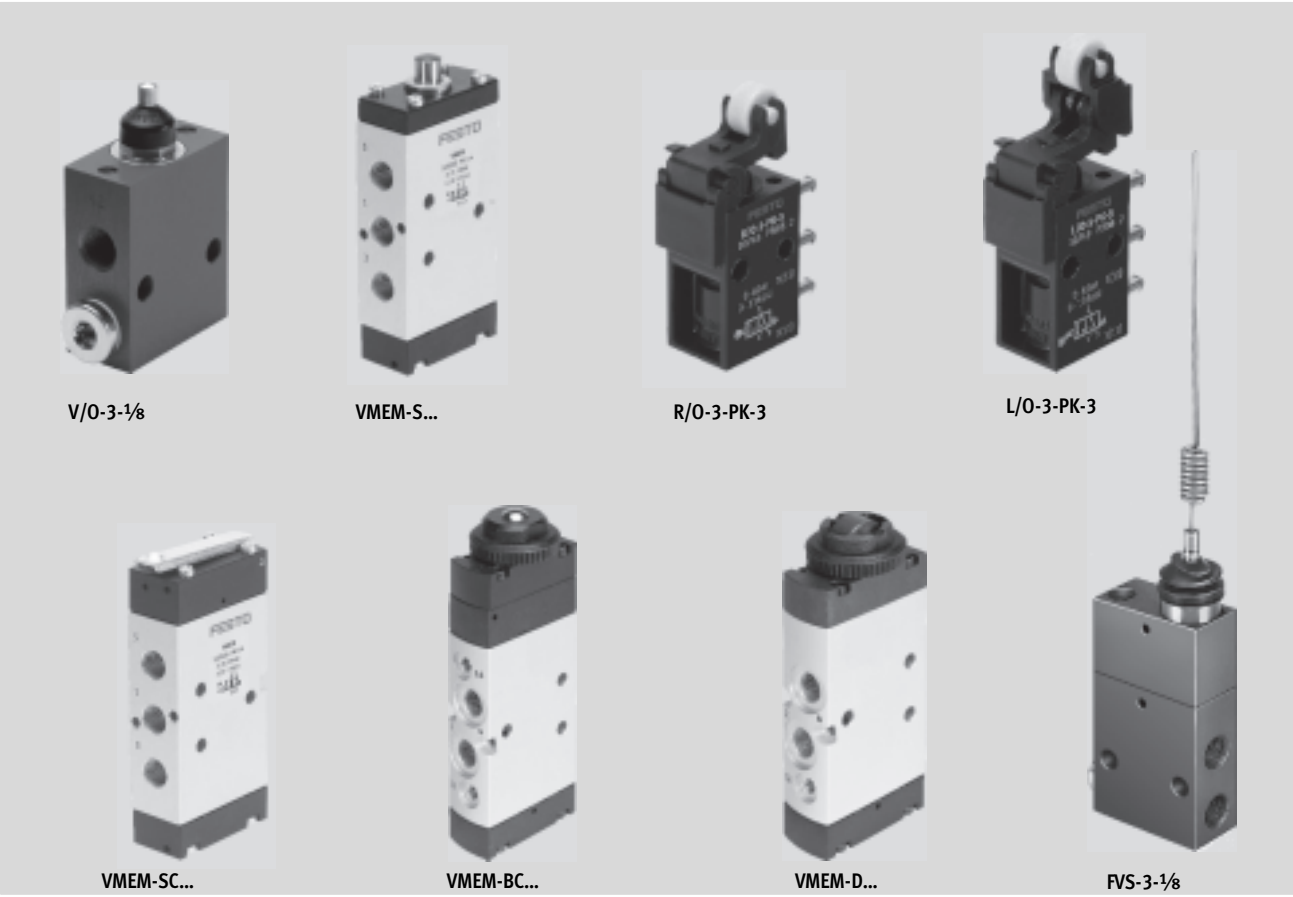
Valves VMEM, mechanically actuated

FESTO

Valves VMEM, mechanically actuated

Key features



Innovative

- Small and compact for a wide range of pneumatic applications
- Large selection of valve functions; 3/2-way, 4/2-way and 5/2-way functions
- With flow rates of up to 1,000 l/min, valves VMEM offer outstanding pneumatic performance for a great variety 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
  - Swivel lever valve
  - Roller lever valve, toggle lever valve
  - Whisker valve
  - Roller actuated valve
  - Ball actuated valve

Reliable

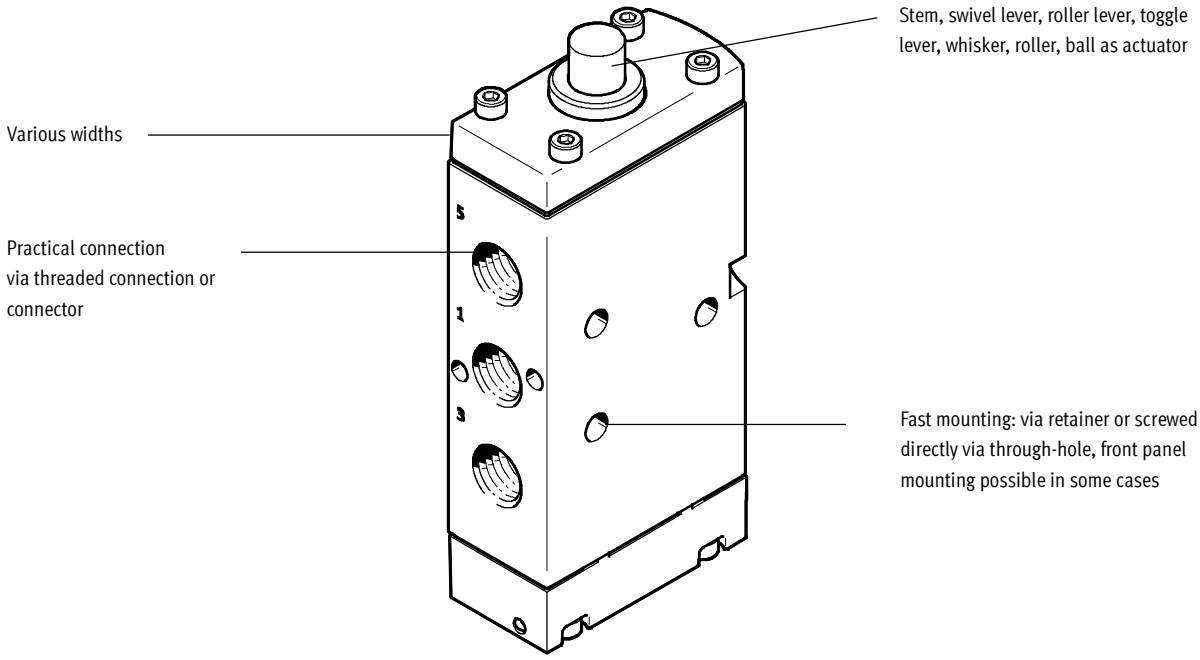
- Durable thanks to proven piston spool and piston poppet valves
- Sturdy thanks to metal or plastic housing and connecting thread or connector

Easy to mount

- Front panel mounting or mounting on bracket

Valves VMEM, mechanically actuated

Key features



Equipment options

3/2-way valve, monostable

- Normally open/closed
- Mechanical spring
- Vacuum operation possible
- Directly actuated and pneumatically piloted
- Ducted exhaust air

4/2-way valve, monostable

- Mechanical spring
- Pneumatically piloted
- Ducted exhaust air

5/2-way valve, monostable

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

Valve selection → Internet: www.festo.com

You order mechanically and manually operated valves using the order code:

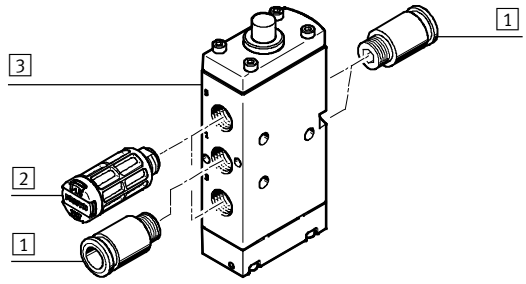
Ordering system for valves
→ Internet: mechanically and manually operated directional control valves

Valves VMEM, mechanically actuated

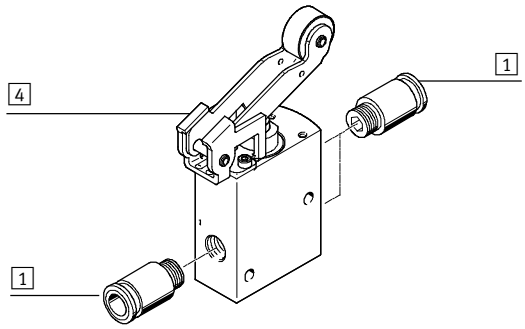
Peripherals overview

Valves, mechanically actuated

5/2-way stem actuated valve VMEM-S

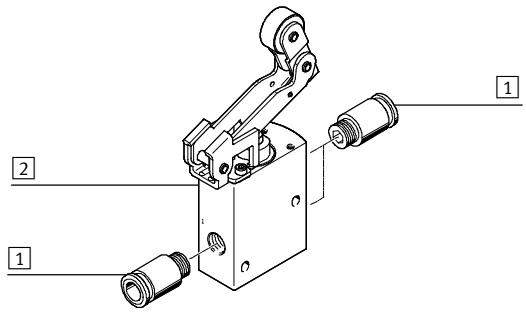


3/2-way roller lever valve R

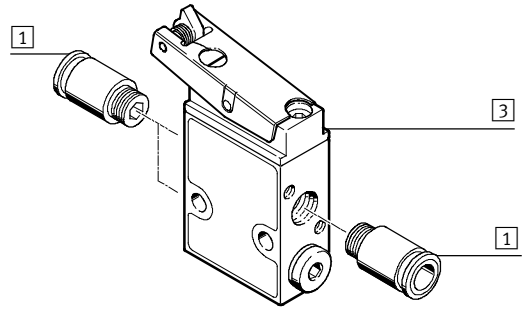


		Brief description	➔ Page/Internet
1	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	43
2	Silencer	For exhaust ports (3, 5)	43
3	Stem actuated valve	VMEM-S	11
4	Roller lever valve	R	28

3/2-way roller lever valve with idle return L

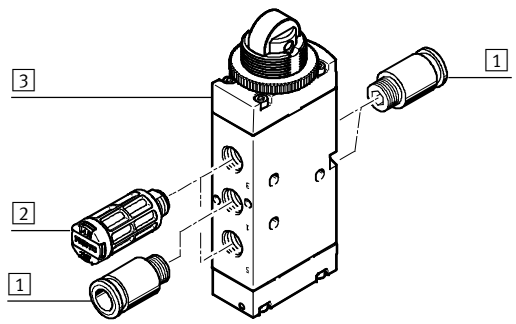


3/2-way toggle lever valve LS

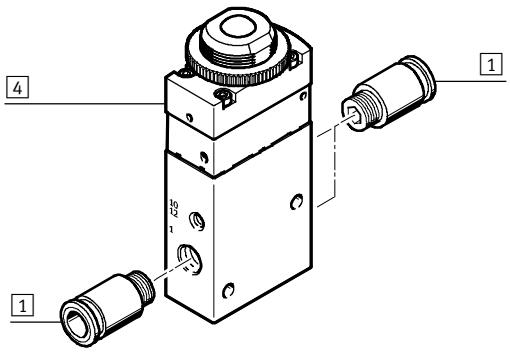


		Brief description	➔ Page/Internet
1	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	43
2	Roller lever valve with idle return	L	28
3	Toggle lever valve	LS	28

5/2-way roller actuated valve VMEM-D



3/2-way ball actuated valve VMEM-B



		Brief description	➔ Page/Internet
1	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	43
2	Silencer	For exhaust ports (3, 5)	43
3	Roller actuated valve	VMEM-D	34
4	Ball actuated valve	VMEM-B	39

Valves VMEM, mechanically actuated

Key features – Pneumatic components

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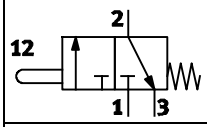
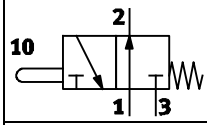
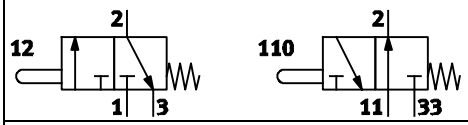
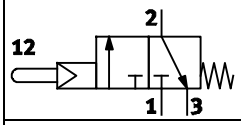
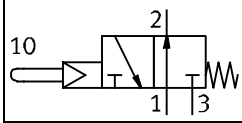
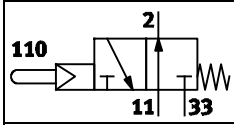
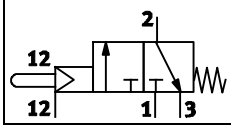
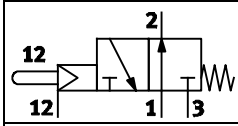
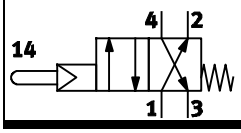
Mechanically actuated valves

Mechanically actuated valves are often used as "signal valves" and feed back a pneumatic signal to the controller. This feedback, e.g. "End position reached", is realised via a stem actuated valve or roller actuated valve.
This is a simple application, but it is an extremely popular solution for smaller machines and conveying systems, e.g. for controlling simple clamping and locking operations in semi-automated assembly and production. The modern design with metal housing combines sturdiness and functionality.
Advantages of mechanically actuated valves:

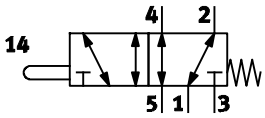
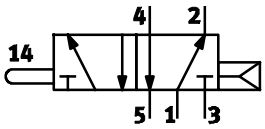
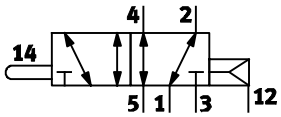
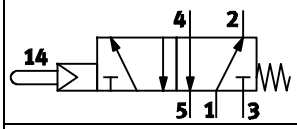
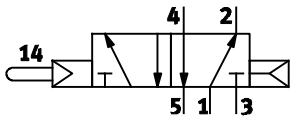
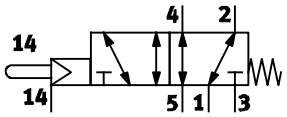
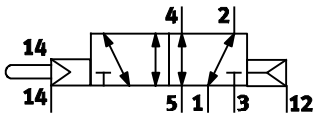
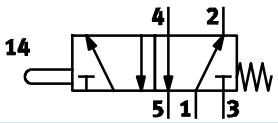
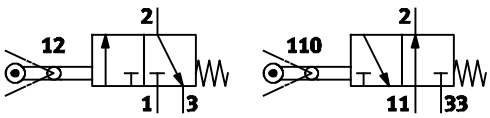
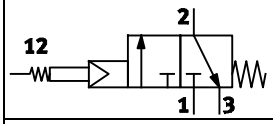
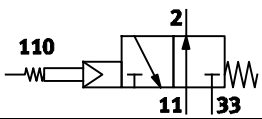
- No electronic controller required
- No programming effort required
- Easy to adjust and connect
- Control and measurement via sensors

Valve functions

Circuit symbol	Type	Description
Stem actuated valve		
	VMEM-ST-M32C-M V-3-M5 V-3-¼-B V/O-3-PK-3	3/2-way valve, monostable • Normally closed • Mechanical spring return • Suitable for vacuum (not V/O-3-PK-3)
	VMEM-ST-M32U-M VO-3-¼-B	3/2-way valve, monostable • Normally open • Mechanical spring return • Suitable for vacuum
	V/O-3-⅛	3/2-way valve, monostable • Normally open/closed • Mechanical spring return • Suitable for vacuum
	VMEM-STC-M32C-M VS-3-⅛	3/2-way valve, monostable • Normally closed • Pneumatically piloted, internal pilot air • Mechanical spring return
	VMEM-STC-M32U-M	3/2-way valve, monostable • Normally open • Pneumatically piloted, internal pilot air • Mechanical spring return
	VOS-3-⅛	3/2-way valve, monostable • Normally open • Pneumatically piloted, internal pilot air • Mechanical spring return
	VMEM-STCZ-M32C-M	3/2-way valve, monostable • Normally closed • Pneumatically piloted, external pilot air • Mechanical spring return
	VMEM-STCZ-M32U-M	3/2-way valve, monostable • Normally open • Pneumatically piloted, external pilot air • Mechanical spring return
	VS-4-⅛	4/2-way valve, monostable • Pneumatically piloted, internal pilot air • Mechanical spring return

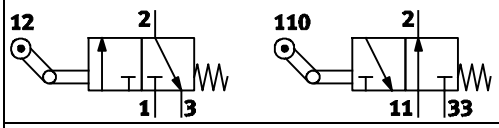
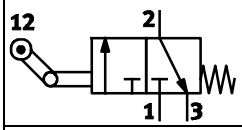
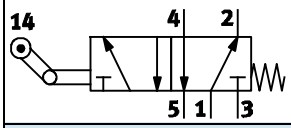
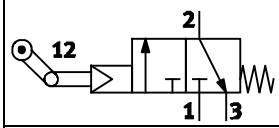
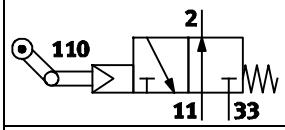
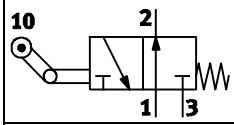
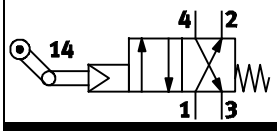
Valves VMEM, mechanically actuated

Key features – Pneumatic components

Valve functions		
Circuit symbol	Type	Description
Stem actuated valve		
	VMEM-S-M52-M	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum • Reverse operation possible
	VMEM-S-M52-A	5/2-way valve, monostable • (Internal) pneumatic spring return
	VMEM-S-M52-E	5/2-way valve, monostable • (External) pneumatic spring return • Suitable for vacuum • Reverse operation possible
	VMEM-SC-M52-M	5/2-way valve, monostable • Pneumatically piloted, internal pilot air • Mechanical spring return
	VMEM-SC-M52-A	5/2-way valve, monostable • Pneumatically piloted, internal pilot air • (Internal) pneumatic spring return
	VMEM-SCZ-M52-M	5/2-way valve, monostable • Pneumatically piloted, external pilot air • Mechanical spring return • Suitable for vacuum • Reverse operation possible
	VMEM-SCZ-M52-E	5/2-way valve, monostable • Pneumatically piloted, external pilot air • (External) pneumatic spring return • Suitable for vacuum • Reverse operation possible
	V-5-¼-B	5/2-way valve, monostable • Normally open/closed • Mechanical spring return • Suitable for vacuum
Swivel lever valve		
	RW/O-3-⅛	3/2-way valve, monostable • Normally open/closed • Mechanical spring return • Suitable for vacuum
Whisker valve		
	FVS-3-⅛	3/2-way valve, monostable • Normally closed • Mechanical spring return • Pneumatically piloted, internal pilot air
	FVSO-3-⅛	3/2-way valve, monostable • Normally open • Mechanical spring return • Pneumatically piloted, internal pilot air

Valves VMEM, mechanically actuated

Key features – Pneumatic components

Valve functions – Circuit symbol		
Circuit symbol	Type	Description
Roller lever valve with idle return		
	L/O-3-PK-3	3/2-way valve, monostable • Normally open/closed • Mechanical spring return
	L-3-M5 L-3-¼-B	3/2-way valve, monostable • Normally closed • Mechanical spring return • Suitable for vacuum
	L-5-¼-B	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum
Toggle lever valve		
	LS-3-⅛	3/2-way valve, monostable • Normally closed • Mechanical spring return • Pneumatically piloted, internal pilot air
	LOS-3-⅛	3/2-way valve, monostable • Normally open • Mechanical spring return • Pneumatically piloted, internal pilot air
	LO-3-¼-B	3/2-way valve, monostable • Normally open • Mechanical spring return • Suitable for vacuum
	LS-4-⅛	4/2-way valve, monostable • Mechanical spring return • Pneumatically piloted, internal pilot air

Valves VMEM, mechanically actuated

Key features – Pneumatic components

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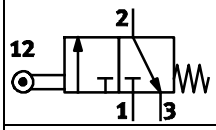
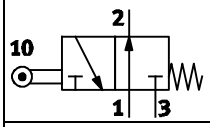
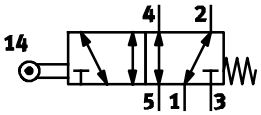
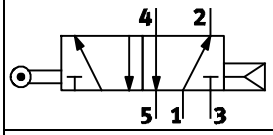
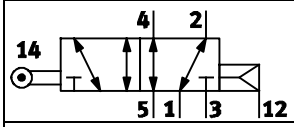
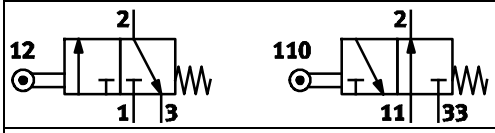
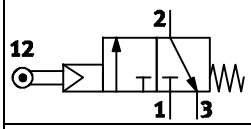
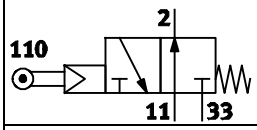
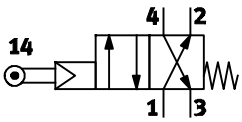
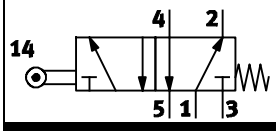
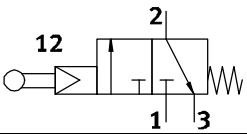
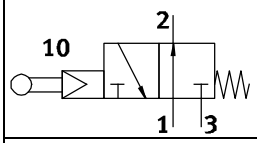
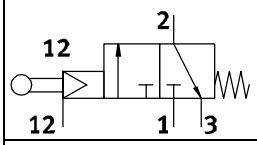
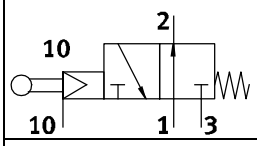
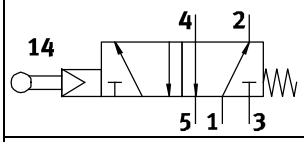
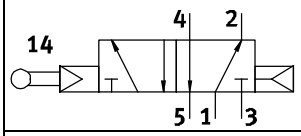
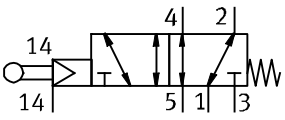
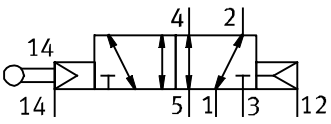
Valve functions – Circuit symbol		
Circuit symbol	Type	Description
Roller lever, roller actuated valve		
	VMEM-DT-M32C-M R-3-M5 R-3-¼-B	3/2-way valve, monostable • Normally closed • Mechanical spring return • Suitable for vacuum
	VMEM-DT-M32U-M RO-3-¼-B	3/2-way valve, monostable • Normally open • Mechanical spring return • Suitable for vacuum
	VMEM-D-M52-M	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum • Reverse operation possible
	VMEM-D-M52-A	5/2-way valve, monostable • (Internal) pneumatic spring return
	VMEM-D-M52-E	5/2-way valve, monostable • (External) pneumatic spring return • Suitable for vacuum • Reverse operation possible
	R/O-3-PK-3	3/2-way valve, monostable • Normally open/closed • Mechanical spring return
	RS-3-⅛	3/2-way valve, monostable • Normally closed • Mechanical spring return • Pneumatically piloted, internal pilot air
	ROS-3-⅛	3/2-way valve, monostable • Normally open • Mechanical spring return • Pneumatically piloted, internal pilot air
	RS-4-⅛	4/2-way valve, monostable • Mechanical spring return • Pneumatically piloted, internal pilot air
	R-5-¼-B	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum

Valves VMEM, mechanically actuated

Key features – Pneumatic components

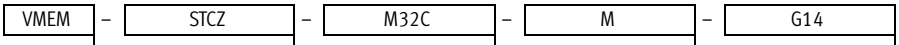
Valve functions		
Circuit symbol	Type	Description
Ball actuated valve		
	VMEM-BTC-M32C-M	3/2-way valve, monostable • Normally closed • Mechanical spring return • Pneumatically piloted, internal pilot air
	VMEM-BTC-M32U-M	3/2-way valve, monostable • Normally open • Mechanical spring return • Pneumatically piloted, internal pilot air
	VMEM-BTCZ-M32C-M	3/2-way valve, monostable • Normally closed • Mechanical spring return • Pneumatically piloted, external pilot air
	VMEM-BTCZ-M32U-M	3/2-way valve, monostable • Normally open • Mechanical spring return • Pneumatically piloted, external pilot air
	VMEM-BC-M52-M	5/2-way valve, monostable • Mechanical spring return • Pneumatically piloted, internal pilot air
	VMEM-BC-M52-A	5/2-way valve, monostable • Pneumatic spring return • Pneumatically piloted, internal pilot air
	VMEM-BCZ-M52-M	5/2-way valve, monostable • Mechanical spring return • Pneumatically piloted, external pilot air • Suitable for vacuum • Reverse operation possible
	VMEM-BCZ-M52-E	5/2-way valve, monostable • Pneumatic spring return • Pneumatically piloted, external pilot air • Suitable for vacuum • Reverse operation possible

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).

Valves VMEM, mechanically actuated

Type codes



Valve series	
VMEM	Mechanically actuated valves

Version	
Actuation	
S	Stem actuated valve
D	Valve with roller actuation
B	Valve with ball actuation
Design principle	
–	Piston spool
T	Disk seat
Actuation method	
–	Directly actuated
C	Pneumatically piloted
Pilot air supply	
–	Internal
Z	External
Switching function	
–	Monostable valve
A	Active (spring)
X	Passive (air)

Valve function	
M32C	3/2-way valve, monostable, normally closed
M32U	3/2-way valve, monostable, normally open
M52	5/2-way valve, monostable

Reset method	
–	None
A	Pneumatic spring, internal
E	Pneumatic spring, external
M	Mechanical spring

Pneumatic connection	
G14	Fitting G¼
G18	Fitting G⅛

Stem actuated valves VMEM

Technical data – Stem actuated valve, standard nominal flow rate 80 ... 140 l/min

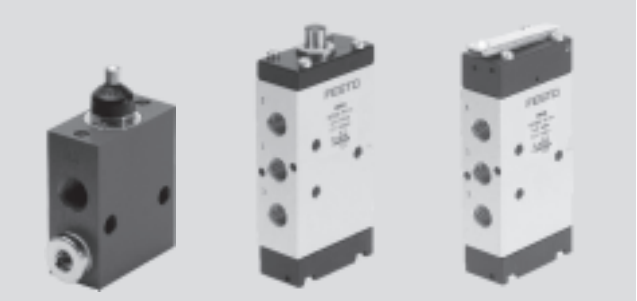
FESTO

Flow rate
80 ... 1,000 l/min

Pressure
–0.95 ... +10 bar

Temperature range
–10 ... +60 °C

Mounting via through-holes



General technical data						
Type		V3-M5	V/O-3-PK-3	V ... -3-⅛	VS-4-⅛	V/O-3-⅛ RW/O-3-⅛
Standard nominal flow rate 1 → 2	[l/min]	80		120	120	140
Valve function		3/2-way valve		3/2-way valve	4/2-way valve	3/2-way valve
Design		Disk seat valve, directly actuated		Disk seat valve, piloted	Disk seat valve, piloted	Disk seat valve, directly actuated
Pneumatic connection		M5	PK-3 [1]	G⅛	G⅛	G⅛
Nominal size	[mm]	2.0	2.5	3.5	3.5	3.5
Weight	[g]	25	20	110	220	90 [2] 150
Actuating force • at 6 bar	[N]	23.0	17.0	3.1	3.1	28.0
• with normally closed position	[N]	–	17.0	–	–	–
• with normally open position	[N]	–	24.0	–	–	–

1) PK-3=Barbed fitting for plastic tubing with 3 mm nominal diameter
2) Value 90 with stem actuated valve, value 150 with swivel lever valve

Materials				
Type	V3-M5	V/O-3-PK-3	V ... -3-⅛	VS-4-⅛	V/O-3-⅛ RW/O-3-⅛
Seal	NBR				
Housing	Die-cast zinc	POM	Anodised aluminium		

Operating and environmental conditions						
Type		V3-M5	V/O-3-PK-3	V ... -3-⅛	VS-4-⅛	V/O-3-⅛ RW/O-3-⅛
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]				Compressed air – oil mist lubrication
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)				
Operating pressure range	[bar]	–0.95 ... 8	0 ... 8	3.5 ... 8		–0.95 ... 8
Temperature of medium	[°C]	–10 ... +60				
Ambient temperature	[°C]	–10 ... +60	–			

Technical data – Actuator attachment for swivel lever valve RW/O-3-⅛				
Swivel lever, type		ASK–02 (short)	ASL–02 (long)	ASS–02 (rod)
Actuating force [N]	Max.	7	Dependent on starting height	Dependent on starting height
Weight	[g]	30	35	30

Materials – Swivel lever	
Swivel lever	Aluminium, steel

Stem actuated valves VMEM

Technical data – Stem actuated valve, standard nominal flow rate 500 l/min

General technical data						
Type		VMEM-ST-M32	VMEM-STC ... -M32	VMEM-S-M52	VMEM-SC-M52	VMEM-SCZ-M52
Standard nominal flow rate 1 → 2	[l/min]	500				
Valve function		3/2-way valve		5/2-way valve		
Reset method		Mechanical spring		Mechanical or pneumatic spring		
Design		Disk seat valve, directly actuated	Disk seat valve, piloted	Piston spool valve, directly actuated	Piston spool valve, piloted	Piston spool valve, piloted
Pneumatic connection		G1/8	G1/8	G1/8	G1/8	G1/8
Pilot air supply		–	Internal or external	–	Internal	External
Nominal size	[mm]	4.0	4.0	4.0	4.0	4.0
Weight	[g]	130	152	148	170	170
Actuating force	[N]	80 [1] 130	15.5	28 [2] 39	15.5	15.5

1) Value 80 with normally closed valve, value 130 with normally open valve
2) Value 28 with mechanical spring reset method, value 39 with pneumatic spring reset method

Materials						
Type		VMEM-ST-M32	VMEM-STC ... -M32	VMEM-S-M52	VMEM-SC-M52	VMEM-SCZ-M52
Cover		–	POM	PA		
Seal		NBR				
Housing		Anodised wrought aluminium alloy				
Note on materials		RoHS-compliant				

Operating and environmental conditions							
Type		VMEM-ST-M32	VMEM-STC ... -M32	VMEM-S-M52		VMEM-SC-M52	VMEM-SCZ-M52
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]					
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)					
Operating pressure range	[bar]						
N/C valves		–0.95 ... 8	3.5 ... 8	–		–	–
N/O valves		–0.95 ... 8	4.5 ... 8	–0.95 ... 10 [1]	2.5 ... 10 [2]	2.5 ... 10	–0.95 ... 10
Temperature of medium	[°C]	–10 ... +60					
Ambient temperature	[°C]	–10 ... +60					

1) Suitable for vacuum, mechanical spring or external pneumatic spring reset method (in the type codes Reset method M: Mechanical spring or E: External pneumatic spring)
2) Not suitable for vacuum, internal pneumatic spring reset method (in the type codes Reset method A: Internal pneumatic spring)

Stem actuated valves VMEM

Technical data – Stem actuated valve, standard nominal flow rate 550 … 600 l/min

General technical data				
Type		V-5-¼-B	VO-3-¼-B	V-3-¼-B
Standard nominal flow rate 1 → 2	[l/min]	550	600	
Valve function		5/2-way valve	3/2-way valve	
Design		Disk seat valve, directly actuated	Disk seat valve, directly actuated	Disk seat valve, directly actuated
Pneumatic connection		G¼	G¼	G¼
Nominal size	[mm]	7.0	7.0	7.0
Weight	[g]	240	130	130
Actuating force	[N]	198.0	93.0	71.0

Materials	
Seal	NBR
Housing	Die-cast aluminium

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)
Operating pressure range	[bar]	–0.95 … 10
Temperature of medium	[°C]	–10 … +60
Ambient temperature	[°C]	–10 … +60

Stem actuated valves VMEM

Technical data – Stem actuated valve, standard nominal flow rate 1,000 l/min

General technical data					
Type		VMEM-ST	VMEM-S	VMEM-SC	VMEM-SCZ
Standard nominal flow rate 1 → 2	[l/min]	1,000			
Valve function		3/2-way valve	5/2-way valve		
Reset method		Mechanical spring	Mechanical or pneumatic spring		
Design		Disk seat valve, directly actuated	Piston spool valve, directly actuated	Piston spool valve, directly actuated	Piston spool valve, directly actuated
Pneumatic connection		G¼	G¼	G¼	G¼
Pilot air supply		–	–	Internal	External
Nominal size	[mm]	6.0	6.0	6.0	6.0
Weight	[g]	198	320	300	300
Actuating force	[N]	80 [1)] 140	38.0 [2)] 65.0	15.0	15.5

1) Value 80 with normally closed valve, value 140 with normally open valve
2) Value 38 with mechanical spring reset method, value 65 with pneumatic spring reset method

Materials				
Type	VMEM-ST	VMEM-S	VMEM-SC	VMEM-SCZ
Cover	–	PA		
Seal	NBR			
Housing	Anodised wrought aluminium alloy			
Note on materials	RoHS-compliant			

Operating and environmental conditions						
Type		VMEM-ST	VMEM-S		VMEM-SC	VMEM-SCZ
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]				
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)				
Operating pressure range	[bar]					
N/C valves		–0.95 … 8	–		–	–
N/O valves		–0.95 … 8	–0.95 … 10 [1)]	2.5 … 10 [2)]	2.5 … 10	–0.95 … 10
Temperature of medium	[°C]	–10 … +60				
Ambient temperature	[°C]	–10 … +60				

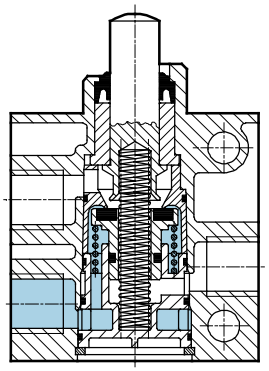
1) Suitable for vacuum, mechanical spring or external pneumatic spring reset method (in the type codes Reset method M: Mechanical spring or E: External pneumatic spring)
2) Not suitable for vacuum, internal pneumatic spring reset method (in the type codes Reset method A: Internal pneumatic spring)

Stem actuated valves VMEM

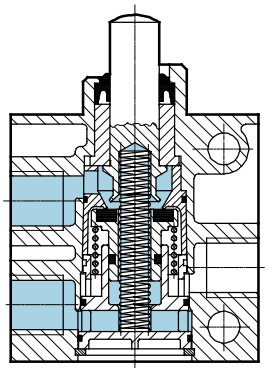
Sectional views

Sectional view

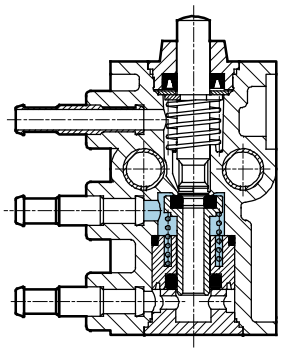
V-3-¼-B, normally closed



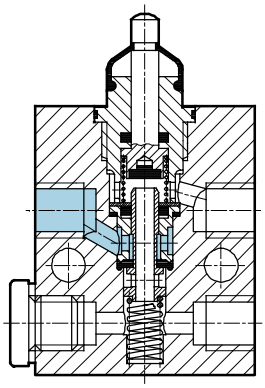
VO-3-¼-B, normally open



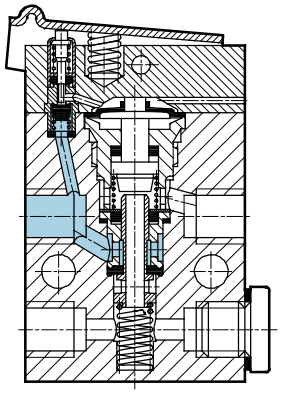
V/O-3-PK-3



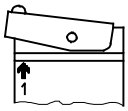
V/O-3-⅛



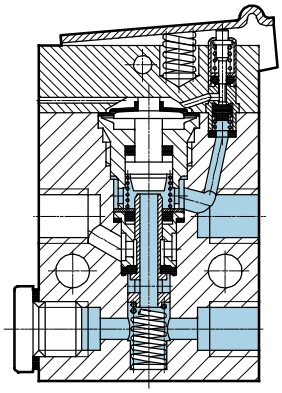
V ... -3-⅛, normally closed



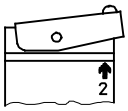
Actuator attachment at left
(number 1 on the attachment above number 1 on the housing)



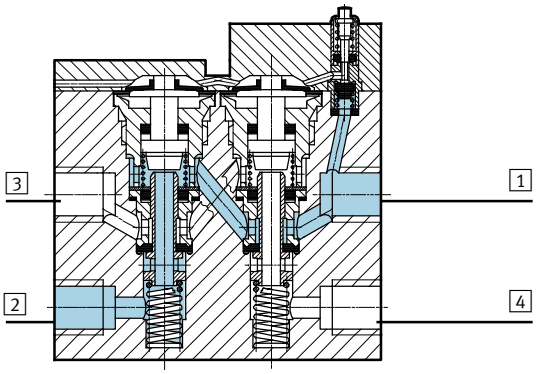
V ... -3-⅛, normally open



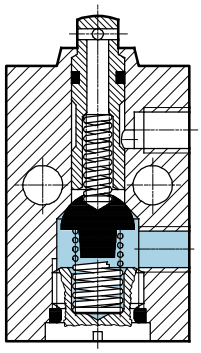
Actuator attachment at right
(number 1 on the attachment above number 2 on the housing)



VS-4-⅛



V-3-M5



1 Supply port
2, 4 Working port
3 Exhaust port

Note

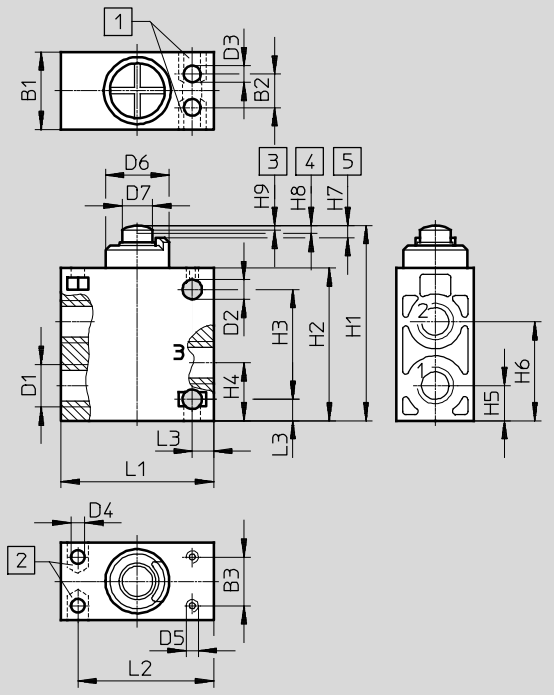
The sectional views, shown on the stem actuated valve, also apply in principle to the roller lever, toggle lever and swivel lever valves. The function remains the same, only the operation via actuator attachments differs.

Stem actuated valves VMEM

Technical data

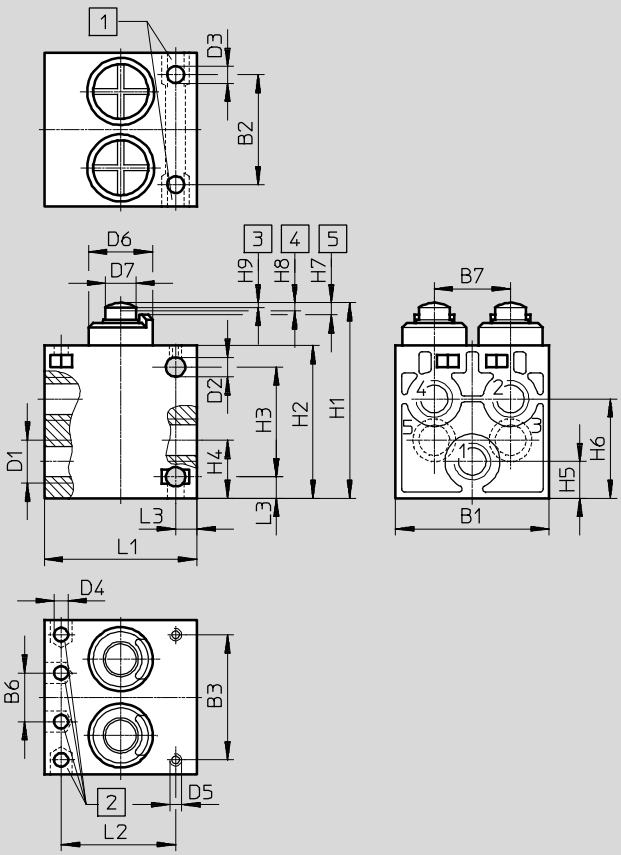
Dimensions Download CAD data ➔ **www.festo.com**

Stem actuated valve V-3- ¼-B, VO-3- ¼-B



1 Holder for hex nut M5 to DIN 934
2 Holder for hex nut M5 to DIN 934
3 Start of opening
4 Max. opening
5 Max. stroke

Stem actuated valve V-5-¼-B



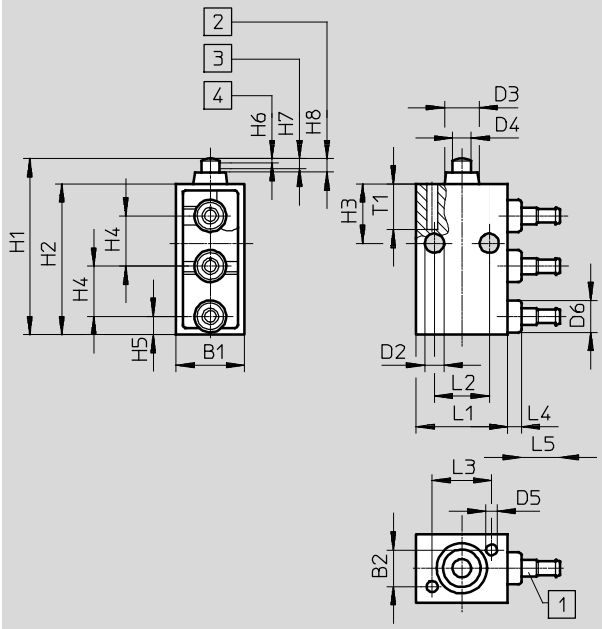
1 Holder for hex nut M5 to DIN 934
2 Holder for hex nut M5 to DIN 934
3 Start of opening
4 Max. opening
5 Max. stroke

Stem actuated valve	B1	B2	B3	B6	B7	D1	D2	D3	D4	D5	D6	D7
V-3-¼-B, VO-3-¼-B	25.4	11	16	–	–	G¼	6.4	5.5	4.5	M4	21	10
V-5-¼-B	50.4	36	41	16	25	G¼	6.4	5.5	4.5	M4	21	10

Stem actuated valve	L1	L2	L3	H1	H2	H3	H4	H5	H6	H7	H8	H9
V-3-¼-B, VO-3-¼-B	50	44.5	7	64	50	36	19	11.5	32.5	4	2.6	1.7
V-5-¼-B	50	37.5	7	64	50	36	19	11.5	32.5	4	2.6	1.7

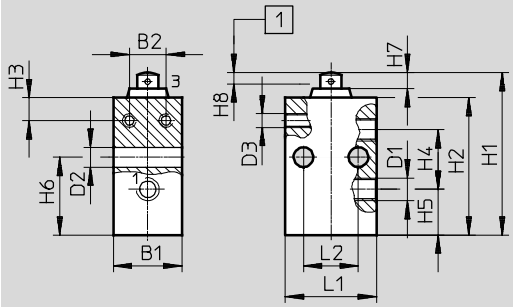
Dimensions Download CAD data ➔ **www.festo.com**

Stem actuated valve V/O-3-PK-3



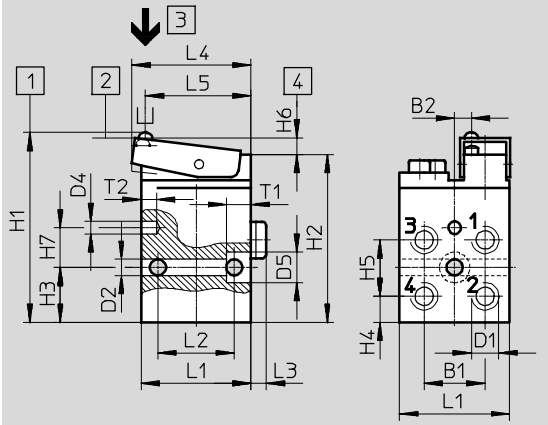
1 Barbed fitting for tubing I.D. 3 mm
2 Max. stroke
3 Max. opening
4 Start of opening

Stem actuated valve V-3-M5



1 Max. stroke

Stem actuated valve VS-4-1/8



1 Initial position
2 ON position
3 Actuation direction
4 Smallest distance between cams

Stem actuated valve	B1	B2	D1	D2	D3	D4	D5	D6	T1	T2
V/O-3-PK-3	15	8	–	4.3	7.5	4	2.4	7	10	–
V-3-M5	15	8	M5	4.3	M3	–	–	–	–	–
VS-4-1/8	20	5.5	G1/8	5.3	–	4.1	10	–	8	5

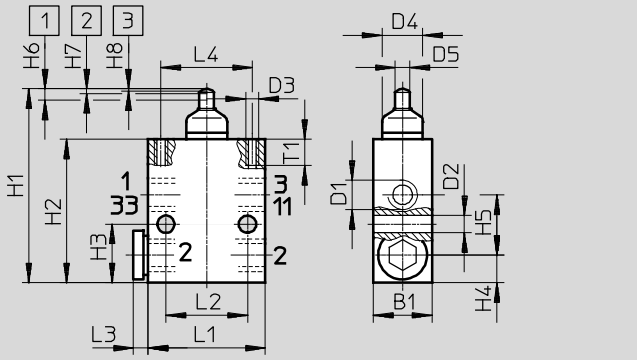
Stem actuated valve	L1	L2	L3	L4	L5	H1	H2	H3	H4	H5	H6	H7	H8	H14
V/O-3-PK-3	20	12	13	3	8.5	38.5	33	13	11	4	0.9	2.1	2.9	–
V-3-M5	–	–	–	–	–	35.5	30	8	13	10	17	3.5	2.5	–
VS-4-1/8	36	25	5	39	35.5	62.5	55	18	8.5	18.5	5.5	–	–	13

Stem actuated valves VMEM

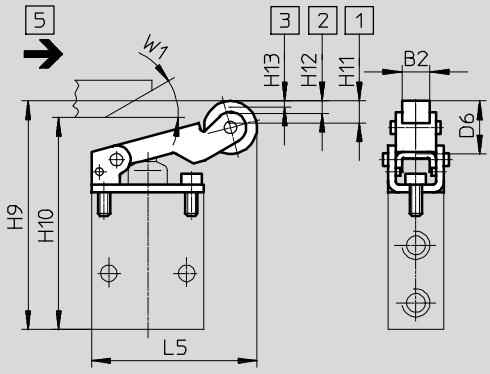
Technical data

Dimensions Download CAD data ➔ **www.festo.com**

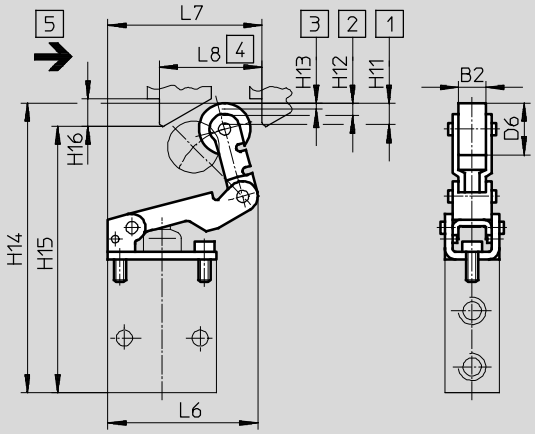
Stem actuated valve V/O-3-⅛



Roller lever AR-01 as actuator attachment for stem actuated valve V/O-3-⅛



Roller lever with idle return AL-01 as actuator attachment for stem actuated valve V/O-3-⅛



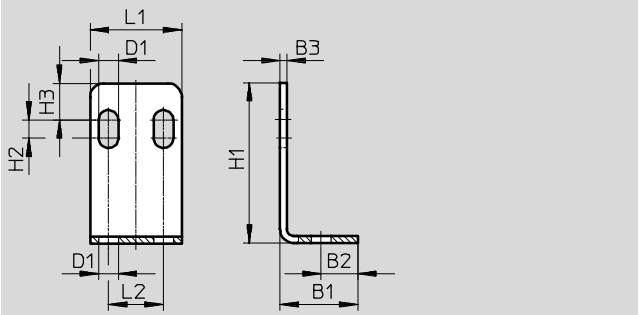
1 Max. stroke
2 Max. opening
3 Start of opening
4 Min. actuation stroke
5 Actuation direction

Stem actuated valve	B1	D1	D2	D3	D4	D5	L1	L2	L3	L4	H1	H2	H3	H4	H5	H6	H7 ±0.2	H8 ±0.2	T1
V/O-3-⅛	18	G⅛	5.3	M4	12.5	4.5	36	25	4.5	28	59.5	44	18	8.5	18.5	3.5	1.4	0.6	8

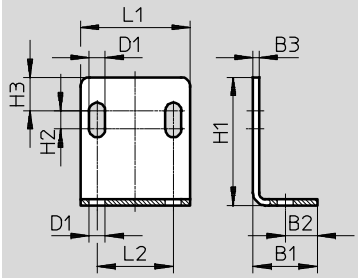
Roller lever	B2	D6	L5	L6	L7	L8	H9	H10 min.	H11	H12 +0.2	H13 +0.2	H14	H15 min.	H16	W1
AR-01	8	17	54	–	–	–	71	64	7	4	2	–	–	–	30°
AL-01	8	17	–	50.5	51	34	–	–	7	4	2	93.5	86.5	9	–

Dimensions Download CAD data ➔ **www.festo.com**

Mounting bracket HV-M5



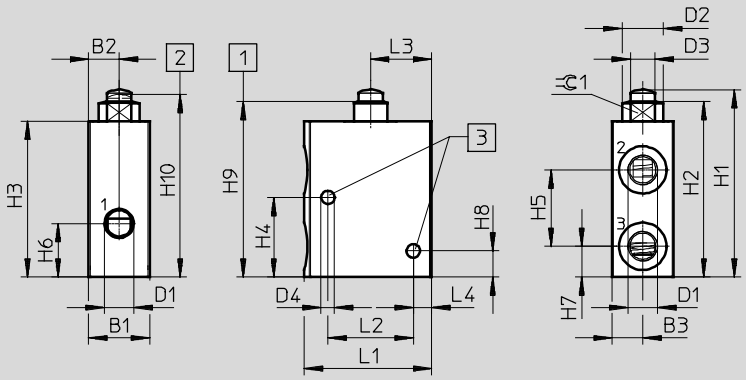
Mounting bracket HV-⅛



Mounting bracket	B1	B2	B3	D1	L1	L2	H1	H2	H3
HV-M5	17	8	1.5	4.3	20	12	35	4	8
HV-⅛	21	10.5	2	5.3	36	25	42	6	11

Dimensions Download CAD data ➔ **www.festo.com**

Stem actuated valve VMEM-ST-M32

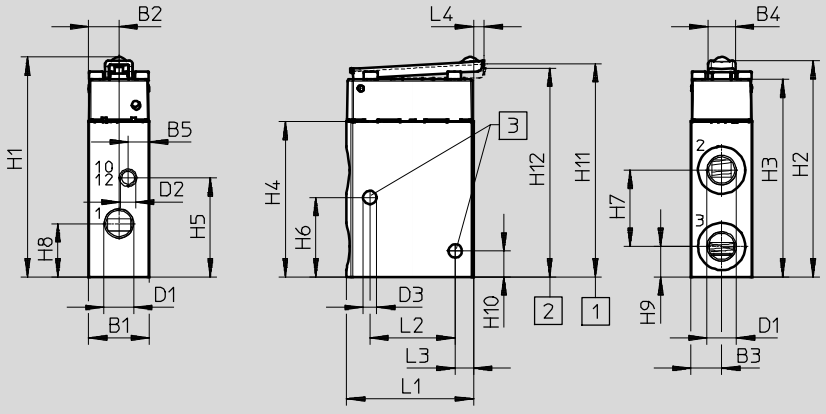


1 Maximum stroke 2 Start of opening 3 Mounting holes

Stem actuated valve	B1	B2	B3	D1	D2	D3	D4	L1	L2	L3	L4	⌀1
VMEM-ST...32...G18	20	10	10	G⅛	13.5	8	4.4	41.7	28	20	6	11
VMEM-ST...32...G14	25	12.5	12.5	G¼	15	10	4.4	52.1	36	25	7	13

Stem actuated valve	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10±0.3
VMEM-ST...32...G18	61.6±0.3	57.4	51	26	25	17.5	10	8.5	58.1±0.4	59.8
VMEM-ST...32...G14	73.3±0.2	67.7	61	26	28	23.5	12.5	8	68.6±0.6	70.5

Stem actuated valve VMEM-STC-M32...G18



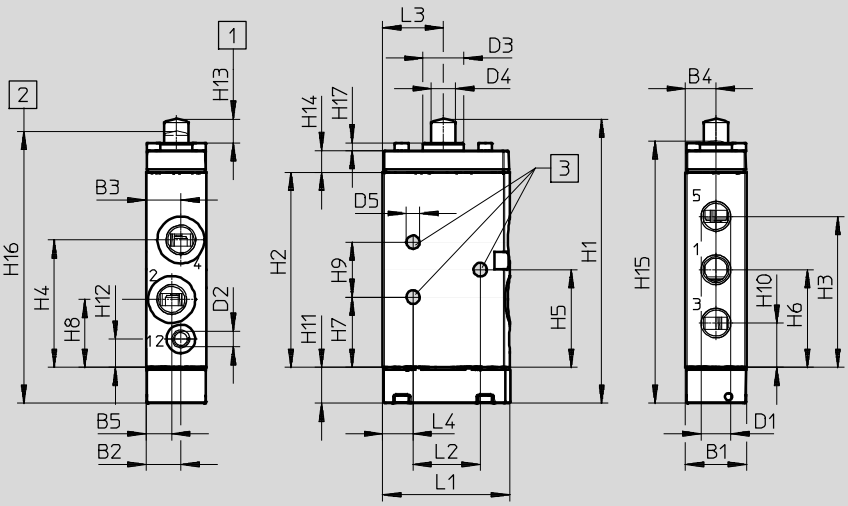
1 Maximum stroke 2 Start of opening 3 Mounting holes

Stem actuated valve	B1	B2	B3	B4	B5	D1	D2	D3	L1	L2	L3	L4
VMEM-STC...32...G18	20	10	10	9	7	G⅛	M5	4.4	41.7	28	6	3.5

Stem actuated valve	H1±0.4	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11±0.4	H12±0.15
VMEM-STC...32...G18	72.1	70.8	64.8	51	32.5	26	25	17.5	10	8.5	71.2	70.35

Dimensions Download CAD data ➔ **www.festo.com**

Stem actuated valve VMEM-S-M52



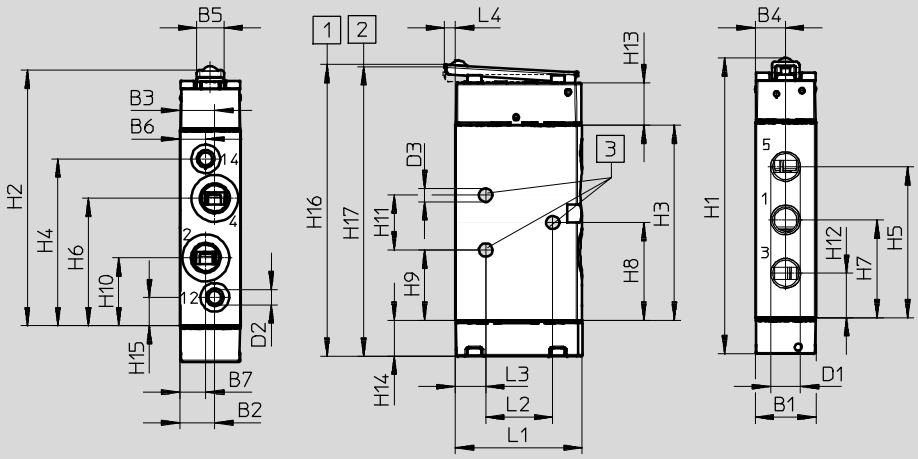
1 Maximum stroke 2 Start of opening 3 Mounting holes

Stem actuated valve	B1	B2	B3	B4	B5	D1	D2	D3	D4	D5	L1	L2	L3	L4
VMEM-S...52...G18	20	11.5	11.5	10	8.5	G⅛	M5	13.5	8	4.4	41.7	25	20	7
VMEM-S...52...G14	25	14.2	14.2	12.5	10.8	G¼	M5	15	10	4.4	52.1	31	25	9.5

Stem actuated valve	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17
VMEM-S...52...G18	93.4±0.4	64	49.5	41.8	32	32	23	22.3	18	14.5	11.8	9.3	7.8	7.1	86.3±0.4	89.4±1	2.5
VMEM-S...52...G14	118.5±0.3	87	68.1	60.1	43.5	43.8	31.4	28.5	24.3	19.5	11	10.1	9	8.3	110.1±0.3	113.7±1.3	3

Dimensions Download CAD data ➔ **www.festo.com**

Stem actuated valve VMEM-SC ... -M52



1 Maximum stroke 2 Start of opening 3 Mounting holes

Stem actuated valve	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	L1	L2	L3	L4
VMEM-SC...52...G18	20	11.5	11.5	10	9	8.5	8.5	G1⁄8	M5	4.4	41.7	25	7	3.5
VMEM-SC...52...G14	25	14.2	14.2	12.5	12	10.8	10.8	G1⁄4	M5	4.4	52.1	31	9.5	4.6

Stem actuated valve	H1±0.4	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16±0.4	H17+0.5
VMEM-SC...52...G18	96.9	83.8	64	54.7	49.5	41.8	32	32	23	22.3	18	14.5	13.8	11.8	9.3	95.6	95.1
VMEM-SC...52...G14	119.4	106.8	87.3	77.5	68.1	59.1	43.8	43.5	31.4	28.5	24.3	19.5	13.8	11	10.1	117.8	117.4

Swivel lever valves VMEM

Technical data – Swivel lever valve, standard nominal flow rate 140 l/min

FESTO

Flow rate
140 l/min

Pressure
–0.95 ... 8 bar

Temperature range
–10 ... +60 °C

Mounting via through-holes

General technical data		
Type		RW/O-3-⅛
Standard nominal flow rate 1 → 2	[l/min]	140
Valve function		3/2-way valve
Design		Disk seat valve, directly actuated
Pneumatic connection		G⅛
Nominal size	[mm]	3.5
Weight	[g]	150
Actuating force at 6 bar	[N]	28.0

Materials	
Seal	NBR
Housing	Anodised aluminium

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)
Operating pressure range	[bar]	–0.95 ... 8
Temperature of medium	[°C]	–10 ... +60

Technical data – Actuator attachment for swivel lever valve RW/O-3-⅛				
Swivel lever, type		ASK–02 (short)	ASL–02 (long)	ASS–02 (rod)
Actuating force [N]	Max.	7	Dependent on starting height	Dependent on starting height
Weight	[g]	30	35	30

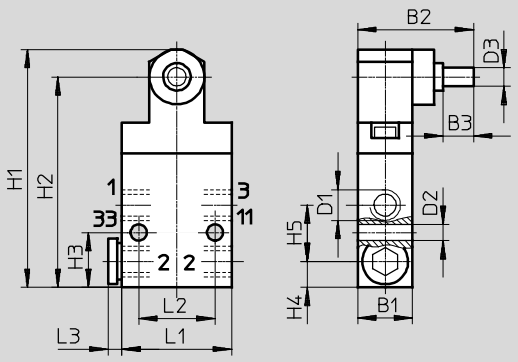
Materials – Swivel lever	
Swivel lever	Aluminium, steel

Swivel lever valves VMEM

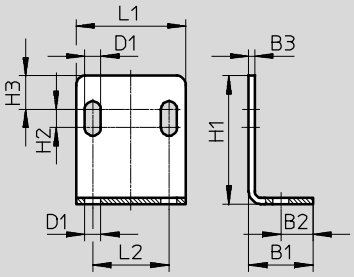
Technical data

Dimensions Download CAD data ➔ **www.festo.com**

Swivel lever valve RW/O-3-⅛



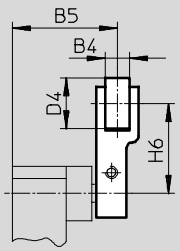
Mounting bracket HV-⅛



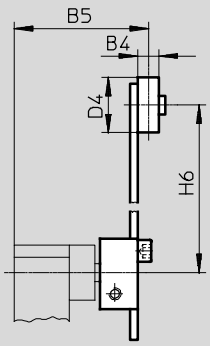
	B1	B2	B3	D1	D2	D3	L1	L2	L3	H1	H2	H3	H4	H5
Swivel lever valve RW/O-3-⅛	18	38	10	G⅛	5.3	6	36	25	4.5	78	69	18	8.5	18.5
Mounting bracket HV-⅛	21	10.5	2	5.3	–	–	36	25	–	42	6	11	–	–

Actuator attachment for swivel lever valve RW/O-3-⅛

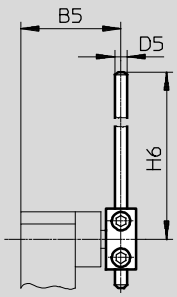
Swivel lever, short ASK-02



Swivel lever, long ASL-02



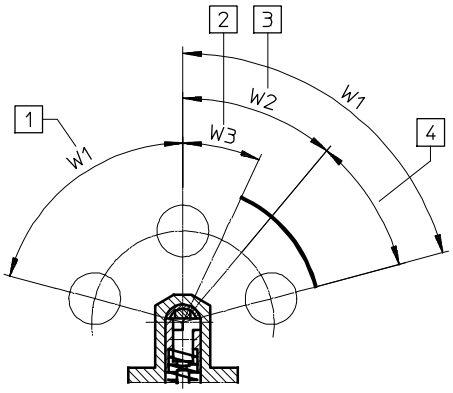
Swivel lever rod ASS-02



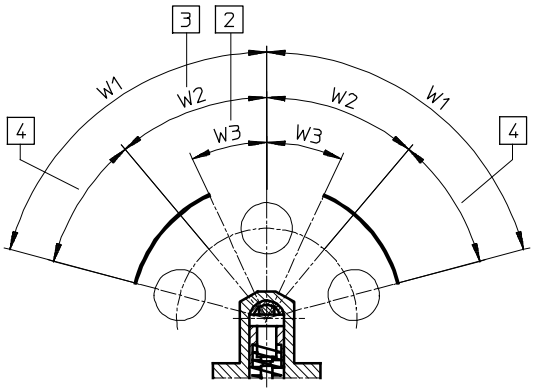
Actuator attachment	B4	B5	D4	D5	D6	H6
ASK-02	8	35	17	–	–	30
ASL-02	7	44	18	–	–	25 ... 85
ASS-02	–	33	–	4	4	30 ... 140

Actuating ranges are set by converting the switching head

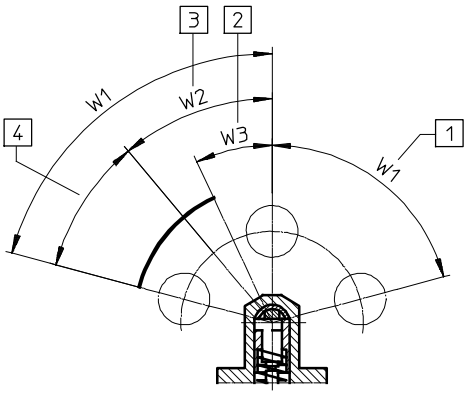
Default settings (upon delivery)



Valve components 1 and 2 turned 90° around the longitudinal axis



Valve components 1 and 2 turned 180° around the longitudinal axis



1 (w1) Idling, or max. angle position (75°)
2 (w3) Start of opening (25° ± 5°)
3 (w2) Max. opening angle (40° ± 5°)
4 Overtravel

Whisker valves VMEM

Technical data – Whisker valve, standard nominal flow rate 120 l/min

- Flow rate
  120 l/min

- Pressure
  3.5 ... 8 bar

- Temperature range
  –10 ... +60 °C

Mounting via through-holes

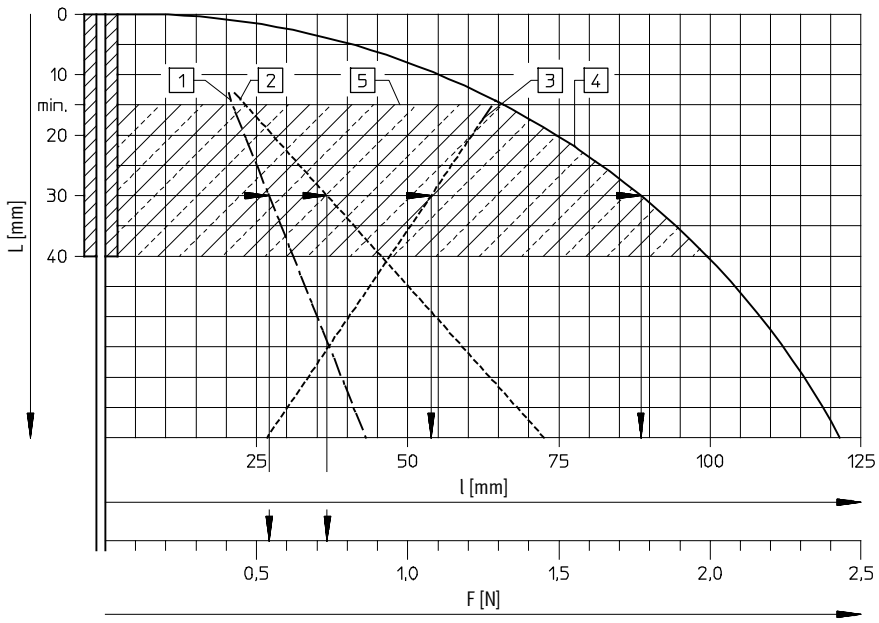
General technical data		
Type		Whisker valve FVS, FVSO
Standard nominal flow rate 1 → 2	[l/min]	120
Valve function		3/2-way valve
Design		Disk seat valve, piloted
Pneumatic connection		G1⁄8
Nominal size	[mm]	3.5
Weight	[g]	130
Actuating force at 6 bar	[N]	➔ Graph
Repetition accuracy of switching point	[mm]	±0.1

Materials	
Seal	NBR
Housing	Anodised aluminium

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)
Operating pressure range	[bar]	3.5 ... 8
Temperature of medium	[°C]	–10 ... +60
Ambient temperature	[°C]	–10 ... +60

Switching forces F and switching travel l at 6 bar as a function of approach distance L

Whisker valve



This piloted valve with extremely low actuating forces is particularly suited for systems where dissimilar parts or actuating elements without precision positioning are to be sensed, or where the actuating levels are different. The whisker can be approached from any direction perpendicular to the whisker axis, or can be passed.

1 Switching force
2 Passing force
3 Switching travel
4 Overtravel
5 Permissible approach range

Example:

A distance of 30 mm from the end of the spring results in:

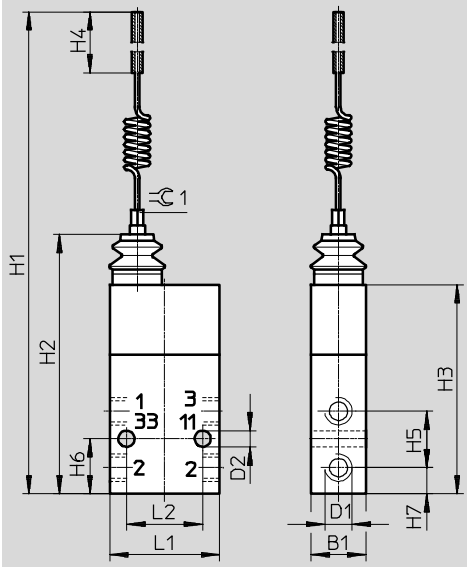
Switching travel 54 mm
Switching force 0.57 N

Overtravel 88 mm
Passing force 0.75 N

Dimensions

Download CAD data ➔ **www.festo.com**

Whisker valve FVS, FVSO



Whisker valve	B1	D1	D2	H1	H2	H3	H4 max.	H5	H6	H7	L1	L2	⌀1
FVS, FVSO	18	G⅛	5.3	220	85	68.5	40	18.5	18	8.5	36	25	4

Roller lever valves with idle return, toggle lever valves VMEM

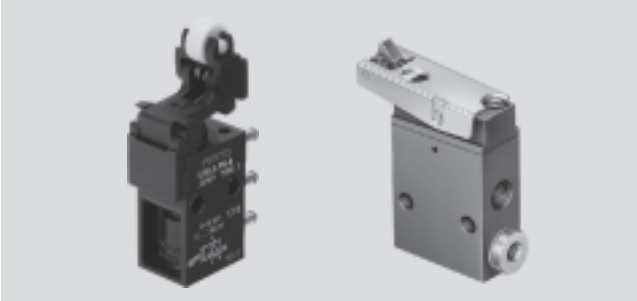
Technical data – Roller lever valve with idle return, toggle lever valve, standard nominal flow rate 80 … 120 l/min

Flow rate
80 … 600 l/min

Pressure
–0.95 … 8 bar

Temperature range
–10 … +60 °C

Mounting via through-holes



General technical data					
Type		L/O-3-PK-3	L-3-M5	LS-3-⅛ LOS-3-⅛	LS-4-⅛
Version		Roller lever valve with idle return	Roller lever valve with idle return	Toggle lever valve	Toggle lever valve
Standard nominal flow rate 1 → 2	[l/min]	80		120	
Valve function		3/2-way valve		3/2-way valve	4/2-way valve
Design		Disk seat valve, directly actuated		Disk seat valve, piloted	Disk seat valve, piloted
Pneumatic connection		PK-3 (barbed fitting for plastic tubing with 3 mm nominal diameter)	M5	G⅛	G⅛
Nominal size	[mm]	2.5	2	3.5	3.5
Weight	[g]	19	43	110	220
Actuating force	[N]	–	16.5	–	2.2
• at 6 bar					
• with normally closed position	[N]	10.0	–	1.8	–
• with normally open position	[N]	13.0	–	1.8	–

Materials					
Type		L/O-3-PK-3	L-3-M5	LS-3-⅛ LOS-3-⅛	LS-4-⅛
Seal		NBR			
Housing		POM	Die-cast zinc	Anodised aluminium	Anodised aluminium

Operating and environmental conditions					
Type		L/O-3-PK-3	L-3-M5	LS-3-⅛ LOS-3-⅛	LS-4-⅛
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]			
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)			
Operating pressure range	[bar]	0 … 8	–0.95 … 8	3.5 … 8	3.5 … 8
Ambient temperature	[°C]	–10 … +60			

Roller lever valves with idle return, toggle lever valves VMEM

Technical data – Roller lever valve with idle return, toggle lever valve, standard nominal flow rate 550 … 600 l/min

General technical data			
Type		L-5-¼-B	L-3-¼-B LO-3-¼-B
Version		Toggle lever valve	Toggle lever valve
Standard nominal flow rate 1 → 2	[l/min]	550	600
Valve function		5/2-way valve	3/2-way valve
Design		Disk seat valve, directly actuated	Disk seat valve, directly actuated
Pneumatic connection		G¼	G¼
Nominal size	[mm]	7.0	7.0
Weight	[g]	360	250
Actuating force	[N]	53.0	15.0 [1] 38.0

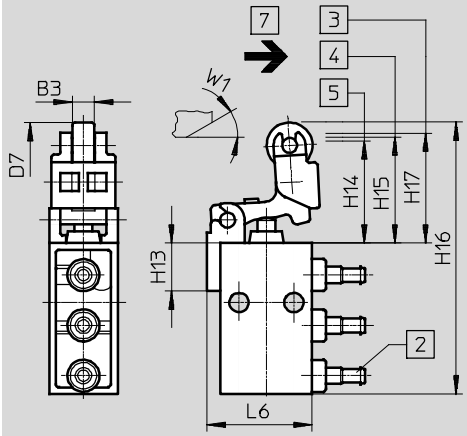
1) Value 15.0 with normally closed valve, value 38.0 with normally open valve

Materials	
Seal	NBR
Housing	Die-cast aluminium

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)
Operating pressure range	[bar]	–0.95 … 10
Ambient temperature	[°C]	–10 … +60

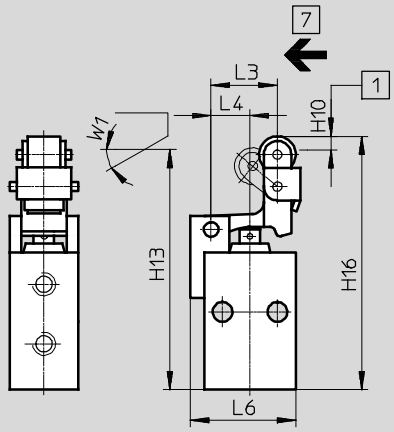
Dimensions Download CAD data ➔ **www.festo.com**

Roller lever valve with idle return L/O-3-PK-3



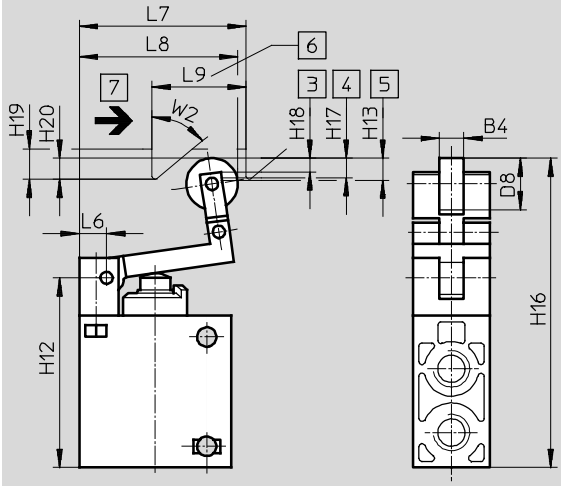
2 Barbed fitting for tubing I.D. 3 mm
3 Max. opening
4 Start of opening
5 Max. stroke
7 Actuation direction

Roller lever valve with idle return L-3-M5



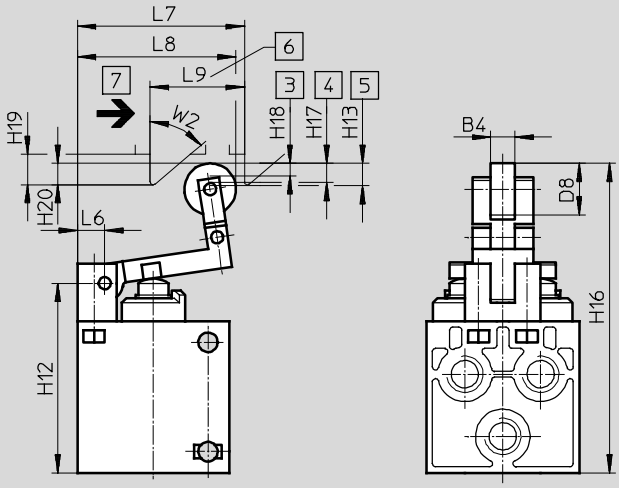
1 Switching travel
7 Actuation direction

Roller lever valve with idle return L-3-¼-B, LO-3-¼-B



3 Start of opening
4 Max. opening
5 Max. stroke
6 Cam operating path
7 Actuation direction

Roller lever valve with idle return L-5-¼-B



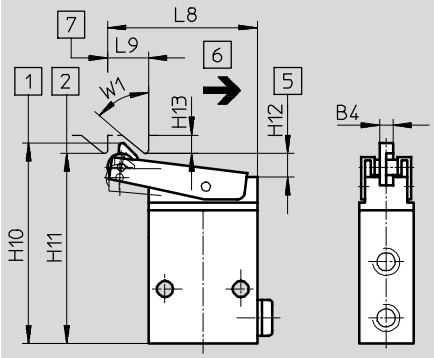
3 Start of opening
4 Max. opening
5 Max. stroke
6 Cam operating path
7 Actuation direction

Roller lever valve with idle return	B3	B4	D7	D8	L3	L4	L6	L7	L8	L9
L/O-3-PK-3	4.8	–	10	–	–	–	23	–	–	–
L-3-M5	–	–	–	–	14.5	8.5	23	–	–	–
L-3-¼-B, LO-3-¼-B	–	8	–	17	–	–	9	55	54	31
L-5-¼-B	–	8	–	17	–	–	9	55	54	31

Roller lever valve with idle return	H10	H12	H13	H14	H15	H16	H17	H18	H19	H20	W1	W2
L/O-3-PK-3	–	–	10.5	22.3	23.2	59.5	24	–	–	–	30°	–
L-3-M5	3	–	52.5	–	–	55.5	–	–	–	–	30°	–
L-3-¼-B, LO-3-¼-B	–	62.5	7.4	–	–	102	6.3	4.1	10	7	–	50°
L-5-¼-B	–	62.5	7.4	–	–	102	6.3	4.1	10	7	–	50°

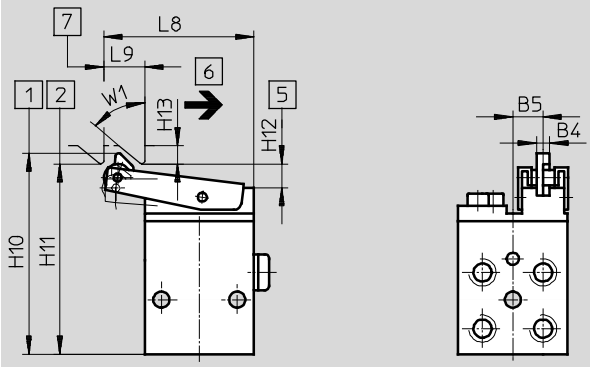
Dimensions Download CAD data ➔ **www.festo.com**

Toggle lever valve LS-3-⅛, LOS-3-⅛



1 Initial position
2 ON position
5 Bottom edge of control rail or cam
6 Idle return
7 Min. switching travel

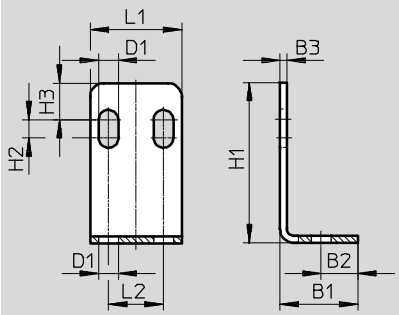
Toggle lever valve LS-4-⅛



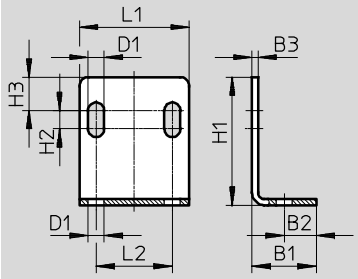
1 Initial position
2 ON position
5 Bottom edge of control rail or cam
6 Idle return
7 Min. switching travel

Toggle lever valve	B4	B5	L8	L9	H10	H11	H12 +0.2, –0.3	H13	W1
LS-3-⅛, LOS-3-⅛	4.4	–	49.5	13.5	66	62.5	7.5	6	50°
LS-4-⅛	4.4	9	49.5	13.5	66	62.5	7.5	6	50°

Mounting bracket HV-M5



Mounting bracket HV-⅛



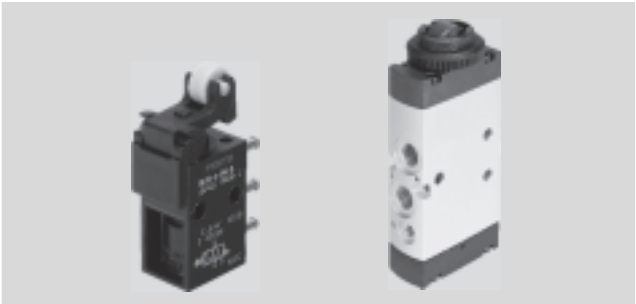
Mounting bracket	B1	B2	B3	D1	L1	L2	H1	H2	H3
HV-M5	17	8	1.5	4.3	20	12	35	4	8
HV-⅛	21	10.5	2	5.3	36	25	42	6	11

Roller lever valves, roller actuated valves VMEM

Technical data – Roller lever valve, roller actuated valve, standard nominal flow rate 80 ... 120 l/min

- Flow rate
  80 ... 500 l/min
- Pressure
  –0.95 ... 10 bar
- Temperature range
  –10 ... +60 °C

Mounting either via through-holes or on front panel



General technical data					
Type		R/O-3-PK-3	R-3-M5	RS-3-⅛ ROS-3-⅛	RS-4-⅛
Version		Roller lever valve	Roller lever valve	Roller lever valve	Roller lever valve
Standard nominal flow rate 1 → 2	[l/min]	80		120	
Valve function		3/2-way valve		3/2-way valve	4/2-way valve
Design		Disk seat valve, directly actuated		Disk seat valve, piloted	
Pneumatic connection		PK-3 (barbed fitting for plastic tubing with 3 mm nominal diameter)	M5	G⅛	G⅛
Nominal size	[mm]	2.5	2	3.5	3.5
Weight	[g]	18	40	120	230
Actuating force • at 6 bar	[N]	–	16.5	1.8	1.8
• with normally closed position	[N]	10.0	–	–	–
• with normally open position	[N]	15.0	–	–	–

Materials				
Type	R/O-3-PK-3	R-3-M5	RS-3-⅛ ROS-3-⅛	RS-4-⅛
Seal	NBR			
Housing	POM	Die-cast zinc	Anodised aluminium	Anodised aluminium

Operating and environmental conditions					
Type		R/O-3-PK-3	R-3-M5	RS-3-⅛ ROS-3-⅛	RS-4-⅛
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]			
Note about operating/pilot medium		Lubricated operation possible (required during subsequent operation)			
Operating pressure range	[bar]	0 ... 8	–0.95 ... 8	3.5 ... 8	3.5 ... 8
Ambient temperature	[°C]	–10 ... +60			

Technical data – Actuator attachment			
Type		AR-01	AL-01
Version		Roller lever	Roller lever with idle return
Actuating force [N]	Max.	10	12
Weight	[g]	42	52

Materials – Actuator attachment	
Actuator attachment	Galvanised steel

Roller lever valves, roller actuated valves VMEM

Technical data – Roller lever valve, roller actuated valve, standard nominal flow rate 550 ... 600 l/min

General technical data			
Type		R-5-¼-B	R-3-¼-B RO-3-¼-B
Version		Roller lever valve	Roller lever valve
Standard nominal flow rate 1 → 2	[l/min]	550	600
Valve function		5/2-way valve	3/2-way valve
Design		Disk seat valve, directly actuated	Disk seat valve, directly actuated
Pneumatic connection		G¼	G¼
Nominal size	[mm]	7.0	7.0
Weight	[g]	340	230
Actuating force	[N]	35.0	10.0 [1] 26.0

1) Value 10.0 with normally closed valve, value 26.0 with normally open valve

Materials	
Seal	NBR
Housing	Die-cast aluminium

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)
Operating pressure range	[bar]	–0.95 ... 10
Ambient temperature	[°C]	–10 ... +60

Roller lever valves, roller actuated valves VMEM

Technical data – Roller lever valve, roller actuated valve, standard nominal flow rate 500 l/min

General technical data			
Type		VMEM-DT	VMEM-D
Standard nominal flow rate 1 → 2	[l/min]	500	
Valve function		3/2-way valve	5/2-way valve
Reset method		Mechanical spring	Mechanical or pneumatic spring
Design		Disk seat valve, directly actuated	Piston spool valve, directly actuated
Pneumatic connection		G1⁄8	G1⁄8
Pilot air supply		–	–
Nominal size	[mm]	4.0	4.0
Weight	[g]	170	176
Actuating force	[N]	90 [1)] 130	27.5 [2)] 47

1) Value 90 with normally closed valve, value 130 with normally open valve
2) Value 27.5 with mechanical spring reset method, value 47 with pneumatic spring reset method

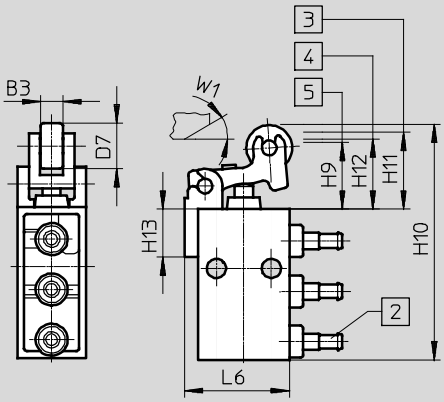
Materials	
Cover	PA
Seal	NBR
Housing	Anodised wrought aluminium alloy
Note on materials	RoHS-compliant

Operating and environmental conditions				
Type		VMEM-DT	VMEM-D	
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]		
Note on operating/ pilot medium	[µm]	Lubricated operation possible (required during subsequent operation)		
Operating pressure range	[bar]	–0.95 ... 8	–0.95 ... 10 [1)]	2.5 ... 10 [2)]
Temperature of medium	[°C]	–10 ... +60		
Ambient temperature	[°C]	–10 ... +60		

1) Suitable for vacuum, mechanical spring or external pneumatic spring reset method (in the type codes Reset method M: Mechanical spring or E: External pneumatic spring)
2) Not suitable for vacuum, internal pneumatic spring reset method (in the type codes Reset method A: Internal pneumatic spring)

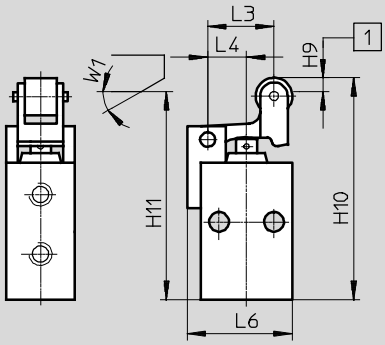
Dimensions Download CAD data ➔ **www.festo.com**

Roller lever valve R/O-3-PK-3



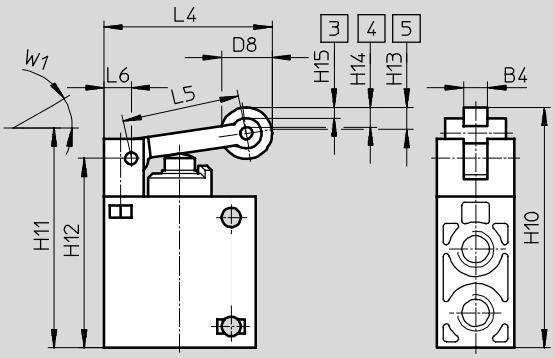
2 Barbed fitting for tubing I.D. 3 mm
3 Max. opening
4 Start of opening
5 Max. stroke

Roller lever valve R-3-M5



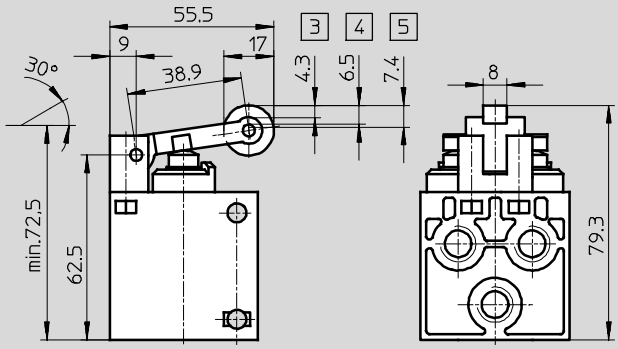
1 Switching travel

Roller lever valve R-3-¼-B, RO-3-¼-B



3 Start of opening
4 Max. opening
5 Max. stroke

Roller lever valve R-5-¼-B



3 Start of opening
4 Max. opening
5 Max. stroke

Roller lever valve	B3	B4	D7	D8	L3	L4	L5	L6
R/O-3-PK-3	4.8	–	10	–	–	–	–	23
R-3-M5	–	–	–	–	14.5	8.5	–	23
R-3-¼-B, RO-3-¼-B	–	8	–	17	–	55.5	39	9
R-5-¼-B	–	8	–	17	–	55.5	39	9

Roller lever valve	H9	H10	H11	H12	H13	H14	H15	W1
R/O-3-PK-3	14.5	14.3	16.8	18.5	10.5	–	–	30°
R-3-M5	3	48.5	45.5	–	–	–	–	30°
R-3-¼-B, RO-3-¼-B	–	79.3	min. 72.5	62.5	7.4	6.5	4.3	30°
R-5-¼-B	–	79.3	min. 72.5	62.5	7.4	6.5	4.3	30°

Roller lever valves, roller actuated valves VMEM

Technical data

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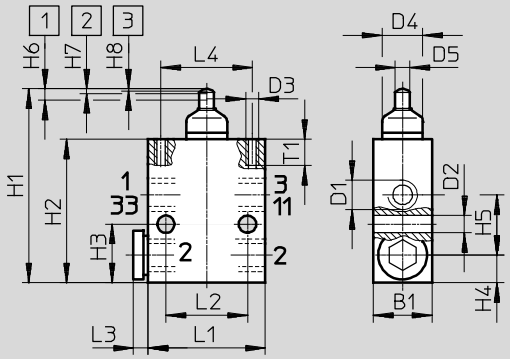
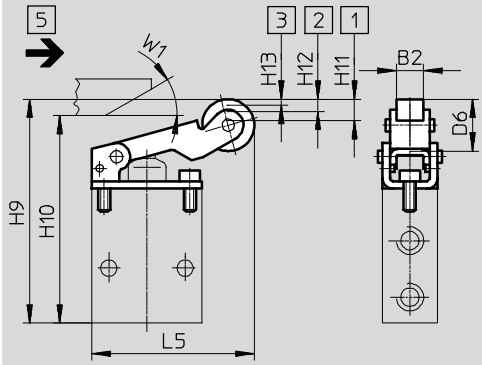
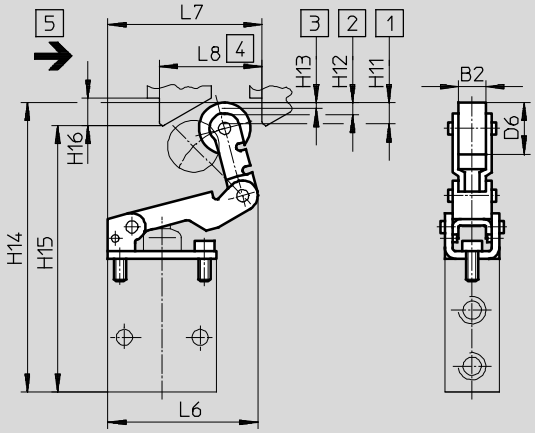
Basic valve, stem actuated valve V/O-3-⅛



Roller lever AR-01 as actuator attachment for stem actuated valve V/O-3-⅛



Roller lever with idle return AL-01 as actuator attachment for stem actuated valve V/O-3-⅛



1 Max. stroke
2 Max. opening
3 Start of opening
4 Min. actuation stroke
5 Actuation direction

Note

The stem actuated valve V/O-3-⅛ can be extended with an actuator attachment for the roller lever or toggle lever valve. The technical data is listed with the stem actuated valve.

Stem actuated valve	B1	D1	D2	D3	D4	D5	L1	L2	L3	L4	H1	H2	H3	H4	H5	H6	H7 ±0.2	H8 ±0.2	T1
V/O-3-⅛	18	G⅛	5.3	M4	12.5	4.5	36	25	4.5	28	59.5	44	18	8.5	18.5	3.5	1.4	0.6	8

Actuator attachment	B2	D6	L5	L6	L7	L8	H9	H10 min.	H11	H12 +0.2	H13 +0.2	H14	H15 min.	H16	W1
AR-01	8	17	54	–	–	–	71	64	7	4	2	–	–	–	30°
AL-01	8	17	–	50.5	51	34	–	–	7	4	2	93.5	86.5	9	–

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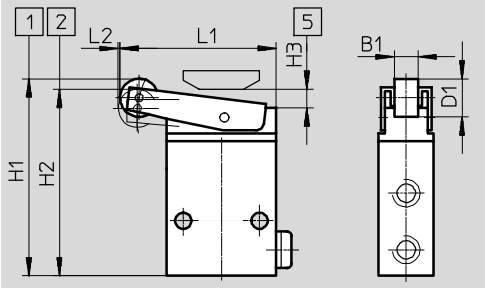
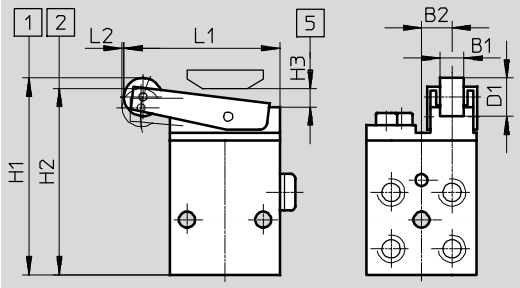
Roller lever valve RS-3-⅛, ROS-3-⅛



1 Initial position
2 ON position
5 Bottom edge of control rail or cam

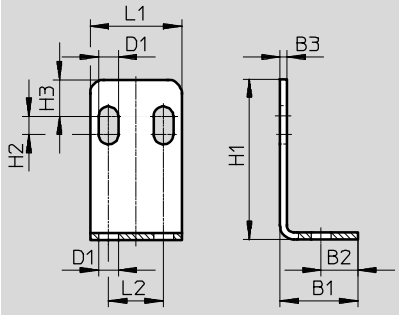
Roller lever valve RS-4-⅛



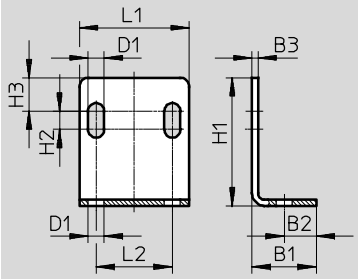
1 Initial position
2 ON position
5 Bottom edge of control rail or cam

Roller lever valve	B1	B2	D1	L1	L2	H1	H2	H3 +0.2, –0.3
RS-3-⅛, ROS-3-⅛	7.7	–	12.5	51.5	0.5	64.5	61	6
RS-4-⅛	7.7	9	12.5	51.5	0.5	64.5	61	6

Mounting bracket HV-M5



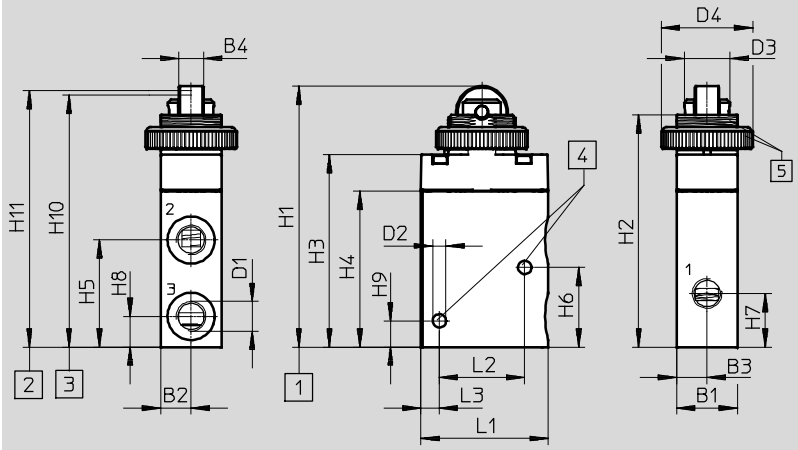
Mounting bracket HV-⅛



Mounting bracket	B1	B2	B3	D1	L1	L2	H1	H2	H3
HV-M5	17	8	1.5	4.3	20	12	35	4	8
HV-⅛	21	10.5	2	5.3	36	25	42	6	11

Dimensions Download CAD data ➔ **www.festo.com**

Roller actuated valve VMEM-DT...32...G18

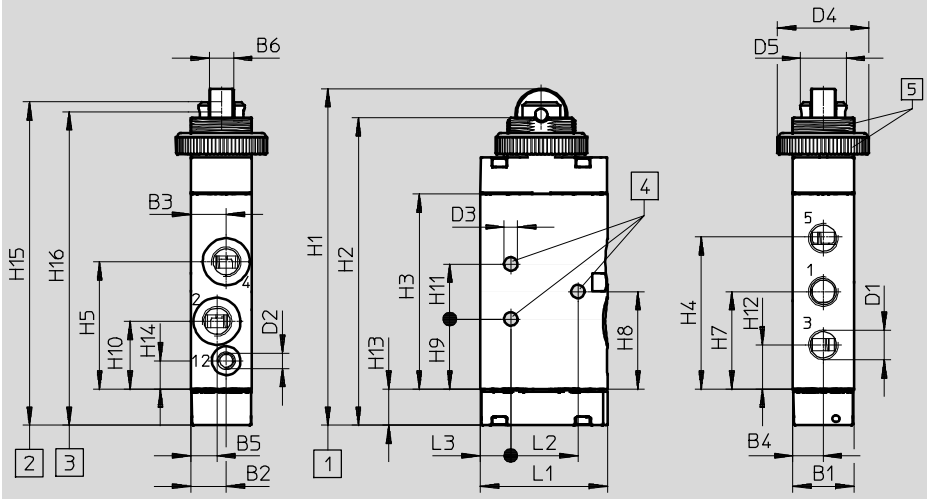


1 Maximum stroke
2 Start of opening
3 Mounting holes
4 Thread and nut (M22x1)

Roller actuated valve	B1	B2	B3	B4	D1	D2∅	D3∅	D4∅	L1	L2	L3
VMEM-DT...32...G18	20	10	10	8	G1⁄8	4.4	15	30	41.7	28	6

Roller actuated valve	H1±0.3	H2	H3	H4	H5	H6	H7	H8	H9	H10±0.4	H11±0.3
VMEM-DT...32...G18	85.8	76	63	51	35	26	18	10	8.5	82.6	84

Roller actuated valve VMEM-D...52...G18



1 Maximum stroke
2 Start of opening
3 End of opening
4 Mounting holes
5 Thread and nut (M22x1)

Roller actuated valve	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4	D5	L1	L2	L3
VMEM-D...52...G18	20	11.5	11.5	10	8.5	8	G1⁄8	M5	4.4	30	15	41.7	25	7

Roller actuated valve	H1±0.2	H2	H3	H4	H5	H7	H8	H10	H11	H12	H13	H14	H15	H16±1	H17±0.4
VMEM-D...52...G18	110.6	101.1	64	49.5	41.8	32	32	23	22.3	18	14.5	11.8	9.3	106.6	104

Ball actuated valves VMEM

Technical data – Ball actuated valve, standard nominal flow rate 500 l/min

- Flow rate
  500 l/min

- Pressure
  0.95 ... 10 bar

- Temperature range
  –10 ... +60 °C

Mounting either via through-holes or on front panel

General technical data				
Type		VMEM-BTC	VMEM-BC	VMEM-BCZ
Standard nominal flow rate 1 → 2	[l/min]	500		
Valve function		3/2-way valve	5/2-way valve	5/2-way valve
Reset method		Mechanical spring	Mechanical or pneumatic spring	Mechanical or pneumatic spring
Design		Disk seat valve, piloted	Piston spool valve, piloted	Piston spool valve, piloted
Pneumatic connection		G⅛	G⅛	G⅛
Pilot air supply		Internal or external	Internal	External
Nominal size	[mm]	4.0	4.0	4.0
Weight	[g]	148	182	182
Actuating force	[N]	77.8	77.8	77.8

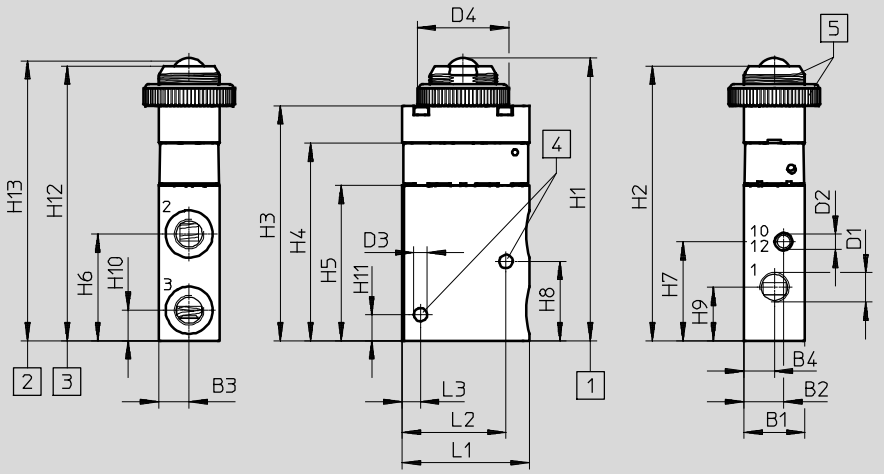
Materials	
Cover	Anodised wrought aluminium alloy
Seal	NBR
Housing	Anodised wrought aluminium alloy
Note on materials	RoHS-compliant

Operating and environmental conditions				
Type		VMEM-BTC	VMEM-BC	VMEM-BCZ
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]		
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)		
Operating pressure range	[bar]			
N/C valves		3.5 ... 8	–	–
N/O valves		4.5 ... 8	2.5 ... 10 [2]	–0.95 ... 10 [1]
Temperature of medium	[°C]	–10 ... +60		
Ambient temperature	[°C]	–10 ... +60		

1) Suitable for vacuum, mechanical spring or external pneumatic spring reset method (in the type codes Reset method M: Mechanical spring or E: External pneumatic spring)
2) Not suitable for vacuum, internal pneumatic spring reset method (in the type codes Reset method A: Internal pneumatic spring)

Dimensions Download CAD data ➔ **www.festo.com**

Ball actuated valve VMEM-BTC...32...G18

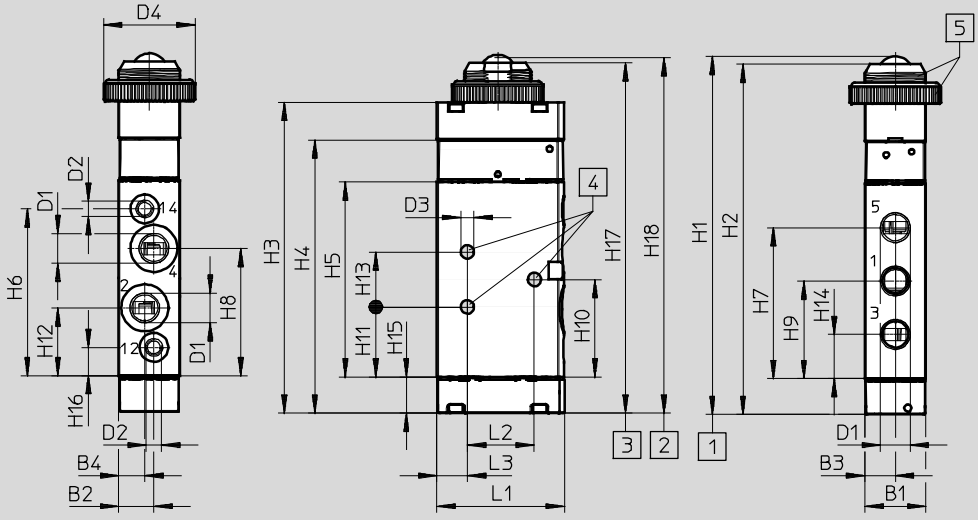


1 Maximum stroke 2 Start of opening 3 Mounting holes 4 Thread and nut (M22x1)

Ball actuated valve	B1	B2	B3	B4	D1	D2	D3∅	D4∅	L1	L2	L3
VMEM-BTC...32...G18	20	13	10	10	G⅛	M5	4.4	30	41.7	28	6

Ball actuated valve	H1±0.3	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12±0.4	H13±0.3
VMEM-BTC...32...G18	92.8	90.1	77.1	64.8	51	35	32.5	26	17.5	10	8.5	90	91

Ball actuated valve VMEM-BC/BCZ...52...G18



1 Maximum stroke 2 Start of opening 3 Mounting holes 4 Thread and nut (M22x1)

Ball actuated valve	B1	B2	B3	B4	D1	D2	D3	D4	L1	L2	L3	H1±0.2	H2	H3
VMEM-BC/BCZ...52...G18	20	11.5	10	8.5	G⅛	M5	4.4	30	41.7	25	7	117.3	114.9	101.9

Ball actuated valve	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17±0.2	H18±0.2
VMEM-BC/BCZ...52...G18	89.6	64	54.7	49.5	41.8	32	32	23	22.3	18	14.5	11.8	9.3	115	115.7

Valves VMEM, mechanically actuated

Ordering data

Ordering data							
Nominal flow rate	Valve function	Description	Mechanical reset	Normal position	Pilot air [1]	Part No.	Type
Stem actuated valve							
80 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Closed	–	**3626**	**V-3-M5**
		Suitable for vacuum	■	Open/closed	–	**10747**	**V/O-3-PK-3**
120 l/min	3/2-way valve, monostable	–	■	Closed	–	**2334**	**VS-3-⅛**
		–	■	Closed	–	**2952**	**VOS-3-⅛**
	4/2-way valve, monostable	–	■	–	–	**3394**	**VS-4-⅛**
140 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Open/closed	–	**4938**	**V/O-3-⅛**
500 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Closed	–	**555618**	**VMEM-ST-M32C-M-G18**
				Open	–	**555619**	**VMEM-ST-M32U-M-G18**
	5/2-way valve, monostable	Suitable for vacuum, reverse operation	■	–	–	**555624**	**VMEM-S-M52-M-G18**
		(Internal) pneumatic reset	–	–	–	**555625**	**VMEM-S-M52-A-G18**
		Suitable for vacuum, reverse operation, (external) pneumatic reset	–	–	–	**555626**	**VMEM-S-M52-E-G18**
550 l/min	5/2-way valve, monostable	Suitable for vacuum	■	–	–	**6809**	**V-5-¼-B**
600 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Closed	–	**6808**	**V-3-¼-B**
				Open	–	**9157**	**VO-3-¼-B**
1,000 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Closed	–	**556901**	**VMEM-ST-M32C-M-G14**
				Open	–	**556902**	**VMEM-ST-M32U-M-G14**
	5/2-way valve, monostable	Suitable for vacuum, reverse operation	■	–	–	**556903**	**VMEM-S-M52-M-G14**
		–	–	–	–	**556904**	**VMEM-S-M52-A-G14**
		Suitable for vacuum, reverse operation	–	–	–	**556905**	**VMEM-S-M52-E-G14**
Swivel lever valve							
140 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Open/closed	–	**4937**	**RW/O-3-⅛**
Whisker valve							
120 l/min	3/2-way valve, monostable	Whisker valve	■	Closed	Internal	**3876**	**FVS-3-⅛**
				Open	Internal	**3877**	**FVSO-3-⅛**

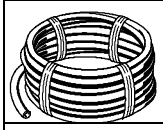
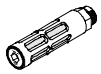
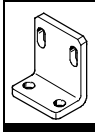
1) With piloted valves

Valves VMEM, mechanically actuated

Ordering data

Ordering data							
Nominal flow rate	Valve function	Description	Mechanical reset	Normal position	Pilot air [1]	Part No.	Type
Roller lever valve with idle return, toggle lever valve							
80 l/min	3/2-way valve, monostable	Roller lever valve with idle return	■	Open/closed	–	**10749**	**L/O-3-PK-3**
		Roller lever valve with idle return, suitable for vacuum		Closed	–	**3628**	**L-3-M5**
120 l/min	3/2-way valve, monostable	Toggle lever valve	■	Closed	–	**2186**	**LS-3-⅛**
				Open	–	**2950**	**LOS-3-⅛**
	4/2-way valve, monostable	Toggle lever valve	■	–	–	**3416**	**LS-4-⅛**
550 l/min	5/2-way valve, monostable	Roller lever valve with idle return, suitable for vacuum	■	–	–	**8993**	**L-5-¼-B**
600 l/min	3/2-way valve, monostable	Roller lever valve with idle return, suitable for vacuum	■	Closed	–	**8982**	**L-3-¼-B**
				Open	–	**8989**	**LO-3-¼-B**
Roller lever, roller actuated valve							
80 l/min	3/2-way valve, monostable	Roller lever valve	■	Open/closed	–	**10748**	**R/O-3-PK-3**
				Closed	–	**3629**	**R-3-M5**
120 l/min	3/2-way valve, monostable	Roller lever valve	■	Closed	–	**2272**	**RS-3-⅛**
				Open	–	**2270**	**ROS-3-⅛**
	4/2-way valve, monostable	Roller lever valve	■	–	–	**2949**	**RS-4-⅛**
550 l/min	5/2-way valve, monostable	Roller lever valve, suitable for vacuum	■	–	–	**8996**	**R-5-¼-B**
600 l/min	3/2-way valve, monostable	Roller lever valve, suitable for vacuum	■	Closed	–	**8985**	**R-3-¼-B**
				Open	–	**8991**	**RO-3-¼-B**

1) With piloted valves

Ordering data					
	Description		Part No.	Type	PU[1]
Push-in fitting with external hex (Mini version)					
	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	**186264**	**QSM-G1⁄8-4**	**10**
		6 mm	**186265**	**QSM-G1⁄8-6**	**10**
Push-in fitting with external hex (Standard version)					
	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**
Push-in fitting with internal hex (Mini version)					
	Connecting thread M5 for tubing O.D.	3 mm	**153313**	**QSM-M5-3-I**	**10**
		4 mm	**153315**	**QSM-M5-4-I**	**10**
		6 mm	**153315**	**QSM-M5-6-I**	**10**
	Connecting thread G1⁄8 for tubing O.D.	4 mm	**186266**	**QSM-G1⁄8-4-I**	**10**
		6 mm	**186267**	**QSM-G1⁄8-6-I**	**10**
Push-in fitting with internal hex (Standard version)					
	Connecting thread G1⁄8 for tubing O.D.	4 mm	**186106**	**QS-G1⁄8-4-I**	**10**
		6 mm	**186107**	**QS-G1⁄8-6-I**	**10**
		8 mm	**186109**	**QS-G1⁄8-8-I**	**10**
	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**
Tubing					
	Standard I.D. tubing, material: PL (packaging unit: 50 m)	Blue	**3453**	**PL-3-BL**	
		Black	**4640**	**PL-3-SW**	
	Standard I.D. tubing, material: PU (packaging unit: 50 m)	Blue	**5732**	**PU-3-BL**	
		Black	**5731**	**PU-3-SW**	
Silencer					
	Connecting thread	G1⁄8	**2307**	**U-1⁄8**	**1**
			161419	**UC-1⁄8**	**1**
		G1⁄4	**2316**	**U-1⁄4**	**1**
			6842	**U-1⁄4-B**	**1**
			165004	**UC-1⁄4**	**1**
Mounting bracket					
	For valves with push-in connector and threaded connection M5	11 g	**9634**	**HV-M5**	**1**
	For valves with push-in connector and threaded connection G1⁄8	32 g	**9635**	**HV-1⁄8**	**1**

1) Packaging unit

Valves VMEM, mechanically actuated

Accessories

FESTO

Ordering data				
	Description	Part No.	Type	PU[1]
Actuator attachment				
	For stem actuated valve V/O-3-⅛, roller lever	**4936**	**AR-01**	**1**
	For stem actuated valve V/O-3-⅛, roller lever with idle return	**4941**	**AL-01**	**1**
	For roller lever valve R-3-M5, roller lever with mounting screws	**6512**	**AR-05**	**1**
	For roller lever valve with idle return L-3-M5, roller lever with idle return with mounting screws	**6513**	**AL-05**	**1**
	For swivel lever valve RW/O-3-⅛, short swivel lever	**5835**	**ASK-02**	**1**
	For swivel lever valve RW/O-3-⅛, long swivel lever	**5836**	**ASL-02**	**1**
	For swivel lever valve RW/O-3-⅛, swivel lever rod	**4789**	**ASS-02**	**1**

1) Packaging unit