

Lubricators MS-LOE, MS series, NPT

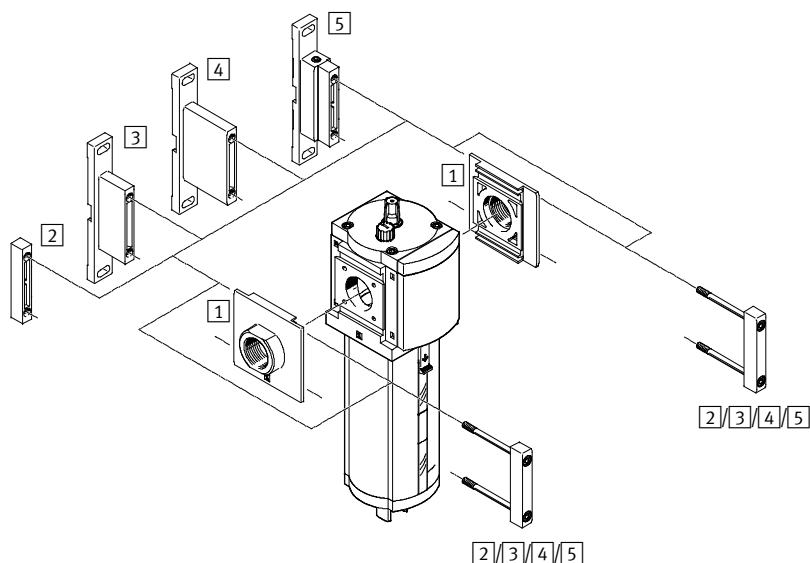
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Lubricators MS9-LOE, MS series, NPT

Peripherals overview

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 Note

Additional accessories:

- Module connector for combinations with size MS6, MS9 or MS12
- Internet: rmv, armv

Mounting attachments and accessories					
		Individual unit		Combination	➔ Page/Internet
		Without connecting thread	With connecting thread NPT¾-14 or NPT1-11½		
1	Connecting plate MS9-AQ...	■	–	■	ms9-aq
2	Module connector MS9-MV	■	–	■	ms9-mv
3	Mounting bracket MS9-WP	■	■	■	ms9-wp
4	Mounting bracket MS9-WPB	■	■	■	ms9-wp
5	Mounting bracket MS9-WPM	■	–	■	ms9-wp

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Type codes

		MS	9	-	LOE	-	G	-	U
Series									
MS	Standard service unit								
Size									
9	Grid dimension 90 mm								
Service function									
LOE	Lubricator								
Pneumatic connection									
G	Module without connecting thread, without connecting plate								
Bowl guard									
U	Integrated as metal bowl								

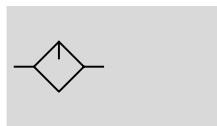
Additional variants can be ordered using the modular product system → 8

- Connecting thread
- Connecting plates
- Type of mounting
- Alternative flow direction

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Technical data

Function



-  - Flow rate
15,000 ... 20,000 l/min
-  - Temperature range
-10 ... +60 °C
-  - Operating pressure
1 ... 16 bar



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

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 part is proportional to the compressed air flow rate.

- Proportional lubricator with precision oil metering
- Integrated sintered filter for filtering the oil
- Reduces wear on drive units subject to high loading
- High flow rate
- Quick and easy oil top-up even during operation (under pressure)

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 OFSW-32 → 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	MS9			
Pneumatic connection 1, 2	NPT $\frac{3}{4}$ -14	NPT1-11 $\frac{1}{2}$	NPT $\frac{1}{2}$ -14 ... NPT1 $\frac{1}{2}$ -11 $\frac{1}{2}$ (with connecting plate AQ...)	– (without connecting thread G)
Design	Proportional standard mist lubricator			
Type of mounting	Via accessories In-line installation			
Mounting position	Vertical $\pm 5^\circ$			
Bowl guard	Integrated as metal bowl			
Minimum flow rate for lubricator operation	[l/min] 100			
Max. oil capacity	[ml] 490			

Standard nominal flow rate $q_{nN}^{1)}$ [l/min]					
Pneumatic connection	Connecting plate AQR	Thread NPT $\frac{3}{4}$ -14 or connecting plate AQS	Thread NPT1-11 $\frac{1}{2}$ or connecting plate AQT	Connecting plate AQU	Connecting plate AQV
In main flow direction 1 → 2	8,500	15,000	23,000	26,000	27,000

1) Measured at $p_1 = 6$ bar and $\Delta p = 1$ bar.

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Operating and environmental conditions	
Operating pressure [bar]	1... 16
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Ambient temperature [°C]	-10 ... +60
Temperature of medium [°C]	-10 ... +60
Storage temperature [°C]	-10 ... +60
Corrosion resistance class CRC ¹⁾	2

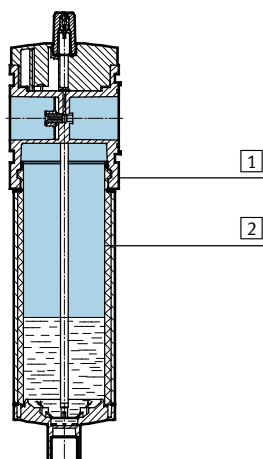
1) Corrosion resistance class 2 according to Festo standard 940 070

Components subject to moderate corrosion stress. 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]	
Lubricator	2,000

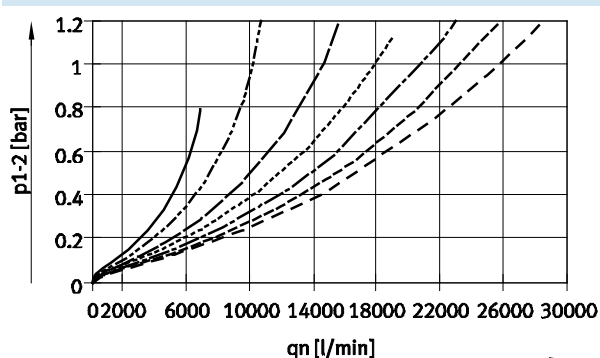
Materials

Sectional view

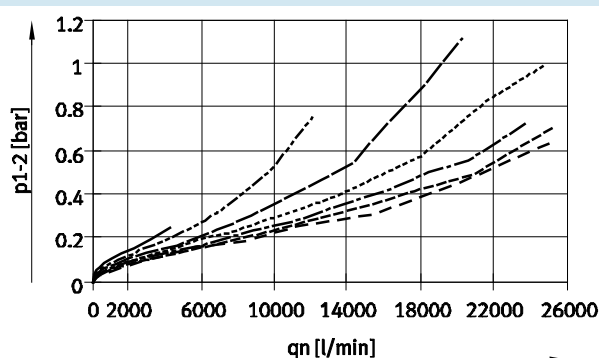


Lubricator	
1 Housing	Die-cast aluminium
2 Bowl	Wrought aluminium alloy
Inspection window	PA
- Cover	PA reinforced
- Connecting plate, module connector, mounting bracket	Die-cast aluminium
- Seals	NBR
Note on materials	RoHS-compliant

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

MS9-LOE-N $\frac{3}{4}$ /AQS, pneumatic connection NPT $\frac{3}{4}$ -14


— 1 bar
 - - - 2 bar
 . . . 4 bar
 - . - 6 bar
 - - - 8 bar
 - - - 10 bar
 - - - 12 bar

MS9-LOE-N1/AQT, pneumatic connection NPT1-11 $\frac{1}{2}$


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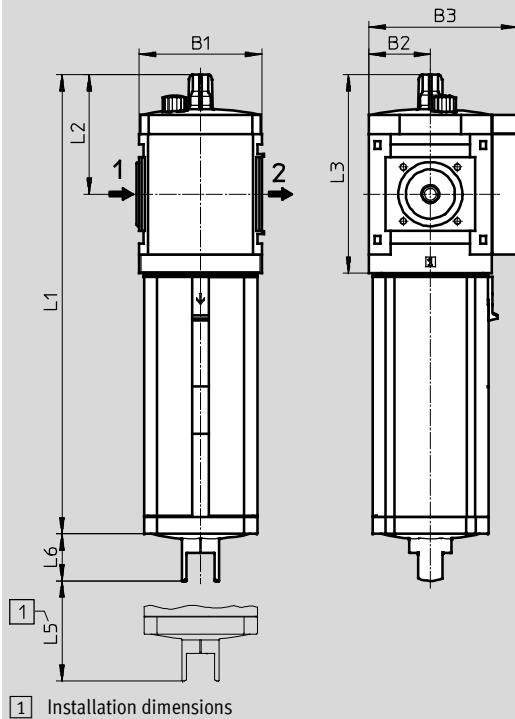
Technical data

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Dimensions – Basic version

Download CAD data → www.festo.com

Without connecting thread G



1 Installation dimensions

→ Flow direction

Type	B1	B2	B3	L1	L2	L3	L5 min.	L6
MS9-LOE-G	90	45	109	336.3	87	145	225	34.5

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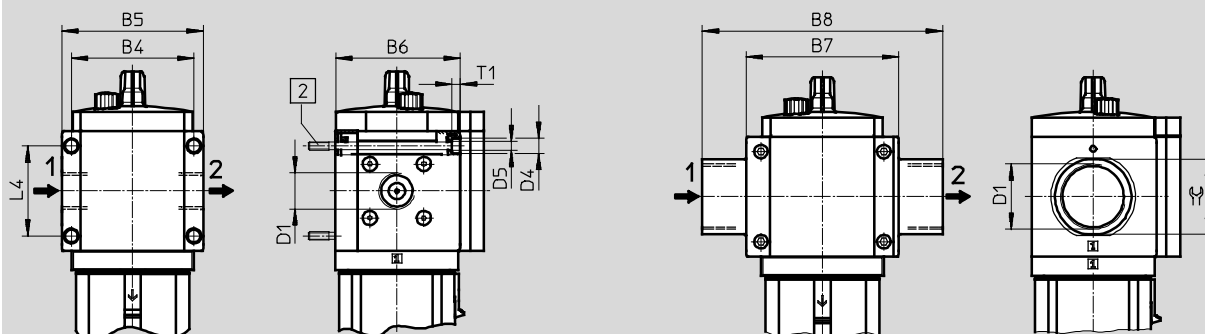
Technical data

Dimensions – Connecting thread/connecting plate

Download CAD data → www.festo.com

With connecting thread N $\frac{3}{4}$ or N1

With connecting plate AQ...



2 Mounting screw M6xmin.90 to DIN 912 (not included in the scope of delivery) for wall mounting without mounting bracket

→ Flow direction

Type	B4	B5	B6	B7	B8	D1	D4 Ø	D5 Ø	L4	T1	≅
MS9-LOE-N $\frac{3}{4}$	90	104	91.5	–	–	NPT $\frac{3}{4}$ -14	11	6.5	66	6	–
MS9-LOE-N1						NPT1-11 $\frac{1}{2}$					
MS9-LOE-AQR	–	–	–	112	132	NPT $\frac{1}{2}$ -14	–	–	–	–	30
MS9-LOE-AQS					132	NPT $\frac{3}{4}$ -14					36
MS9-LOE-AQT					142	NPT1-11 $\frac{1}{2}$					41
MS9-LOE-AQU					162	NPT1 $\frac{1}{4}$ -11 $\frac{1}{2}$					50
MS9-LOE-AQV					176	NPT1 $\frac{1}{2}$ -11 $\frac{1}{2}$					55

Ordering data

Size	Connection	Part No.	Type
MS9	–	564144	MS9-LOE-G-U

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Ordering data – Modular products

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M Mandatory data						O Options	
Module No.	Series	Size	Function	Connection size	Bowl	Type of mounting	Alternative flow direction
562533	MS	9	LOE	N $\frac{3}{4}$, N1, AQR, AQS, AQT, AQU, AQV, G	U	WP, WPM, WPB	Z
Ordering example							
562533	MS	9	- LOE	- AQR	- U	- WP	

Ordering table							
Grid dimension		[mm]	90	Condi- tions	Code	Enter code	
M	Module No.	562533					
	Series	Standard service unit			MS		MS
	Size	9			9		9
	Function	Lubricator			-LOE		-LOE
	Connection size	Thread N $\frac{3}{4}$			-N $\frac{3}{4}$		
		Thread N1			-N1		
		Connecting plate N $\frac{1}{2}$			-AQR		
		Connecting plate N $\frac{3}{4}$			-AQS		
		Connecting plate N1			-AQT		
		Connecting plate N1 $\frac{1}{4}$			-AQU		
		Connecting plate N1 $\frac{1}{2}$			-AQV		
		Module without connecting thread, without connecting plate			-G		
	Bowl	Metal bowl			-U		-U
O	Type of mounting	Mounting bracket			1	-WP	
		Mounting bracket			1	-WPM	
		Mounting bracket for large wall gap			1	-WPB	
	Alternative flow direction	Flow direction from right to left				-Z	

1 WP, WPM, WPB Not with module G

Transfer order code

562533	MS	9	-	LOE	-		-	U	-		-	
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Accessories



Special oil



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