

## Mechanically actuated valves, NPT

**FESTO**



## Key features



### 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
- Available pressure range from vacuum to 10 bar.
- Design:
  - Stem actuated valve
  - Roller lever valve
  - Roller lever valve with idle return

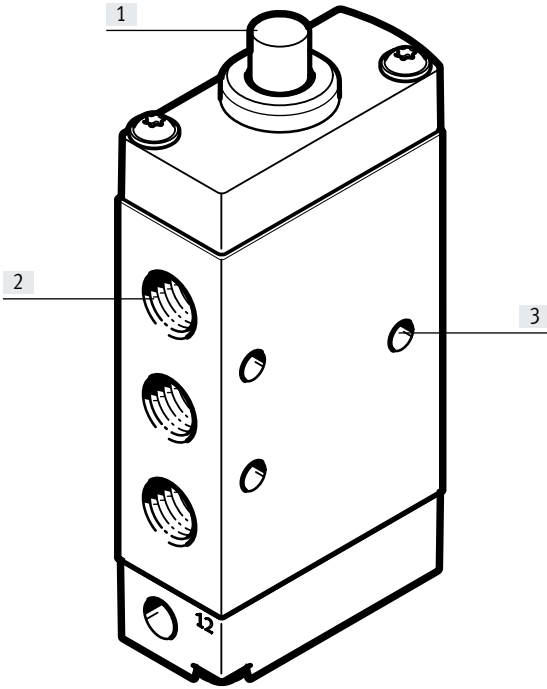
### Reliable

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

### Easy to install

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

Key features



- [1] Stem as actuator
- [2] Practical connection: via threaded connection or connector
- [3] Fast mounting: screwed directly via through-hole, front panel mounting possible

**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

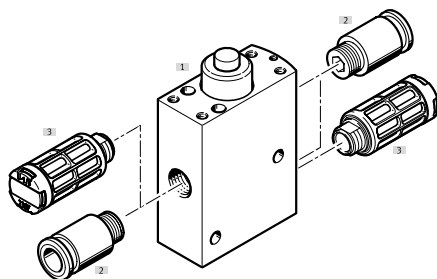
- Pneumatic spring/mechanical spring
- Vacuum operation possible

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

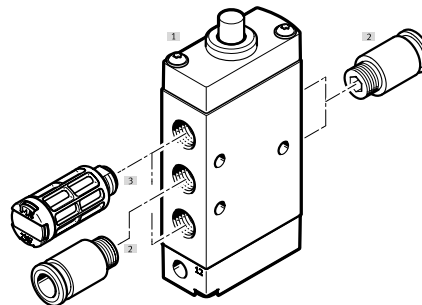
## Peripherals overview

### Valves, mechanically actuated

Stem actuated valve, 3/2-way valve

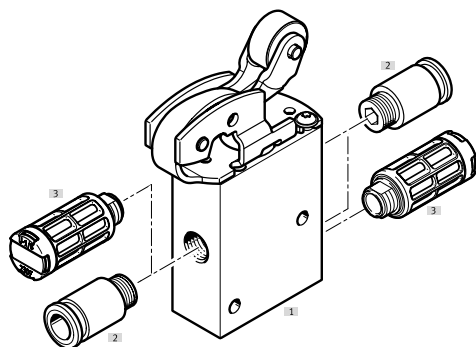


Stem actuated valve, 5/2-way valve

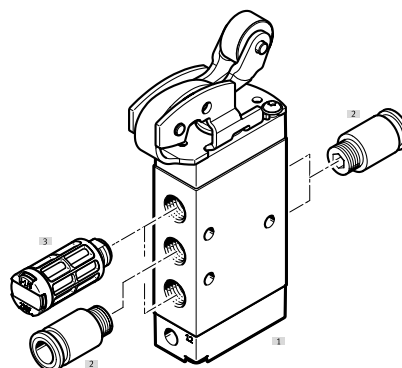


		Brief description	→ Page/Internet
[1]	3/2-way valve	Stem actuated valve	9
	5/2-way valve	Stem actuated valve	9
[2]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	29
[3]	Silencers	For exhaust ports (3, 5)	29

Roller lever valve, 3/2-way valve



Roller lever valve, 5/2-way valve



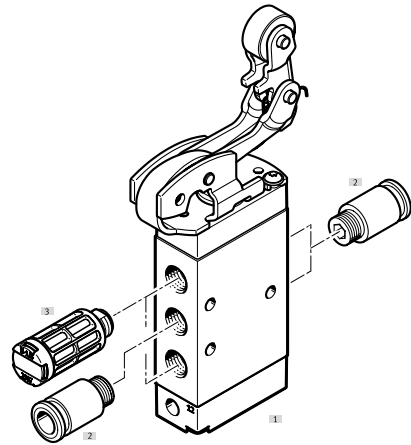
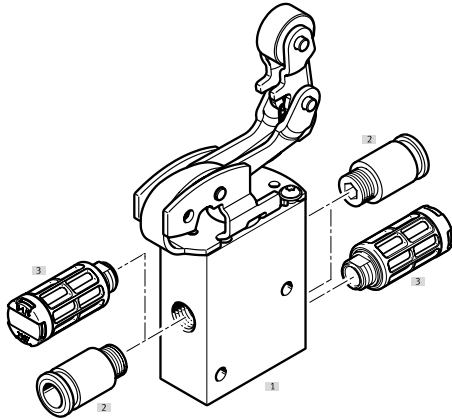
		Brief description	→ Page/Internet
[1]	3/2-way valve	Stem actuated valve with roller lever attachment	17
	5/2-way valve	Stem actuated valve with roller lever attachment	17
[2]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	29
[3]	Silencers	For exhaust ports (3, 5)	29

## Peripherals overview

### Valves, mechanically actuated

Roller lever valve with idle return, 3/2-way valve

Roller lever valve with idle return, 5/2-way valve



		Brief description	→ Page/Internet
[1]	3/2-way valve	Stem actuated valve with idle return roller lever attachment	21
	5/2-way valve	Stem actuated valve with idle return roller lever attachment	21
[2]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	29
[3]	Silencers	For exhaust ports (3, 5)	29

## Key features – Pneumatic components

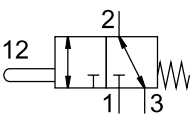
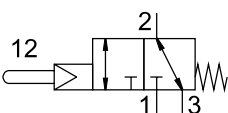
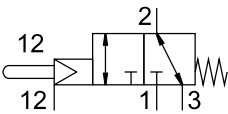
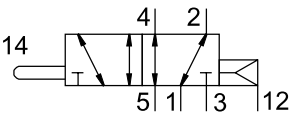
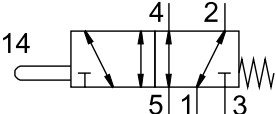
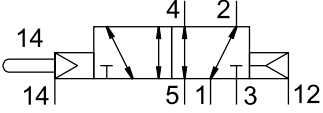
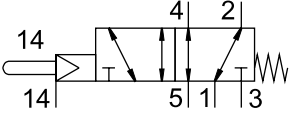
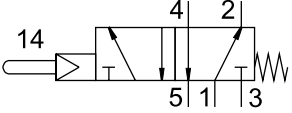
### Mechanically actuated valves

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.

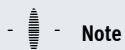
Benefits of mechanically actuated valves:

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

Valve functions Circuit symbol	Type	Description
<b>Stem actuated valve</b>		
	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>• Mechanical spring return</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>• Mechanical spring return</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>• Mechanical spring return</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>• Mechanical spring return</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>• Pneumatic spring return</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>• Mechanical spring return</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>• Mechanical spring return</li> </ul>

## Key features – Pneumatic components

Valve functions		
Circuit symbol	Type	Description
<b>Roller lever valve</b>		
<p>The circuit symbol shows a roller lever actuator (12) on the left. The valve has three ports: 1 (bottom left), 2 (top right), and 3 (bottom right). A spring symbol is connected to port 2, indicating a normally closed position (1 → 2) and a normally open position (3 → 2).</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>• Mechanical spring return</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
<p>The circuit symbol shows a roller lever actuator (14) on the left. The valve has five ports: 4 (top left), 2 (top right), 5 (bottom left), 1 (bottom center), and 3 (bottom right). A spring symbol is connected to port 2, indicating a normally closed position (4 → 2) and a normally open position (5 → 2).</p>	VMEF-R-M52-M-...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Mechanical spring return</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
<p>The circuit symbol shows a roller lever actuator (14) on the left. The valve has five ports: 4 (top left), 2 (top right), 5 (bottom left), 1 (bottom center), and 3 (bottom right). A spring symbol is connected to port 2, and an external pneumatic spring symbol is connected to port 1, indicating a reset mechanism.</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>Roller lever valve with idle return</b>		
<p>The circuit symbol shows a roller lever actuator (12) on the left. The valve has three ports: 1 (bottom left), 2 (top right), and 3 (bottom right). A spring symbol is connected to port 2, indicating a normally closed position (1 → 2) and a normally open position (3 → 2).</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>• Mechanical spring return</li> <li>• Directly actuated</li> <li>• Suitable for vacuum</li> <li>• Reversible</li> </ul>
<p>The circuit symbol shows a roller lever actuator (14) on the left. The valve has five ports: 4 (top left), 2 (top right), 5 (bottom left), 1 (bottom center), and 3 (bottom right). A spring symbol is connected to port 2, indicating a normally closed position (4 → 2) and a normally open position (5 → 2).</p>	VMEF-K-M52-M-...	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Mechanical spring return</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 with connector).

## Type codes

<b>001</b>	<b>Series</b>	
<b>VMEF</b>	Mechanically actuated valve	

<b>002</b>	<b>Actuation type</b>	
<b>S</b>	Stem actuated valve	
<b>R</b>	Roller lever valve	
<b>K</b>	Roller lever valve with idle return	

<b>003</b>	<b>Design principle</b>	
	Piston spool	
<b>T</b>	Poppet valve	

<b>004</b>	<b>Type of control</b>	
	Directly actuated	
<b>C</b>	Indirectly actuated	

<b>005</b>	<b>Pilot air</b>	
	Internal	
<b>Z</b>	External	




<b>006</b>	<b>Valve function</b>	
<b>M32</b>	3/2-way valve, normally closed or open	
<b>M52</b>	5/2-way valve, single solenoid/monostable	

<b>007</b>	<b>Reset method for monostable/single solenoid valves</b>	
<b>E</b>	Pneumatic spring, external	
<b>M</b>	Mechanical spring	

<b>008</b>	<b>Pneumatic connection</b>	
<b>G18</b>	G1/8	
<b>G14</b>	G1/4	
<b>N18</b>	1/8 NPT	
<b>N14</b>	1/4 NPT	



## Datasheet – Stem actuated valve

-  Flow rate  
750 ... 1200 l/min
-  Pressure  
-0.095 ... 1 MPa  
-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
Application information	Do not use as mechanical stop
Actuation type	Mechanical
Mounting	Via through-hole
Sealing principle	Soft
Flow direction	Reversible
Mounting position	Any
Max. switching frequency [Hz]	3

Technical data – Poppet valve					
Type		VMEF-ST-M32 ... 18	VMEF-STC... -M32 ... 18	VMEF-ST-M32 ... 14	VMEF-STC... -M32 ... 14
Design		Poppet 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, monostable			
Overlap		Zero overlap			
Type of control		Directly actuated	Piloted	Directly actuated	Piloted
Reset method		Mechanical spring			
Pneumatic connection 1, 2, 3		1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT
Pilot air port 1 2/14		–	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

## Datasheet – Stem actuated valve

Technical data – Piston spool valve					
Type	VMEF-S-M52-E ... 18	VMEF-S-M52-M ... 18	VMEF-S-M52-E... 14	VMEF-S-M52-M ... 14	
Design	Piston spool valve				
Standard nominal flow rate 1 → 2 [l/min]	750	750	1200	1200	
Valve function	5/2-way valve, monostable				
Overlap	Positive overlap				
Type of control	Directly actuated				
Reset method	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring	
Pneumatic connection 1, 2, 3, 4, 5	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT	
Pilot air port 1 2/14	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	VMEF-SCZ-M52-E ... 18	VMEF-S...M52-M ... 18	VMEF-SCZ-M52-E ... 14	VMEF-S...M52-M ... 14	
Design	Piston spool valve				
Standard nominal flow rate 1 → 2 [l/min]	750	750	1200	1200	
Valve function	5/2-way valve, monostable				
Overlap	Positive overlap				
Type of control	Piloted				
Reset method	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring	
Pneumatic connection 1, 2, 3, 4, 5	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT	
Pilot air port 1 2/14	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	

Materials	
Housing	Anodised wrought aluminium alloy
Cover	Reinforced PA (VMEF-STC...-M32-, VMEF...-M52-)
Seal	NBR
Note on materials	RoHS-compliant
PWIS conformity	VDMA24364-B1/B2-L

Operating and environmental conditions						
Type	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 the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure	[MPa]	–0.095 ... 1		0.35 ... 1		–0.095 ... 1
	[bar]	–0.95 ... 10		3.5 ... 10		–0.95 ... 10
With internal/external pilot air NC valves	[bar]	Internal	External	Internal	External	–
		3.5 ... 10	3.0 ... 10	3.0 ... 10	2.5 ... 10	–
NO valves	[bar]	3.5 ... 10	3.0 ... 10	3.5 ... 10	2.5 ... 10	–
Pilot pressure	[bar]	–		3.5 ... 10		2.5 ... 10
Temperature of medium	[°C]	–10 ... +60				
Ambient temperature	[°C]	–10 ... +60				
Corrosion resistance class CRC <sup>1)</sup>	2					

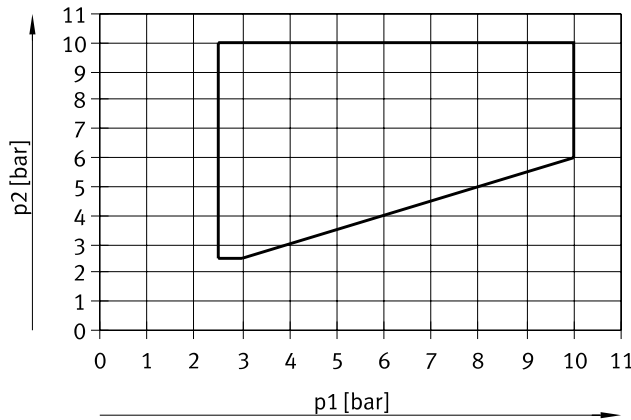
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Datasheet – Stem actuated valve

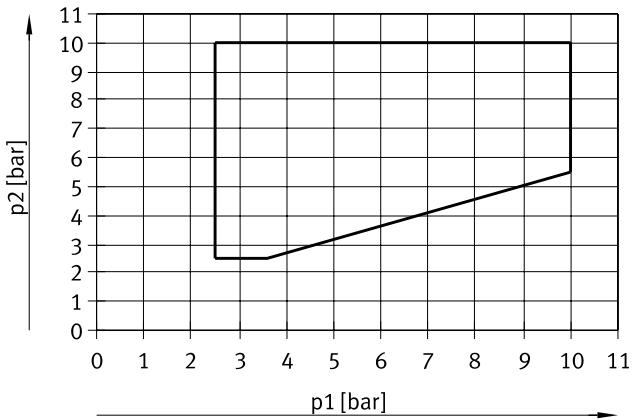
**Pilot pressure p2 as a function of external pneumatic spring pressure p1**

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



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

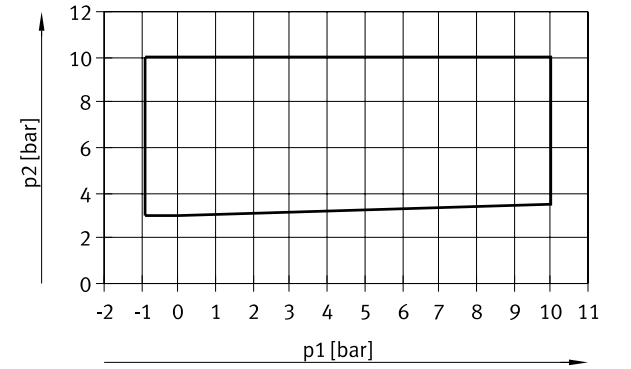
For piston spool valves VMEF-...-M52...14



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

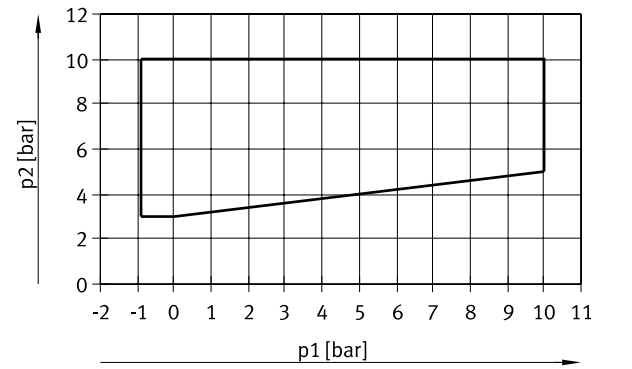
**Pilot pressure p2 as a function of working pressure p1**

For poppet valves VMEF-...-M32...  
(normally closed)



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

For poppet valves VMEF-...-M32...  
(normally open)



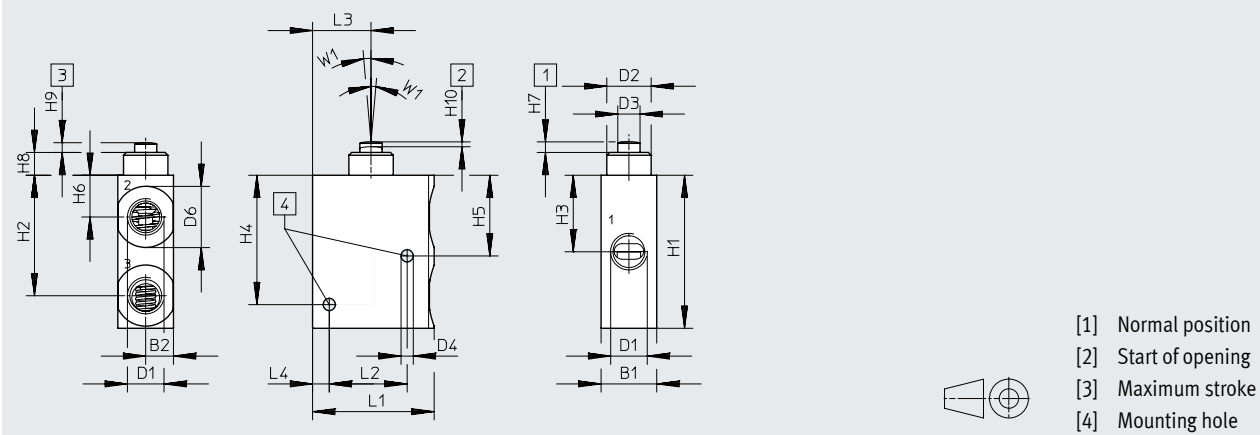
The framed area shows the operating range for external pilot air.

Datasheet – Stem actuated valve

Dimensions

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

3/2-way valve



Type	B1	B2	D1	D2 ∅	D3 ∅	D4 ∅	D6 ∅	L1	L2	L3	L4
VMEF-ST-M32-M-N18	20	10	1/8 NPT	16.0	8.0	4.4	16.5	43.7	28	21	6
VMEF-ST-M32-M-N14			1/4 NPT				22				

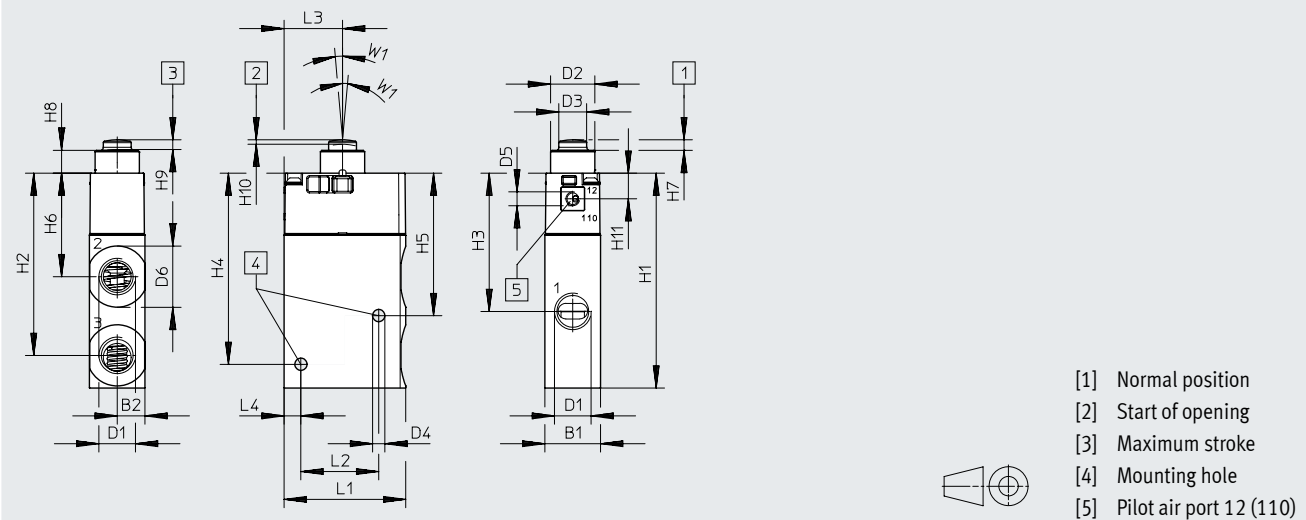
Type	H1	H2	H3	H4	H5	H6	H7 ±0.2	H8	H9 ±0.3	H10 ±0.3	W1
VMEF-ST-M32-M-N18	55	43.3	27.5	46.5	29	15	3.8	8.2	3.5	1.8	5°
VMEF-ST-M32-M-N14											

## Datasheet – 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



- [1] Normal position
- [2] Start of opening
- [3] Maximum stroke
- [4] Mounting hole
- [5] Pilot air port 12 (110)

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

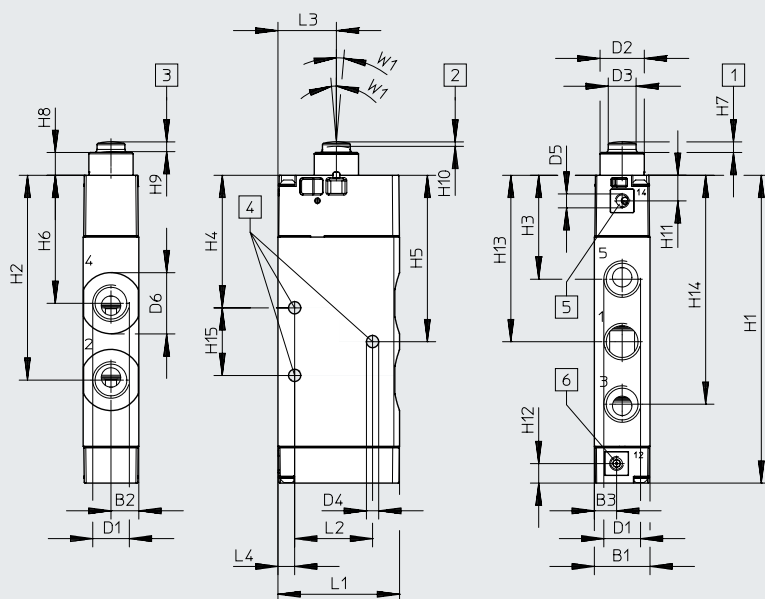
Type	H1	H2	H3	H4	H5	H6	H7 ±0.15	H8	H9 ±0.15	H10 ±0.4	H11	W1
VMEF-STC-M32-M-N18	77.2	65.5	49.7	68.7	51.2	37.2	3.8	8.2	3.5	1.6	9.2	5°
VMEF-STC-M32-M-N14												
VMEF-STCZ-M32-M-N18												
VMEF-STCZ-M32-M-N14												

Datasheet – 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



- [1] Normal position
- [2] Start of opening
- [3] Maximum stroke
- [4] Mounting hole
- [5] Pilot air port 14
- [6] Pilot air port 12

Type	B1	B2	B3	D1	D2 ∅	D3 ∅	D4 ∅	D5	D6 ∅	L1	L2	L3	L4
VMEF-SC-M52-M-N18	20	10	8	1/8 NPT	15.9	10	4.4	-	16.5	43.7	28	21	6
VMEF-SCZ-M52-M-N18				1/8 NPT				M5					
VMEF-SCZ-M52-E-N18				1/8 NPT									
VMEF-SC-M52-M-N14				1/4 NPT				22					
VMEF-SCZ-M52-M-N14				1/4 NPT				M5					
VMEF-SCZ-M52-E-N14				1/4 NPT									

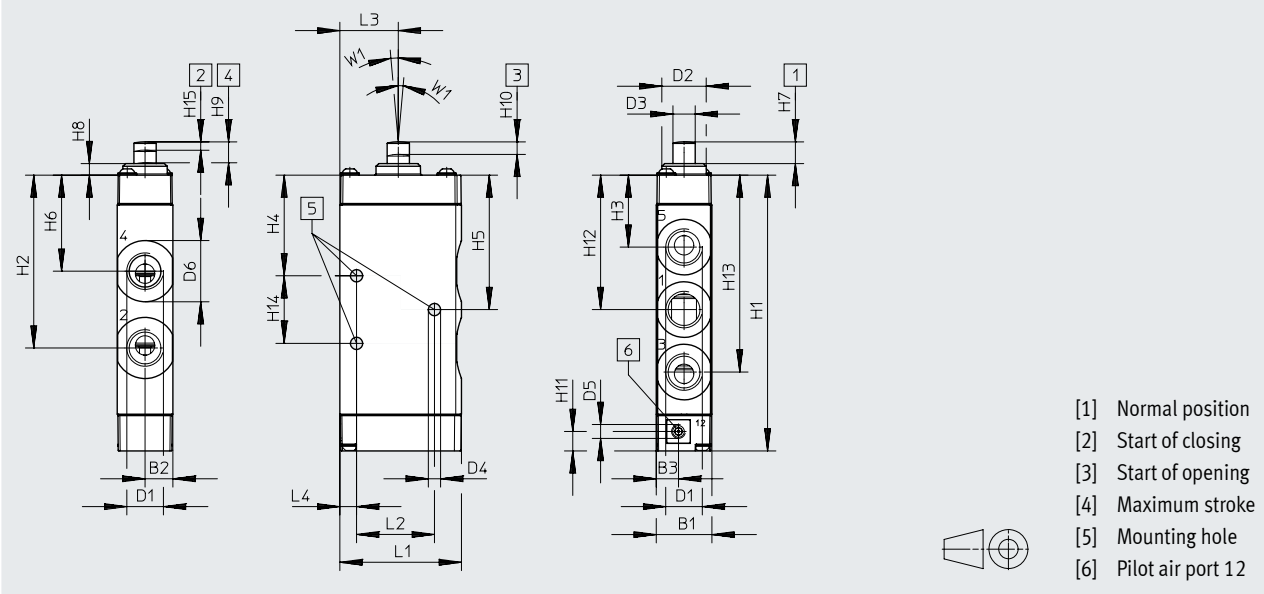
Type	H1	H2	H3	H4	H5	H6	H7 ±0.15	H8	H9 ±0.15	H10 ±0.4	H11	H12	H13	H14	H15	W1
VMEF-SC-M52-M-N18	94.1	61.4	34.6	42.6	51.6	41.8	3.8	8.2	3.5	1.6	9.2	7	51.6	68.6	18	5°
VMEF-SCZ-M52-M-N18																
VMEF-SCZ-M52-E-N18																
VMEF-SC-M52-M-N14	110.6	73.6	37.4	47.7	59.8	46							59.8	82.3	24.3	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

## Datasheet – 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
VMEFS-M52-M-N18	20	10	8	1/8 NPT	16	8	4.4	-	16.5	43.7	28	21	6	82.6	49.9
VMEFS-M52-E-N18				1/4 NPT				M5							
VMEFS-M52-M-N14				1/4 NPT				-							
VMEFS-M52-E-N14				1/4 NPT				M5							

Type	H3	H4	H5	H6	H7 ±0.15	H8	H9 ±0.15	H10 ±0.15	H11	H12	H13	H14	H15 ±0.15	W1
VMEFS-M52-M-N18	23.1	31.1	40.1	30.3	7.8	4.2	7.5	4.2	7	40.1	57.1	18	3	5°
VMEFS-M52-E-N18														
VMEFS-M52-M-N14	25.9	36.2	48.3	34.5	7.8	4.2	7.5	4.5	7	48.3	70.8	24.3	3	5°
VMEFS-M52-E-N14														

Directly actuated stem actuated valves VMEFS-... can be extended with the actuator attachment VAOM-R4-20-... to form a roller lever valve or roller lever valve with idle return. Actuator attachments are available for 3/2-way and 5/2-way valves.

→ Page 25

The valve can be moved in the actuation direction with the mounting kit VAME-R4-20-PA. This enables the correct switching point to be set. → Page 29

 **Note**




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

## Datasheet – Stem actuated valve

Ordering data						
Type of control	Pilot air	Reset	Flow rate [l/min]	Weight [g]	Part no.	Type
<b>3/2-way valves</b>						
Direct	–	Mechanical	750	116	<b>8031305</b>	<b>VMEF-ST-M32-M-N18</b>
			870	110	<b>8031310</b>	<b>VMEF-ST-M32-M-N14</b>
Piloted	Internal	Mechanical	750	131	<b>8031333</b>	<b>VMEF-STC-M32-M-N18</b>
			870	124	<b>8031334</b>	<b>VMEF-STC-M32-M-N14</b>
	External	Mechanical	750	131	<b>8031337</b>	<b>VMEF-STCZ-M32-M-N18</b>
			870	124	<b>8031338</b>	<b>VMEF-STCZ-M32-M-N14</b>
<b>5/2-way valves</b>						
Direct	–	Mechanical	750	145	<b>8031307</b>	<b>VMEF-S-M52-M-N18</b>
		Pneumatic	750	144	<b>8031309</b>	<b>VMEF-S-M52-E-N18</b>
		Mechanical	1200	178	<b>8031312</b>	<b>VMEF-S-M52-M-N14</b>
		Pneumatic	1200	177	<b>8031314</b>	<b>VMEF-S-M52-E-N14</b>
Piloted	Internal	Mechanical	1200	184	<b>8031321</b>	<b>VMEF-SC-M52-M-N14</b>
			750	151	<b>8031322</b>	<b>VMEF-SC-M52-M-N18</b>
	External	Pneumatic	1200	183	<b>8031325</b>	<b>VMEF-SCZ-M52-E-N14</b>
			750	150	<b>8031326</b>	<b>VMEF-SCZ-M52-E-N18</b>
		Mechanical	1200	184	<b>8031329</b>	<b>VMEF-SCZ-M52-M-N14</b>
			750	151	<b>8031330</b>	<b>VMEF-SCZ-M52-M-N18</b>



## Datasheet – Roller lever valve

-  Flow rate  
750 ... 1200 l/min
-  Pressure  
-0.095 ... 1 MPa  
-0.95 ... 10 bar
-  Temperature range  
-10 ... +60°C

**General technical data**

Design	Roller lever
Width [mm]	20
Type of control	Directly actuated
Application information	Risk of pinching
Actuation type	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 – Poppet valve**

Type	VMEF-RT-M32-...18	VMEF-RT-M32-...14
Design	Poppet valve	
Standard nominal flow rate 1 → 2 [l/min]	750	870
Valve function	3/2-way valve, monostable	
Overlap	Zero overlap	
Reset method	Mechanical spring	
Pneumatic connection 1, 2, 3	1/8 NPT	1/4 NPT
Nominal width [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
Design	Piston spool valve			
Standard nominal flow rate 1 → 2 [l/min]	750		1200	
Valve function	5/2-way valve, monostable			
Overlap	Positive overlap			
Reset method	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Max. switching frequency [Hz]	3			
Pneumatic connection 1, 2, 3	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT
Nominal width [mm]	5.2	5.2	7	7
Max. stroke limit (hard) [mm]	11.6			
Actuating force [N]	38			

## Datasheet – Roller lever valve

Materials	
Housing	Anodised wrought aluminium alloy
Cover	Reinforced PA (VMEF...-M52-)
Actuator attachment	Galvanised steel
Seal	NBR
Note on materials	RoHS-compliant
PWIS conformity	VDMA24364-B1/B2-L

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[MPa] -0.095 ... 1
	[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

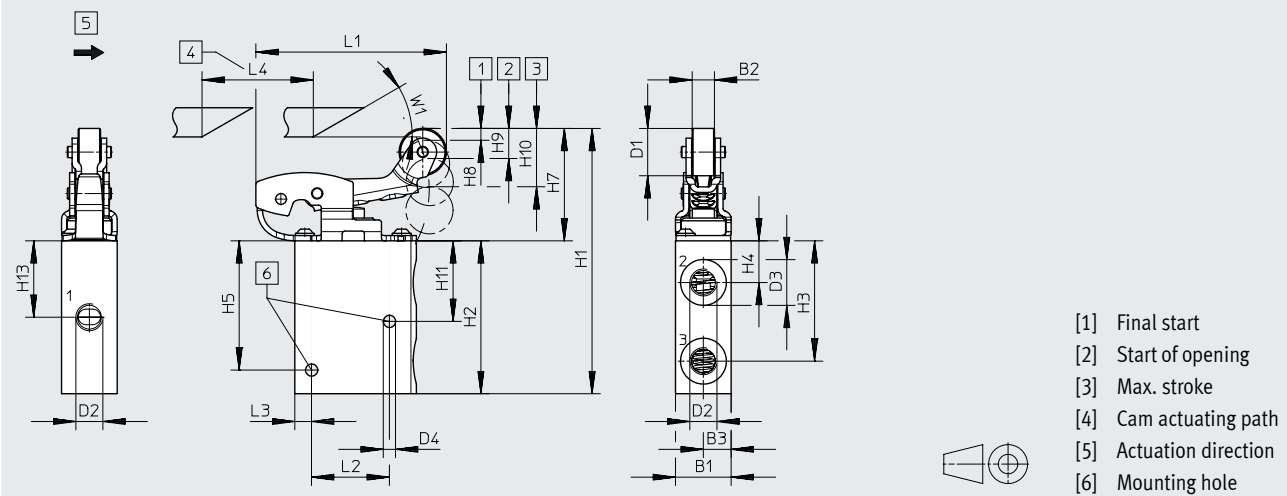
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

## Datasheet – Roller lever valve

## Dimensions

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

3/2-way valve



- [1] Final start
- [2] Start of opening
- [3] Max. stroke
- [4] Cam actuating path
- [5] Actuation direction
- [6] Mounting hole

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

Type	H1	H2	H3	H4	H5	H7	H8	H9	H10	H11	H13	W1
VMEF-RT-M32-M-N18	91.9	55	43.3	15	46.5	37	6	6	10	29	27.5	30°
VMEF-RT-M32-M-N14												

**Note**

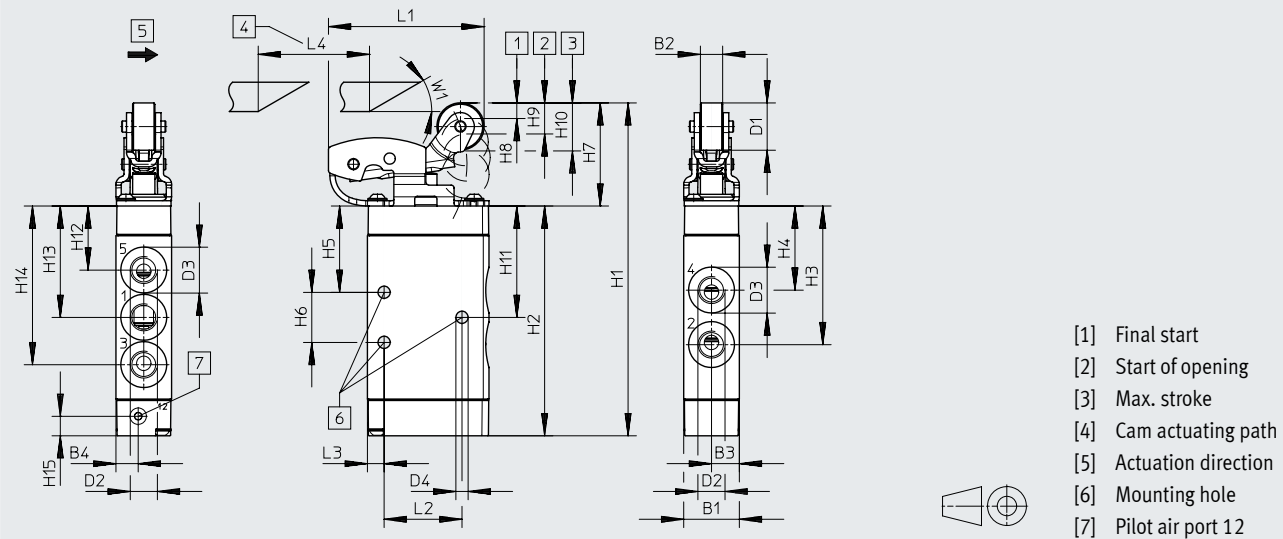
Roller lever valves can be actuated by a cam from either side, i.e. from the left (forward movement) or from the right (backward movement).

Datasheet – Roller lever valve

Dimensions

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

5/2-way valve



- [1] Final start
- [2] Start of opening
- [3] Max. stroke
- [4] Cam actuating path
- [5] Actuation direction
- [6] Mounting hole
- [7] Pilot air port 12

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

Type	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	W1
VMEF-R-M52-...N18	49.9	30.3	31.1	18	37	5	7	11	40.1	23.1	40.1	57.1	7	30°
VMEF-R-M52-...N14	62.1	34.5	36.2	24.3					48.3	25.9	48.3	70.8		

If required, actuator attachments VAOM-R4-20-... can be used as spare parts for existing directly actuated roller lever valves. → Page 25

The valve can be moved in the actuation direction with the mounting kit VAME-R4-20-PA. This enables the correct switching point to be set. → Page 29




Note

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

Ordering data

Type of control	Reset	Flow rate [l/min]	Weight [g]	Part no.	Type
<b>3/2-way valves</b>					
Direct	Mechanical	750	209	<b>8047098</b>	<b>VMEF-RT-M32-M-N18</b>
	Mechanical	870	204	<b>8047101</b>	<b>VMEF-RT-M32-M-N14</b>
<b>5/2-way valves</b>					
Direct	Pneumatic	750	240	<b>8047096</b>	<b>VMEF-R-M52-E-N18</b>
	Mechanical	750	240	<b>8047097</b>	<b>VMEF-R-M52-M-N18</b>
	Pneumatic	1200	272	<b>8047099</b>	<b>VMEF-R-M52-E-N14</b>
	Mechanical	1200	272	<b>8047100</b>	<b>VMEF-R-M52-M-N14</b>

## Datasheet – Roller lever valve

-  Flow rate  
750 ... 1200 l/min
-  Pressure  
-0.095 ... 1 MPa  
-0.95 ... 10 bar
-  Temperature range  
-10 ... +60°C

**General technical data**

Design	Roller lever with idle return	
Width [mm]	20	
Type of control	Directly actuated	
Application information	Risk of pinching	
Actuation type	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 – Poppet valve**

Type	VMEF-KT-M32...18	VMEF-KT-M32...14
Design	Poppet valve	
Standard nominal flow rate 1 → 2 [l/min]	750	870
Valve function	3/2-way valve, monostable	
Overlap	Zero overlap	
Reset method	Mechanical spring	
Pneumatic connection 1, 2, 3	1/8 NPT	1/4 NPT
Nominal width [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
Design	Piston spool valve	
Standard nominal flow rate 1 → 2 [l/min]	750	1200
Valve function	5/2-way valve, monostable	
Overlap	Positive overlap	
Reset method	Mechanical spring	
Pneumatic connection 1, 2, 3	1/8 NPT	1/4 NPT
Nominal width [mm]	5.2	7
Max. stroke limit (hard) [mm]	11.8	
Actuating force [N]	23.5	

## Datasheet – Roller lever valve

Materials	
Housing	Anodised wrought aluminium alloy
Cover	Reinforced PA (VMEF...-M52-)
Actuator attachment	Galvanised steel
Seal	NBR
Note on materials	RoHS-compliant
PWIS conformity	VDMA24364-B1/B2-L

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[MPa] -0.095 ... 1
	[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

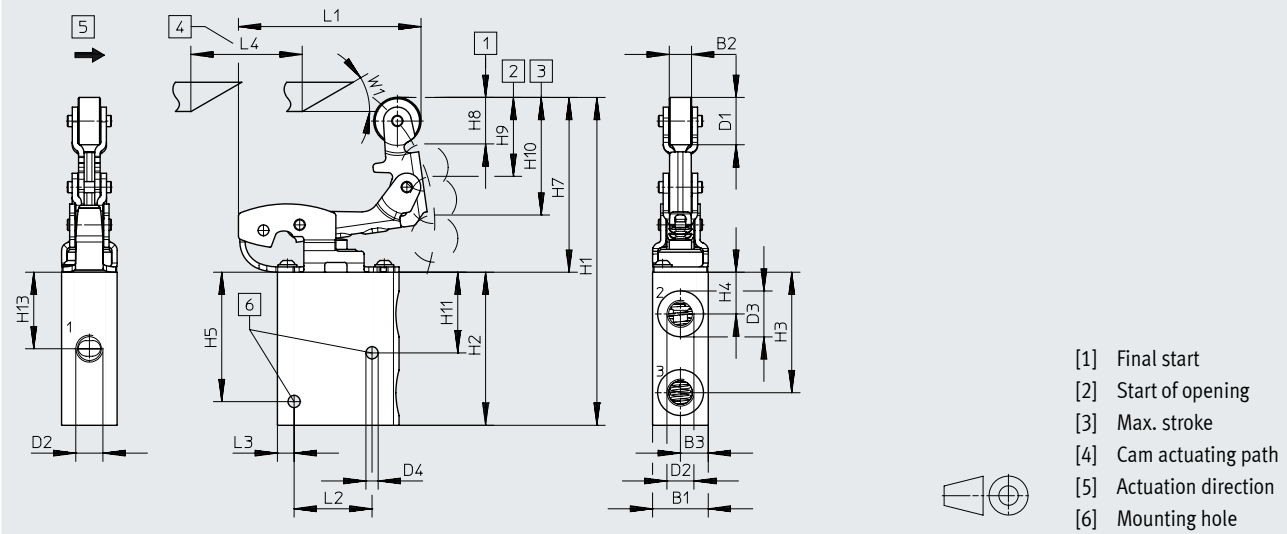
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

## Datasheet – Roller lever valve

## Dimensions

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


3/2-way valve



- [1] Final start
- [2] Start of opening
- [3] Max. stroke
- [4] Cam actuating path
- [5] Actuation direction
- [6] Mounting hole

Type	B1	B2	B3	D1 ∅	D2	D3	D4 ∅	L1	L2	L3	L4 Min.
VMEF-KT-M32-M-N18	20	8	10	17	1/8 NPT	16.5	4.4	65.6	28	6	40
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-N18	117.2	55	43.3	15	46.5	62	6	6	10	29	27.5	30°
VMEF-KT-M32-M-N14												

 **Note**

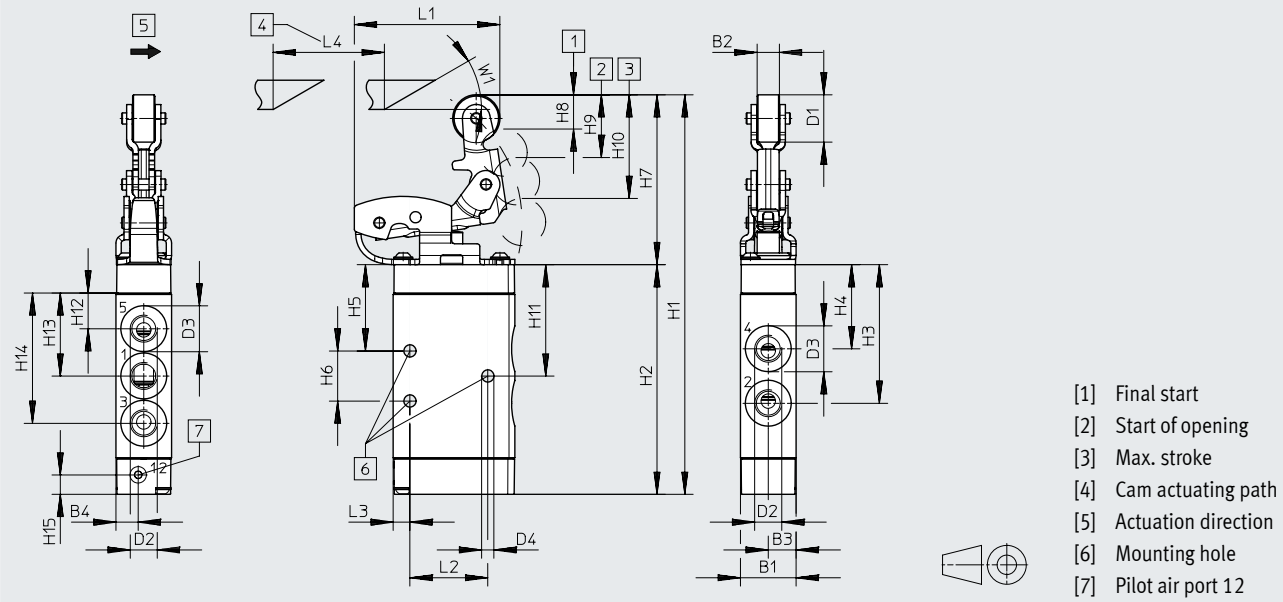
Roller lever valves with idle return can only be actuated by a cam from one side, i.e. only in one direction (forward movement). If the actuation is applied from the other direction (backward movement), the valve is not actuated.

Datasheet – Roller lever valve

Dimensions

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

5/2-way valve



- [1] Final start
- [2] Start of opening
- [3] Max. stroke
- [4] Cam actuating path
- [5] Actuation direction
- [6] Mounting hole
- [7] Pilot air port 12

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

Type	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	W1
VMEF-K-M52-...N18	49.9	30.3	31.1	18	61	5	7	11	40.1	23.1	40.1	57.1	7	30°
VMEF-K-M52-...N14	62.1	34.5	36.2	24.3					48.3	25.9	48.3	70.8		

If required, actuator attachments VAOM-R4-20-... can be used as spare parts for existing directly actuated roller lever valves. → Page 25

The valve can be moved in the actuation direction with the mounting kit VAME-R4-20-PA. This enables the correct switching point to be set. → Page 29

**Note**

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

Ordering data

Type of control	Reset	Flow rate [l/min]	Weight [g]	Part no.	Type
<b>3/2-way valves</b>					
Direct	Mechanical	750	227	<b>8047105</b>	<b>VMEF-KT-M32-M-N18</b>
		870	218	<b>8047107</b>	<b>VMEF-KT-M32-M-N14</b>
<b>5/2-way valves</b>					
Direct	Mechanical	750	255	<b>8047104</b>	<b>VMEF-K-M52-M-N18</b>
		1200	286	<b>8047106</b>	<b>VMEF-K-M52-M-N14</b>



## Datasheet – Actuator attachments

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

- Roller lever
- Roller lever with idle return



General technical data		VAOM-R4-20-D1-...	VAOM-R4-20-D2-...
Type		Roller lever	Roller lever with idle return
Design		Roller lever	Roller lever with idle return
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	
Corrosion resistance class CRC <sup>1)</sup>		1	

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

Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

### Actuator attachments for valves

Stem actuated valves from the series VMEF can be retrofitted with the actuator attachments VAOM.

If an actuator attachment VAOM is screwed onto the corresponding stem actuated valve of the VMEF series, it converts it to a roller lever valve or roller lever valve with idle return.

- Roller lever valves can be actuated by a cam from either side, i.e. from the left (forward movement) or from the right (backward movement).
- Roller lever valves with idle return can only be actuated by a cam from one side, i.e. only in one direction (forward movement). If the actuation is applied from the other direction (backward movement), the valve is not actuated.

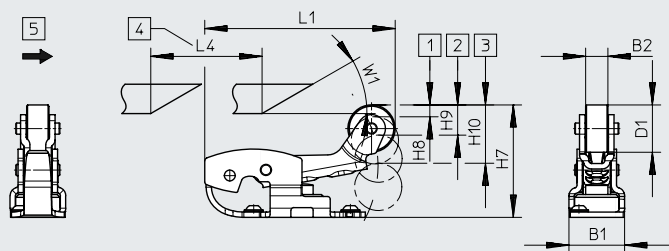
The actuator attachments VAOM can also be used to replace mechanically worn attachments for roller lever valves or roller lever valves with idle return.

Datasheet – Actuator attachments

Dimensions

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

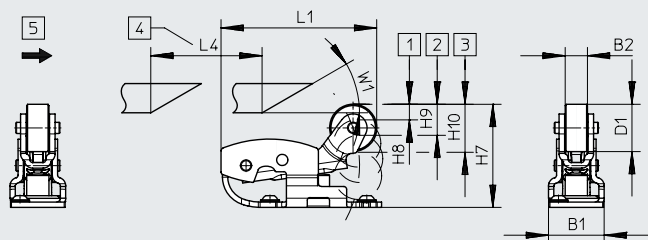
Roller lever for 3/2-way valves



- [1] Start of opening
- [2] Max. opening
- [3] Max. stroke
- [4] Cam actuating path
- [5] Actuation direction

Type	B1	B2	D1 ∅	L1	L4 Min.	H7 ±0.1	H8 ±0.1	H9 ±0.1	H10 ±0.1	W1
VAOM-R4-20-D1-32	20	8	17	68.5	40	36.9	2.9	2.9	6.3	30°

Roller lever for 5/2-way valves



- [1] Start of opening
- [2] Max. opening
- [3] Max. stroke
- [4] Cam actuating path
- [5] Actuation direction

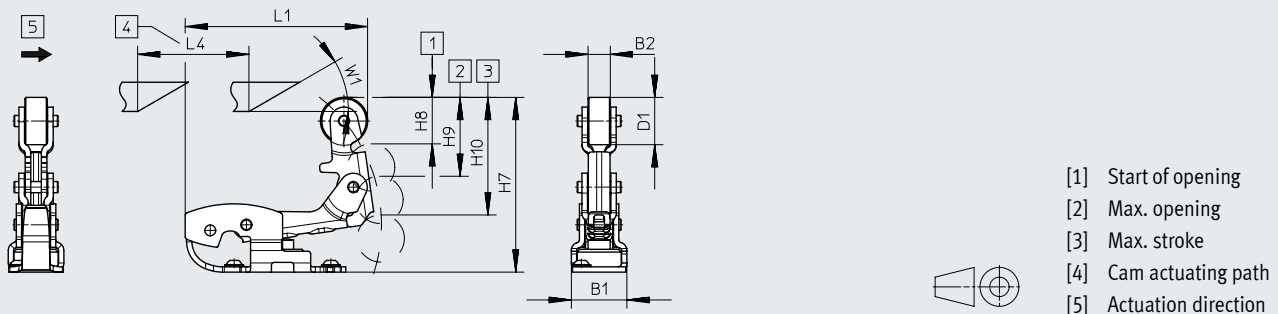
Type	B1	B2	D1 ∅	L1	L4 Min.	H7 ±0.2	H8 ±0.3	H9 ±0.2	H10 ±0.1	W1
VAOM-R4-20-D1-52	20	8	17	56	40	37	7.3	7.6	11.6	30°

## Datasheet – Actuator attachments

## Dimensions

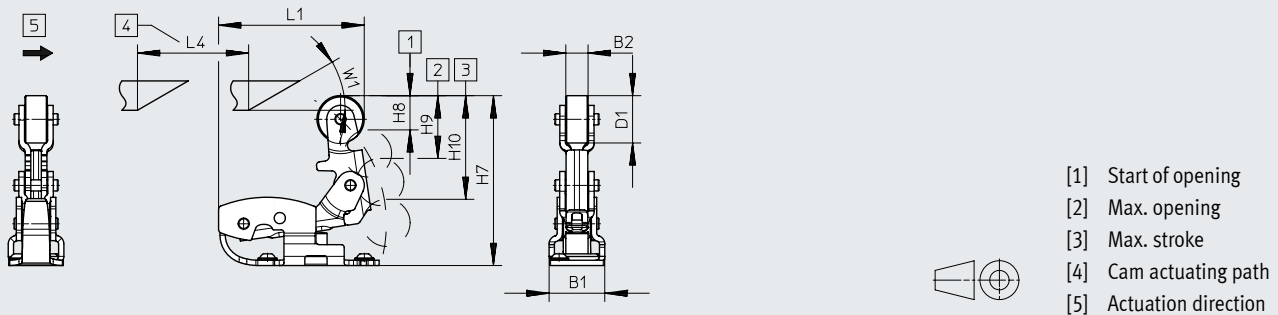
Download CAD data → [www.festo.com](http://www.festo.com)

Roller lever with idle return for 3/2-way valves




Type	B1	B2	D1 Ø	L1	L4 Min.	H7 ±0.2	H8 ±0.2	H9 ±0.2	H10 ±0.1	W1
VAOM-R4-20-D2-32	20	8	17	65.6	40	62.2	5.9	5.8	11.1	30°

Roller lever with idle return for 5/2-way valves

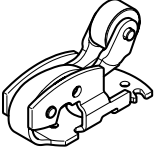
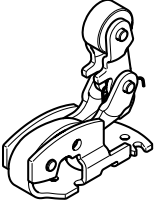


Type	B1	B2	D1 Ø	L1	L4 Min.	H7 ±0.1	H8 ±0.3	H9 ±0.3	H10 ±0.1	W1
VAOM-R4-20-D2-52	20	8	17	52.4	40	60.9	7.4	7.7	11.8	30°

 Note


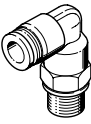
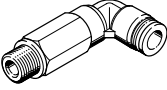

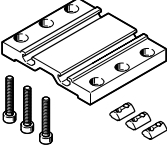
- When screwing the actuator attachment VAOM-R4-20-... onto the valve, ensure that the prescribed torque of 1.5 Nm ± 10% is observed.
- An actuator attachment VAOM-R4-20-... can only be mounted on a basic valve three times.

Datasheet – Actuator attachments

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

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## Accessories

Ordering data	Description	Part no.	Type	PJ <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>
			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>
		Connecting thread 1/4 NPT for tubing O.D.	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>Silencers</b>						
	Metal	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>
<b>Mounting kit for switching point adjustment</b>						
	Mounting kit for valves VMEF comprising:		<b>8060046</b>	<b>VAME-R4-20-PA</b>	<b>1</b>	
	<ul style="list-style-type: none"> <li>• 1x mounting plate 60 x 70 mm</li> <li>• 3x socket head screws to ISO 4762 M4x25 8.8</li> <li>• 3x slot nuts</li> </ul>					

1) Packaging unit