D-MICRO



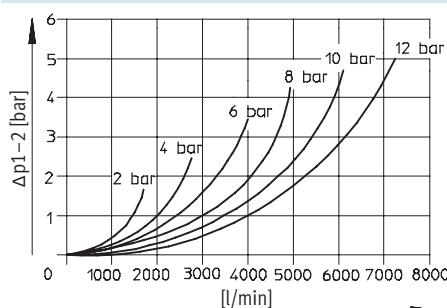
LOE-QS4-D-MICRO



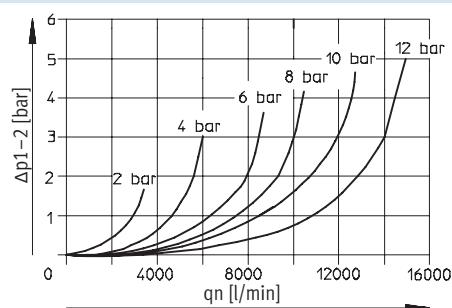
LOE-QS6-D-MICRO



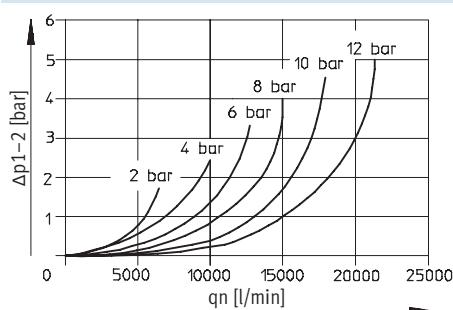
LOE-1/4-D-MINI



LOE-1/2-D-MIDI



LOE-1-D-MAXI



Primary pressure $p_1 = 10$ bar

Lubricators LOE, D series, metal design

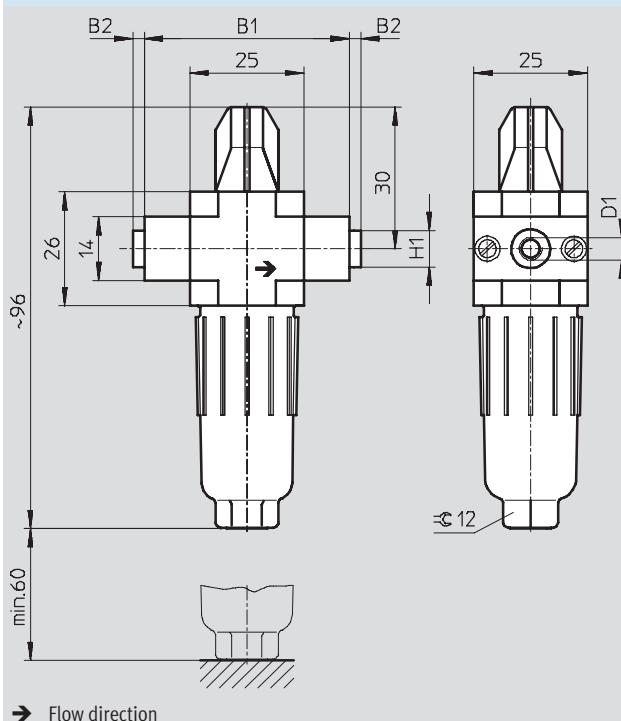
Technical data

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Dimensions

Download CAD data → www.festo.com

Micro



Type	B1	B2	D1	H1
MICRO				
LOE-M5-D-MICRO	25	-	M5	-
LOE-M7-D-MICRO B			M7	
LOE-1/8-D-MICRO	45	~2.5	G1/8	~8
LOE-QS4-D-MICRO			QS4	
LOE-QS6-D-MICRO			QS6	

• Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Lubricators LOE, D series, metal design

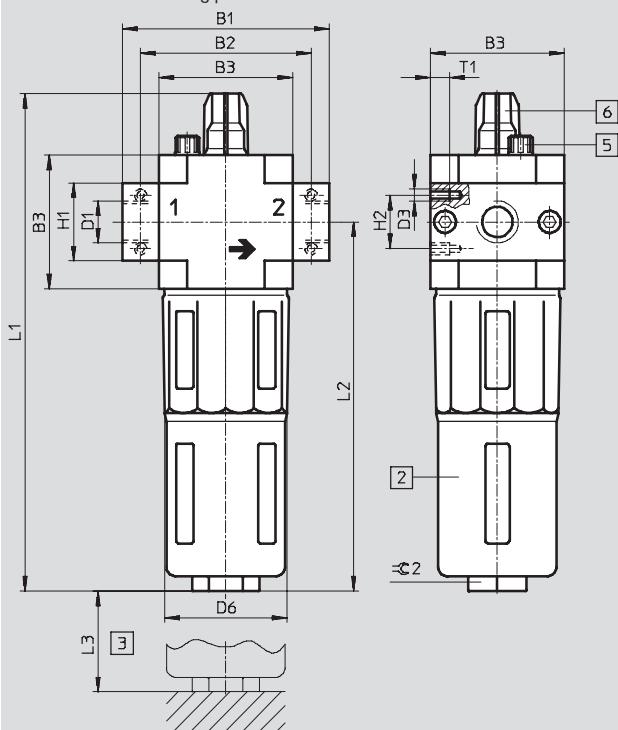
FESTO

Technical data

Dimensions

Mini/Midi/Maxi

With threaded connecting plates



[2] Metal bowl guard

[3] Installation dimensions

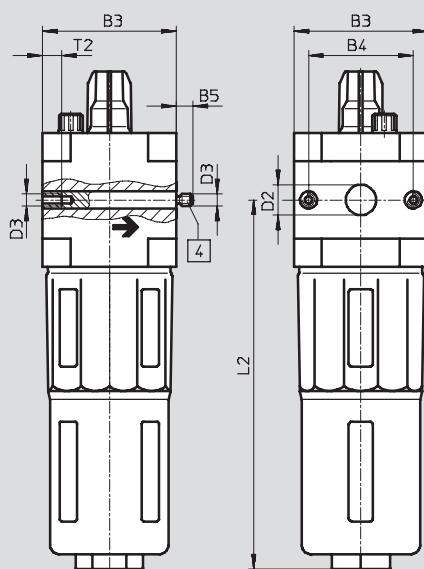
[4] Threaded pin (exchangeable)

[5] Bleed screw for oil reservoir

→ Flow direction

[6] Oil adjusting screw

Without threaded connecting plates



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

Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Lubricators LOE, D series, metal design

Technical data

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Ordering data

Lubricator, input pressure 0 ... 10 bar

Size	Connection	Part No.	Type
Micro			
	Without threaded connecting plates, connecting thread in housing		
M5	526309	LOE-M5-D-MICRO	
M7	534188	LOE-M7-D-MICRO-B	
With threaded connecting plates			
G1/8	526310	LOE-1/8-D-MICRO	
With connecting plate and push-in fitting			
QS4	526313	LOE-QS4-D-MICRO	
QS6	526314	LOE-QS6-D-MICRO	

Ordering data

Lubricator, input pressure 0 ... 16 bar, metal bowl guard

Size	Part No.	Type
Without threaded connecting plates		
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 connecting plates			
Mini	G1/8	159620	LOE-1/8-D-MINI
	G1/4	159621	LOE-1/4-D-MINI
	G3/8	162680	LOE-3/8-D-MINI
Midi	G1/4	186479	LOE-1/4-D-MIDI
	G3/8	159586	LOE-3/8-D-MIDI
	G1/2	159587	LOE-1/2-D-MIDI
	G3/4	162681	LOE-3/4-D-MIDI
Maxi	G1/2	186480	LOE-1/2-D-MAXI
	G3/4	159622	LOE-3/4-D-MAXI
	G1	159623	LOE-1-D-MAXI

Lubricators LOE, D series

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Accessories

Special oil



Ordering data

Scope of delivery

1 litre

Part No.

Type

152811 OFSW-32