

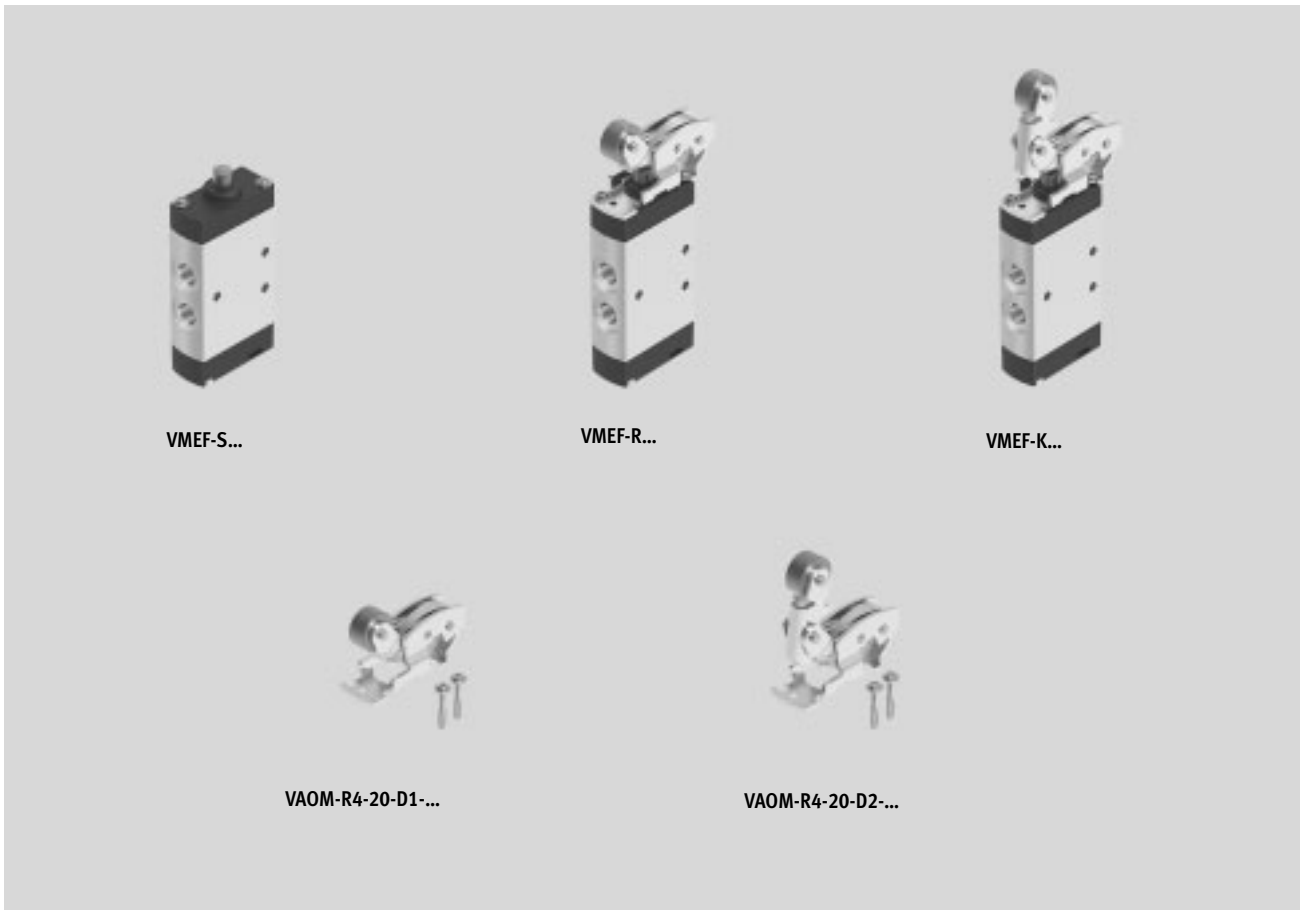
Mechanically actuated valves



Mechanically actuated valves

Key features

FESTO



VMEF-S...

VMEF-R...

VMEF-K...

VAOM-R4-20-D1-...

VAOM-R4-20-D2-...

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

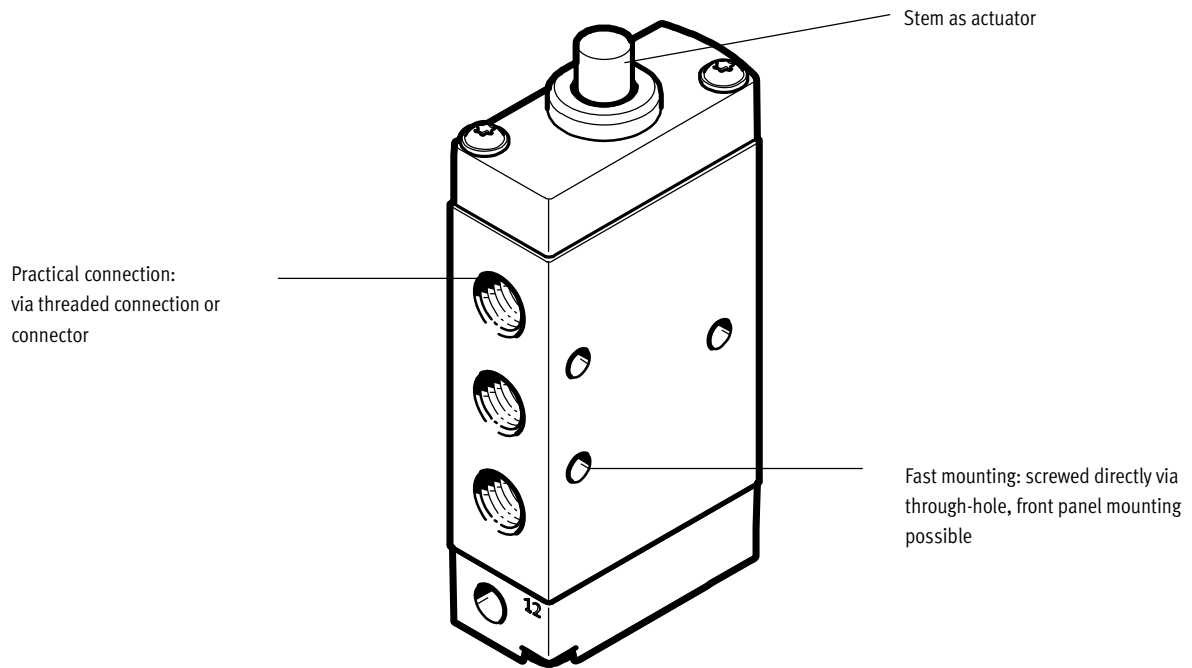
Easy to install

- 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

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

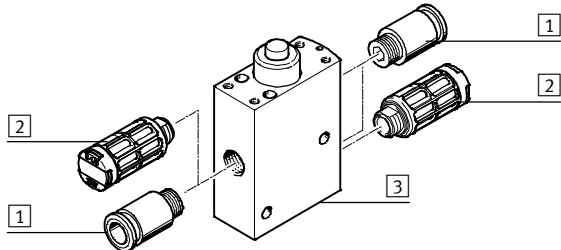
- Reversible in some cases
- Pneumatically piloted
- Ducted exhaust air

Mechanically actuated valves

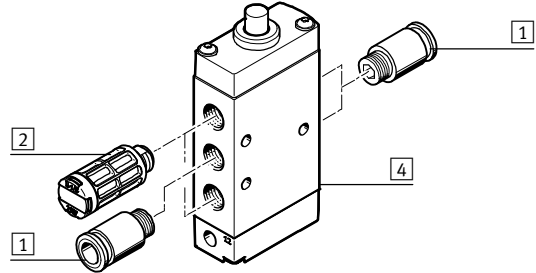
Peripherals overview

Valves, mechanically actuated

Stem actuated valve, 3/2-way valve

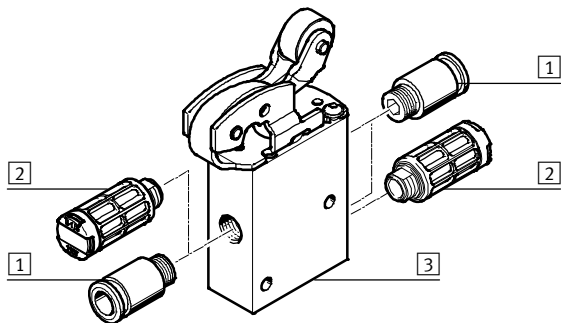


Stem actuated valve, 5/2-way valve

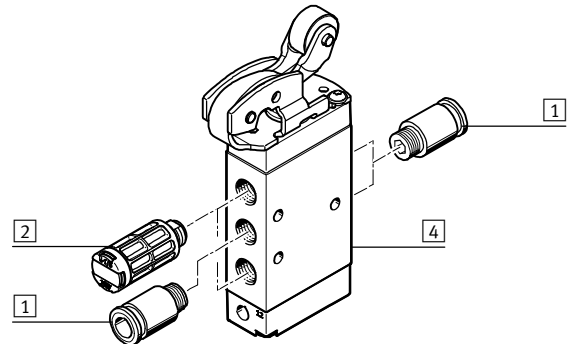


	Brief description	→ Page/Internet
1	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)
2	Silencers	For exhaust ports (3, 5)
3	3/2-way valve	Stem actuated valve
4	5/2-way valve	Stem actuated valve

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)
2	Silencers	For exhaust ports (3, 5)
3	3/2-way valve	Stem actuated valve with roller lever attachment
4	5/2-way valve	Stem actuated valve with roller lever attachment

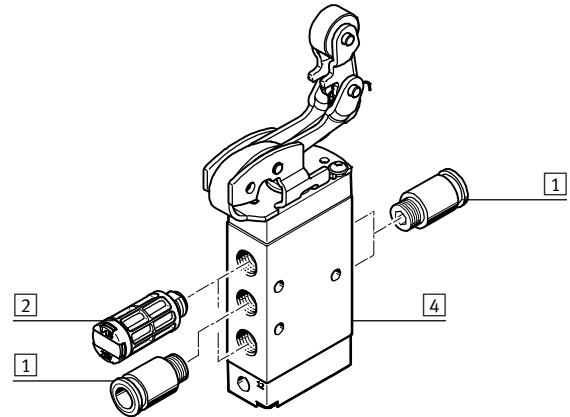
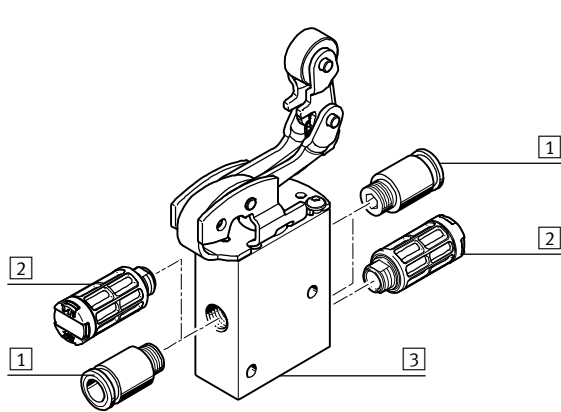
Mechanically actuated valves

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)
2	Silencers	For exhaust ports (3, 5)
3	3/2-way valve	Stem actuated valve with toggle lever attachment
4	5/2-way valve	Stem actuated valve with toggle lever attachment

Mechanically actuated valves

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

Mechanically actuated valves

Key features – Pneumatics

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

- - 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

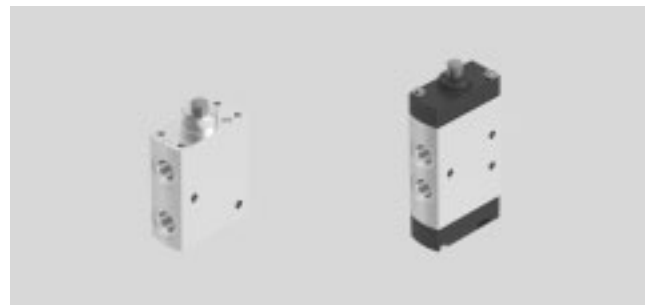
Type codes

		VMEF	-		-		-		-	
Valve series										
VMEF	Mechanically actuated valves									
Design										
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									
Valve function										
M32	3/2-way valve, monostable									
M52	5/2-way valve, monostable									
Type of reset										
E	Pneumatic spring, external									
M	Mechanical spring									
Pneumatic connection										
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

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			
Type of control		Directly actuated	Piloted	Directly actuated	Piloted
Reset method		Mechanical spring			
Pneumatic connection 1, 2, 3	G	G1/8	G1/8	G1/4	G1/4
	NPT	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT
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

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			
Type of control	Directly actuated			
Reset method	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Pneumatic port 1, 2, 3, 4, 5	G1/8 or 1/8 NPT	G1/8 or 1/8 NPT	G1/4 or 1/4 NPT	G1/4 or 1/4 NPT
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			
Type of control	Piloted			
Reset method	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Pneumatic port 1, 2, 3, 4, 5	G1/8 or 1/8 NPT	G1/8 or 1/8 NPT	G1/4 or 1/4 NPT	G1/4 or 1/4 NPT
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

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	
With internal or external pilot air	Internal	External	Internal	External
NC valves [bar]	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
Operating pressure range [psi]	–14 ... 145		36 ... 145	
With internal or external pilot air	Internal	External	Internal	External
NC valves [psi]	51 ... 145	44 ... 145	44 ... 145	36 ... 145
NO valves [psi]	51 ... 145	44 ... 145	51 ... 145	36 ... 145
Pilot pressure range [bar]	–		–	
Temperature of medium [°C]	–10 ... +60			
Ambient temperature [°C]	–10 ... +60			
Corrosion resistance class CRC ¹⁾	2			

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

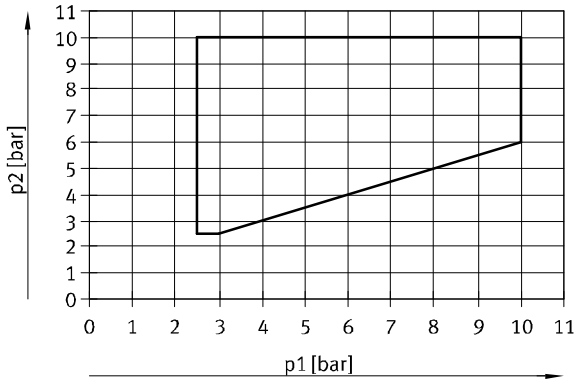
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Mechanically actuated valves

Technical data – Stem actuated valve

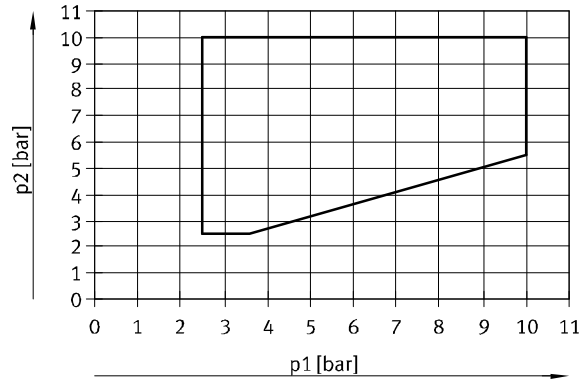
Pilot pressure p2 as a function of external pneumatic spring pressure p1

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

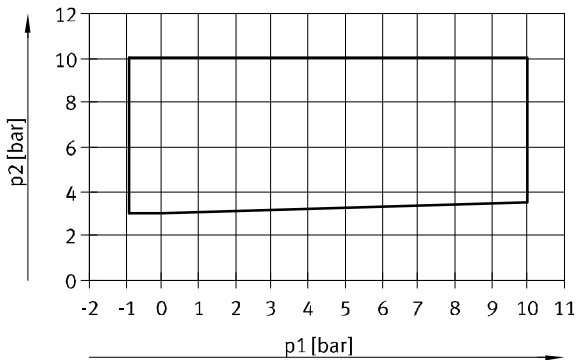


The framed area shows the operating area for internal and external pilot air.

Pilot pressure p2 as a function of working pressure p1

For disc seat valves VMEF-...-M32...

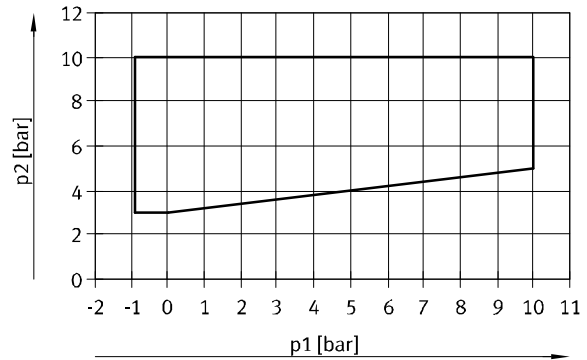
(normally closed, NC)



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.

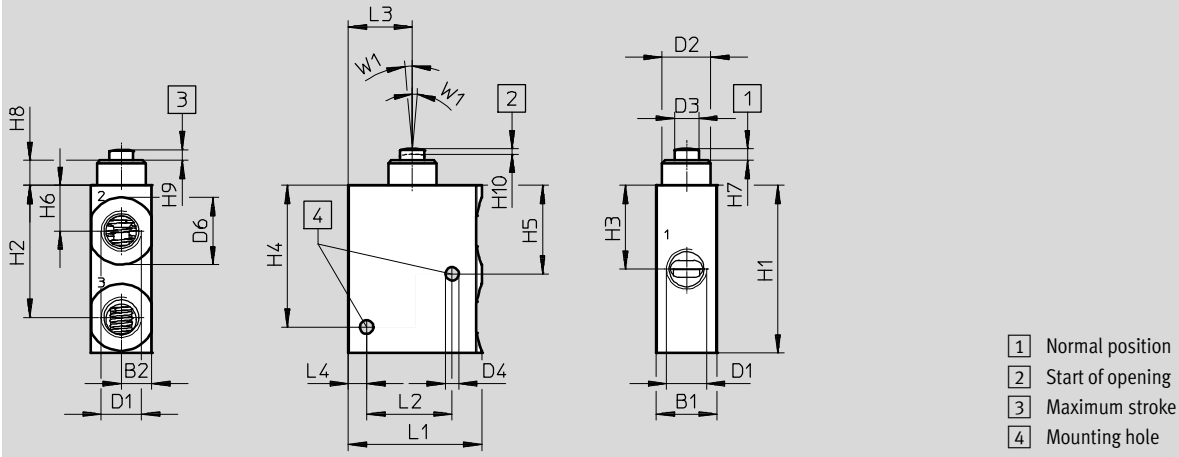
Mechanically actuated valves

Technical data – Stem actuated valve

Dimensions

Download CAD data → 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											

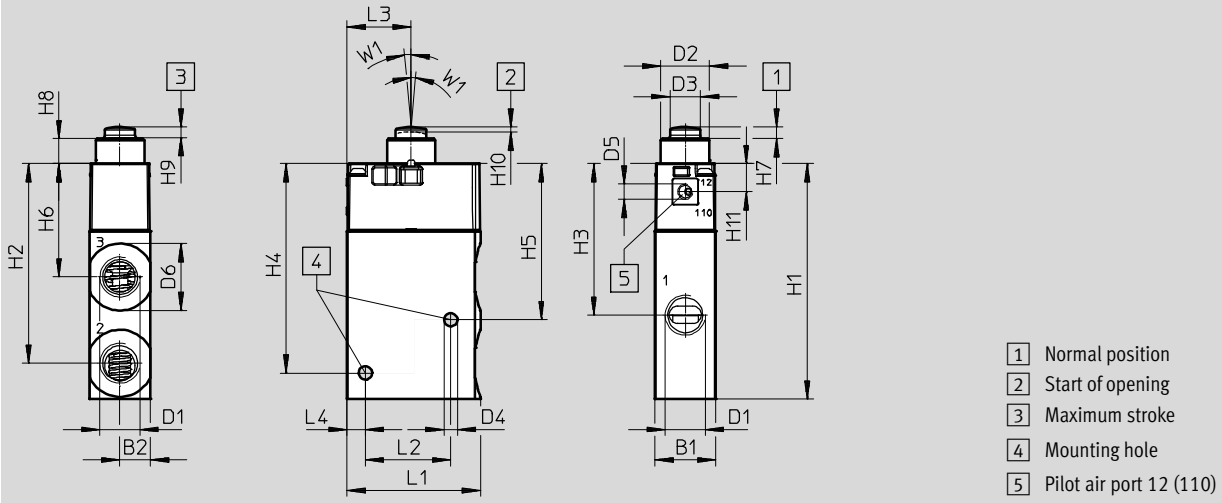
Mechanically actuated valves

Technical data – Stem actuated valve

Dimensions

Download CAD data → www.festo.com

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



Type	B1	B2	D1	D2 ∅	D3 ∅	D4 ∅	D5	D6 ∅	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

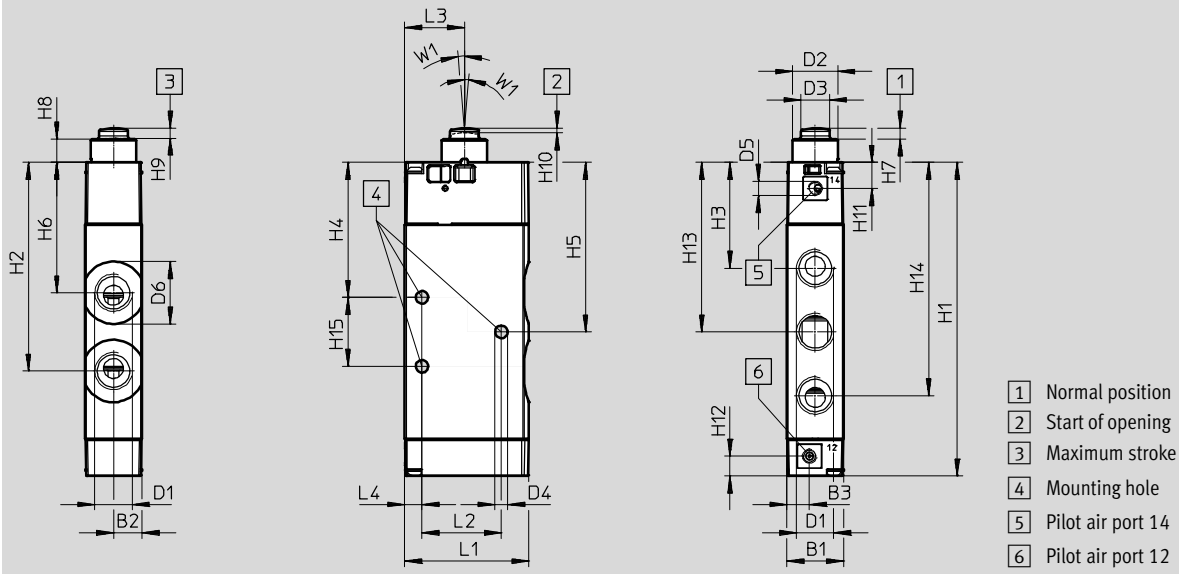
Technical data – Stem actuated valve



Dimensions

Download CAD data → 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																

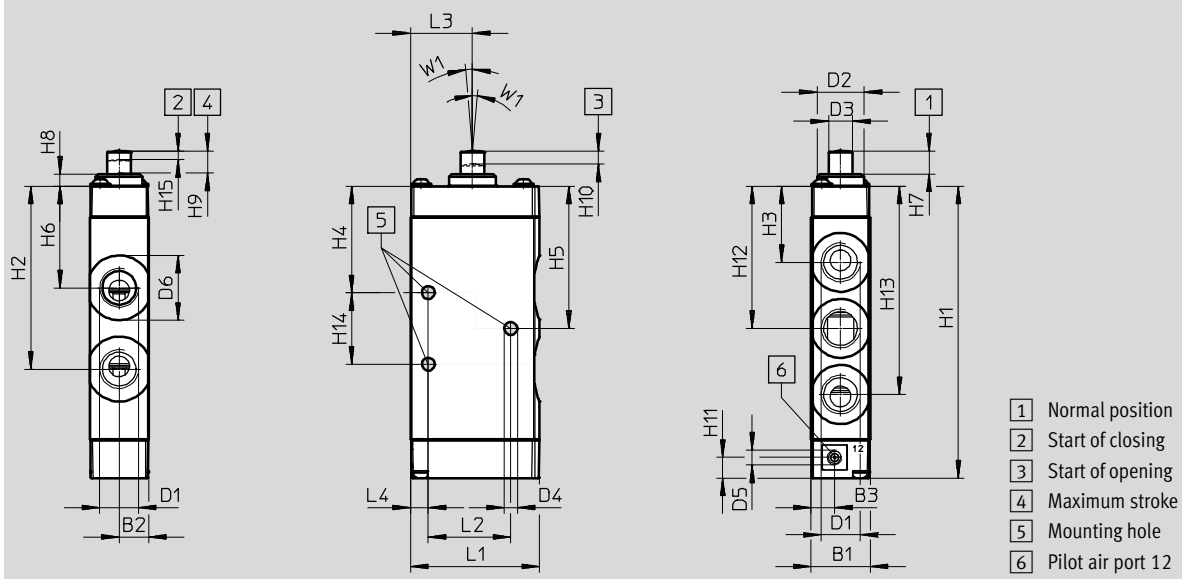
Mechanically actuated valves

Technical data – Stem actuated valve

Dimensions

Download CAD data → 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				1/8 NPT				M5										
VMEF-S-M52-M-N18				-				-										
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				4.5		48.3	70.8	24.3		
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 27

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 32

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




Technical data – Stem actuated valve

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

1) With piloted valves

Mechanically actuated valves

Technical data – Roller lever valve

-  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	
Type of reset		Mechanical spring	
Pneumatic connection 1, 2, 3	G NPT	1/8 1/8	1/4 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			
Type of reset		Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Max. switching frequency [Hz]		3			
Pneumatic connection 1, 2, 3	G NPT	1/8 1/8	1/8 1/8	1/4 1/4	1/4 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

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 ¹⁾	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).

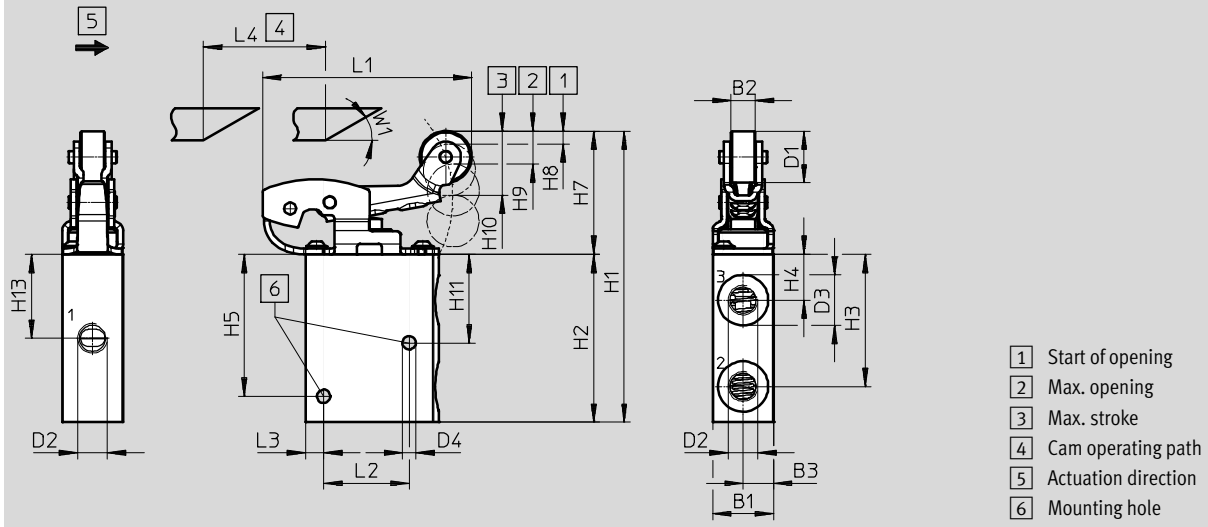
Mechanically actuated valves

Technical data – Roller lever valve

Dimensions

Download CAD data → 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).

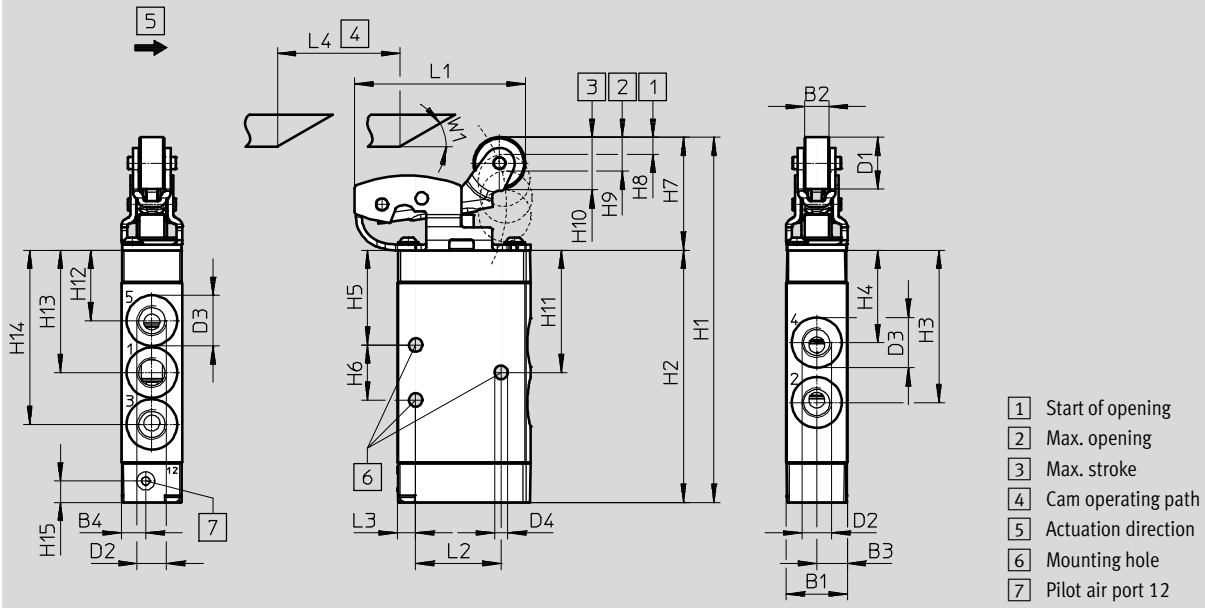
Mechanically actuated valves

Technical data – Roller lever valve

Dimensions

Download CAD data → 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														
VMEF-R-M52-...G14	62.1	34.5	36.2	24.3										
VMEF-R-M52-...N14														




Mechanically actuated valves

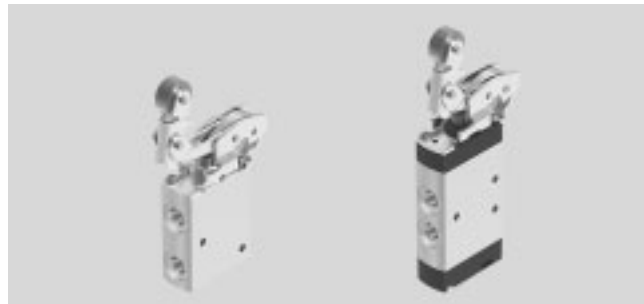
Technical data – Roller lever valve

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

Mechanically actuated valves

Technical data – Roller lever valve

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



General technical data				
Type	VMEF-KT-M32-M-...18	VMEF-K-M52-M-...18	VMEF-KT-M32-M-...14	VMEF-K-M52-M-...14
Design	Toggle lever			
Version	Disc seat valve	Piston spool valve	Disc seat valve	Piston spool valve
Standard nominal flow rate	1 → 2 [l/min]		750	870
Valve function	3/2-way valve, monostable	5/2-way valve, monostable	3/2-way valve, monostable	5/2-way valve, monostable
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			
Type of reset	Mechanical spring			
Max. switching frequency [Hz]	3			
Pneumatic connection	G	1/8	1/8	1/4
1, 2, 3	NPT	1/8	1/8	1/4
Nominal size [mm]	5.6	5.2	6	7
Max. stroke limit (hard) [mm]	11	11.8	11	11.8
Max. actuating speed for side actuation [m/s]	0.7			
Cam angle in angular degrees	30			
Actuating force [N]	32.7	23.5	32.7	23.5

Mechanically actuated valves

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

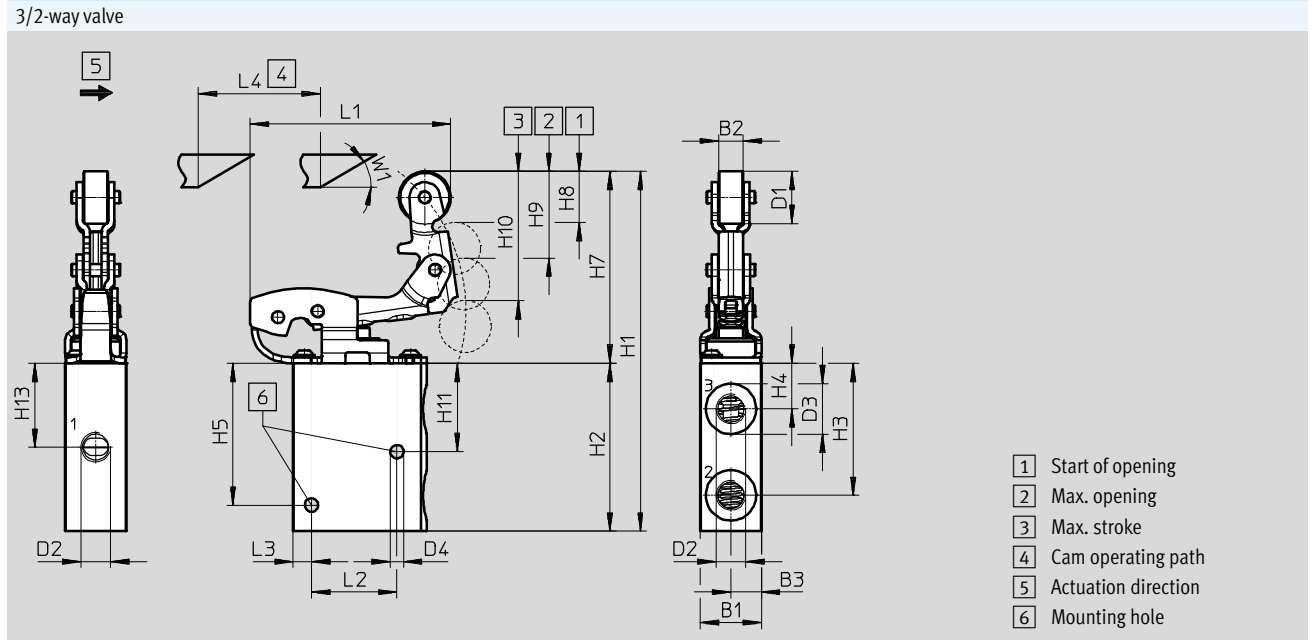
Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range [bar]	-0.95 ... 10
Temperature of medium [°C]	-10 ... +60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

Technical data – Roller lever valve

Dimensions Download CAD data → www.festo.com



Type	B1	B2	B3	D1 Ø	D2	D3	D4 Ø	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						
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.

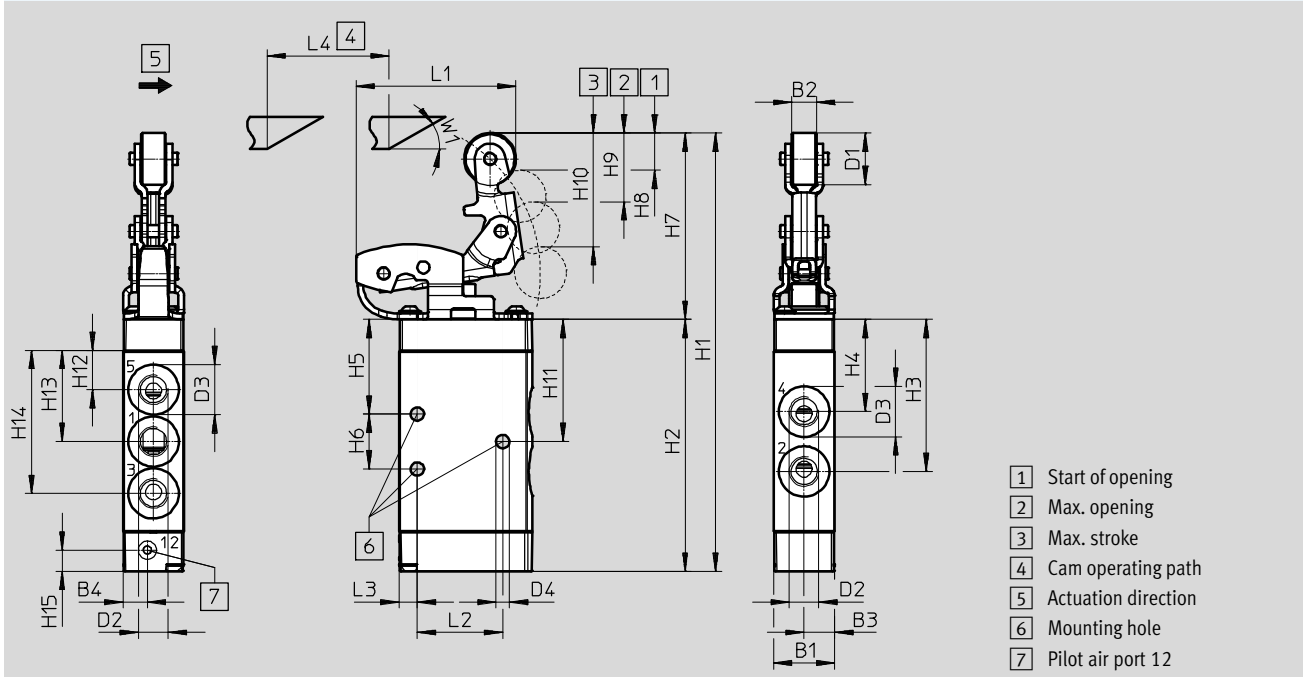
Mechanically actuated valves

Technical data – Roller lever valve

Dimensions

Download CAD data → 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						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										
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 27

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 32

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

Technical data – Roller lever valve

FESTO

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

Mechanically actuated valves

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.

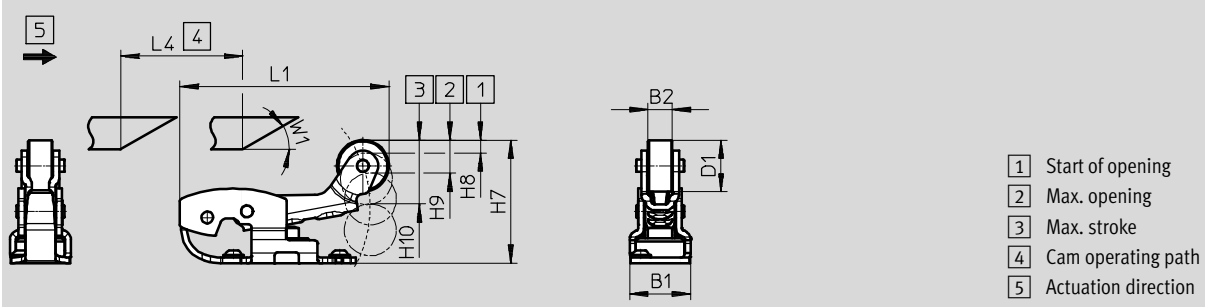
Mechanically actuated valves

Technical data – Actuator attachments

Dimensions

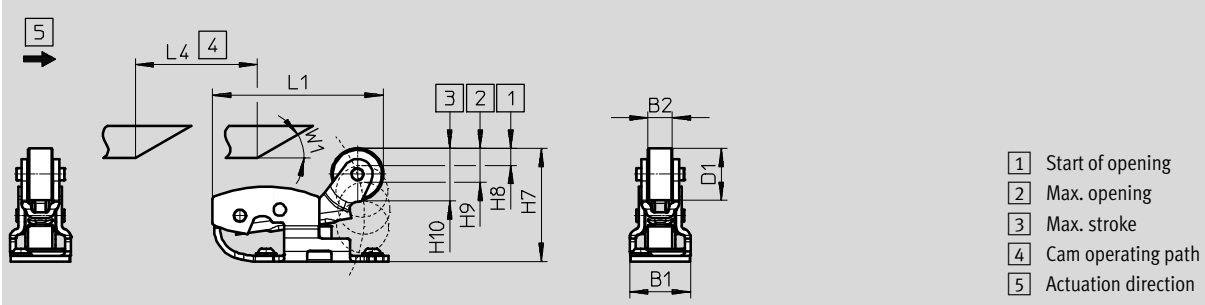
Download CAD data → www.festo.com

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°

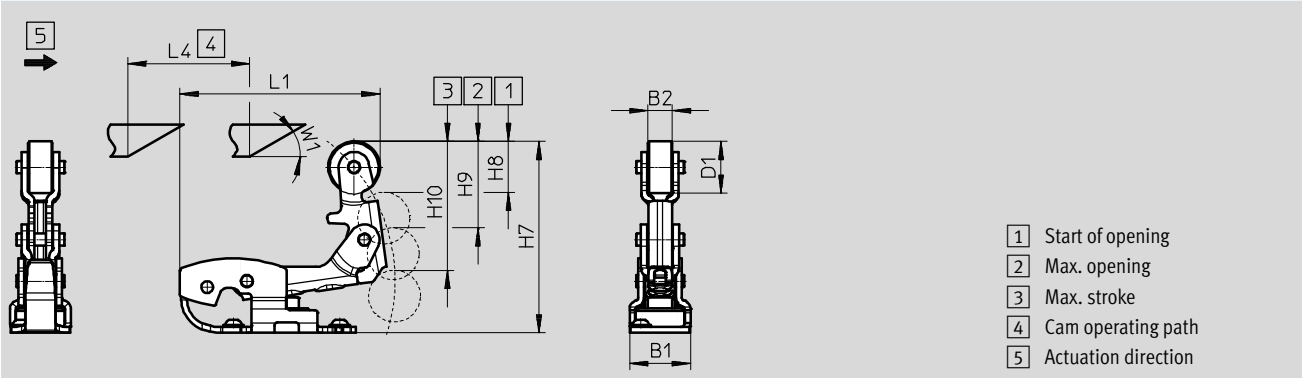
Mechanically actuated valves

Technical data – Actuator attachments

Dimensions

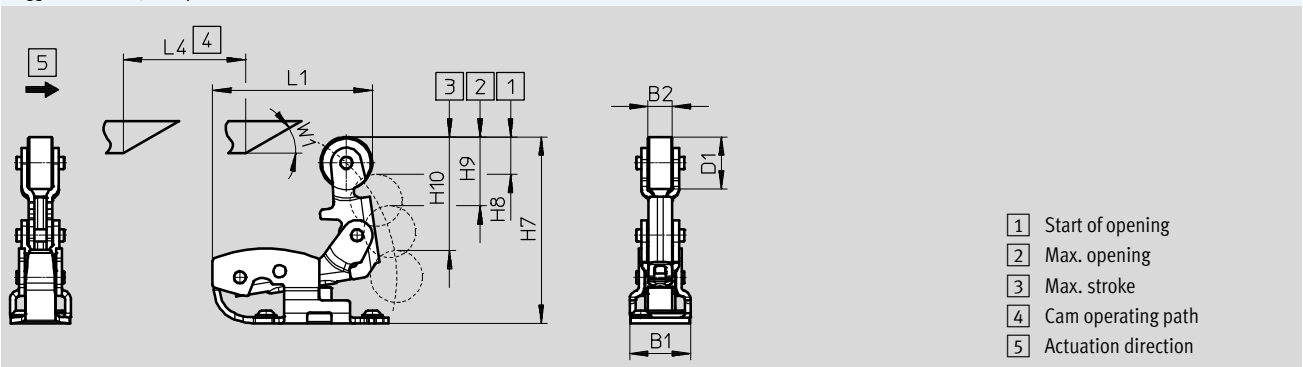
Download CAD data → www.festo.com

Toggle lever 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°

Toggle lever for 5/2-way valves



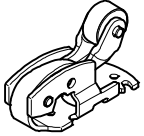

Type	B1	B2	D1 Ø	L1	L4 Min.	H7 ±0.1	H8 ±0.3	H9 ±0.3	H10 ±0.1	W1
VAOM-R4-20-D2-52	20	8	17	52.4	40	60.9	7.4	7.7	11.8	30°

-  - Note

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

Mechanically actuated valves




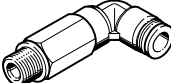


Technical data – Actuator attachments

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

1) Packaging unit

Mechanically actuated valves

Accessories

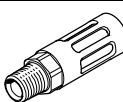
Ordering data – G thread						
	Description		Part No.	Type	PU ¹⁾	
Push-in fitting, straight						
	With internal hex	Connecting thread M5 for tubing O.D.	4 mm	153315	QSM-M5-4-I	10
			4 mm	186106	QS-G1/8-4-I	10
		Connecting thread G1/8 for tubing O.D.	4 mm	133008	QS-G1/8-4-I-100	100
			6 mm	186107	QS-G1/8-6-I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

1) Packaging unit

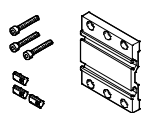
Mechanically actuated valves

Accessories

FESTO

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

1) Packaging unit

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

1) Packaging unit