Mechanically actuated valves VMEF

FESTO

Characteristics





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
- Low 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
  - Roller lever valve with idle return

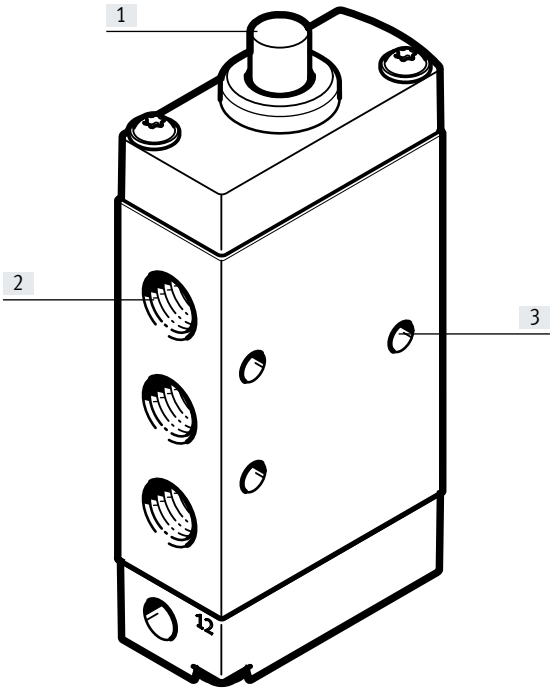
Reliable

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

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

Characteristics



[1] Stem as actuator
[2] Practical connection: via threaded connection or connectors
[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

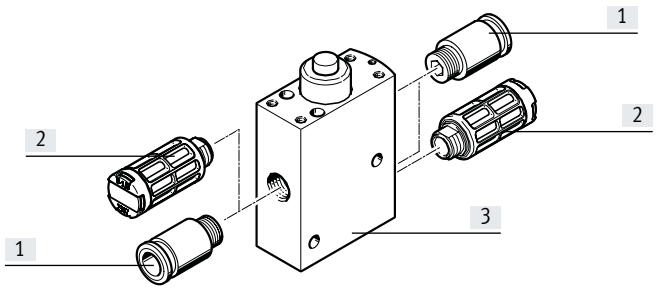
5/2-way valve, monostable

- Pneumatic spring/mechanical spring
- Vacuum operation possible
- Reversible in some cases
- Pneumatically piloted
- Ducted exhaust air

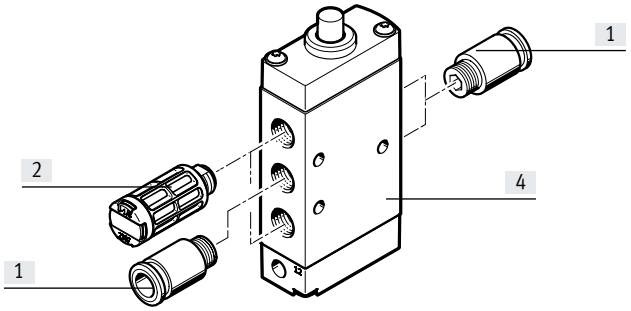
Peripherals overview

Valves, mechanically actuated

Stem actuated valve, 3/2-way valve

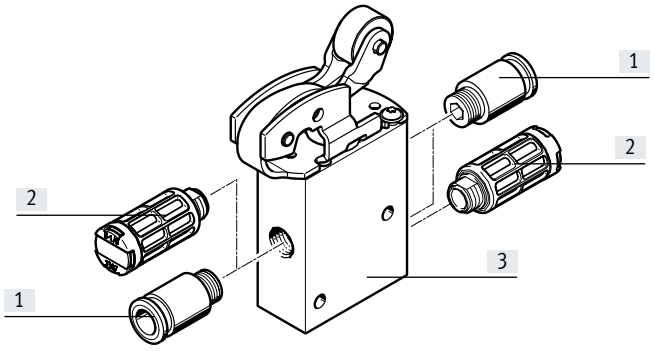


Stem actuated valve, 5/2-way valve

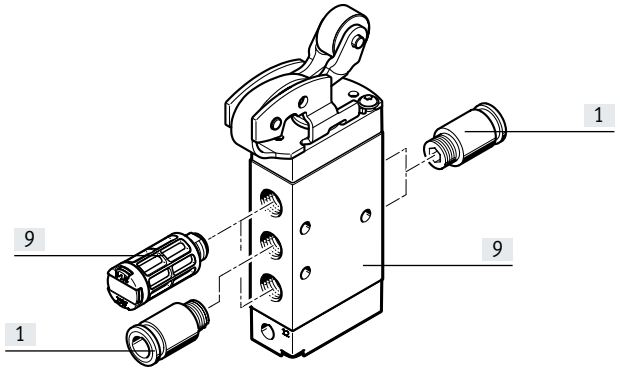


		Brief description	→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	32
[2]	Silencers	For exhaust ports (3, 5)	32
[3]	3/2-way valve	Stem actuated valve	9
[4]	5/2-way valve	Stem actuated valve	9

Roller lever valve, 3/2-way valve



Roller lever valve, 5/2-way valve



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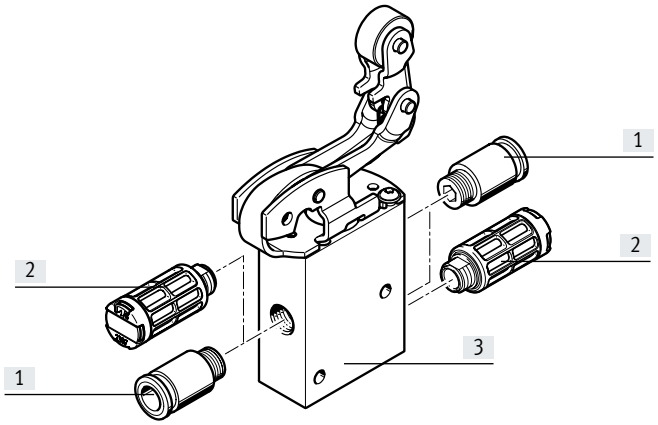
[2]	Silencers	For exhaust ports (3, 5)	32
[3]	3/2-way valve	Stem actuated valve with roller lever attachment	18
[4]	5/2-way valve	Stem actuated valve with roller lever attachment	18

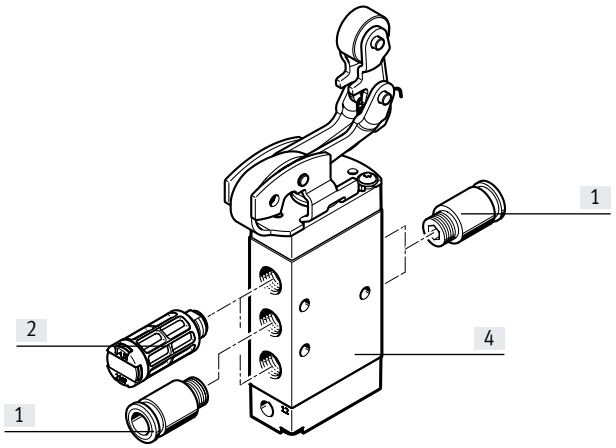
Peripherals overview

Valves, mechanically actuated

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



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



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Characteristics – Pneumatic components

Mechanically actuated valves

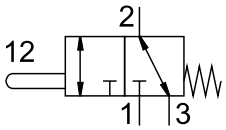
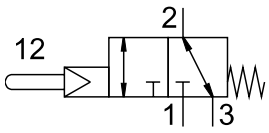
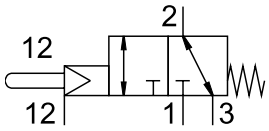
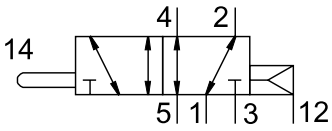
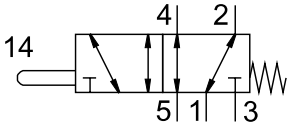
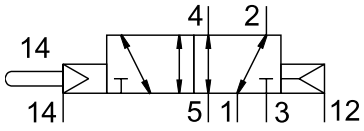
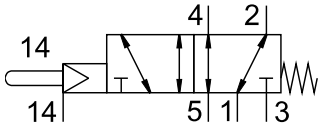
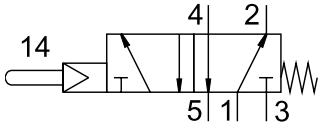
Mechanically actuated valves are often used as "signal valves", and return a pneumatic signal to the controller. This signal, e.g. "end position reached", is transmitted via a stem or roller actuated valve.

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.

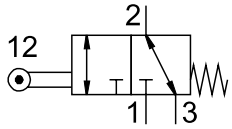
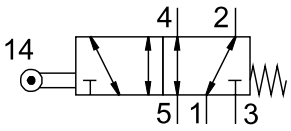
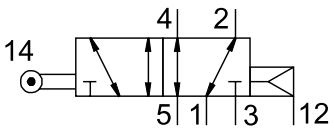
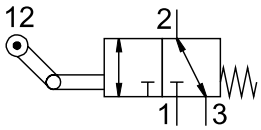
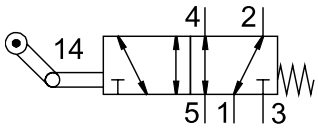
Benefits of mechanically actuated valves:

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

Valve functions

Circuit symbol	Type	Description
Stem actuated valve		
	VMEF-ST-M32-M-...	3/2-way valve, monostable • Normally closed (1 ⇢ 2) • Normally open (3 ⇢ 2) • Mechanical spring return • Suitable for vacuum • Reversible
	VMEF-STC-M32-M-...	3/2-way valve, monostable • Normally closed (1 ⇢ 2) • Normally open (3 ⇢ 2) • Mechanical spring return • Pneumatically piloted, internal pilot air • Reversible
	VMEF-STCZ-M32-M-...	3/2-way valve, monostable • Normally closed (1 ⇢ 2) • Normally open (3 ⇢ 2) • Mechanical spring return • Pneumatically piloted, external pilot air • Reversible
	VMEF-S-M52-E-...	5/2-way valve, monostable • Reset via (external) pneumatic spring • Suitable for vacuum • Reversible
	VMEF-S-M52-M-...	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum • Reversible
	VMEF-SCZ-M52-E-...	5/2-way valve, monostable • Pneumatically piloted, external pilot air • Pneumatic spring return • Suitable for vacuum • Reversible
	VMEF-SCZ-M52-M-...	5/2-way valve, monostable • Pneumatically piloted, external pilot air • Mechanical spring return • Suitable for vacuum • Reversible
	VMEF-SC-M52-M-...	5/2-way valve, monostable • Pneumatically piloted, internal pilot air • Mechanical spring return

Characteristics – Pneumatic components

Valve functions Circuit symbol	Type	Description
Roller lever valve		
	VMEF-RT-M32-M-...	3/2-way valve, monostable • Normally closed (1 ⇢ 2) • Normally open (3 ⇢ 2) • Mechanical spring return • Directly actuated • Suitable for vacuum • Reversible
	VMEF-R-M52-M-...	5/2-way valve, monostable • Mechanical spring return • Directly actuated • Suitable for vacuum • Reversible
	VMEF-R-M52-E-...	5/2-way valve, monostable • Reset via (external) pneumatic spring • Directly actuated • Suitable for vacuum • Reversible
Roller lever valve with idle return		
	VMEF-KT-M32-M-...	3/2-way valve, monostable • Normally closed (1 ⇢ 2) • Normally open (3 ⇢ 2) • Mechanical spring return • Directly actuated • Suitable for vacuum • Reversible
	VMEF-K-M52-M-...	5/2-way valve, monostable • Mechanical spring return • 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 with connector).

Type codes

001	Series	
VMEF	Mechanically actuated valve	

002	Actuation type	
S	Stem actuated valve	
R	Roller lever valve	
K	Roller lever valve with idle return	

003	Design principle	
	Piston spool	
T	Poppet valve	

004	Type of control	
	Directly actuated	
C	Indirectly actuated	

005	Pilot air	
	Internal	
Z	External	

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

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

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

Data sheet – 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
Note regarding use		Do not use as mechanical stop
Actuation type		Mechanical
Mounting		With 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, monostable			
Overlap			Zero overlap			
Type of control			Directly actuated	Piloted	Directly actuated	Piloted
Reset method			Mechanical spring			
Pneumatic connection 1, 2, 3			G1/8	G1/8	G1/4	G1/4
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

Data sheet – 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
Version			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 port 1, 2, 3, 4, 5			G1/8	G1/8	G1/4	G1/4
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			VMEF-SC ... M52-E ... 18	VMEF-S...-M52-M ... 18	VMEF-SC ... M52-E ... 14	VMEF-S...-M52-M ... 14
Version			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 port 1, 2, 3, 4, 5			G1/8	G1/8	G1/4	G1/4
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

Data sheet – Stem actuated valve

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

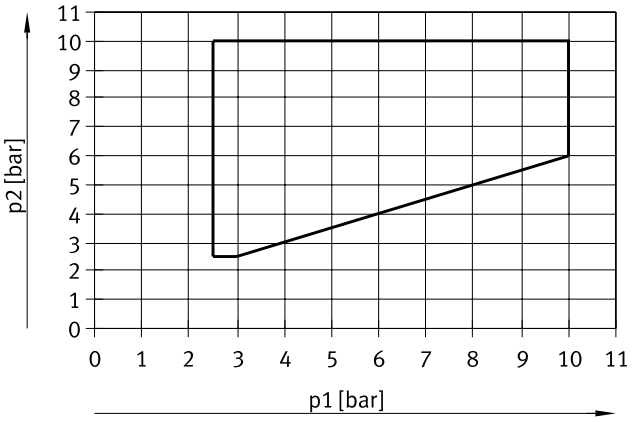
Operating and environmental conditions							
Type		VMEF-ST-M32- ... VMEF-STCZ-M32- ...		VMEF-STC-M32- ...		VMEF-S-M52- ... VMEF-SCZ-M52- ...	VMEF-SC-M52- ...
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]					
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)					
Operating pressure 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 CRC[1)]		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.

Data sheet – Stem actuated valve

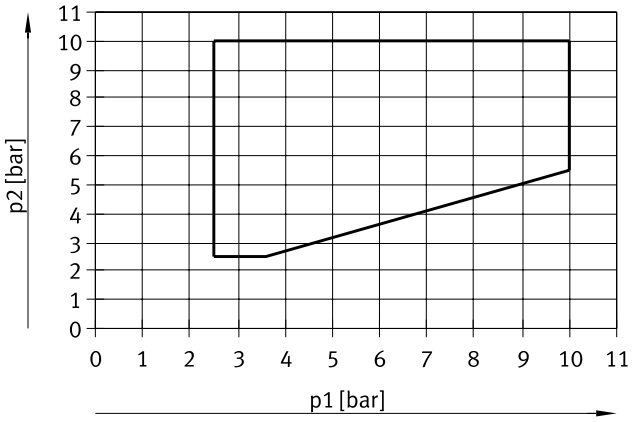
Pilot pressure p2 as a function of external pneumatic spring pressure p1

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



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

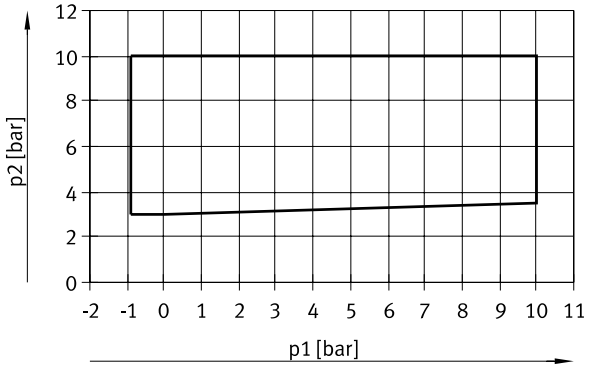
For piston spool valves VMEF-...-M52...14



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

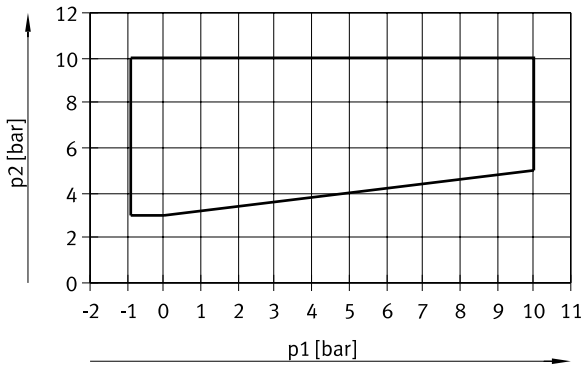
Pilot pressure p2 as a function of supply pressure p1

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



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

For disc seat valves VMEF-...-M32...
(normally open)

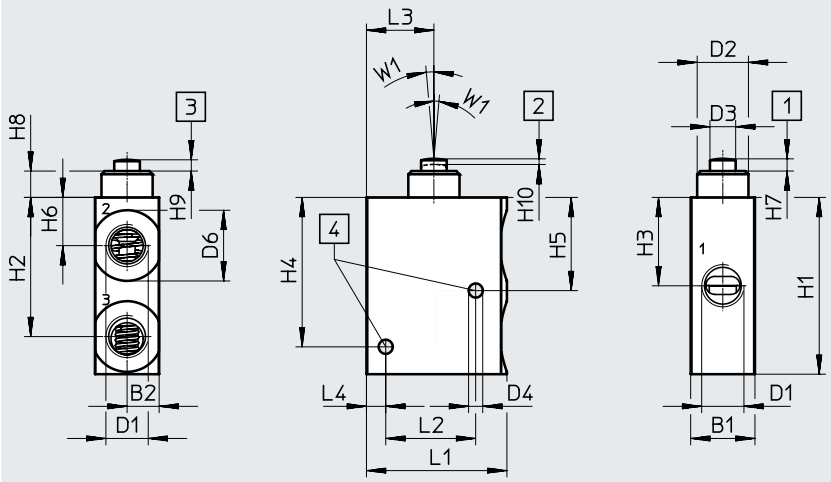


The framed area shows the operating area for external pilot air.

Data sheet – Stem actuated valve

Dimensions Download CAD data ➔ www.festo.com

3/2-way valve



[1] Normal position
[2] Start of opening
[3] Maximum stroke
[4] Mounting hole

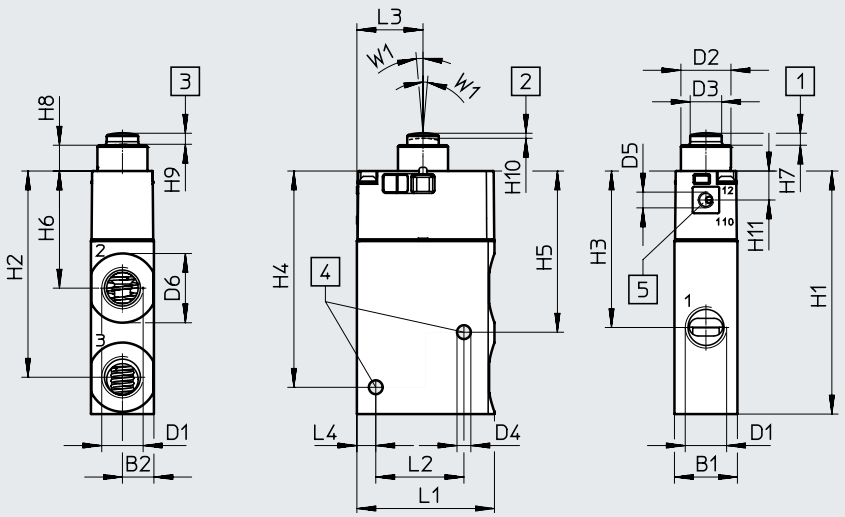
Type	B1	B2	D1	D2 ⌀	D3 ⌀	D4 ⌀	D6 ⌀	L1	L2	L3	L4
VMEF-ST-M32-M-G18	20	10	G1/8	16.0	8.0	4.4	16.5	43.7	28	21	6
VMEF-ST-M32-M-G14			G1/4				22				

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-G14											

Data sheet – Stem actuated valve

Dimensions Download CAD data ➔ 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)

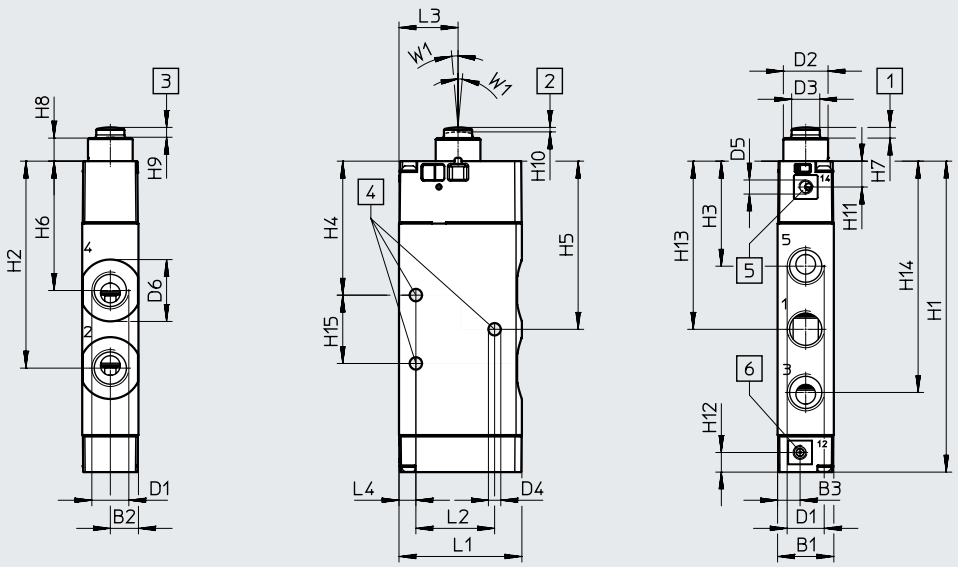
Type	B1	B2	D1	D2 ø	D3 ø	D4 ø	D5	D6 ø	L1	L2	L3	L4
VMEF-STC-M32-M-G18	20	10	G1/8	15.9	10	4.4	–	16.5	43.7	28	21	6
VMEF-STC-M32-M-G14			G1/4					22				
VMEF-STCZ-M32-M-G18			G1/8				M5	16.5				
VMEF-STCZ-M32-M-G14			G1/4					22				

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-G14												
VMEF-STCZ-M32-M-G18												
VMEF-STCZ-M32-M-G14												

Data sheet – Stem actuated valve

Dimensions Download CAD data ➔ 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

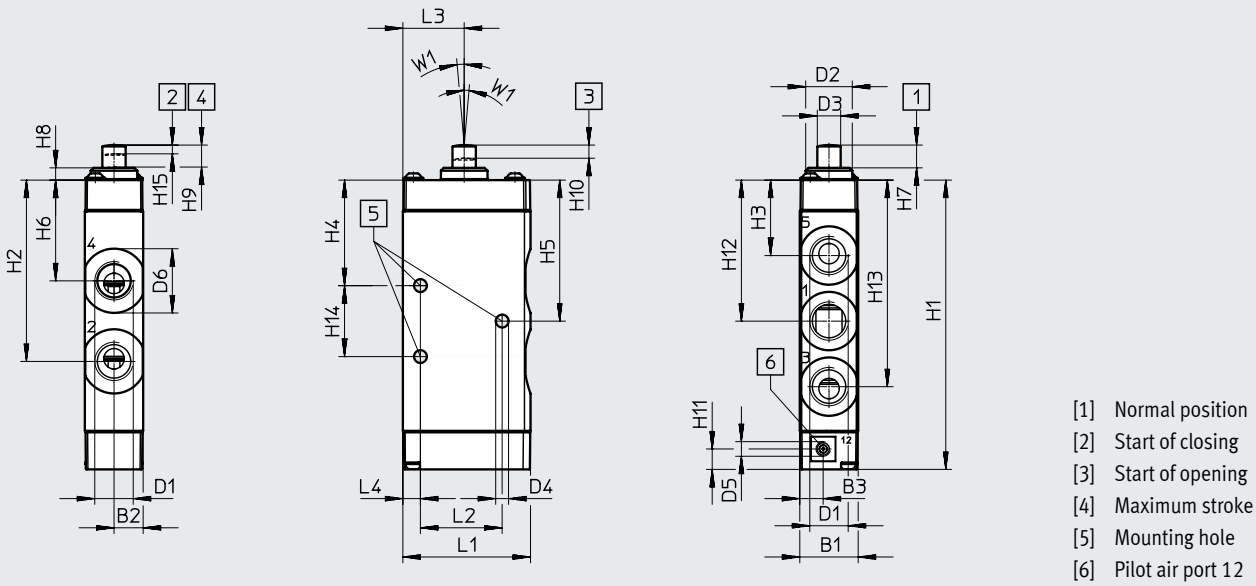
Type	B1	B2	B3	D1	D2 ø	D3 ø	D4 ø	D5	D6 ø	L1	L2	L3	L4
VMEF-SC-M52-M-G18	20	10	8	G1/8	15.9	10	4.4	–	16.5	43.7	28	21	6
VMEF-SCZ-M52-M-G18				G1/8				M5					
VMEF-SCZ-M52-E-G18				G1/8									
VMEF-SC-M52-M-G14				G1/4				–	22				
VMEF-SCZ-M52-M-G14				G1/4				M5					
VMEF-SCZ-M52-E-G14				G1/4									

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-SCZ-M52-M-G18																
VMEF-SCZ-M52-E-G18																
VMEF-SC-M52-M-G14	110.6	73.6	37.4	47.7	59.8	46							59.8	82.3	24.3	
VMEF-SCZ-M52-M-G14																
VMEF-SCZ-M52-E-G14																

Data sheet – Stem actuated valve

Dimensions Download CAD data ➔ www.festo.com

5/2-way valve



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

Type	B1	B2	B3	D1	D2 ø	D3 ø	D4 ø	D5	D6 ø	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-G14				G1/4				–	22					99.1	62.1
VMEF-S-M52-E-G14								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	7.8	4.2	7.5	4.2	7	40.1	57.1	18	3	5°
VMEF-S-M52-E-G18														
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														

Directly actuated stem actuated valves VMEF-S-... can be extended to form a roller lever or roller lever valve with idle return 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 directly actuated basic valve three times.

Data sheet – Stem actuated valve

Ordering data

Type of control	Pilot air	Reset	Flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valves						
Direct	–	Mechanical	750	116	**8031295**	**VMEF-ST-M32-M-G18**
			870	110	**8031300**	**VMEF-ST-M32-M-G14**
Piloted	Internal	Mechanical	750	131	**8031331**	**VMEF-STC-M32-M-G18**
			870	124	**8031332**	**VMEF-STC-M32-M-G14**
	External	Mechanical	750	131	**8031335**	**VMEF-STCZ-M32-M-G18**
			870	124	**8031336**	**VMEF-STCZ-M32-M-G14**
5/2-way valves						
Direct	–	Mechanical	750	145	**8031297**	**VMEF-S-M52-M-G18**
		Pneumatic	750	144	**8031299**	**VMEF-S-M52-E-G18**
		Mechanical	1200	178	**8031302**	**VMEF-S-M52-M-G14**
		Pneumatic	1200	177	**8031304**	**VMEF-S-M52-E-G14**
Piloted	Internal	Mechanical	1200	184	**8031319**	**VMEF-SC-M52-M-G14**
			750	151	**8031320**	**VMEF-SC-M52-M-G18**
	External	Pneumatic	1200	183	**8031323**	**VMEF-SCZ-M52-E-G14**
			750	150	**8031324**	**VMEF-SCZ-M52-E-G18**
		Mechanical	1200	184	**8031327**	**VMEF-SCZ-M52-M-G14**
			750	151	**8031328**	**VMEF-SCZ-M52-M-G18**

Data sheet – 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
Note regarding use		Risk of pinching
Actuation type		Mechanical
Mounting		With 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	
Overlap		Zero overlap	
Reset method		Mechanical spring	
Pneumatic connection 1, 2, 3		G1/8	G1/4
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
Version		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		G1/8	G1/8	G1/4	G1/4
Nominal width	[mm]	5.2	5.2	7	7
Max. stroke limit (hard)	[mm]	11.6			
Actuating force	[N]	38			

Data sheet – 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

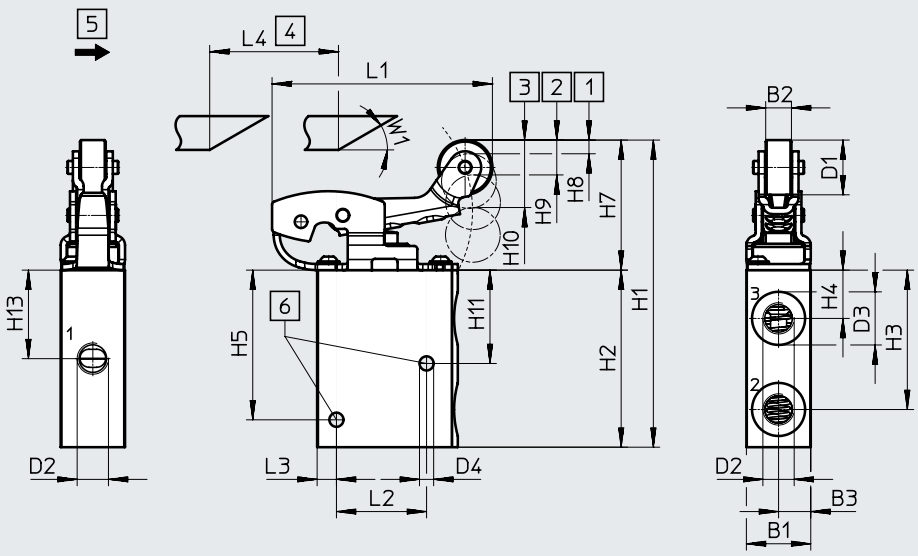
Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range	[bar]	–0.95 ... 10
Temperature of medium	[°C]	–10 ... +60
Ambient temperature	[°C]	–10 ... +60
Note on ambient temperature		Influence of heat on wear
Corrosion resistance CRC[1)]		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 coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Data sheet – Roller lever valve

Dimensions Download CAD data ➔ www.festo.com

3/2-way valve



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

Type	B1	B2	B3	D1 ø	D2	D3	D4 ø	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-G14					G1/4	22					

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	10.2	29	27.5	30°
VMEF-RT-M32-M-G14												

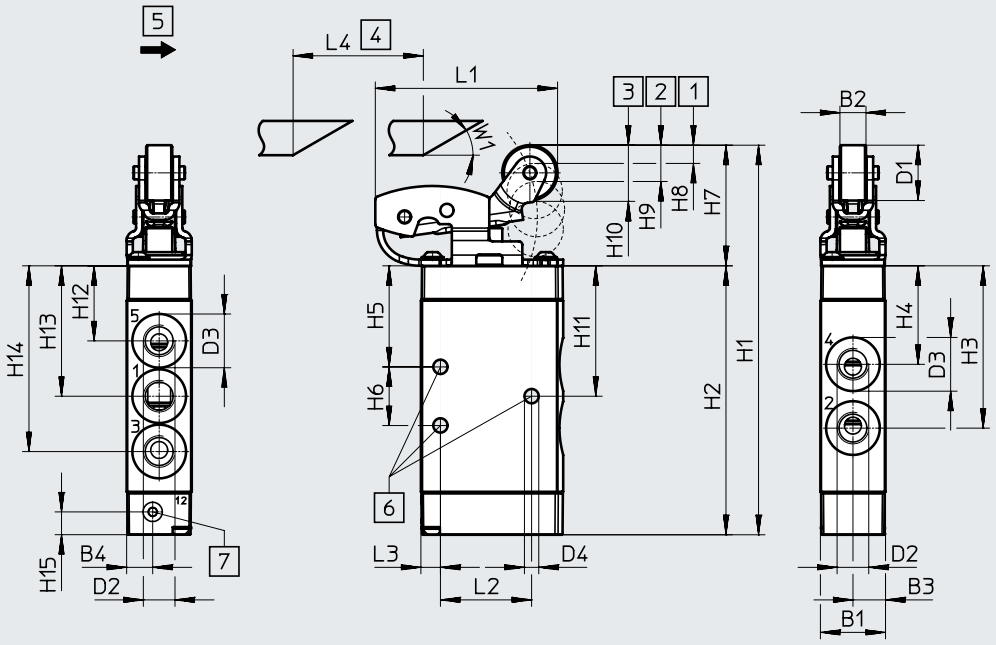
Note

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).

Data sheet – Roller lever valve

Dimensions Download CAD data ➔ www.festo.com

5/2-way valve



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

Type	B1	B2	B3	B4	D1 ø	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-...G14						G1/4	22						136.1	99.1

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-...G14	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 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.

Data sheet – Roller lever valve

Ordering data Type of control	Reset	Flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valves					
Direct	Mechanical	750	209	**8049239**	**VMEF-RT-M32-M-G18**
		870	204	**8047095**	**VMEF-RT-M32-M-G14**
5/2-way valves					
Direct	Pneumatic	750	240	**8047092**	**VMEF-R-M52-E-G18**
	Mechanical	750	240	**8049238**	**VMEF-R-M52-M-G18**
	Pneumatic	1200	272	**8047093**	**VMEF-R-M52-E-G14**
	Mechanical	1200	272	**8047094**	**VMEF-R-M52-M-G14**

Data sheet – 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 with idle return
Width	[mm]	20
Type of control		Directly actuated
Note regarding use		Risk of pinching
Actuation type		Mechanical
Mounting		With 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	
Overlap		Zero overlap	
Reset method		Mechanical spring	
Pneumatic connection 1, 2, 3		G1/8	G1/4
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
Version		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		G1/8	G1/4
Nominal width	[mm]	5.2	7
Max. stroke limit (hard)	[mm]	11.8	
Actuating force	[N]	23.5	

Data sheet – 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

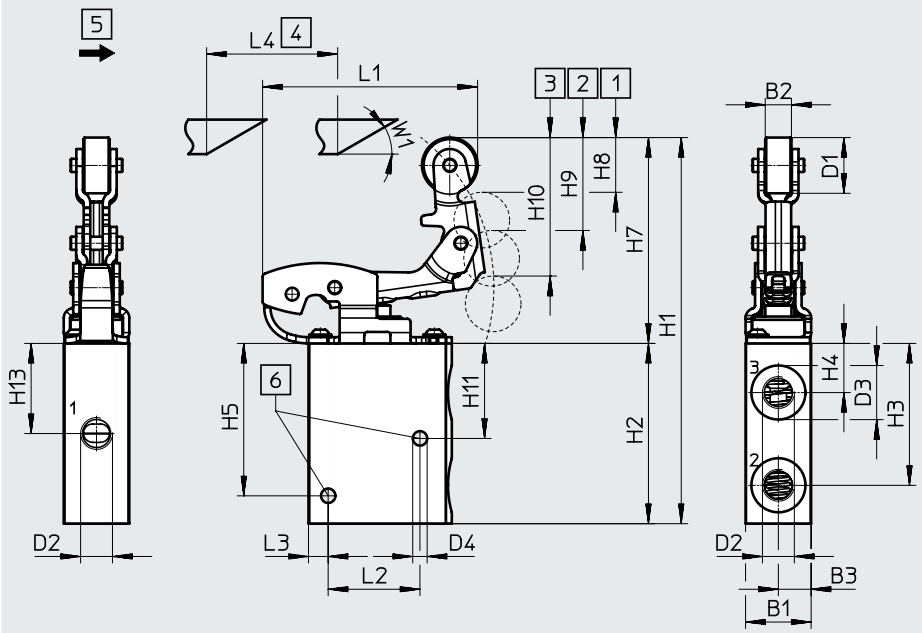
Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range	[bar]	–0.95 ... 10
Temperature of medium	[°C]	–10 ... +60
Ambient temperature	[°C]	–10 ... +60
Note on ambient temperature		Influence of heat on wear
Corrosion resistance CRC[1)]		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 coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Data sheet – Roller lever valve

Dimensions Download CAD data ➔ www.festo.com

3/2-way valve



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

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-G14					G1/4	22					

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	10.9	29	27.5	30°
VMEF-KT-M32-M-G14												

Note

Roller lever valves with idle return 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.

Data sheet – Roller lever valve

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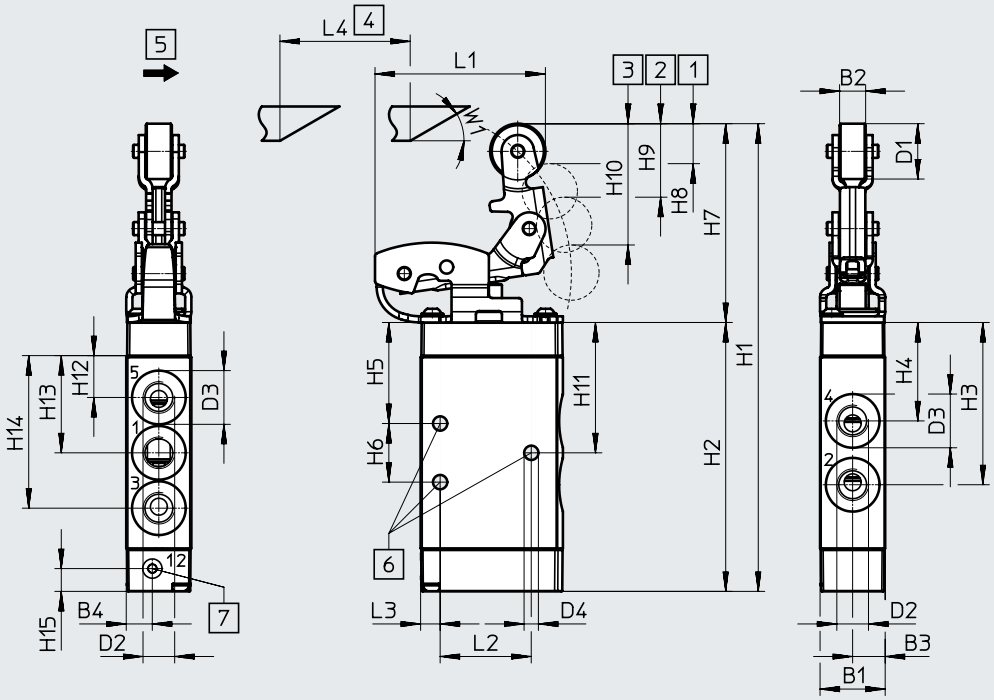
5/2-way valve



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

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-...G14						G1/4	22						160	99.1

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-...G14	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 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.

Data sheet – Roller lever valve

Ordering data

Type of control	Reset	Flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valves					
Direct	Mechanical	750	**227**	**8049241**	**VMEF-KT-M32-M-G18**
		870	**218**	**8047103**	**VMEF-KT-M32-M-G14**
5/2-way valves					
Direct	Mechanical	750	**255**	**8049240**	**VMEF-K-M52-M-G18**
		1200	**286**	**8047102**	**VMEF-K-M52-M-G14**

Data sheet – Actuator attachments

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

- Roller lever
- Roller lever with idle return

General technical data			
Type		VAOM-R4-20-D1-...	VAOM-R4-20-D2-...
Version		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 CRC[1)]	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 coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

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 roller lever valve with idle return.

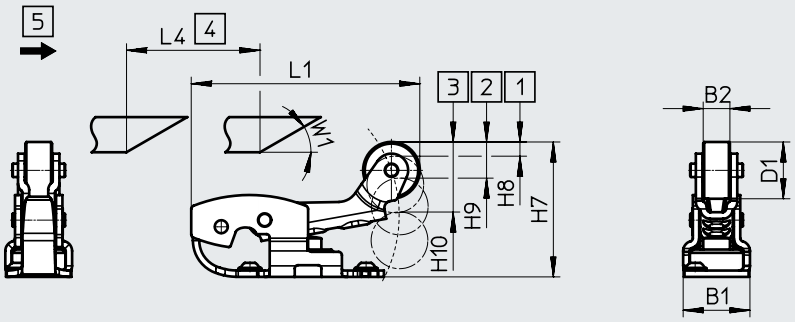
- Roller lever valves can be actuated by a cam from either side, i.e. from the left (forwards movement) or from the right (backwards movement).
- Roller lever valves with idle return can only be actuated by a cam from one side, i.e. only in one direction (forwards movement). If control is applied from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

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

Data sheet – Actuator attachments

Dimensions Download CAD data ➔ www.festo.com

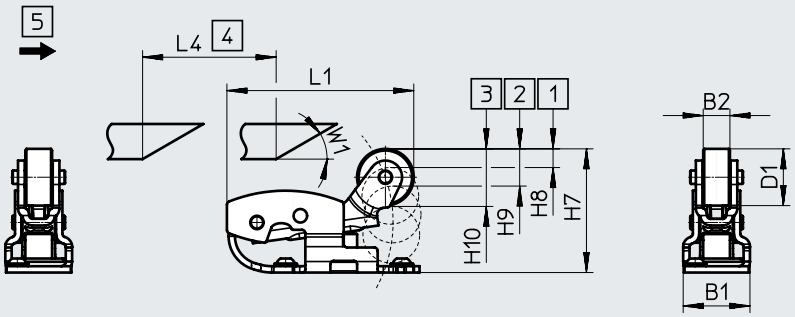
Roller lever for 3/2-way valves



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

Type	B1	B2	D1 Ø	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



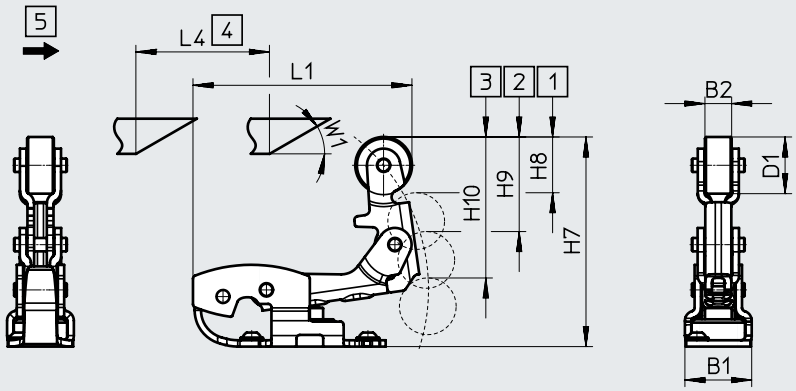
[1] Start of opening
[2] Max. opening
[3] Max. stroke
[4] Cam operating path
[5] Actuation direction

Type	B1	B2	D1 Ø	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°

Data sheet – Actuator attachments

Dimensions Download CAD data ➔ www.festo.com

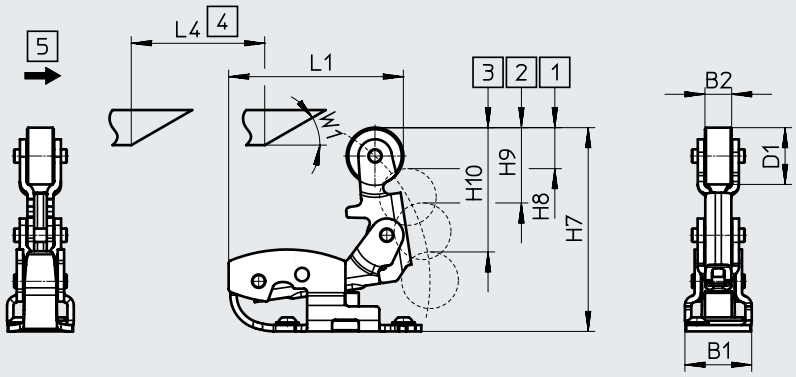
Roller lever with idle return for 3/2-way valves



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

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



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

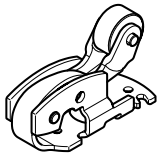
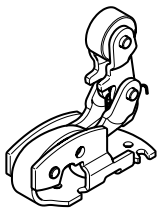
Type	B1	B2	D1 Ø	L1	L4 min.	H7 ±0.1	H8 ±0.3	H9 ±0.3	H10 ±0.1	W1
VAOM-R4-20-D2-52	20	8	17	52.4	40	60.9	7.4	7.7	11.8	30°

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 directly actuated basic valve three times.

Data sheet – Actuator attachments

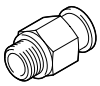
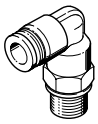
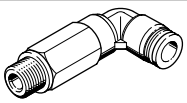
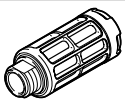
Ordering data

	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 retaining screws	**8049233**	**VAOM-R4-20-D1-52**	**1**
Roller lever with idle return				
	For 3/2-way valves, with mounting screws	**8049237**	**VAOM-R4-20-D2-32**	**1**
	For 5/2-way valves, with retaining screws	**8049236**	**VAOM-R4-20-D2-52**	**1**

1) Packaging unit

Accessories

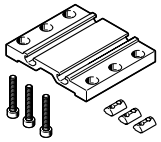
Ordering data

	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**
		Connecting thread G1/8 for tubing O.D.	4 mm	**186106**	**QS-G1/8-4-I**	**10**
				133008	**QS-G1/8-4-I-100**	**100**
			6 mm	**186107**	**QS-G1/8-6-I**	**10**
				133009	**QS-G1/8-6-I-100**	**100**
			8 mm	**186109**	**QS-G1/8-8-I**	**10**
				133010	**QS-G1/8-8-I-100**	**100**
		Connecting thread G1/4 for tubing O.D.	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**	**QSLL-G1/8-4**	**10**
				133015	**QSLL-G1/8-4-100**	**100**
			6 mm	**186128**	**QSLL-G1/8-6**	**10**
				133016	**QSLL-G1/8-6-100**	**100**
			8 mm	**186130**	**QSLL-G1/8-8**	**10**
				133017	**QSLL-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 version	With connecting thread	G1/8	**6841**	**U-1/8-B**	**1**
			G1/4	**6842**	**U-1/4-B**	**1**

1) Packaging unit

Accessories

Ordering data

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