

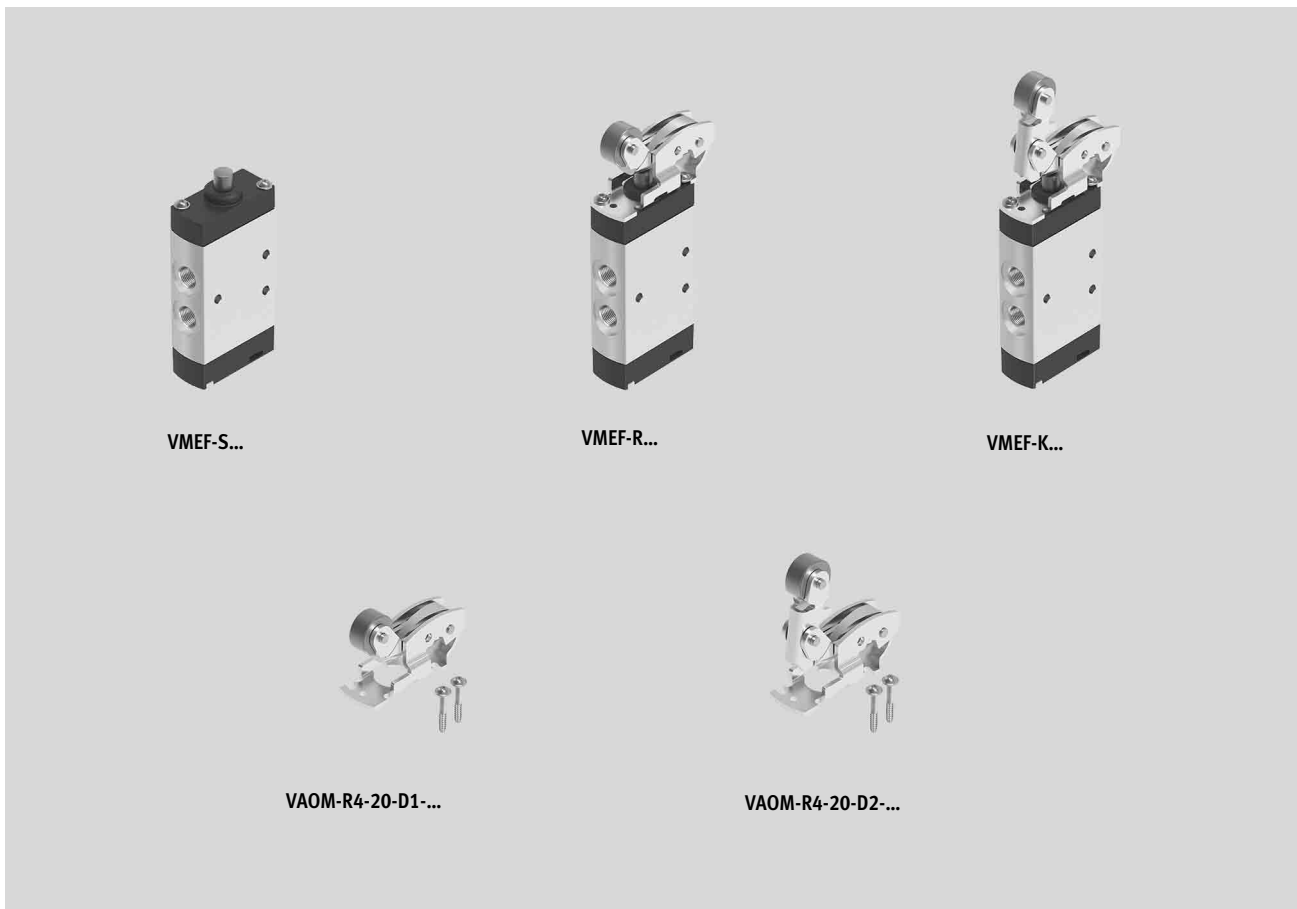
**Mechanically actuated valves VMEF**



# Mechanically actuated valves VMEF

Key features

FESTO



## Innovative

- Small and compact for a wide range of pneumatic applications
- Numerous selectable valve functions: 3/2-way and 5/2-way functions
- Flow rates up to 1200 l/min
- Outstanding pneumatic performance for a wide range of applications
- Light weight
- Minimal actuating forces

## Versatile

- Flexibility of the pneumatic working ports provides a practical solution to different requirements
- Round silencer for ducted exhaust air
- Suitable for vacuum in some cases
- Reverse operation possible in some cases
- Actuation: direct and piloted
- Pressure range from vacuum to 10 bar possible
- Version:
  - Stem actuated valve
  - Roller lever valve
  - Toggle lever valve

## Reliable

- Durable thanks to tried and tested piston spool and disc seat valves
- Sturdy thanks to metal housing and connecting thread or connector

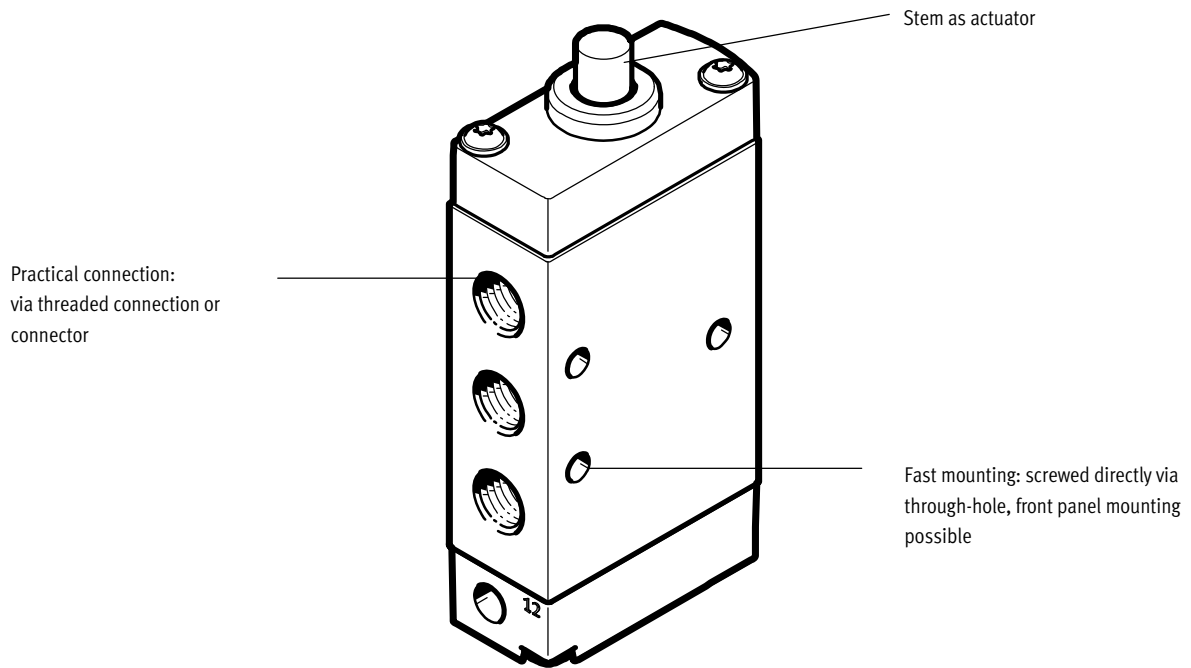
## Easy to install

- To be mounted via through-holes (stem-actuated valves are also suitable for front panel mounting)
- Can be precisely adjusted using mounting kit

# Mechanically actuated valves VMEF

Key features

FESTO



## Equipment options

### 3/2-way valve, monostable

- Normally open/closed
- Mechanical spring
- Vacuum operation possible

- Directly controlled and pneumatically piloted
- Reversible
- Ducted exhaust air

### 5/2-way valve, monostable

- Pneumatic spring/mechanical spring
- Vacuum operation possible

- Reversible in some cases
- Pneumatically piloted
- Ducted exhaust air

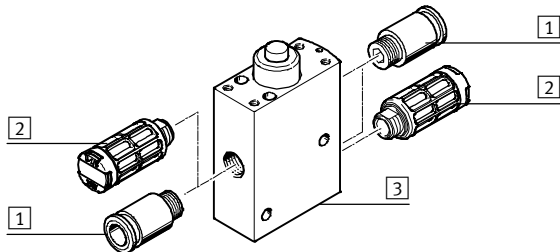
# Mechanically actuated valves VMEF

Peripherals overview

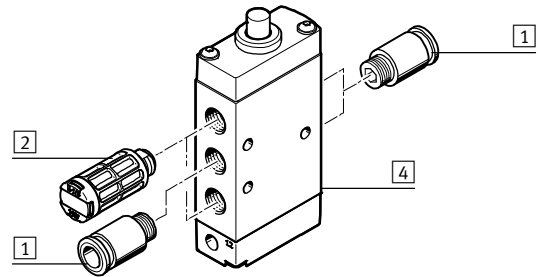


## Valves, mechanically actuated

### Stem actuated valve, 3/2-way valve

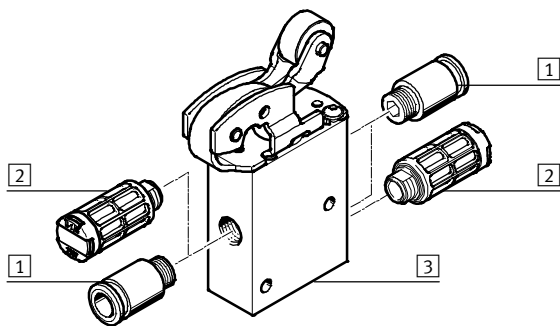


### Stem actuated valve, 5/2-way valve

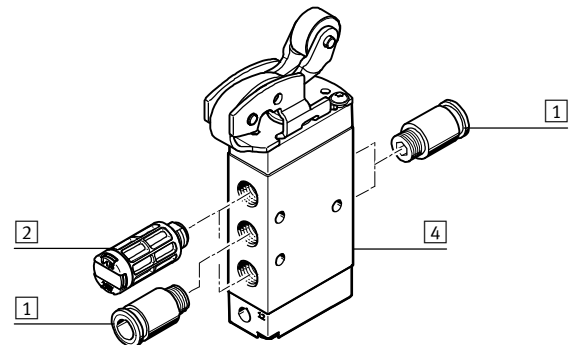


	Brief description	→ Page/Internet	
1	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	32
2	Silencers	For exhaust ports (3, 5)	32
3	3/2-way valve	Stem actuated valve	9
4	5/2-way valve	Stem actuated valve	9

### Roller lever valve, 3/2-way valve



### Roller lever valve, 5/2-way valve



	Brief description	→ Page/Internet	
1	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	32
2	Silencers	For exhaust ports (3, 5)	32
3	3/2-way valve	Stem actuated valve with roller lever attachment	23
4	5/2-way valve	Stem actuated valve with roller lever attachment	23

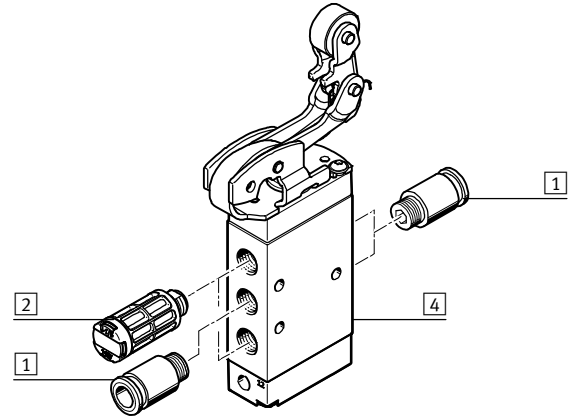
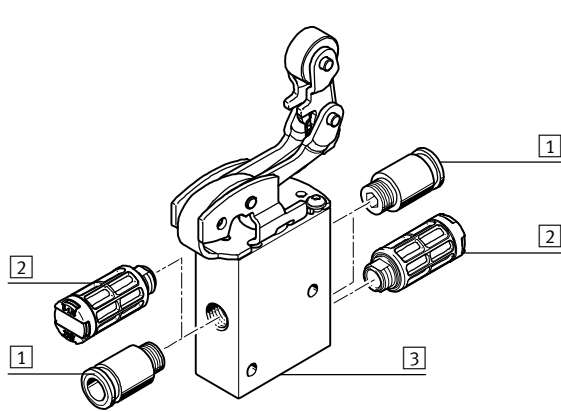
# Mechanically actuated valves VMEF

Peripherals overview

**Valves, mechanically actuated**

Toggle lever valve, 3/2-way valve

Toggle lever valve, 5/2-way valve



	Brief description	→ Page/Internet	
1	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	32
2	Silencers	For exhaust ports (3, 5)	32
3	3/2-way valve	Stem actuated valve with toggle lever attachment	23
4	5/2-way valve	Stem actuated valve with toggle lever attachment	23

# Mechanically actuated valves VMEF

Key features – Pneumatics

## Mechanically actuated valves

Mechanically actuated valves are often used as “signal valves”, and return a pneumatic signal to the controller. This signal, e.g. “end position reached”, is transmitted via

a stem or roller actuated valve. This application sounds simple; it is used in smaller machines and in conveyor systems e.g. to control simple clamping and locking

processes in semi-automatic assembly and manufacturing.

Benefits of mechanically actuated valves:

- No expensive programming
- Easy to set and connect
- Can be controlled and measured using sensors
- No electronic controller required

Valve functions		
Circuit symbol	Type	Description
Stem actuated valve		
	VMEF-ST-M32-M...	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed (1 → 2)</li> <li>• Normally open (3 → 2)</li> <li>• Reset via mechanical spring</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
	VMEF-STC-M32-M...	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed (1 → 2)</li> <li>• Normally open (3 → 2)</li> <li>• Reset via mechanical spring</li> <li>• Pneumatically piloted, internal pilot air</li> <li>• Reversible</li> </ul>
	VMEF-STCZ-M32-M...	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed (1 → 2)</li> <li>• Normally open (3 → 2)</li> <li>• Reset via mechanical spring</li> <li>• Pneumatically piloted, external pilot air</li> <li>• Reversible</li> </ul>
	VMEF-S-M52-E...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reset via (external) pneumatic spring</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
	VMEF-S-M52-M...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reset via mechanical spring</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
	VMEF-SCZ-M52-E...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Pneumatically piloted, external pilot air</li> <li>• Reset via pneumatic spring</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
	VMEF-SCZ-M52-M...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Pneumatically piloted, external pilot air</li> <li>• Reset via mechanical spring</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
	VMEF-SC-M52-M...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Pneumatically piloted, internal pilot air</li> <li>• Reset via mechanical spring</li> <li>• Suitable for vacuum</li> </ul>

# Mechanically actuated valves VMEF

Key features – Pneumatics

Valve functions		
Circuit symbol	Type	Description
<b>Roller lever valve</b>		
<p>The circuit symbol shows a 3/2-way valve with a roller lever actuator. Port 12 is the inlet, port 2 is the outlet, and port 3 is the return. A spring symbol is shown on port 3, indicating a normally open configuration.</p>	VMEF-RT-M32-M-...	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed (1 → 2)</li> <li>• Normally open (3 → 2)</li> <li>• Reset via mechanical spring</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
<p>The circuit symbol shows a 5/2-way valve with a roller lever actuator. Port 14 is the inlet, port 2 is the outlet, and port 3 is the return. Ports 4 and 5 are the two additional outlets. A spring symbol is shown on port 3, indicating a normally open configuration.</p>	VMEF-R-M52-M-...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reset via mechanical spring</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
<p>The circuit symbol shows a 5/2-way valve with a roller lever actuator and an external pneumatic spring. Port 14 is the inlet, port 2 is the outlet, and port 3 is the return. Ports 4 and 5 are the two additional outlets. A spring symbol is shown on port 3, indicating a normally open configuration.</p>	VMEF-R-M52-E-...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reset via (external) pneumatic spring</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
<b>Toggle lever valve</b>		
<p>The circuit symbol shows a 3/2-way valve with a toggle lever actuator. Port 12 is the inlet, port 2 is the outlet, and port 3 is the return. A spring symbol is shown on port 3, indicating a normally open configuration.</p>	VMEF-KT-M32-M-...	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed (1 → 2)</li> <li>• Normally open (3 → 2)</li> <li>• Reset via mechanical spring</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
<p>The circuit symbol shows a 5/2-way valve with a toggle lever actuator. Port 14 is the inlet, port 2 is the outlet, and port 3 is the return. Ports 4 and 5 are the two additional outlets. A spring symbol is shown on port 3, indicating a normally open configuration.</p>	VMEF-K-M52-M-...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reset via mechanical spring</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>

- - Note

A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup).

# Mechanically actuated valves VMEF




Type codes

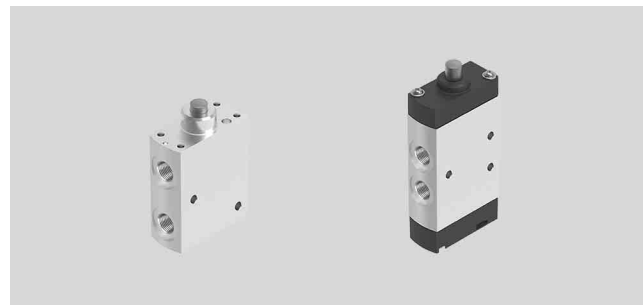
		VMEF	-		-		-		-	
<b>Valve series</b>										
VMEF	Mechanically actuated valves									
<b>Design</b>										
Actuation										
K	Toggle lever valve									
R	Roller lever valve									
S	Stem actuated valve									
Design										
-	Piston spool									
T	Disc seat									
Actuation										
-	Directly actuated									
C	Pneumatically piloted									
Pilot air supply										
-	Internal									
Z	External									
<b>Valve function</b>										
M32	3/2-way valve, monostable									
M52	5/2-way valve, monostable									
<b>Type of reset</b>										
E	Pneumatic spring, external									
M	Mechanical spring									
<b>Pneumatic connection</b>										
G14	Threaded connection G1/4									
N14	Threaded connection 1/4 NPT									
G18	Threaded connection G1/8									
N18	Threaded connection 1/8 NPT									



# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

-  Flow rate  
750 ... 1200 l/min
-  Pressure  
-0.95 ... +10 bar
-  Temperature range  
-10 ... +60 °C



General technical data	
Design	Stem actuated valve
Width [mm]	20
Type of control	Directly actuated or piloted
Max. actuating speed	
• Directly actuated [m/s]	0.6
• Piloted [m/s]	0.3
Notes regarding use	Do not use as mechanical stop
Type of actuation	Mechanical
Mounting	Via through-hole
Sealing principle	Soft
Flow direction	Reversible
Mounting position	Any
Max. switching frequency [Hz]	3

Technical data – Disc seat valve					
Type		VMEF-ST-M32 ... 18	VMEF-STC ... -M32 ... 18	VMEF-ST-M32 ... 14	VMEF-STC ... -M32 ... 14
Version		Disc seat valve			
Standard nominal flow rate	1 → 2 [l/min]	750	750	870	870
	3 → 2 [l/min]	665	665	750	750
Valve function		3/2-way valve, closed, monostable			
Lap		Zero lap			
Type of control		Directly actuated	Piloted	Directly actuated	Piloted
Reset method		Mechanical spring			
Pneumatic connection 1, 2, 3	G	1/8	1/8	1/4	1/4
	NPT	1/8	1/8	1/4	1/4
Pilot air port 12/14		–	M5	–	M5
Pilot air supply		–	Internal or external	–	Internal or external
Nominal width [mm]		5.6	5.6	6.0	6.0
Actuating force at 6 bar					
• Normally closed [N]		46	14	46	14
• Normally open [N]		82	14	82	14

# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

Technical data – Piston spool valve				
Type code	VMEF-S-M52-E ... 18	VMEF-S-M52-M ... 18	VMEF-S-M52-E ... 14	VMEF-S-M52-M ... 14
Version	Piston spool valve			
Standard nominal flow rate $1 \rightarrow 2$ [l/min]	750	750	1200	1200
Valve function	5/2-way valve, monostable			
Lap	Overlap			
Type of control	Directly actuated			
Reset method	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Pneumatic port 1, 2, 3, 4, 5	G	1/8	1/8	1/4
	NPT	1/8	1/8	1/4
Pilot air port 12/14	M5	–	M5	–
Nominal width [mm]	5.2	5.2	7.0	7.0
Actuating force at 6 bar [N]	28	34	48	43

Technical data – Piston spool valve				
Type code	VMEF-SCZ-M52-E ... 18	VMEF-S...M52-M ... 18	VMEF-SCZ-M52-E ... 14	VMEF-S...M52-M ... 14
Version	Piston spool valve			
Standard nominal flow rate $1 \rightarrow 2$ [l/min]	750	750	1200	1200
Valve function	5/2-way valve, monostable			
Lap	Overlap			
Type of control	Piloted			
Reset method	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Pneumatic port 1, 2, 3, 4, 5	G	1/8	1/8	1/4
	NPT	1/8	1/8	1/4
Pilot air port 12/14	M5	M5	M5	M5
Pilot air supply	External	Internal or external	External	Internal or external
Nominal width [mm]	5.2	5.2	7.0	7.0
Actuating force at 6 bar [N]	14	14	14	14

# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

Materials	
Housing	Anodised wrought aluminium alloy
Cover	PA reinforced (VMEF-STC...-M32-, VMEF...-M52-)
Seal	NBR
Note on materials	RoHS-compliant

Operating and environmental conditions						
Type code	VMEF-ST-M32- ... VMEF-STCZ-M32- ...		VMEF-STC-M32- ...		VMEF-S-M52- ... VMEF-SCZ-M52- ...	VMEF-SC-M52- ...
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]					
Note on operating/ pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure range [bar]	-0.95 ... 10		2.5 ... 10		-0.95 ... 10	2.5 ... 10
With internal or external pilot air NC valves [bar]	Internal 3.5 ... 10	External 3.0 ... 10	Internal 3.0 ... 10	External 2.5 ... 10	-	-
NO valves [bar]	3.5 ... 10	3.0 ... 10	3.5 ... 10	2.5 ... 10	-	-
Operating pressure range [psi]	-14 ... 145		36 ... 145		36 ... 145	-14 ... 145
With internal or external pilot air NC valves [psi]	Internal 51 ... 145	External 44 ... 145	Internal 44 ... 145	External 36 ... 145	-	-
NO valves [psi]	51 ... 145	44 ... 145	51 ... 145	36 ... 145	-	-
Pilot pressure range [bar]	-		-		2.5 ... 10	2.5 ... 10
Temperature of medium [°C]	-10 ... +60					
Ambient temperature [°C]	-10 ... +60					
Corrosion resistance class CRC <sup>1)</sup>	2					

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

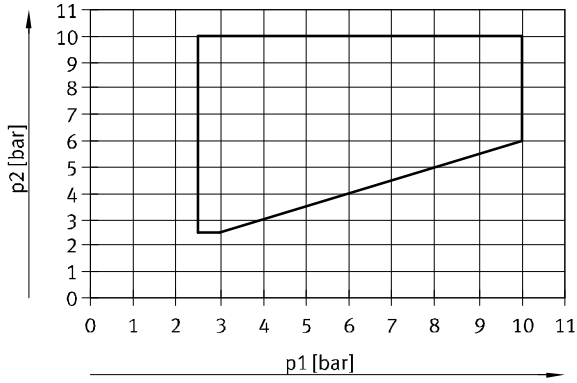
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

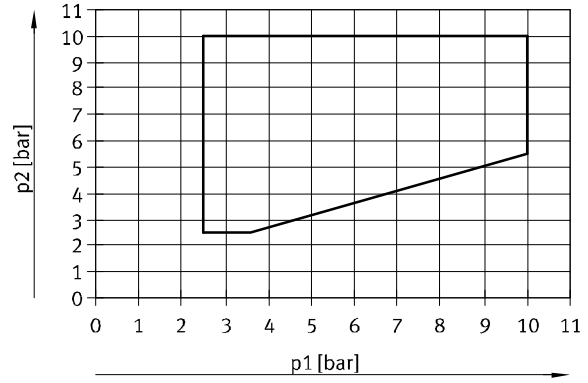
## Pilot pressure $p_2$ as a function of external pneumatic spring pressure $p_1$

For piston spool valves VMEF...-M52...18



The framed area shows the operating area for internal and external pilot air.

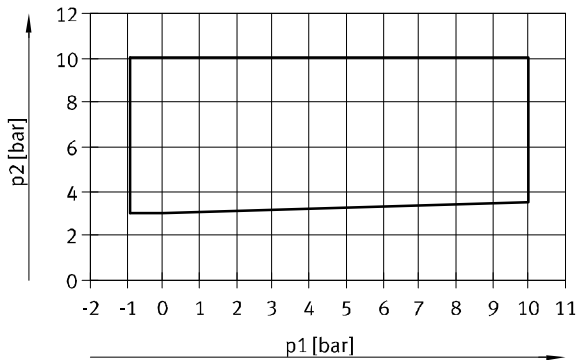
For piston spool valves VMEF...-M52...14



The framed area shows the operating area for internal and external pilot air.

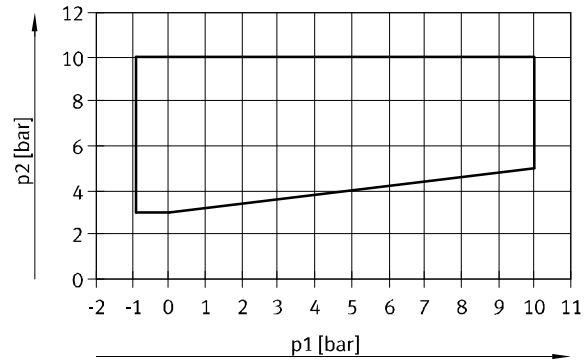
## Pilot pressure $p_2$ as a function of working pressure $p_1$

For disc seat valves VMEF...-M32...  
(normally closed, NC)



The framed area shows the operating area for external pilot air.

For disc seat valves VMEF...-M32...  
(normally open, NO)



The framed area shows the operating area for external pilot air.

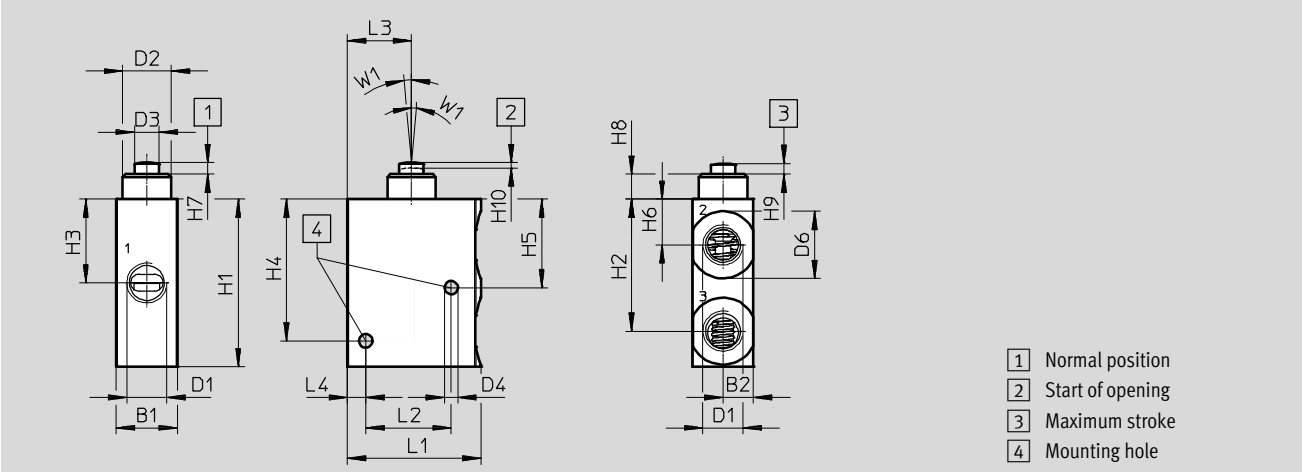
# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

3/2-way valve



Type	B1	B2	D1	D2 Ø	D3 Ø	D4 Ø	D6 Ø	L1	L2	L3	L4
VMEF-ST-M32-M-G18	20	10	G1/8	16.0	8.0	4.4	16.5	43.7	28	21	6
VMEF-ST-M32-M-N18			1/8 NPT								
VMEF-ST-M32-M-G14			G1/4								
VMEF-ST-M32-M-N14			1/4 NPT								

Type	H1	H2	H3	H4	H5	H6	H7 ±0.2	H8	H9 ±0.3	H10 ±0.3	W1
VMEF-ST-M32-M-G18	55	43.3	27.5	46.5	29	15	3.8	8.2	3.5	1.8	5°
VMEF-ST-M32-M-N18											
VMEF-ST-M32-M-G14											
VMEF-ST-M32-M-N14											

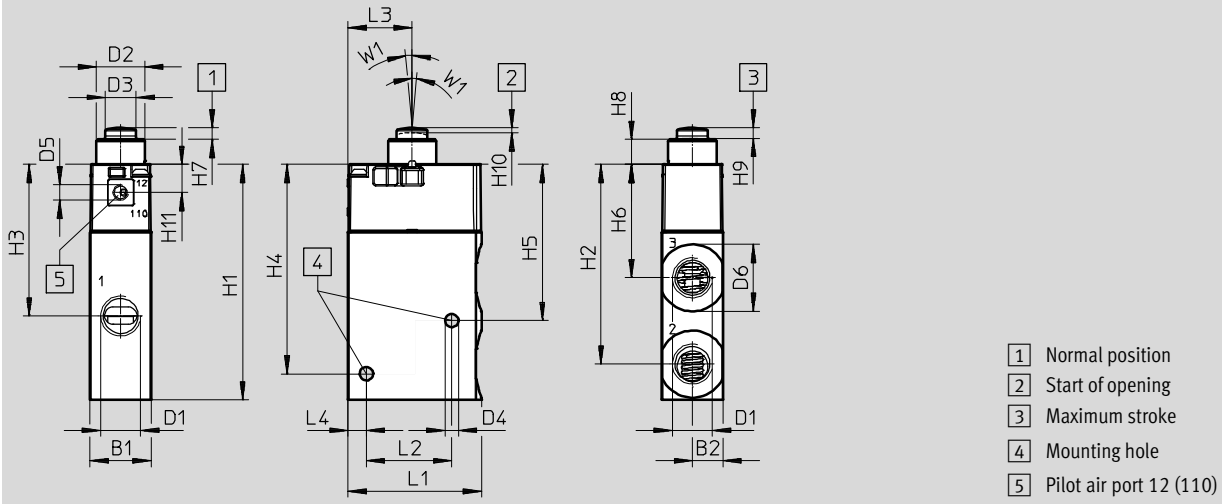
# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

3/2-way valve and 3/2-way valve with external pilot air supply



Type	B1	B2	D1	D2 Ø	D3 Ø	D4 Ø	D5	D6 Ø	L1	L2	L3	L4
VMEF-STC-M32-M-G18	20	10	G1/8	15.9	10	4.4	-	16.5	43.7	28	21	6
VMEF-STC-M32-M-N18			1/8 NPT									
VMEF-STC-M32-M-G14			G1/4					22				
VMEF-STC-M32-M-N14			1/4 NPT									
VMEF-STCZ-M32-M-G18			G1/8				M5	16.5				
VMEF-STCZ-M32-M-N18			1/8 NPT									
VMEF-STCZ-M32-M-G14			G1/4					22				
VMEF-STCZ-M32-M-N14			1/4 NPT									

Type	H1	H2	H3	H4	H5	H6	H7 ±0.15	H8	H9 ±0.15	H10 ±0.4	H11	W1
VMEF-STC-M32-M-G18	77.2	65.5	49.7	68.7	51.2	37.2	3.8	8.2	3.5	1.6	9.2	5°
VMEF-STC-M32-M-N18												
VMEF-STC-M32-M-G14												
VMEF-STC-M32-M-N14												
VMEF-STCZ-M32-M-G18												
VMEF-STCZ-M32-M-N18												
VMEF-STCZ-M32-M-G14												
VMEF-STCZ-M32-M-N14												

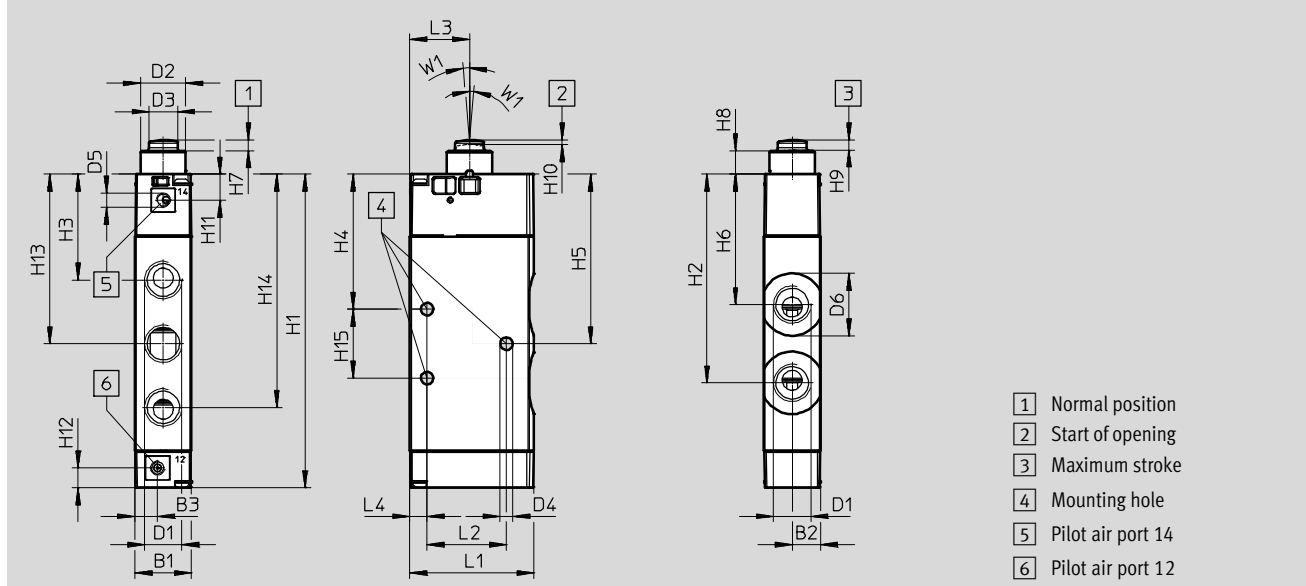
# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

5/2-way valve and 5/2-way valve with external pilot air supply



Type	B1	B2	B3	D1	D2 ∅	D3 ∅	D4 ∅	D5	D6 ∅	L1	L2	L3	L4	
VMEF-SC-M52-M-G18	20	10	8	G1/8	15.9	10	4.4	-	16.5	43.7	28	21	8.2	
VMEF-SC-M52-M-N18				1/8 NPT										
VMEF-SCZ-M52-M-G18				G1/8										M5
VMEF-SCZ-M52-M-N18				1/8 NPT										
VMEF-SCZ-M52-E-G18				G1/8										
VMEF-SCZ-M52-E-N18				1/8 NPT										
VMEF-SC-M52-M-G14				G1/4				-	22					
VMEF-SC-M52-M-N14				1/4 NPT										
VMEF-SCZ-M52-M-G14				G1/4										M5
VMEF-SCZ-M52-M-N14				1/4 NPT										
VMEF-SCZ-M52-E-G14				G1/4										
VMEF-SCZ-M52-E-N14				1/4 NPT										

Type	H1	H2	H3	H4	H5	H6	H7 ±0.15	H8	H9 ±0.15	H10 ±0.4	H11	H12	H13	H14	H15	W1
VMEF-SC-M52-M-G18	94.1	61.4	34.6	42.6	51.6	41.8	3.8	8.2	3.5	1.6	9.2	7	51.6	68.6	18	5°
VMEF-SC-M52-M-N18																
VMEF-SCZ-M52-M-G18																
VMEF-SCZ-M52-M-N18																
VMEF-SCZ-M52-E-G18																
VMEF-SCZ-M52-E-N18																
VMEF-SC-M52-M-G14	110.6	73.6	37.4	47.7	59.8	46							59.8	82.3	24.3	
VMEF-SC-M52-M-N14																
VMEF-SCZ-M52-M-G14																
VMEF-SCZ-M52-M-N14																
VMEF-SCZ-M52-E-G14																
VMEF-SCZ-M52-E-N14																

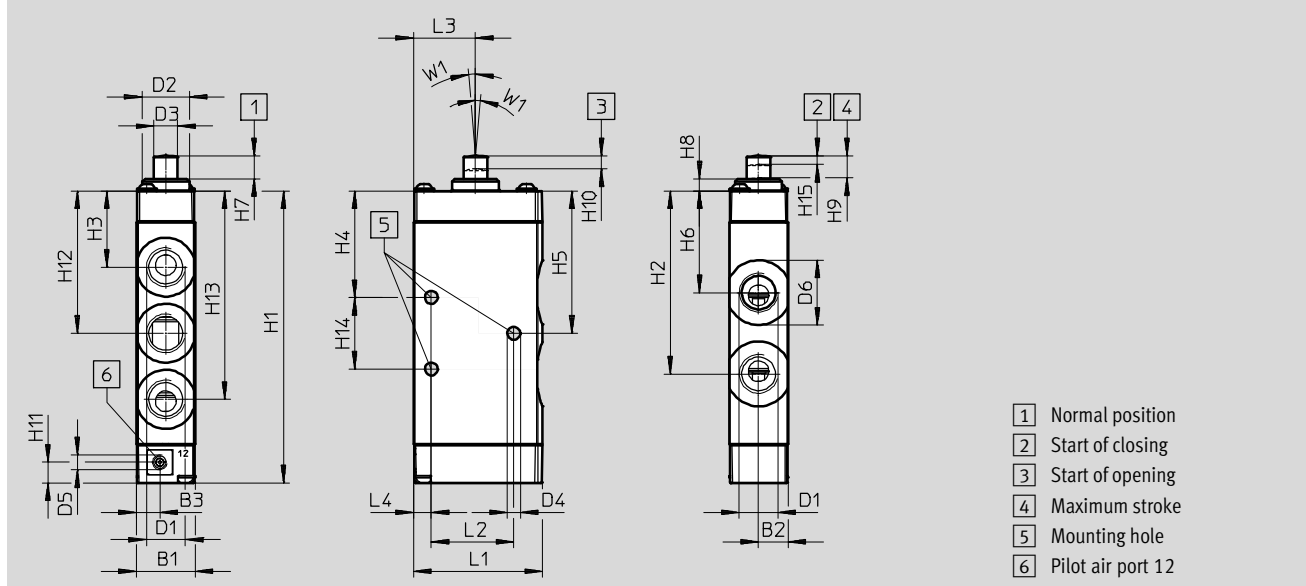
# Mechanically actuated valves VMEF

Technical data – Stem actuated valve

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

5/2-way valve



Type	B1	B2	B3	D1	D2 ∅	D3 ∅	D4 ∅	D5	D6 ∅	L1	L2	L3	L4	H1	H2		
VMEF-S-M52-M-G18	20	10	8	G1/8	16	8	4.4	-	16.5	43.7	28	21	6	82.6	49.9		
VMEF-S-M52-E-G18				M5													
VMEF-S-M52-M-N18				1/8 NPT				-									
VMEF-S-M52-E-N18				M5													
VMEF-S-M52-M-G14				G1/4				-	22							99.1	62.1
VMEF-S-M52-E-G14				M5													
VMEF-S-M52-M-N14				1/4 NPT				-									
VMEF-S-M52-E-N14				M5													

Type	H3	H4	H5	H6	H7 ±0.15	H8	H9 ±0.15	H10 ±0.15	H11	H12	H13	H14	H15 ±0.15	W1
VMEF-S-M52-M-G18	23.1	31.1	40.1	30.3	7.5	4.2	7.5	4.2	7	40.1	57.1	18	3	5°
VMEF-S-M52-E-G18														
VMEF-S-M52-M-N18														
VMEF-S-M52-E-N18														
VMEF-S-M52-M-G14	25.9	36.2	48.3	34.5	7.5	4.2	7.5	4.5	7	48.3	70.8	24.3	3	5°
VMEF-S-M52-E-G14														
VMEF-S-M52-M-N14														
VMEF-S-M52-E-N14														

Stem actuated valves VMEF-S... can be extended to form a roller lever or toggle lever valve using the actuator attachment VAOM-R4-20-.... Actuator attachments are available for 3/2-way and 5/2-way valves. → Page 28

Using the mounting kit VAME-R4-20-PA, the valve can be moved in the actuation direction. This enables the correct switching point to be set. → Page 33

- - Note

- When screwing the actuator attachment VAOM-R4-20-... onto the valve, ensure that the prescribed torque of 1.5 Nm ± 10% is observed.
- A new actuator attachment VAOM-R4-20-... can only be mounted on a basic valve three times.



# Mechanically actuated valves VMEF

Technical data – Stem actuated valve




Ordering data					
Type of control	Pilot air <sup>1)</sup>	Reset	Weight [g]	Part No.	Type
<b>3/2-way valves, G thread</b>					
Direct	–	Mechanical	116	<b>8031295</b>	<b>VMEF-ST-M32-M-G18</b>
			110	<b>8031300</b>	<b>VMEF-ST-M32-M-G14</b>
Piloted	Internal	Mechanical	131	<b>8031331</b>	<b>VMEF-STC-M32-M-G18</b>
			124	<b>8031332</b>	<b>VMEF-STC-M32-M-G14</b>
	External	Mechanical	131	<b>8031335</b>	<b>VMEF-STCZ-M32-M-G18</b>
			124	<b>8031336</b>	<b>VMEF-STCZ-M32-M-G14</b>
<b>5/2-way valves, G thread</b>					
Direct	–	Mechanical	145	<b>8031297</b>	<b>VMEF-S-M52-M-G18</b>
		Pneumatic	144	<b>8031299</b>	<b>VMEF-S-M52-E-G18</b>
		Mechanical	178	<b>8031302</b>	<b>VMEF-S-M52-M-G14</b>
		Pneumatic	177	<b>8031304</b>	<b>VMEF-S-M52-E-G14</b>
Piloted	Internal	Mechanical	184	<b>8031319</b>	<b>VMEF-SC-M52-M-G14</b>
			151	<b>8031320</b>	<b>VMEF-SC-M52-M-G18</b>
	External	Pneumatic	183	<b>8031323</b>	<b>VMEF-SCZ-M52-E-G14</b>
			150	<b>8031324</b>	<b>VMEF-SCZ-M52-E-G18</b>
		Mechanical	184	<b>8031327</b>	<b>VMEF-SCZ-M52-M-G14</b>
			151	<b>8031328</b>	<b>VMEF-SCZ-M52-M-G18</b>
<b>3/2-way valves, NPT thread</b>					
Direct	–	Mechanical	116	<b>8031305</b>	<b>VMEF-ST-M32-M-N18</b>
			110	<b>8031310</b>	<b>VMEF-ST-M32-M-N14</b>
Piloted	Internal	Mechanical	131	<b>8031333</b>	<b>VMEF-STC-M32-M-N18</b>
			124	<b>8031334</b>	<b>VMEF-STC-M32-M-N14</b>
	External	Mechanical	131	<b>8031337</b>	<b>VMEF-STCZ-M32-M-N18</b>
			124	<b>8031338</b>	<b>VMEF-STCZ-M32-M-N14</b>
<b>5/2-way valves, NPT thread</b>					
Direct	–	Mechanical	145	<b>8031307</b>	<b>VMEF-S-M52-M-N18</b>
		Pneumatic	144	<b>8031309</b>	<b>VMEF-S-M52-E-N18</b>
		Mechanical	178	<b>8031312</b>	<b>VMEF-S-M52-M-N14</b>
		Pneumatic	177	<b>8031314</b>	<b>VMEF-S-M52-E-N14</b>
Piloted	Internal	Mechanical	184	<b>8031321</b>	<b>VMEF-SC-M52-M-N14</b>
			151	<b>8031322</b>	<b>VMEF-SC-M52-M-N18</b>
	External	Pneumatic	183	<b>8031325</b>	<b>VMEF-SCZ-M52-E-N14</b>
			150	<b>8031326</b>	<b>VMEF-SCZ-M52-E-N18</b>
		Mechanical	184	<b>8031329</b>	<b>VMEF-SCZ-M52-M-N14</b>
			151	<b>8031330</b>	<b>VMEF-SCZ-M52-M-N18</b>

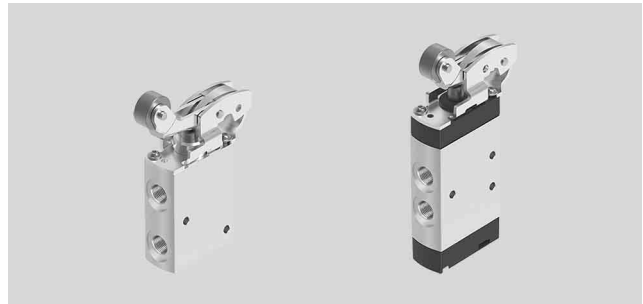
1) With piloted valves

# Mechanically actuated valves VMEF

Technical data – Roller lever valve

FESTO

-  Flow rate  
750 ... 1200 l/min
-  Pressure  
-0.95 ... 10 bar
-  Temperature range  
-10 ... +60 °C



General technical data	
Design	Roller lever
Width [mm]	20
Type of control	Directly actuated
Notes regarding use	Risk of pinching
Type of actuation	Mechanical
Mounting	Via through-hole
Sealing principle	Soft
Flow direction	Reversible
Mounting position	Any
Max. switching frequency [Hz]	3
Max. actuating speed for side actuation [m/s]	1.4
Cam angle in angular degrees	30

Technical data – Disc seat valve			
Type	VMEF-RT-M32-...18		VMEF-RT-M32-...14
Version	Disc seat valve		
Standard nominal flow rate 1 → 2 [l/min]	750		870
Valve function	3/2-way valve, monostable		
Lap	Zero lap		
Type of reset	Mechanical spring		
Pneumatic connection 1, 2, 3	G	1/8	1/4
	NPT	1/8	1/4
Nominal size [mm]	5.6		6
Max. stroke limit (hard) [mm]	6.3		
Actuating force [N]	35.2		

Technical data – Piston spool valve				
Type	VMEF-R-M52-E-...18	VMEF-R-M52-M-...18	VMEF-R-M52-E-...14	VMEF-R-M52-M-...14
Version	Piston spool valve			
Standard nominal flow rate 1 → 2 [l/min]	750		1200	
Valve function	5/2-way valve, monostable			
Lap	Overlap			
Type of reset	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Max. switching frequency [Hz]	3			
Pneumatic connection 1, 2, 3	G	1/8	1/8	1/4
	NPT	1/8	1/8	1/4
Nominal size [mm]	5.2	5.2	7	7
Max. stroke limit (hard) [mm]	11.6			
Actuating force [N]	38			

# Mechanically actuated valves VMEF

Technical data – Roller lever valve

Materials	
Housing	Anodised wrought aluminium alloy
Cover	PA reinforced (VMEF...-M52-)
Actuator attachment	Galvanised steel
Seal	NBR
Note on materials	RoHS compliant

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating/ pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range [bar]	-0.95 ... 10
Temperature of medium [°C]	-10 ... +60
Ambient temperature [°C]	-10 ... +60
Note on ambient temperature	Influence of heat on wear
Corrosion resistance class CRC <sup>1)</sup>	1

1) Corrosion resistance class CRC 1 to Festo standard FN 940070  
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

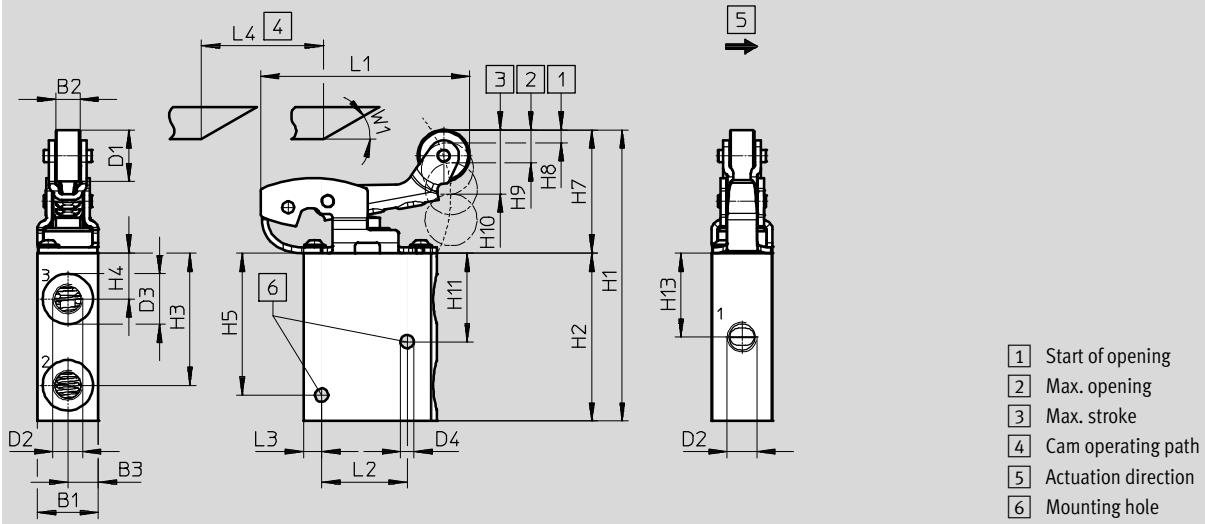
# Mechanically actuated valves VMEF

Technical data – Roller lever valve

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

3/2-way valve



Type	B1	B2	B3	D1 ∅	D2	D3	D4 ∅	L1	L2	L3	L4 Min.
VMEF-RT-M32-M-G18	20	8	10	17	G1/8	16.5	4.4	68.5	28	6	40
VMEF-RT-M32-M-N18					1/8 NPT						
VMEF-RT-M32-M-G14					G1/4	22					
VMEF-RT-M32-M-N14					1/4 NPT						

Type	H1	H2	H3	H4	H5	H7	H8	H9	H10	H11	H13	W1
VMEF-RT-M32-M-G18	91.9	55	43.3	15	46.5	39	5.3	6.3	10.8	29	27.5	30°
VMEF-RT-M32-M-N18												
VMEF-RT-M32-M-G14												
VMEF-RT-M32-M-N14												

- - Note

Roller lever valves can be actuated by a cam from either side, i.e. from the left (forwards movement) or from the right (backwards movement).

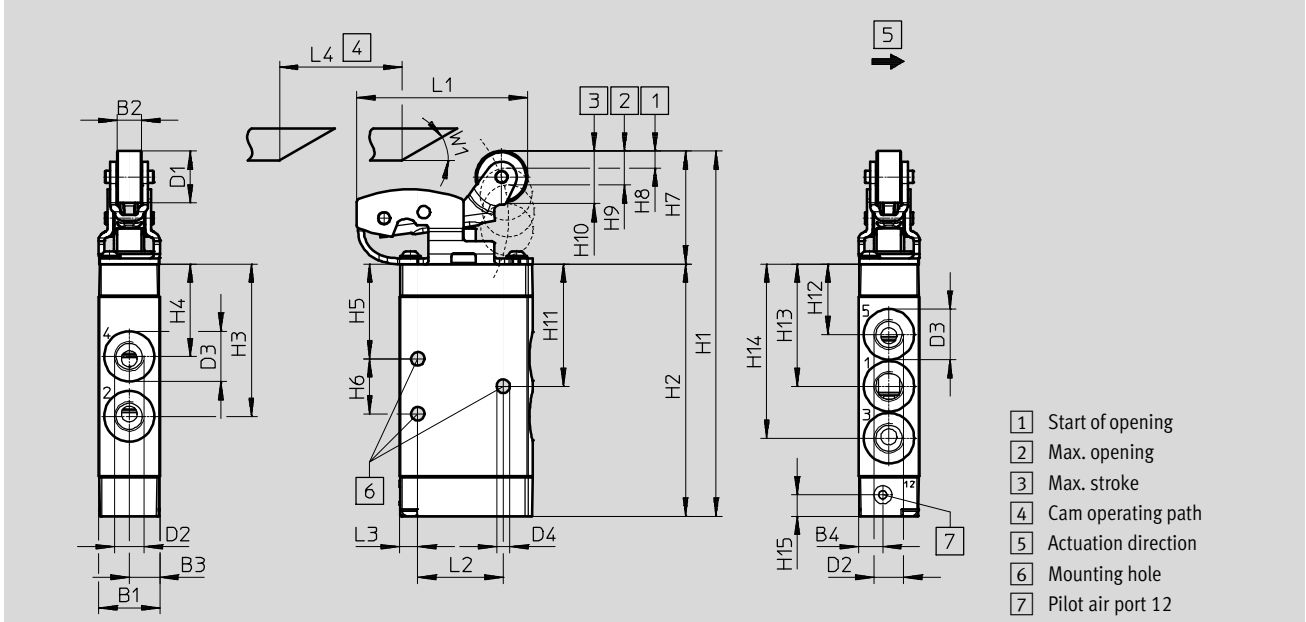
# Mechanically actuated valves VMEF

Technical data – Roller lever valve

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

5/2-way valve



Type	B1	B2	B3	B4	D1 ∅	D2	D3	D4	L1	L2	L3	L4 Min.	H1	H2	
VMEF-R-M52-...G18	20	8	10	8	17	G1/8	16.5	4.4	56	28	6	40	119.6	82.6	
VMEF-R-M52-...N18						1/8 NPT									
VMEF-R-M52-...G14						G1/4	22	136.1							99.1
VMEF-R-M52-...N14						1/4 NPT									

Type	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	W1						
VMEF-R-M52-...G18	49.9	30.3	31.1	18	37.2	6	4.9	11.4	40.1	23.1	40.1	57.1	7	30°						
VMEF-R-M52-...N18				24.3					48.3	25.9	48.3	70.8								
VMEF-R-M52-...G14	62.1	34.5	36.2	24.3					37.2	6	4.9	11.4			48.3	25.9	48.3	70.8	7	30°
VMEF-R-M52-...N14																				

# Mechanically actuated valves VMEF




Technical data – Roller lever valve

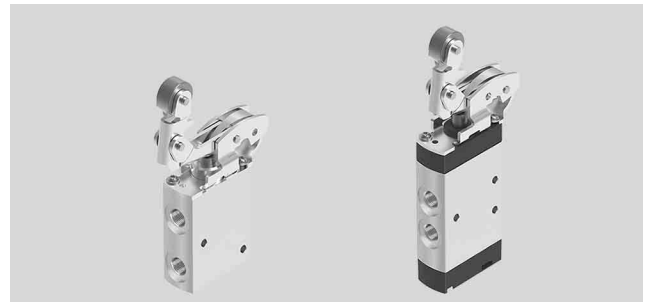
Ordering data				
Type of control	Reset	Weight [g]	Part No.	Type
<b>3/2-way valves, G thread</b>				
Direct	Mechanical	209	<b>8049239</b>	<b>VMEF-RT-M32-M-G18</b>
		204	<b>8047095</b>	<b>VMEF-RT-M32-M-G14</b>
<b>5/2-way valves, G thread</b>				
Direct	Pneumatic	240	<b>8047092</b>	<b>VMEF-R-M52-E-G18</b>
	Mechanical	240	<b>8049238</b>	<b>VMEF-R-M52-M-G18</b>
	Pneumatic	272	<b>8047093</b>	<b>VMEF-R-M52-E-G14</b>
	Mechanical	272	<b>8047094</b>	<b>VMEF-R-M52-M-G14</b>
<b>3/2-way valves, NPT thread</b>				
Direct	Mechanical	209	<b>8047098</b>	<b>VMEF-RT-M32-M-N18</b>
	Mechanical	204	<b>8047101</b>	<b>VMEF-RT-M32-M-N14</b>
<b>5/2-way valves, NPT thread</b>				
Direct	Pneumatic	240	<b>8047096</b>	<b>VMEF-R-M52-E-N18</b>
	Mechanical	240	<b>8047097</b>	<b>VMEF-R-M52-M-N18</b>
	Pneumatic	272	<b>8047099</b>	<b>VMEF-R-M52-E-N14</b>
	Mechanical	272	<b>8047100</b>	<b>VMEF-R-M52-M-N14</b>

# Mechanically actuated valves VMEF

Technical data – Roller lever valve

FESTO

-  Flow rate  
750 ... 1200 l/min
-  Pressure  
-0.95 ... 10 bar
-  Temperature range  
-10 ... +60 °C



General technical data	
Design	Toggle lever
Width [mm]	20
Type of control	Directly actuated
Notes regarding use	Risk of pinching
Type of actuation	Mechanical
Mounting	Via through-hole
Sealing principle	Soft
Flow direction	Reversible
Mounting position	Any
Max. switching frequency [Hz]	3
Max. actuating speed for side actuation [m/s]	0.7
Cam angle in angular degrees	30

Technical data – Disc seat valve		
Type	VMEF-KT-M32-...18	VMEF-KT-M32-...14
Version	Disc seat valve	
Standard nominal flow rate 1 → 2 [l/min]	750	870
Valve function	3/2-way valve, monostable	
Lap	Zero lap	
Type of reset	Mechanical spring	
Pneumatic connection 1, 2, 3	G 1/8 NPT 1/8	1/4 1/4
Nominal size [mm]	5.6	6
Max. stroke limit (hard) [mm]	11	
Actuating force [N]	32.7	

Technical data – Piston spool valve		
Type	VMEF-K-M52-M-...18	VMEF-K-M52-M-...14
Version	Piston spool valve	
Standard nominal flow rate 1 → 2 [l/min]	750	1200
Valve function	5/2-way valve, monostable	
Lap	Overlap	
Type of reset	Mechanical spring	
Pneumatic connection 1, 2, 3	G 1/8 NPT 1/8	1/4 1/4
Nominal size [mm]	5.2	7
Max. stroke limit (hard) [mm]	11.8	
Actuating force [N]	23.5	

# Mechanically actuated valves VMEF

Technical data – Roller lever valve

Materials	
Housing	Anodised wrought aluminium alloy
Cover	PA reinforced (VMEF...-M52-)
Actuator attachment	Galvanised steel
Seal	NBR
Note on materials	RoHS compliant

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range [bar]	-0.95 ... 10
Temperature of medium [°C]	-10 ... +60
Ambient temperature [°C]	-10 ... +60
Note on ambient temperature	Influence of heat on wear
Corrosion resistance class CRC <sup>1)</sup>	1

1) Corrosion resistance class CRC 1 to Festo standard FN 940070  
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).



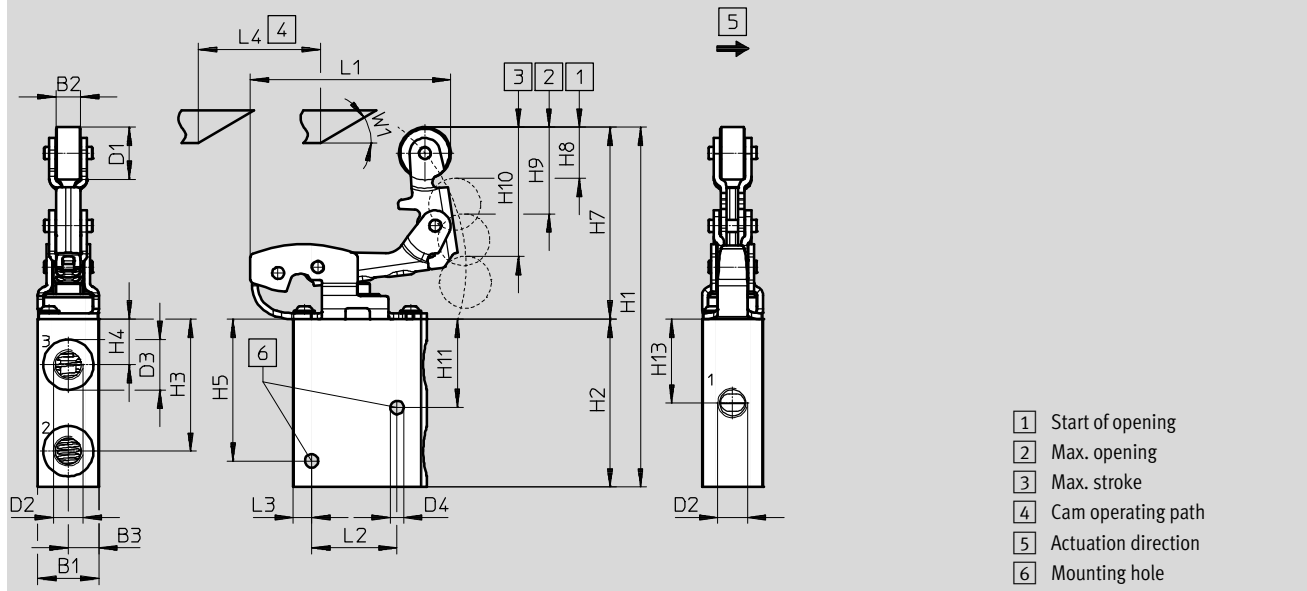
# Mechanically actuated valves VMEF

Technical data – Roller lever valve

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

3/2-way valve



Type	B1	B2	B3	D1 ∅	D2	D3	D4 ∅	L1	L2	L3	L4 Min.
VMEF-KT-M32-M-G18	20	8	10	17	G1/8	16.5	4.4	65.6	28	6	40
VMEF-KT-M32-M-N18					1/8 NPT						
VMEF-KT-M32-M-G14					G1/4	22					
VMEF-KT-M32-M-N14					1/4 NPT						

Type	H1	H2	H3	H4	H5	H7	H8	H9	H10	H11	H13	W1
VMEF-KT-M32-M-G18	117.2	55	43.3	15	46.5	63	5	5.5	10.3	29	27.5	30°
VMEF-KT-M32-M-N18												
VMEF-KT-M32-M-G14												
VMEF-KT-M32-M-N14												

Note

Roller lever valves can only be actuated by a cam from one side, i.e. only in one direction (forwards movement). If control is applied from the other direction (backwards movement), the valve is not actuated.

# Mechanically actuated valves VMEF

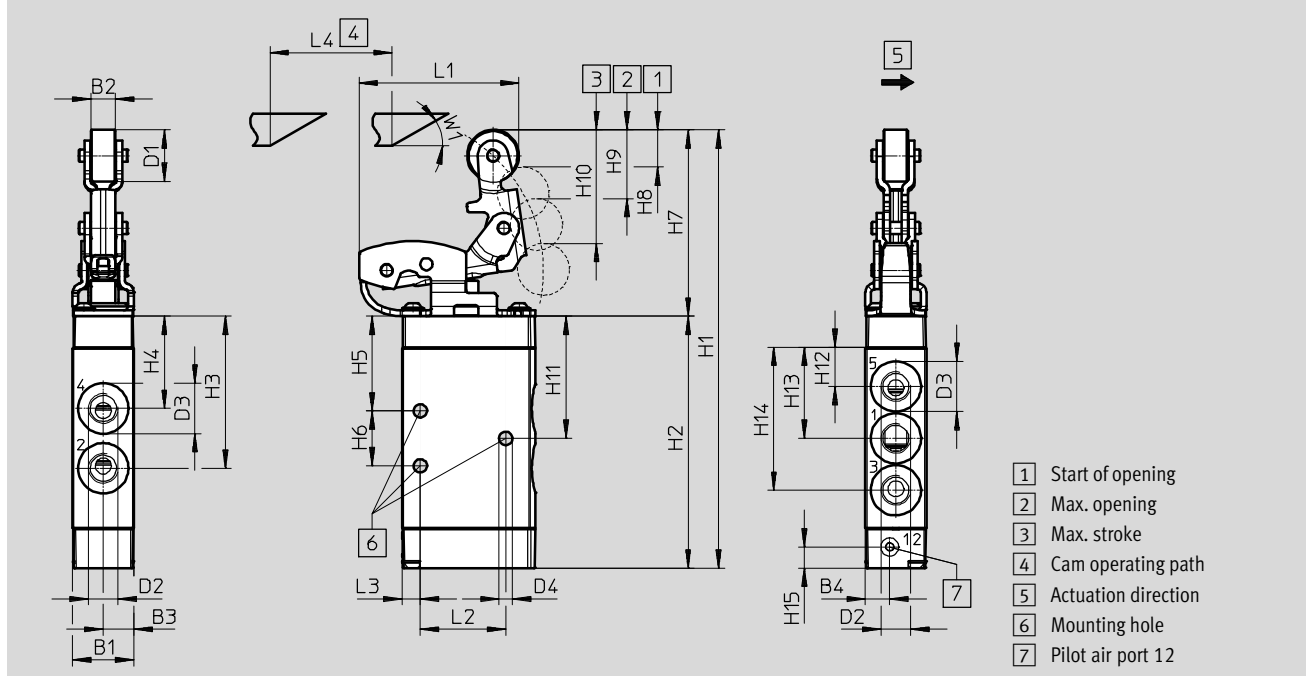
Technical data – Roller lever valve



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

5/2-way valve



Type	B1	B2	B3	B4	D1 Ø	D2	D3	D4	L1	L2	L3	L4 Min.	H1	H2
VMEF-K-M52-...G18	20	8	10	8	17	G1/8	16.5	4.4	52.4	28	6	40	143.5	82.6
VMEF-K-M52-...N18						1/8 NPT								
VMEF-K-M52-...G14						G1/4	22	160					99.1	
VMEF-K-M52-...N14						1/4 NPT								

Type	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	W1
VMEF-K-M52-...G18	49.9	30.3	31.1	18	61	6.7	4.5	11.2	40.1	23.1	40.1	57.1	7	30°
VMEF-K-M52-...N18									48.3	25.9	48.3	70.8		
VMEF-K-M52-...G14	62.1	34.5	36.2	24.3					48.3	25.9	48.3	70.8		
VMEF-K-M52-...N14														

If required, actuator attachments VAOM-R4-20-... can be used as spare parts for existing roller lever or roller lever valves. → Page 28

Using the mounting accessories VAME-R4-20-PA, the valve can be moved in the actuation direction. This enables the correct switching point to be set. → Page 33



Note

When screwing the actuator attachment VAOM-R4-20-... onto the valve, ensure that the prescribed torque of 1.5 Nm ± 10% is observed.

# Mechanically actuated valves VMEF

Technical data – Roller lever valve

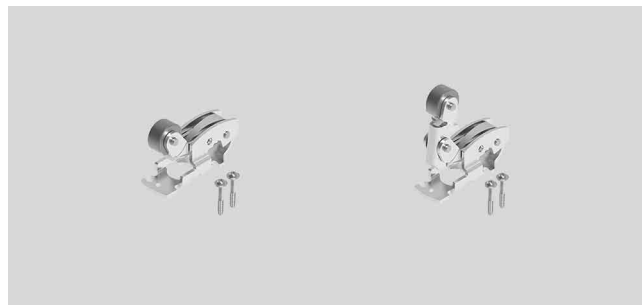
Ordering data				
Type of control	Reset	Weight [g]	Part No.	Type
<b>3/2-way valves, G thread</b>				
Direct	Mechanical	227	<b>8049241</b>	<b>VMEF-KT-M32-M-G18</b>
		218	<b>8047103</b>	<b>VMEF-KT-M32-M-G14</b>
<b>5/2-way valves, G thread</b>				
Direct	Mechanical	255	<b>8049240</b>	<b>VMEF-K-M52-M-G18</b>
		286	<b>8047102</b>	<b>VMEF-K-M52-M-G14</b>
<b>3/2-way valves, NPT thread</b>				
Direct	Mechanical	227	<b>8047105</b>	<b>VMEF-KT-M32-M-N18</b>
		218	<b>8047107</b>	<b>VMEF-KT-M32-M-N14</b>
<b>5/2-way valves, NPT thread</b>				
Direct	Mechanical	255	<b>8047104</b>	<b>VMEF-K-M52-M-N18</b>
		286	<b>8047106</b>	<b>VMEF-K-M52-M-N14</b>

# Mechanically actuated valves VMEF

Technical data – Actuator attachments

Actuator attachments as replacement or extension option for stem actuated valves:

- Roller lever
- Toggle lever



General technical data		
Type	VAOM-R4-20-D1-...	VAOM-R4-20-D2-...
Version	Roller lever	Toggle lever
Width [mm]	20	
Type of control	Directly actuated	
Actuation	Mechanical	
Mounting position	Screwed onto valve, in the movement plane	
Mounting	Screwed with self-tapping screws	
Ambient temperature [°C]	-10 ... +60	

Materials	
Actuator attachment	Galvanised steel
Note on materials	RoHS compliant

## Actuator attachments for valves

With the actuator attachments VAOM, it is possible to extend stem actuated valves from the series VMEF. If an actuator attachment VAOM is screwed onto the corresponding stem actuated valve from the series VMEF, it creates a roller lever or toggle lever valve.

- Roller lever valves can be actuated by a cam from either side, i.e. from the left (forwards movement) or from the right (backwards movement).
- Toggle lever valves can only be actuated by a cam from one side, i.e. only in one direction (forwards movement). If control is applied from the other direction (backwards movement), the valve is not actuated.

The actuator attachment VAOM can also be used to replace mechanically worn actuators for roller lever or toggle lever valves.

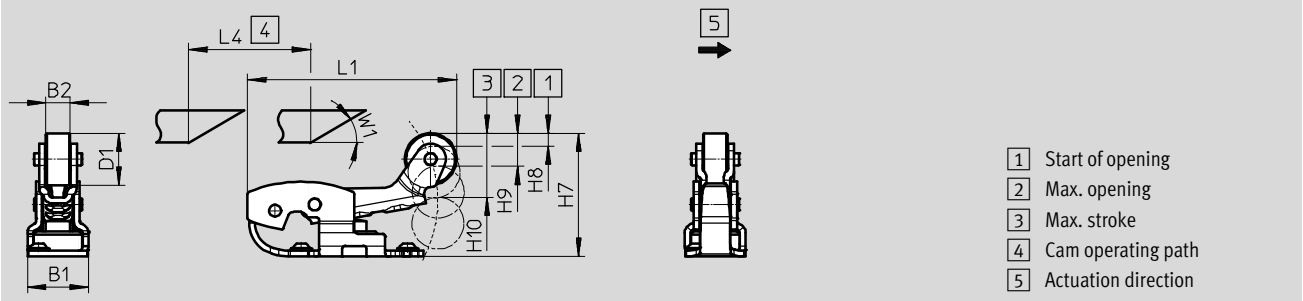
# Mechanically actuated valves VMEF

Technical data – Actuator attachments

## Dimensions

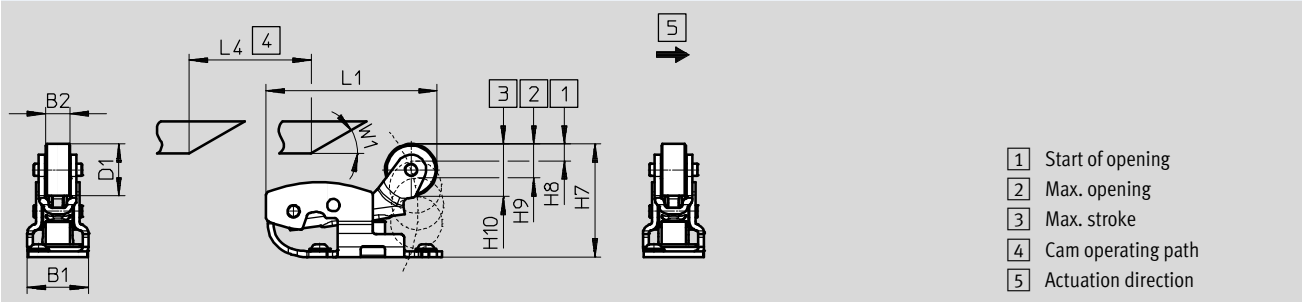
Download CAD data → [www.festo.com](http://www.festo.com)

### Roller lever for 3/2-way valves



Type	B1	B2	D1	L1	L4	H7	H8	H9	H10	W1
VAOM-R4-20-D1-32	20	8	17	68.5	40	±0.1	±0.1	±0.1	±0.1	30°

### Roller lever for 5/2-way valves



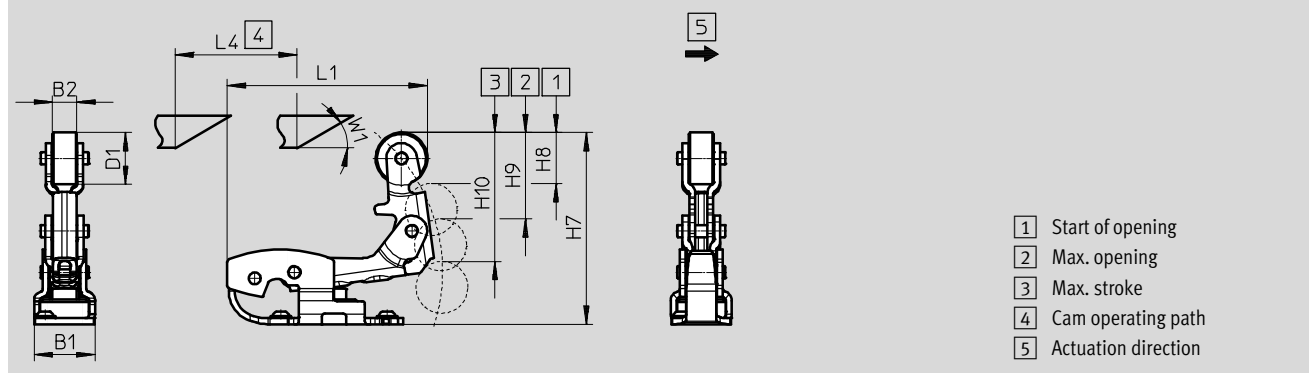
Type	B1	B2	D1	L1	L4	H7	H8	H9	H10	W1
VAOM-R4-20-D1-52	20	8	17	56	40	±0.2	±0.3	±0.2	±0.1	30°

# Mechanically actuated valves VMEF

Technical data – Actuator attachments

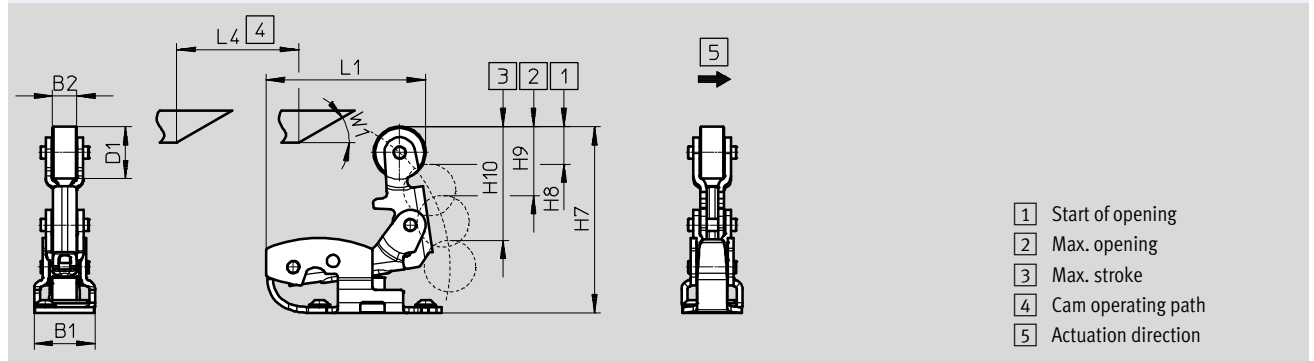
**Dimensions** Download CAD data → [www.festo.com](http://www.festo.com)

Toggle lever for 3/2-way valves



Type	B1	B2	D1	L1	L4	H7	H8	H9	H10	W1
VAOM-R4-20-D2-32	20	8	17	65.6	40	±0.2	±0.2	±0.2	±0.1	30°

Toggle lever for 5/2-way valves



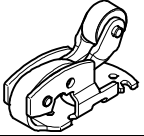
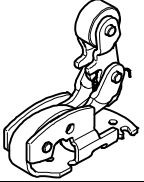
Type	B1	B2	D1	L1	L4	H7	H8	H9	H10	W1
VAOM-R4-20-D2-52	20	8	17	52.4	40	±0.1	±0.3	±0.3	±0.1	30°

Note

- When screwing the actuator attachment VAOM-R4-20-... onto the valve, ensure that the prescribed torque of 1.5 Nm ± 10% is observed.
- A new actuator attachment VAOM-R4-20-... can only be mounted on a basic valve three times.

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Technical data – Actuator attachments




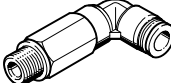


Ordering data				
	Description	Part No.	Type	PU <sup>1)</sup>
<b>Roller lever</b>				
	For 3/2-way valves, with mounting screws	<b>8049235</b>	<b>VAOM-R4-20-D1-32</b>	<b>1</b>
	For 5/2-way valves, with mounting screws	<b>8049233</b>	<b>VAOM-R4-20-D1-52</b>	<b>1</b>
<b>Toggle lever</b>				
	For 3/2-way valves, with mounting screws	<b>8049237</b>	<b>VAOM-R4-20-D2-32</b>	<b>1</b>
	For 5/2-way valves, with mounting screws	<b>8049236</b>	<b>VAOM-R4-20-D2-52</b>	<b>1</b>

1) Packaging unit

# Mechanically actuated valves VMEF

Accessories

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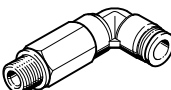
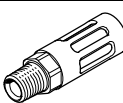
Ordering data – G thread								
	Description		Part No.	Type	PU <sup>1)</sup>			
<b>Push-in fitting, straight</b>								
	With internal hex	Connecting thread M5 for tubing O.D.	4 mm	<b>153315</b>	<b>QSM-M5-4-I</b>	<b>10</b>		
			4 mm	<b>186106</b>	<b>QS-G1/8-4-I</b>	<b>10</b>		
		Connecting thread G1/8 for tubing O.D.	4 mm	<b>133008</b>	<b>QS-G1/8-4-I-100</b>	<b>100</b>		
				<b>186107</b>	<b>QS-G1/8-6-I</b>	<b>10</b>		
			6 mm	<b>133009</b>	<b>QS-G1/8-6-I-100</b>	<b>100</b>		
				<b>186109</b>	<b>QS-G1/8-8-I</b>	<b>10</b>		
			8 mm	<b>133010</b>	<b>QS-G1/8-8-I-100</b>	<b>100</b>		
				<b>186108</b>	<b>QS-G1/4-6-I</b>	<b>10</b>		
		Connecting thread G1/4 for tubing O.D.	8 mm	<b>186110</b>	<b>QS-G1/4-8-I</b>	<b>10</b>		
			10 mm	<b>186112</b>	<b>QS-G1/4-10-I</b>	<b>10</b>		
<b>186109</b>	<b>QS-G1/8-8-I</b>		<b>10</b>					
	With external hex	Connecting thread M5 for tubing O.D.	3 mm	<b>153302</b>	<b>QSM-M5-3</b>	<b>10</b>		
			4 mm	<b>153304</b>	<b>QSM-M5-4</b>	<b>10</b>		
			6 mm	<b>153306</b>	<b>QSM-M5-6</b>	<b>10</b>		
		Connecting thread G1/8 for tubing O.D.	4 mm	<b>186095</b>	<b>QS-G1/8-4</b>	<b>10</b>		
			6 mm	<b>186096</b>	<b>QS-G1/8-6</b>	<b>10</b>		
		Connecting thread G1/4 for tubing O.D.	6 mm	<b>186097</b>	<b>QS-G1/4-6</b>	<b>10</b>		
			8 mm	<b>186099</b>	<b>QS-G1/4-8</b>	<b>10</b>		
			10 mm	<b>186101</b>	<b>QS-G1/4-10</b>	<b>10</b>		
			12 mm	<b>186350</b>	<b>QS-G1/4-12</b>	<b>10</b>		
			<b>186109</b>	<b>QS-G1/8-8-I</b>	<b>10</b>			
		<b>Push-in fitting, angled</b>						
			With external hex	Connecting thread G1/8 for tubing O.D.	4 mm	<b>186116</b>	<b>QSL-G1/8-4</b>	<b>10</b>
<b>132048</b>	<b>QSL-G1/8-4-100</b>					<b>100</b>		
6 mm	<b>186117</b>				<b>QSL-G1/8-6</b>	<b>10</b>		
	<b>132049</b>				<b>QSL-G1/8-6-100</b>	<b>100</b>		
8 mm	<b>186119</b>				<b>QSL-G1/8-8</b>	<b>10</b>		
	<b>132050</b>				<b>QSL-G1/8-8-50</b>	<b>50</b>		
Connecting thread G1/4 for tubing O.D.	8 mm			<b>186120</b>	<b>QSL-G1/4-8</b>	<b>10</b>		
				<b>132052</b>	<b>QSL-G1/4-8-50</b>	<b>50</b>		
	10 mm			<b>186122</b>	<b>QSL-G1/4-10</b>	<b>10</b>		
				<b>132053</b>	<b>QSL-G1/4-10-50</b>	<b>50</b>		
	12 mm			<b>186351</b>	<b>QSL-G1/4-12</b>	<b>10</b>		
				<b>132054</b>	<b>QSL-G1/4-12-20</b>	<b>20</b>		
<b>Push-in fitting, angled, long</b>								
	With external hex	Connecting thread G1/8 for tubing O.D.	4 mm	<b>186127</b>	<b>QSL-G1/8-4</b>	<b>10</b>		
				<b>133015</b>	<b>QSL-G1/8-4-100</b>	<b>100</b>		
			6 mm	<b>186128</b>	<b>QSL-G1/8-6</b>	<b>10</b>		
				<b>133016</b>	<b>QSL-G1/8-6-100</b>	<b>100</b>		
			8 mm	<b>186130</b>	<b>QSL-G1/8-8</b>	<b>10</b>		
				<b>133017</b>	<b>QSL-G1/8-8-100</b>	<b>100</b>		
<b>Silencer</b>								
	Polymer design	With connecting thread	G1/8	<b>2307</b>	<b>U-1/8</b>	<b>1</b>		
				<b>534222</b>	<b>U-1/8-50</b>	<b>50</b>		
			G1/4	<b>2316</b>	<b>U-1/4</b>	<b>1</b>		
				<b>534223</b>	<b>U-1/4-20</b>	<b>20</b>		
	Metal design	With connecting thread	G1/8	<b>6841</b>	<b>U-1/8-B</b>	<b>1</b>		
			G1/4	<b>6842</b>	<b>U-1/4-B</b>	<b>1</b>		

1) Packaging unit

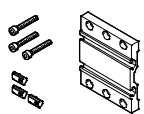


# Mechanically actuated valves VMEF

Accessories

Ordering data – NPT thread						
	Description		Part No.	Type		PU <sup>1)</sup>
<b>Push-in fitting, straight</b>						
	With internal hex	Connecting thread 10-32 UNF for tubing O.D.	5/32"	<b>572312</b>	<b>QBM-10-32-UNF-5/32-I-U</b>	<b>10</b>
		Connecting thread 1/8 NPT for tubing O.D.	5/32"	<b>572317</b>	<b>QB-1/8-5/32-I-U</b>	<b>10</b>
	Connecting thread 1/4 NPT for tubing O.D.	1/4"	<b>572318</b>	<b>QB-1/8-1/4-I-U</b>	<b>10</b>	
		5/16"	<b>572319</b>	<b>QB-1/8-5/16-I-U</b>	<b>10</b>	
		5/16"	<b>572321</b>	<b>QB-1/4-5/16-I-U</b>	<b>10</b>	
		3/8"	<b>572322</b>	<b>QB-1/4-3/8-I-U</b>	<b>10</b>	
		1/2"	<b>567771</b>	<b>QB-1/4-1/2-U</b>	<b>10</b>	
<b>Push-in fitting, angled</b>						
	With external hex	Connecting thread 1/8 NPT for tubing O.D.	5/32"	<b>533290</b>	<b>QBL-1/8-5/32-U</b>	<b>10</b>
		1/4"	<b>533292</b>	<b>QBL-1/8-1/4-U</b>	<b>10</b>	
		5/16"	<b>533293</b>	<b>QBL-1/8-5/16-U</b>	<b>10</b>	
	Connecting thread 1/4 NPT for tubing O.D.	5/16"	<b>533296</b>	<b>QBL-1/4-5/16-U</b>	<b>10</b>	
		3/8"	<b>533297</b>	<b>QBL-1/4-3/8-U</b>	<b>5</b>	
		1/2"	<b>567775</b>	<b>QBL-1/4-1/2-U</b>	<b>5</b>	
<b>Push-in fitting, angled, long</b>						
	With external hex	Connecting thread 1/8 NPT for tubing O.D.	5/32"	<b>564668</b>	<b>QBLL-1/8-5/32-U</b>	<b>10</b>
			1/4"	<b>564670</b>	<b>QBLL-1/8-1/4-U</b>	<b>10</b>
			5/16"	<b>564671</b>	<b>QBLL-1/8-5/16-U</b>	<b>10</b>
<b>Silencer</b>						
	Metal design	With connecting thread	1/8 NPT	<b>12638</b>	<b>U-1/8-B-NPT</b>	<b>1</b>
			1/4 NPT	<b>12639</b>	<b>U-1/4-B-NPT</b>	<b>1</b>

1) Packaging unit

Ordering data						
	Description		Part No.	Type		PU <sup>1)</sup>
<b>Mounting kit for switching point adjustment</b>						
	Mounting kit set for valves VMEF comprising:		<b>8060046</b>	<b>VAME-R4-20-PA</b>		<b>1</b>
	1x mounting plate 60 x 70 mm 3x socket head cap screws to ISO 4762 M4x25 8.8 3x slot nuts					

1) Packaging unit

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