Lubricators LOE, D series

FESTO





Type Size Pneumatic connection										Press regula [bar]	ure ation ra	nge	Grade	of filtra	ation				
			M5	M7	G¹∕8	G¹⁄4	G3/8	G½2	G ³ /4	G1	QS4	QS6	0.5 7	0.5 12	2.5 12	0.01	1	5	40
Service units																		_	
FRC/FRCS		Micro				_	_	_	_	_				Ι_	Ι_	_	_		_
TRE/TRES		Mini	-	-				_	_	_	_	_		-	_	_	_		
		Midi	_	_	-					_	_	_			_	_	_		
		Maxi	_	_	_	_	_				_	_			_	_	_		
	<u> </u>	ιτιαλί		1	I			_	_	_	I				1			_	_
Service unit com	binations																		
FRC-K	Ω 1	Micro	_																
		Mini	_	_			_	_	_	_	_	_	_			_	_	_	
		Midi	_	_	_				_	_	_	_	_			_	_	_	
		Maxi	_	_	_	_	_			_	_	_	_			_	_	_	
LFR-K	Ω.	Micro	_																
LFRS-K		Mini	_	_			_	_	_	_	_	_	_			_	_	_	
Lino R		Midi	_	-	-				_	_	_	_	_			_	_	_	
	Ĭ	Maxi	_	_	_	_	_			_	_	_	_			_	_	_	
	*	Muxi												_					
Individual device) C																		
Filter	Ω	Micro				_	_	_	_	_				l -	_	_	_		_
regulators		Mini	_	_		-		_	_	_	_	_			_	_	_		-
LFR/LFRS		Midi	_	_	_					_	_	_			_	_	_		
,	Ū	Maxi	_	_	_	_	_		•		_	_			_	_	_		
	•																		
Filters		Micro		-		_	_	_	-	_		•	-	-	_	-	_		-
LF		Mini	_	_				_	_	_	_	_	_	-	_	_	_		
	I	Midi	_	_	_					_	_	_	_	-	_	_	_		
	Ų.	Maxi	-	-	-	-	_				-	-	-	-	_	_	_		
Fine and micro	\sim	Micro	_	1	1	I	I	I	I .	I	1	1	1	1	1	1	I	I	1
filters		Mini	_	_				-	-	-	-	-	_	-	_			-	_
LFMA/LFMB		Midi	-	-	-					-	-	-	-	-	-	•		-	-
	(N)	Maxi	-	-	-	-	-				-	-	-	-	-	•		-	-
Active carbon		Micro	-	1	1	1	1	1	I	1	1	T.	1	1	1	T.	1	1	T.
filters		Mini	-	-	-			-	-	-	-	-	-	-	-	-	_	-	_
LFX		Midi	-	-	-					-	-	-	-	-	-	-	-	-	-
	Ů	Maxi	-	-	-	-	-				-	-	-	-	-	-	_	_	-
Filter		Micro	-																
combinations		Mini	-	-	•			-	-	-	-	-	-	-	-			-	-
LFMBA		Midi	-	-	-					-	-	-	-	-	-			-	-
	M	Maxi	-	-	-	-	-				-	-	-	-	-	•		-	-
		1	1	1	1	I .	I .	I .	l .	I .	1	l .	1	1	1	l .	I .	I .	l
Pressure		Micro		-	•	-	-	-	-	-	•	•	•	-	-	-	-	-	-
regulators		Mini	-	-	-			-	-	-	-	-	•	•	-	-	-	-	-
LR/LRS		Midi	-	-	-					-	-	-	•	•	-	-	-	-	-
		Maxi	_	-	-	-	-		-		-	-			-	-	_	_	-



Туре	Size	Bowl g	guard	Conde	nsate di	rain	Pressu indica		Actuat	tor lock	Supply	y voltage	e	Options			→ Page/ Internet
		Metal bowl guard	Plastic bowl	Manual rotary	Semi-automatic	Fully automatic	With pressure gauge	Without pressure gauge	Rotary knob with detent	Rotary knob with integrated lock	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 con	nbination	S															
FRC-K	Micro	-															frc
	Mini		_		-		•	_		_	•	_	_	_	-	_	
	Midi		_		-			-		_		_	-	_	_	_	
	Maxi		_		-			-		_		_	_			_	
LFR-K	Micro	_															lfr
LFRS-K	Mini		-		-		•	-				-	-	_	_	_	
	Midi		_		-	•		-				_	-	_	_	_	
	Maxi		_		_			_				_	_				
Individual device	es																
Filter	Micro	-			•	-				-	-	-	-	_	-	-	lfr
regulators	Mini		-		-						-	-	-	-	-	-	
LFR/LFRS	Midi		-		-						-	-	-	-	-	-	
	Maxi		-	•	-		•	-		•	-	-	-			-	
	I.	ļ	ļ	ļ					ļ.	ļ			l .	1			
Filters	Micro	-				-	-	-	-	-	-	-	-	-	-	-	lf
LF	Mini		-		-		-	-	-	-	-	-	-	-	-	-	
	Midi		-		-		-	-	-	-	-	-	-	-	-	-	
	Maxi		-		-		-	-	-	-	-	-	-	-	-	-	
Fine and micro	Micro	-															lfma, lfmb
filters	Mini		-		-		-	-	-	-	-	-	-	-	-		
LFMA/LFMB	Midi		-		-		-	-	-	-	-	-	-	-	-		
	Maxi		-		-		-	-	-	-	-	-	-	-	-		
Active carbon	Micro	-															lfx
filters	Mini		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LFX	Midi		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Maxi		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Filter	Micro	-													· 	·	lfmba
combinations	Mini		-		-		-	-	-	-	-	-	-	-	-		
LFMBA	Midi		-		-		-	-	-	-	-	-	-	-	-		
	Maxi		-		-		-	-	-	-	-	-	-	-	-		
D				1			T -			1					1 1		
Pressure	Micro	-	-	-	-	-	-	-	-	-	-	-	-	_	-	_	lr
regulators	Mini	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LR/LRS	Midi	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	
	Maxi	-	-	-	-	-					-	-	-			-	



Туре		Size	Pneumat connecti										Pressure regulatio [bar]	
			M5	M7	G½8	G½	G3/8	G½	G3/4	G 1	QS4	QS6	0.5 7	0.5 12
Individual devic	es											-		
Pressure	Ω	Micro	_											
regulators		Mini	-	_	-		-	-	-	-	-	-		-
LRB/LRBS	CT O	Midi	-	-	-	-	•	-	-	-	-	-		•
		Maxi	-											
Pressure		Micro	-											
regulator		Mini	-	-	-			-	-	-	-	-		
combinations	6070	Midi	-	-	-	-			-	-	-	-		
LRB-K	4	Maxi	-											
		1.00					1		1	1				1
Lubricators		Micro	-	•	•	-	_	-	-	_	•	•	-	-
LOE		Mini	-	-	•	-	-	_		-	-	-	-	-
	M	Midi	-	-	-	•		-	-	_	-	-	-	-
	9	Maxi	-		-		-				-	-	-	-
On-off valves	~	Micro	_											
HE		Mini	_	_		-		_	_	_	_	_	_	_
		Midi	_	_	-			-	-	_	_	_	_	_
		Maxi	_	_	_	_	_	-	-	-	_	_	_	_
On-off valves,	,(0)	Micro	_											
electrical		Mini	_	_				_	_	_	_	_	_	_
HEE		Midi	_	-	_					_	_	_	_	_
		Maxi	-	-	-	-	_	-	-	-	-	-	-	-
On-off valves,		Micro	-	II			II		1	II				II
pneumatic		Mini	-	_				_	_	_	_	-	_	_
HEP		Midi	-	-	-	•	-	•	-	-	-	-	_	_
		Maxi	-	-	-	-	-	•	-	-	-	-	_	_
Soft-start		Micro	-	1			1		1	1				1
valves		Mini	-	_				-	-	-	-	-	-	-
HEL		Midi	-	-	-					-	-	-	-	-
		Maxi	-	-	-	-	-	-	-	-	-	-	-	-
Membrane air		Micro	-											
dryers		Mini	-											
LDM1		Midi	-	1			1		1	1		T		1
	U	Maxi	-	-	-	-	-					-	-	-
Branching		Micro	_											
modules		Mini	_	_	•	•		_	_	_	_	_	_	_
FRM		Midi	_	_	-			_	_	_	_	_	_	_
I IAIVI		Maxi	_	_	_	-	_		-	-	_	_	_	_
Distributor		Micro	_	_	_	_	_	-	_	_	_	_	_	_
block		Mini	_	_	_	_	_	_	_	_	_	_	_	_
FRZ	406	Midi	_	_	_	_	_	_	_	_	_	_	_	_
· · · · ·	1000	Maxi	_	_	_	_	_	_	_	_	_	_	_	_
		IVIdXI	_	_	_	-	_	_	_	_	_	_	_	



Туре	Size	Bowl guar	rd .	Pressure i	ndication	Actuator l	ock	Supply vo	ltage		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 V AC	230 V AC	Non-return function	Pressure switch	
Individual devi	ces												
Pressure	Micro	-											lrb
regulators	Mini	-	-	-				-	-	-	-	-	
LRB/LRBS	Midi	-	-	-				-	-	-	-	-	
Durana	Maxi	-											Lulu
Pressure	Micro	_	I		_	T _							lrb
regulator	Mini	-	_	-	-	-	-	-	-	-	-	-	1
combinations	Midi	-	-	-			-	-	-	-	-	-	
LRB-K	Maxi	-	-										
Lubricators	Micro	_		_		_	_	_	_	_	_	_	6
LOE	Mini		_	_	_	_	_	_	_	_	_	_	-
101	Midi		_	_	_	_	_	_	_	_	_	_	
	Maxi		_	_	_	_	_	_	_	_	_	_	
	maxi	_			_								
On-off valves	Micro	-											he
HE	Mini	-	-	-			-	-	-	-	-	-	
	Midi	-	-	-			_	-	-	-	-	-	
	Maxi	-	-	-			_	-	-	-	-	-	
On-off valves,	Micro	-											hee
electrical	Mini	-	-	-		-	-				-	-	
HEE	Midi	-	-	-		-	-	•			-	-	
	Maxi	-	-	-		-	_				-	-	
On-off valves,	Micro	-				1	1	1	1			1	hep
pneumatic	Mini	-	-	-		-	-	-	-	-	-	-	
HEP	Midi	-	-	-		-	-	-	-	-	-	-	
	Maxi	-	-	-		-	-	-	-	-	-	-	
Soft-start	Micro	-					•						hel
valves	Mini	-	-	-		-	-	-	-	-	-	-	
HEL	Midi	-	-	-		-	-	-	-	-	-	-	
	Maxi	-	_	-		-	-	-	-	-	-	-	
		T											L
Membrane air	Micro	-											ldm1
dryers	Mini	-											
LDM1	Midi	-	1	1	ı	1	1	1	T	1	1	T	
	Maxi		_	-		-	-	-	-	-	-	-	
Branching	Micro	_											frm
modules	Mini	_	_	_		_	_	_	_	_			- '''''
FRM	Midi	_	_	_	-	_	_	_	_	_			1
1 AIVI	Maxi	_	_	_	-	_	_	_	_	_			+
Distributor	Micro	_	_	_	-	_	_	_	_	_	_	-	frz
block	Mini	_	_	_	-	_	_	_	_	_	_	_	1112
FRZ	Midi	_	_	_	-	_	_	_	_	_	_	_	+
. 11.2	Maxi	_	_	_	-	_	_	_	_	_	_	_	+
	ινιαλΙ	_			-	_		_	_	_	_	_	

Lubricators LOE, D series, metal design Peripherals overview

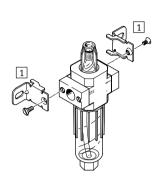


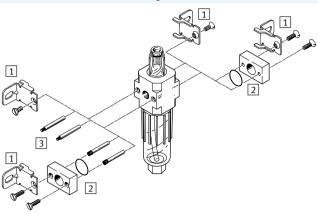


Micro

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

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



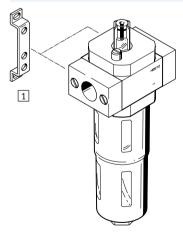


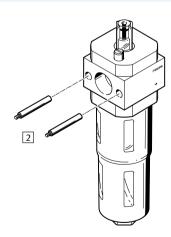
Mounting attachments and access	ories					
		Individual unit		Combination		→ Page/
		with connection	without connection	with connection	without connection	Internet
		plates	plates	plates	plates	
Mounting bracket		_	_	_	_	hfoe-d
HFOE		•	-	-	-	
2 Connecting plate kit			_		_	pbl
PBL		_	-	_	-	
3 Threaded pin		_	_	•	•	frb-d
FRB		1	_	-	_	

Mini/Midi/Maxi

Individual unit with connection plates

Individual unit without connection plates, for service unit combination



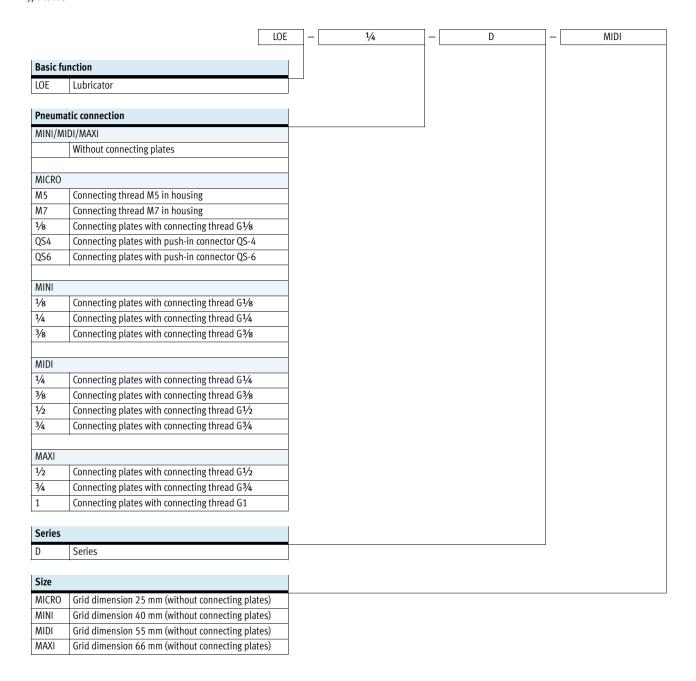


Mounting attachments and accessories					
	Individual unit		Combination		→ Page/
	with connection	without connection	with connection	without connection	Internet
	plates	plates	plates	plates	
Mounting bracket			_		hfoe-d
HFOE	-	_	-	_	
2 Threaded pin (included in scope of delivery)			•	_	frb-d
FRB	_	_	-	-	

Lubricators LOE, D series, metal design



Type codes



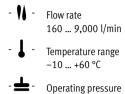
Lubricators LOE, D series, metal design

FESTO

Technical data

Function





0 ... 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 → 14
- 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, 2 ¹⁾	M5 ²⁾ , M7 ²⁾ , G ¹ /8, QS-4 ³⁾ , QS-6 ³⁾	G½, G¼, G¾, -4)	G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄ , - ⁴⁾	G½, G¾, G1, -4)
Design	Proportional standard mist lu	ıbricator		
Type of mounting	Via accessories			
	In-line installation			
Mounting position	Vertical ±5°			
Air purity class at the output	Compressed air according to	ISO 8573-1:2010 [7:4:4]		
	Inert gases			
Bowl guard	-	Metal bowl guard		
Minimum flow for lubricator [l/min]	3	3	8	10
operation				
Max. oil capacity [cm ³]	6.5	45	110	100

- Connecting plates with connecting thread
 Without connecting plates, connecting thread in housing
- Connecting plates with push-in connector
- Without connecting plates.
- Note: This product conforms to ISO 1179-1 and to ISO 228-1

Lubricators LOE, D series, metal designTechnical data



Standard nominal flow rate ¹⁾ qnN [l/min]									
Size	Micro								
Pneumatic connection 1, 2	M5	M7	G1/8	QS-4	QS-6				
LOE	200	430	410	160	330				

1) Measured at p1 = 6 bar and Δ p = 1 bar.

Standard nominal flow rate q _{nN} ¹⁾ [l/min]										
Size	Mini			Midi				Maxi		
Pneumatic connection 1, 2	G1/8	G ¹ / ₄	G3/8	G1/4	G3/8	G ¹ / ₂	G3/4	G ¹ / ₂	G3/4	G1
LOE	1,300	2,300	2,700	2,800	5,500	6,100	6,300	8,300	8,400	9,000

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

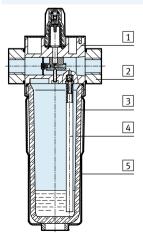
Operating and environmen	tal condition	15			
Size		Micro	Mini	Midi	Maxi
Operating pressure	[bar]	1 10	0 16		
Operating medium		Compressed air in acco	ordance with ISO 8573-	1:2010 [7:4:4]	
		Inert gases			
Note on operating/pilot med	dium	Operation with lubrica	ted medium possible (ir	which case lubricated operation	n will always be required)
Ambient temperature	[°C]	-10 +60			
Temperature of medium	[°C]	-10 +60			
Storage temperature	[°C]	-10 +60			
Corrosion resistance class (CRC ¹⁾	2			
Certification		Germanischer Lloyd			

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Weight [g]						
Size	Micro		Mini	Midi	Maxi	
	Connecting	Connecting			Connection	Connection
	thread	plate			G ¹ / ₂ , G ³ / ₄	G1
LOE	39	59	270	630	1,100	1,200

Materials

Sectional view



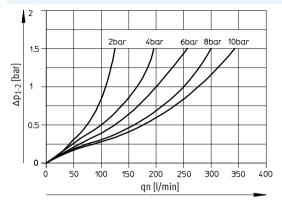
Size		Micro	Mini/Midi/Maxi
1	Housing	Die-cast aluminium	Die-cast zinc/aluminium
2	Connecting plates	Wrought aluminium alloy	Die-cast zinc/aluminium
3	Bowl	PC	
4	Tubing	PE	
5	Metal bowl guard	-	Wrought aluminium alloy
-	Seals	NBR	
Note	on materials	RoHS-compliant	

Lubricators LOE, D series, metal design Technical data

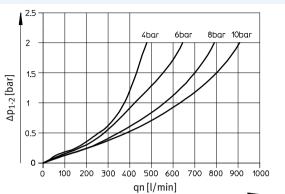


Standard flow rate qn as a function of the differential pressure $\Delta p1-2$

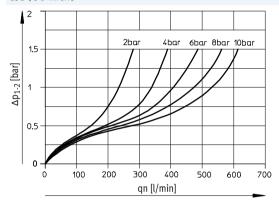
LOE-M5-D-MICRO



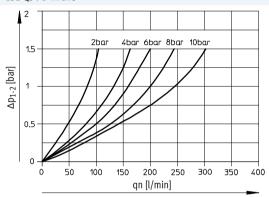
LOE-M7-D-MICRO B



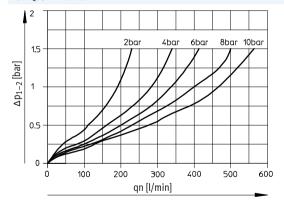
LOE-1/8-D-MICRO



LOE-QS4-D-MICRO



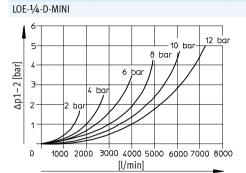
LOE-QS6-D-MICRO

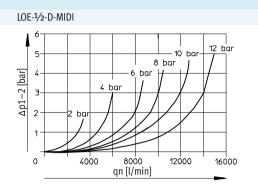


Lubricators LOE, D series, metal design Technical data

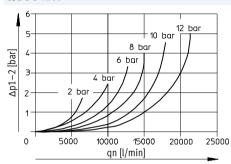


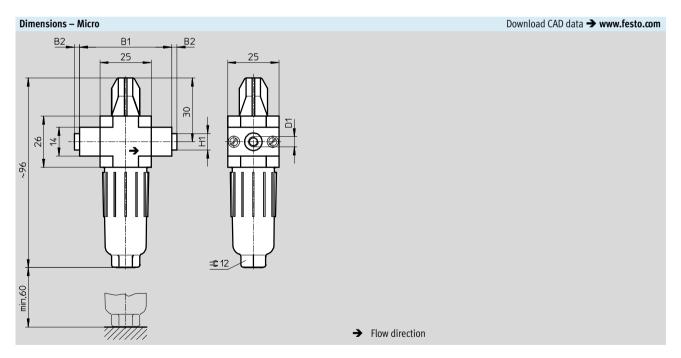
Standard flow rate qn as a function of the differential pressure $\Delta p1-2$





LOE-1-D-MAXI





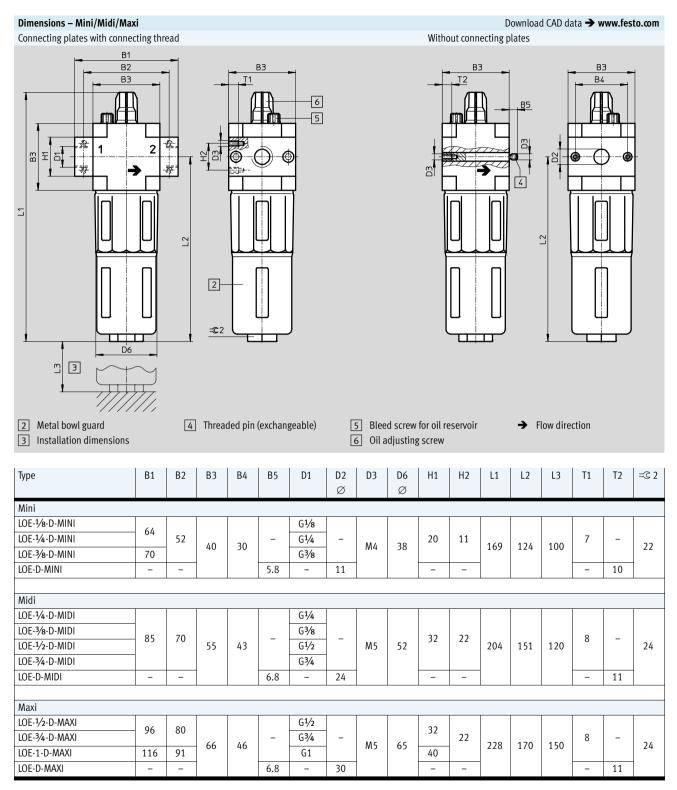
Туре	B1	B2	D1	H1
LOE-M5-D-MICRO	25		M5	
LOE-M7-D-MICRO B	25	-	M7	-
LOE-1/8-D-MICRO			G1/8	
LOE-QS4-D-MICRO	45	~2.5	QS-4	~8
LOE-QS6-D-MICRO		~ 2.5	QS-6	~10

 $^{\|\}cdot\|$ Note: This product conforms to ISO 1179-1 and to ISO 228-1

Lubricators LOE, D series, metal design



Technical data



 $[\]ensuremath{\|}\cdot$ Note: This product conforms to ISO 1179-1 and to ISO 228-1

Lubricators LOE, D series, metal design Technical data



Ordering data – Micro				
Size	Connection	Part No.	Туре	
Without conn	ecting plates, connecti	ng thread in hous	ing	
Micro	M5	526309	LOE-M5-D-MICRO	
	M7	534188	LOE-M7-D-MICRO-B	
	lates with connecting th			
Micro	G1/8	526310	LOE-1/8-D-MICRO	
Connecting p	lates with push-in conr	nector		
Micro	QS-4	526313	LOE-QS4-D-MICRO	
	QS-6	526314	LOE-QS6-D-MICRO	

Ordering data	a – Mini/Midi/Maxi				
Size	Connection	Part No.	Туре		
Without conn	ecting plates				
Mini	-	192575	LOE-D-MINI		
Midi	-	192576	LOE-D-MIDI		
Maxi	-	192577	LOE-D-MAXI		
	·		·	·	
Connecting p	ates with connecting thr	read			
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		
	G ¹ / ₂	159587	LOE-1/2-D-MIDI		
	G ³ / ₄	162681	LOE-3/4-D-MIDI		
Maxi	G ¹ / ₂	186480	LOE-1/2-D-MAXI		
	G ³ / ₄	159622	LOE-3/4-D-MAXI		
	G1	159623	LOE-1-D-MAXI		

Lubricators LOE, D series Accessories



Special oil



Ordering data		
Scope of delivery	Part No.	Туре
1 litre	152811	OFSW-32