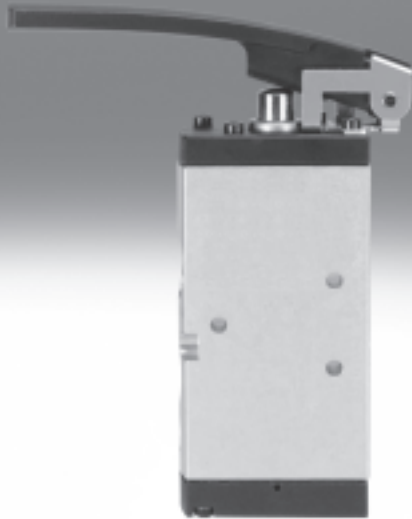


## Valves VHEM, manually operated

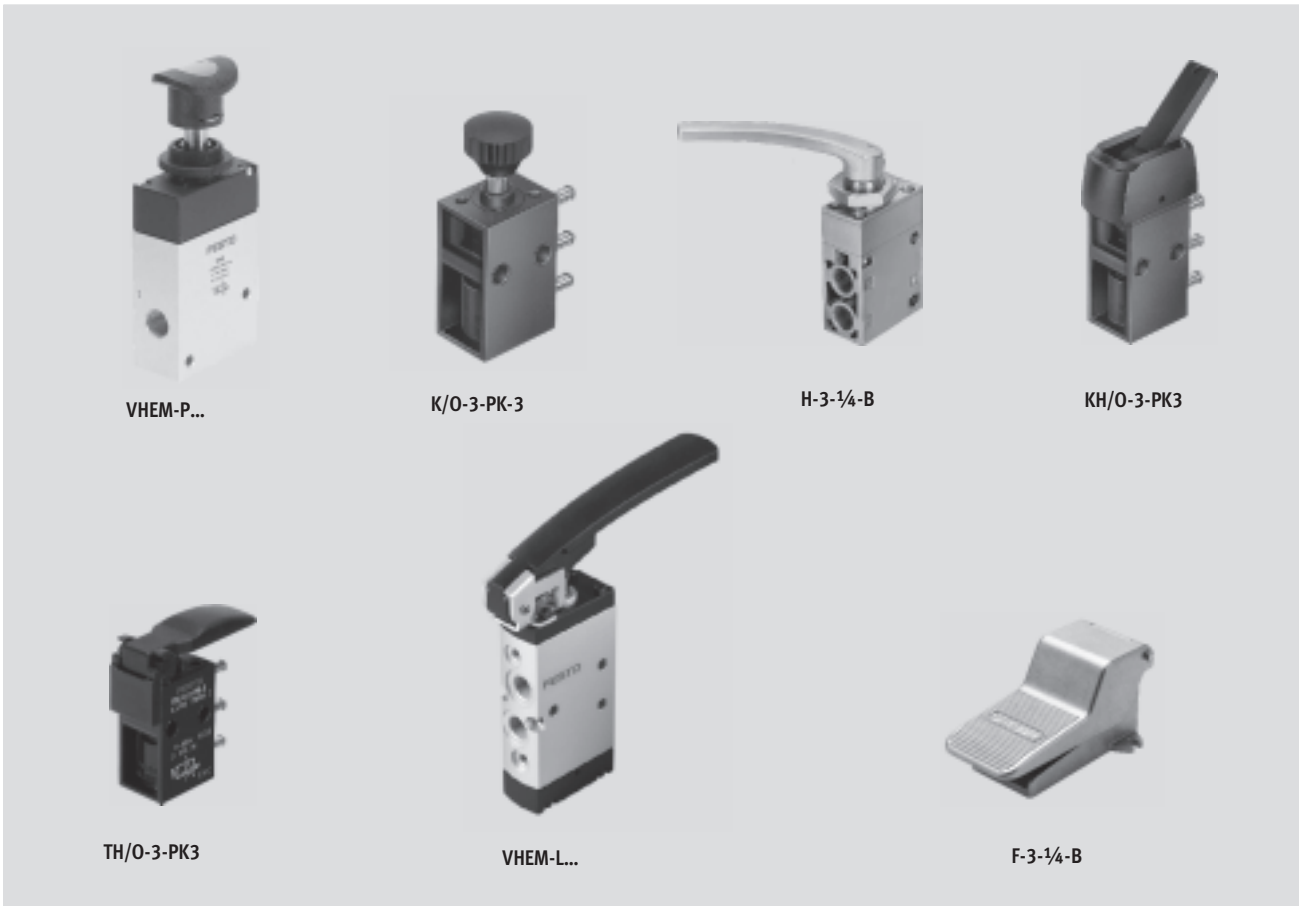
**FESTO**



# Valves VHEM, manually operated

Key features

FESTO



## Innovative

- Small and compact for a wide range of pneumatic applications
- Numerous selectable valve functions: 3/2-way and 5/2-way functions
- With flow rates of up to 1,000 l/min, valves VHEM offer outstanding pneumatic performance for a wide range of applications
- Low weight
- Minimal actuating forces

## Versatile

- Flexibility of the pneumatic working lines 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
- Design:
  - Pushbutton valve
  - Toggle lever valve
  - Hand lever valve
  - Finger lever valve
  - Foot valve

## Reliable

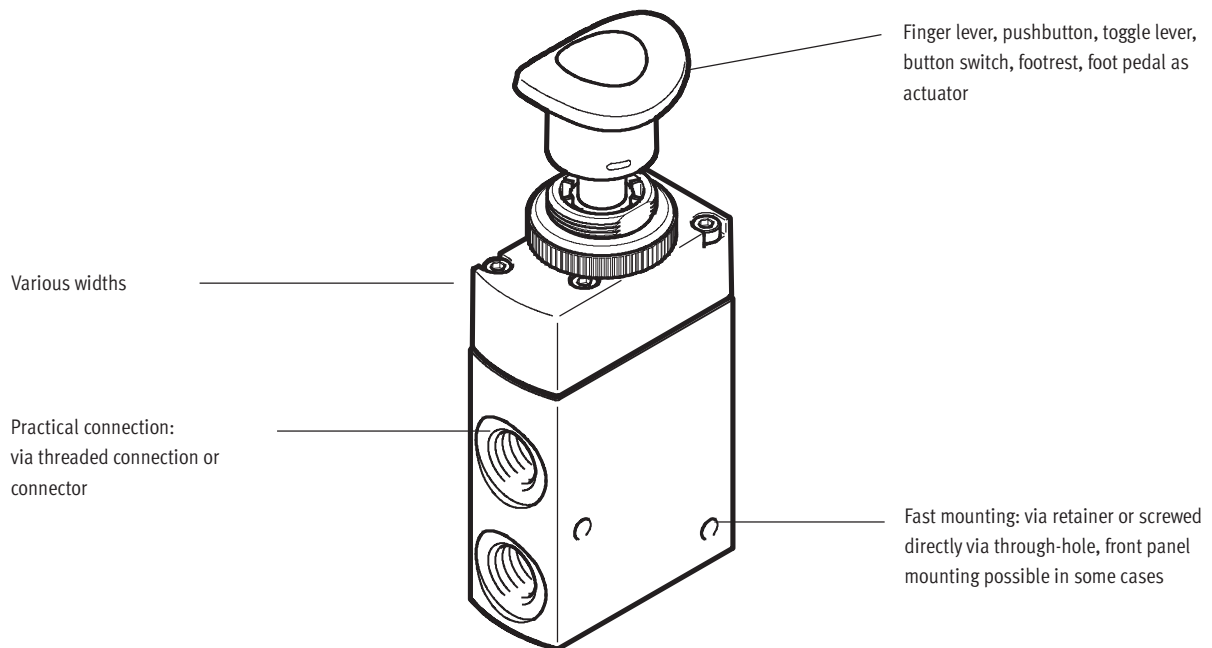
- Durable thanks to proven piston spool and piston poppet valves
- Sturdy thanks to metal or plastic housing and connecting thread or connector

## Easy to mount

- Front panel mounting or mounting on bracket

# Valves VHEM, manually operated

Key features



## Equipment options

### 3/2-way valve

- Normally open/closed
- Mechanical spring
- Vacuum operation possible
- Pneumatically piloted or directly actuated
- Ducted exhaust air
- Detenting (bistable) or non-detenting (monostable)

### 5/2-way valve

- Pneumatic spring/mechanical spring
- Vacuum operation possible
- Reversible
- Pneumatically piloted or directly actuated
- Ducted exhaust air
- Detenting (bistable) or non-detenting (monostable)

## Valve selection

→ Internet: [www.festo.com](http://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

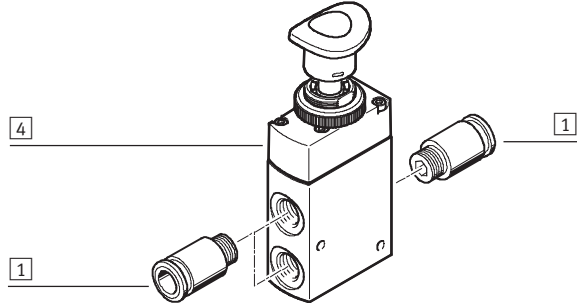
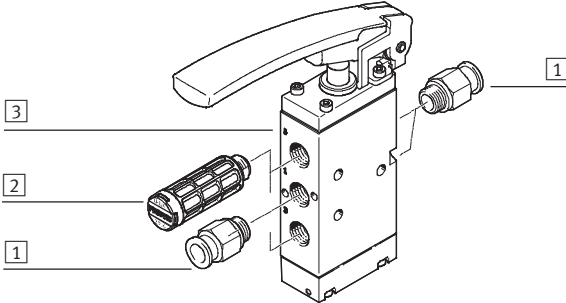
# Valves VHEM, manually operated

Peripherals overview

## Manually operated valves

Finger lever valve VHEM-L, 5/2-way

Pushbutton valve VHEM-P..., 3/2-way

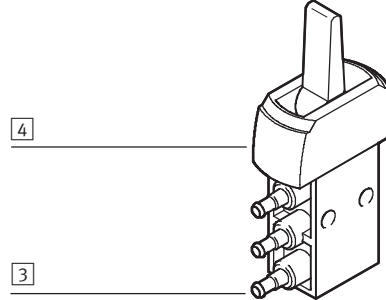
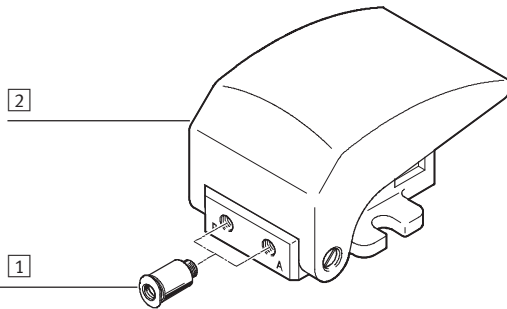


	Brief description	→ Page/Internet
1	Fitting For supply air/exhaust ports (1, 3, 5) and working lines (2, 4)	31
2	Silencer For exhaust ports (3, 5)	31
3	Finger lever valve VHEM-L...	18
4	Pushbutton valve VHEM-P...	9

## Manually operated valves

Foot valve F-3\_M5 ..., 3/2-way

Toggle lever valve KH/O-3-PK, 3/2-way



	Brief description	→ Page/Internet
1	Fitting For supply air/exhaust ports (1, 3, 5) and working lines (2, 4)	31
2	Foot valve F- ...	26
3	Tubing connector For standard I.D. tubing	31
4	Toggle lever valve KH/O-3-PK	16

# Valves VHEM, manually operated

Key features

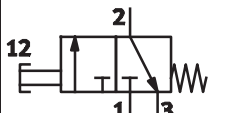
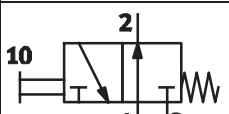
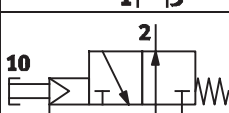
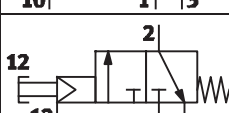
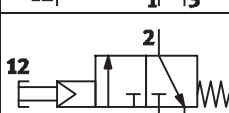
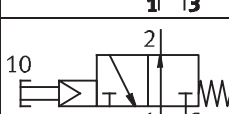
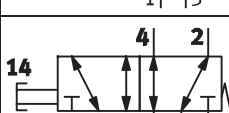
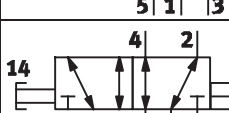
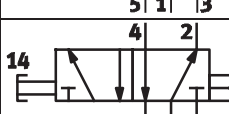
**Manually operated valves**

Manually operated valves are used in all industrial sectors, as well as in the commercial trades. They are used to

carry out simple processes such as clamping or closing safety doors. Depending on the desired actuation

(pushing, rotating/swivelling or tilting), the valves are either detenting or non-detenting. The valves are

directly controlled in some cases or are pneumatically piloted.

Valve functions		
Circuit symbol	Type	Description
Pushbutton valve		
	VHEM-LT-M32C K-3-M5	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• Mechanical spring return</li> <li>• Suitable for vacuum</li> </ul>
	VHEM-LT-M32U	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally open</li> <li>• Mechanical spring return</li> <li>• Suitable for vacuum</li> </ul>
	VHEM-PTCZ-M32U	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally open</li> <li>• Mechanical spring return</li> <li>• Pneumatically piloted</li> </ul>
	VHEM-PTCZ-M32C	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• Mechanical spring return</li> <li>• Pneumatically piloted</li> </ul>
	VHEM-PTC-M32C	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• Pneumatically piloted</li> <li>• Mechanical spring return</li> </ul>
	VHEM-PTC-M32U	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally open</li> <li>• Pneumatically piloted</li> <li>• Mechanical spring return</li> </ul>
	VHEM-P-M52-M	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reverse operation possible</li> <li>• Mechanical spring return</li> <li>• Suitable for vacuum</li> </ul>
	VHEM-P-M52-E VHEM-L-M52-E	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reverse operation possible</li> <li>• (External) pneumatic spring return</li> <li>• Suitable for vacuum</li> </ul>
	VHEM-P-M52-A VHEM-L-M52-A	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Reverse operation not possible</li> <li>• (Internal) pneumatic spring return</li> </ul>

# Valves VHEM, manually operated

Key features

Valve functions		
Circuit symbol	Type	Description
Pushbutton valve		
	K/O-3-PK-3	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally open/closed</li> <li>• Mechanical spring return</li> </ul>
	VHEM-PCZ-M52-M	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Pneumatically piloted</li> <li>• Reverse operation possible</li> <li>• Mechanical spring return</li> </ul>
	VHEM-PCZ-M52-E	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Pneumatically piloted</li> <li>• Reverse operation possible</li> <li>• (External) pneumatic spring return</li> </ul>
	VHEM-PC-M52-M	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Pneumatically piloted</li> <li>• Mechanical spring return</li> </ul>
	VHEM-PC-M52-A	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Pneumatically piloted</li> <li>• (Internal) pneumatic spring return</li> </ul>
	VHEM-PA-B52	5/2-way valve, bistable <ul style="list-style-type: none"> <li>• Detenting actuation</li> <li>• Reverse operation possible</li> <li>• Mechanical spring return</li> <li>• Suitable for vacuum</li> </ul>
Toggle lever valve		
	KH/O-3-PK-3	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Detenting actuation</li> <li>• Normally open/closed</li> <li>• Mechanical spring return</li> </ul>
Finger lever valve		
	TH/O-3-PK-3	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally open/closed</li> <li>• Mechanical spring return</li> </ul>
	TH-3-M5	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• Mechanical spring return</li> <li>• Suitable for vacuum</li> </ul>
	TH-3-1/4-B	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• Mechanical spring return</li> </ul>
	THO-3-1/4-B	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally open</li> <li>• Mechanical spring return</li> </ul>
	VHEM-L-M52-M TH-5-1/4-B	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Mechanical spring return</li> <li>• Suitable for vacuum</li> </ul>

# Valves VHEM, manually operated

Key features

Valve functions		
Circuit symbol	Type	Description
Hand lever valve		
<b>12</b> 	H-3-1/4-B	3/2-way valve, bistable <ul style="list-style-type: none"> <li>• Detenting actuation</li> </ul>
<b>14</b> 	H-5-1/4-B	5/2-way valve, bistable <ul style="list-style-type: none"> <li>• Detenting actuation</li> </ul>
Foot valve, foot valve with detent		
<b>12</b> 	F-3-1/4-B	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally closed</li> <li>• Mechanical spring return</li> </ul>
<b>10</b> 	F-3-1/4-B	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Normally open</li> <li>• Mechanical spring return</li> </ul>
<b>12</b> 	FP-3-1/4-B FPB-3-1/4	3/2-way valve, monostable <ul style="list-style-type: none"> <li>• Detenting actuation</li> <li>• Normally closed</li> <li>• Mechanical spring return</li> </ul>
<b>14</b> 	F-5-1/4-B	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Mechanical spring return</li> </ul>
<b>14</b> 	FP-5-1/4-B	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Detenting actuation</li> </ul>
<b>14</b> 	FPB-5-1/4	5/2-way valve, monostable <ul style="list-style-type: none"> <li>• Detenting actuation</li> <li>• Mechanical spring return</li> </ul>

**Note**

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

# Valves VHEM, manually operated

Type codes

VHEM - PTCZ - M32C - M - G14

Valve series	
VHEM	Manually operated valves

### Design

#### Actuation

L	Finger lever valve
P	Pushbutton valve

#### Design principle

-	Piston spool
T	Disk seat

#### Actuation

-	Directly actuated
C	Pneumatically piloted

#### Pilot air supply

-	Internal
Z	External

#### Switching function

-	Monostable valve
A	Active (spring, bistable valve)
X	Passive (air, bistable valve)

### Valve functions

M32C	3/2-way valve, monostable, normally closed
M32U	3/2-way valve, monostable, normally open
B32	3/2-way valve, bistable
M52	5/2-way valve, monostable
B52	5/2-way valve, bistable

### Reset method

-	None
A	Internal pneumatic spring
E	External pneumatic spring
M	Mechanical spring


### Pneumatic connection


G14	Thread G1/4
G18	Thread G1/8




# Pushbutton valves VHEM

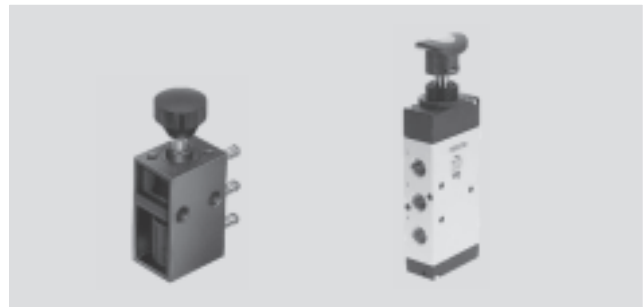
Technical data – Pushbutton valve, standard nominal flow rate 80 l/min

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

-  Pressure  
-0.95 ... 10 bar

-  Temperature range  
-10 ... +60 °C

Mounting either via through-hole or on front panel (in the case of F-3-M5 with flange eyes)



General technical data				
Type	K/O-3-PK-3		K-3-M5	F-3-M5
Standard nominal flow rate [l/min] 1 → 2	80			
Valve function	3/2-way valve			
Design	Disk seat valve, directly actuated			
Pneumatic connection	PK-3 <sup>1)</sup>		M5	M5
Nominal size [mm]	2.5		2.0	2.0
Weight [g]	20		28	165
Actuating force [N]	-		23.0	7.0
• at 6 bar				
• with normally closed position [N]	24.0		-	-
• with normally open position [N]	17.0		-	-

1) PK-3=Barbed fitting for plastic tubing with 3 mm nominal diameter

Materials				
Type	K/O-3-PK-3		K-3-M5	F-3-M5
Seal	NBR			-
Housing	Plastic		Die-cast zinc	Die-cast zinc

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

# Pushbutton valves VHEM

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

General technical data					
Type	VHEM-PTC ... G18		VHEM-P ... G18		VHEM-PC ... G18
Standard nominal flow rate [l/min] 1 → 2	500				
Valve function	3/2-way valve		5/2-way valve		
Reset method	Mechanical spring		Mechanical or pneumatic spring		
Design	Disk seat valve, piloted		Piston spool valve, directly actuated		Piston spool valve, piloted
Pneumatic connection	G $\frac{1}{8}$		G $\frac{1}{8}$		G $\frac{1}{8}$
Pilot air supply	Internal or external		–		Internal or external
Nominal size [mm]	4.0		4.0		4.0
Weight [g]	198		194		216
Actuating force [N]	28.0		26.0 <sup>1)</sup> 39.0		28.0

1) Valve 26.0 with mechanical spring reset method, value 39.0 with pneumatic spring reset method

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

Operating and environmental conditions					
Type	VHEM-PTC ... G18		VHEM-P ... G18		VHEM-PC ... G18
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]				
Note about the 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		–0.95 ... 10 <sup>1)</sup> 2.5 ... 10 <sup>2)</sup>		–0.95 ... 10 <sup>1)</sup> 2.5 ... 10 <sup>2)</sup>
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)

# Pushbutton valves VHEM

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

General technical data			
Type	VHEM-P ... G14		VHEM-PC ... G14
Standard nominal flow rate [l/min] 1 → 2	1,000		
Valve function	5/2-way valve		
Reset method	Mechanical or pneumatic spring		
Design	Piston spool valve, directly actuated		Piston spool valve, piloted
Pneumatic connection	G $\frac{3}{4}$		G $\frac{3}{4}$
Pilot air supply	–		Internal or external
Nominal size [mm]	6.0		6.0
Weight [g]	366		346
Actuating force [N]	39.0		29.5

1) Value 145.0 with normally open valve, value 105.0 with normally closed valve

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

Operating and environmental conditions			
Type	VHEM-P ... G14		VHEM-PC ... G14
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]		
Note about the operating/ pilot medium	Lubricated operation possible (required during subsequent operation)		
Operating pressure range [bar]	–0.95 ... 10 <sup>1</sup> )	2.5 ... 10 <sup>2</sup> )	–0.95 ... 10 <sup>1</sup> ) 2.5 ... 10 <sup>2</sup> )
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)

# Pushbutton valves VHEM

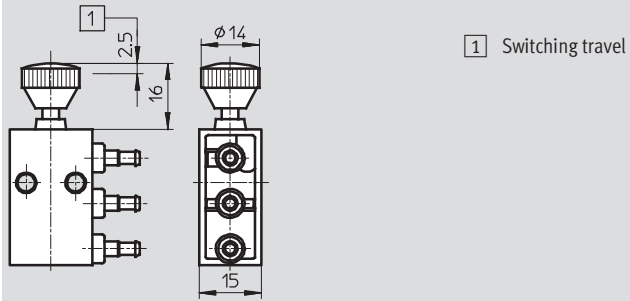
Technical data

FESTO

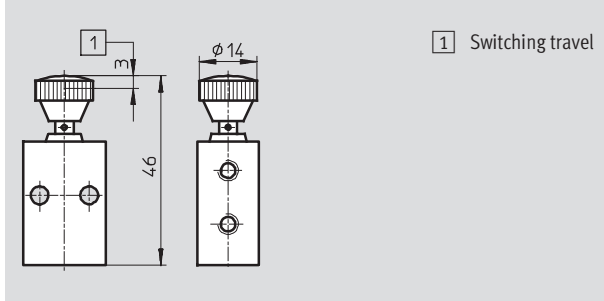
## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

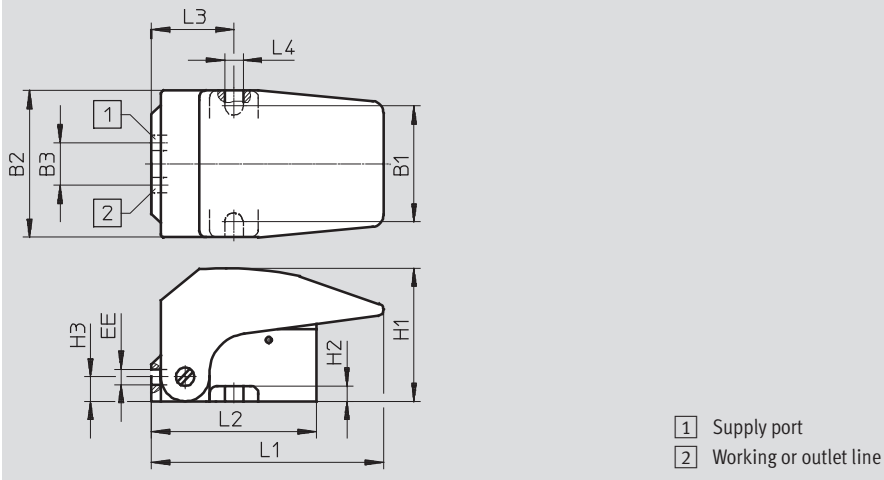
### Pushbutton valve K/O-3-PK-3



### Pushbutton valve K-3-M5

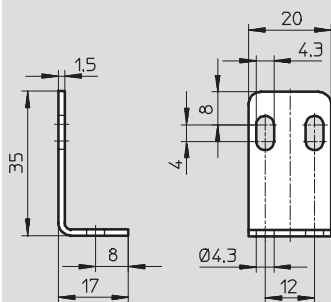


### Pushbutton valve F-3-M5



Pushbutton valve	B1	B2	B3	EE	H1	H2	H3	L1	L2	L3	L4
F-3-M5	38	48	15	M5	43	5	7.5	76.5	54	27	6.5

### Mounting bracket HV-M5



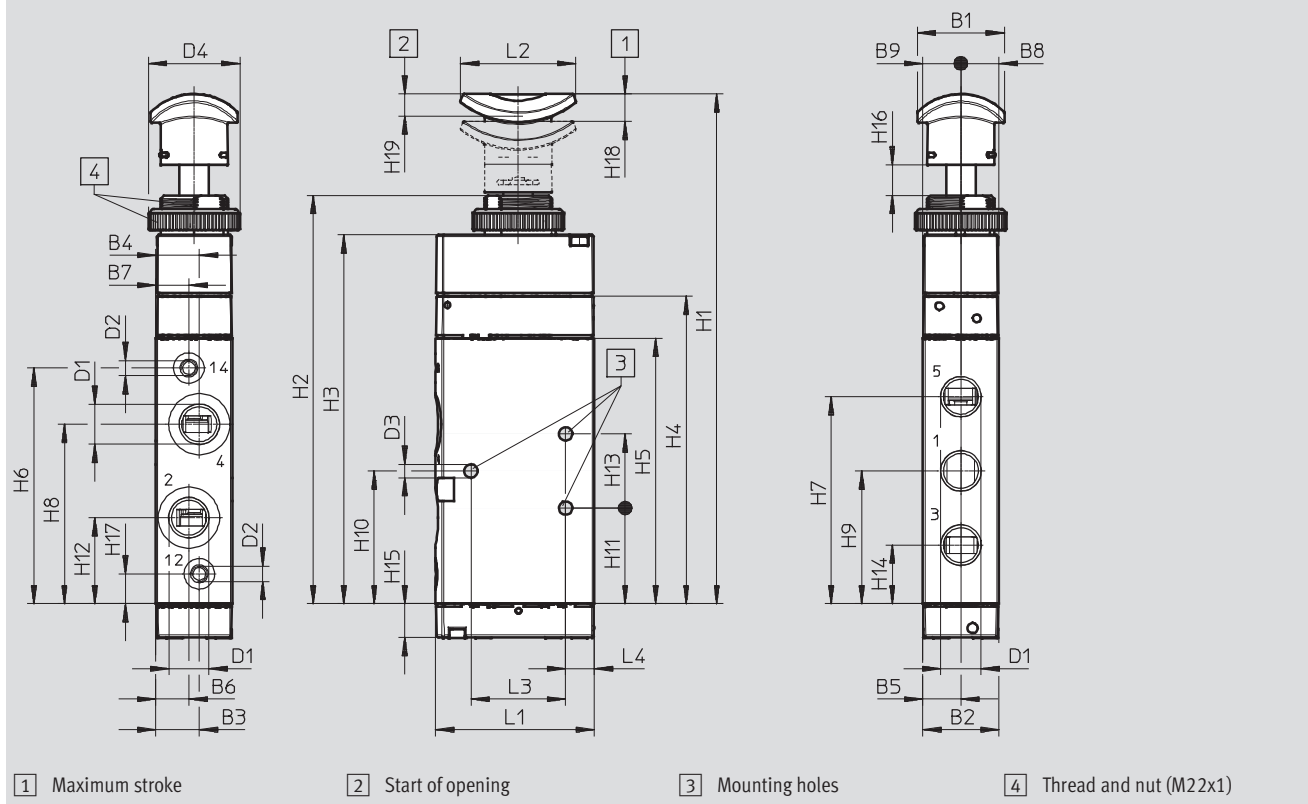
# Pushbutton valves VHEM

Technical data

**Dimensions**

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pushbutton valve VHEM-PC ... 52 ... G ...



Pushbutton valve	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3	D4	L1	L2	L3	L4
VHEM-PC...52...G14	28.5	25	14.2	14.2	12.5	10.8	10.8	9.5	9.5	G¼	M5	4.4	30	52.1	37.8	31	9.5
VHEM-PC...52...G18	28.5	20	11.5	11.5	10	8.5	8.5	7.5	7.5	G½	M5	4.4	30	41.7	37.8	22	10

Pushbutton valve	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
VHEM-PC...52...G14	167	133.8	120.8	100.8	87	77.2	67.8	58.8	43.5	43.5
VHEM-PC...52...G18	144	110.8	97.8	77.8	64	54.7	49.5	41.8	32	32

Pushbutton valve	H11	H12	H13	H14	H15	H16	H17	H18	H19
VHEM-PC...52...G14	31.4	28.2	24.3	19.2	11	10	9.8	9	7.2
VHEM-PC...52...G18	23	22.3	18	14.5	11.8	10	9.3	9	7.2

# Pushbutton valves VHEM

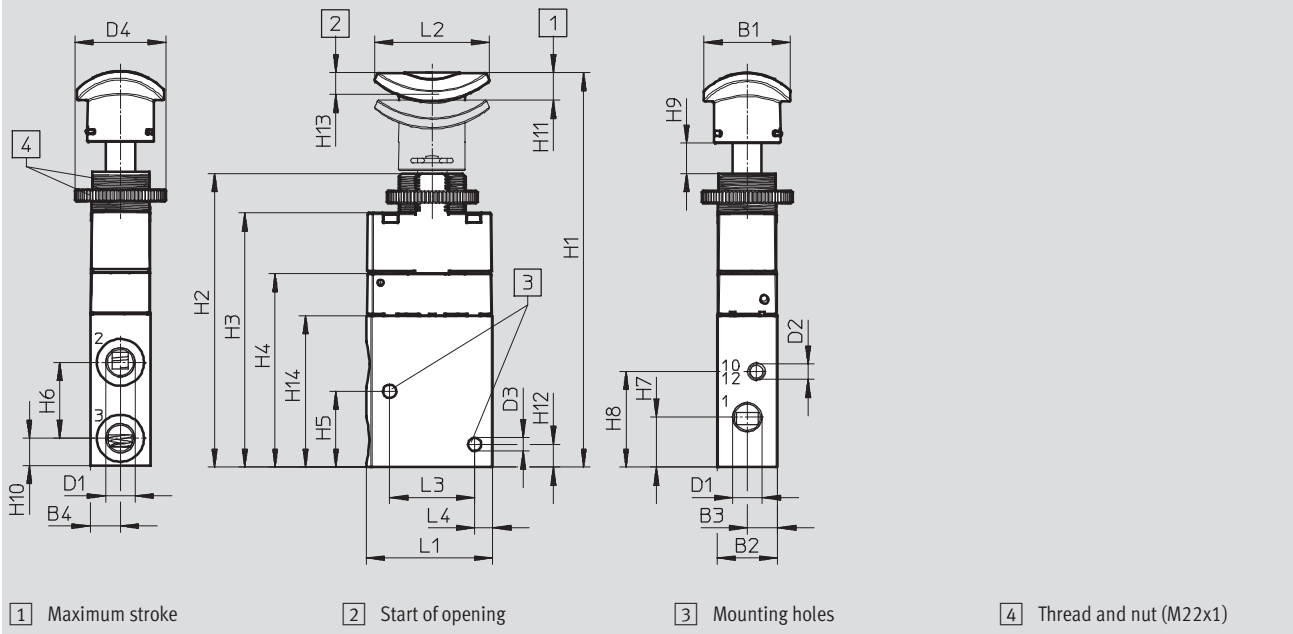
Technical data

FESTO

## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pushbutton valve VHEM-PTC ... 32 ... G ...



Pushbutton valve	B1	B2	B3	B4	D1	D2	D3	D4	L1	L2	L3	L4
VHEM-PTC...32...G18	28.5	20	10	10	G $\frac{1}{8}$	M5	4.4	30	41.7	37.8	28	6

Pushbutton valve	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14
VHEM-PTC...32...G18	130	96.8	83.8	63.8	26	25	16.5	31.5	10	9	9	8.5	7.2	50

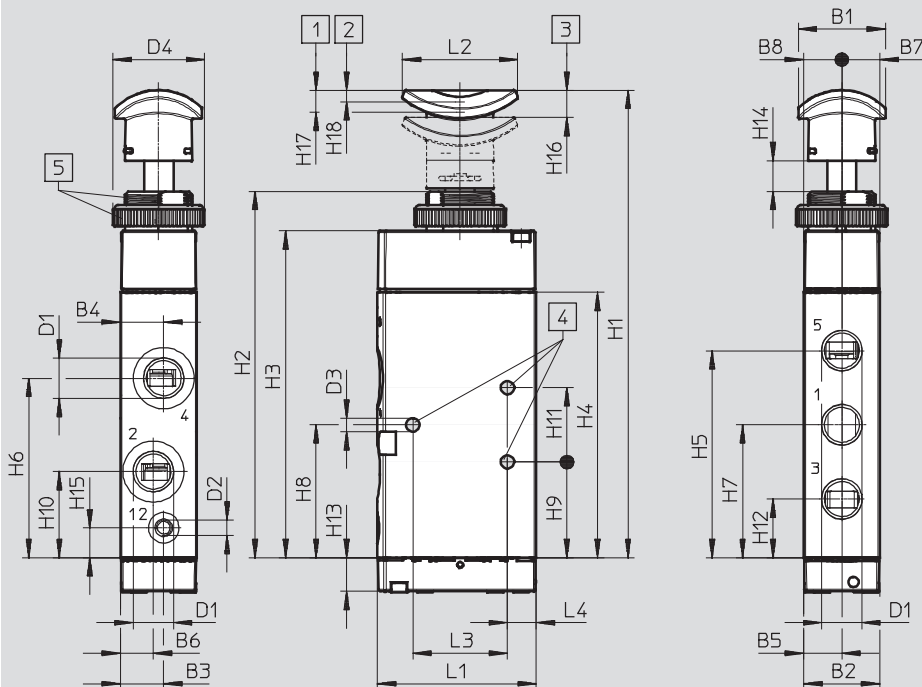
# Pushbutton valves VHEM

Technical data – Pushbutton valve

## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Pushbutton valve VHEM-P- ... 52 ... G ...



1 Start of opening

2 End of opening

3 Maximum stroke

4 Mounting holes




5 Thread and nut (M22x1)

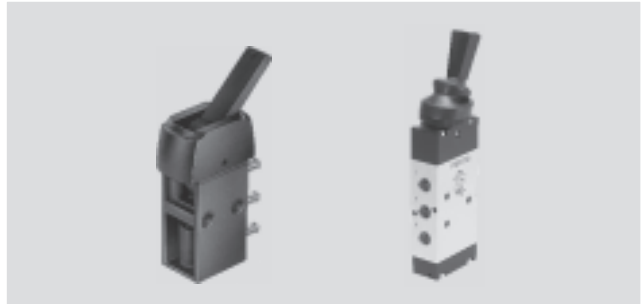
Pushbutton valve	B1	B2	B3	B4	B5	B6	B7	B8	D1	D2	D3	D4	L1	L2	L3	L4	H1	H2
VHEM-P...52...G14	28.5	25	14.2	14.2	12.5	10.8	9.5	9.5	G1/4	M5	4.4	30	52.1	37.8	31	9.5	153.2	120
VHEM-P...52...G18	28.5	20	11.5	11.5	10	8.5	7.5	7.5	G1/8	M5	4.4	30	41.7	37.8	25	7	130.2	97

Pushbutton valve	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18
VHEM-P...52...G14	107	87	67.8	58.8	43.5	43.5	31.4	28.2	24.3	19.2	11	10	9.8	9	5.3	3.8
VHEM-P...52...G18	84	64	49.5	41.8	32	32	23	22.3	18	14.5	11.8	10	9.3	7.5	4.5	3.2

# Toggle lever valves VHEM

Technical data – Toggle lever valve, 80 l/min standard nominal flow rate

-  Flow rate  
80 l/min
  -  Pressure  
0 ... 8 bar
  -  Temperature range  
-10 ... +60 °C
- Mounting either via through-hole or on front panel



General technical data		
Type	KH/O-3-PK-3	
Standard nominal flow rate [l/min]	80	
1 → 2		
Valve functions	3/2-way valve	
Design	Disk seat valve, directly actuated	
Pneumatic connection	PK-3 <sup>1)</sup>	
Nominal size [mm]	2.5	
Weight [g]	20	
Actuating force [N]	-	
• at 6 bar		
• with normally closed [N]	7.5	
• with normally open [N]	6.5	

1) PK-3=Barbed fitting for plastic tubing with 3 mm nominal diameter

Materials	
Seal	Nitrile rubber
Housing	Plastic

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note about the operating/pilot medium	Lubricated operation possible (required during subsequent operation)
Operating pressure range [bar]	0 ... 8
Ambient temperature [°C]	-10 ... +60



# Toggle lever valves VHEM

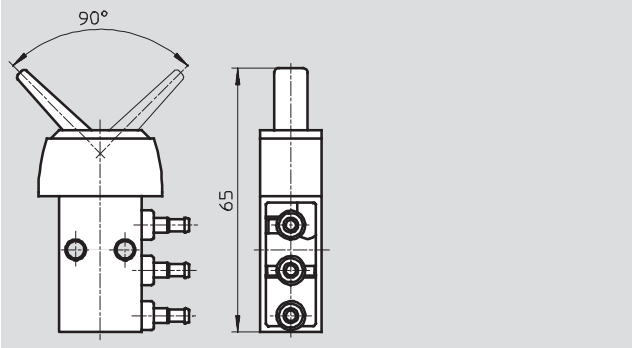
Technical data

FESTO

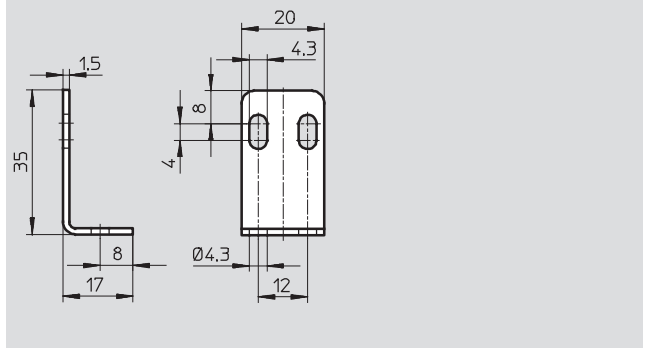
## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Toggle lever valve KH/O-3-PK-3




Mounting bracket HV-M5




# Finger lever valves VHEM


FESTO

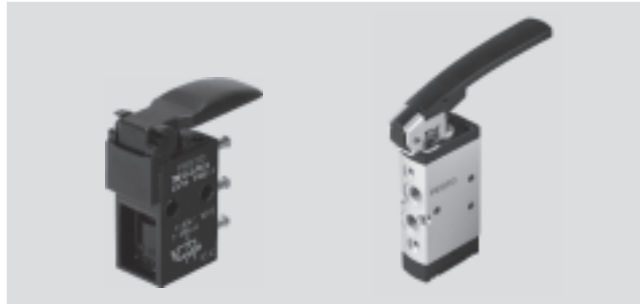
Technical data – Finger lever valve, standard nominal flow rate 80 ... 600 l/min

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

Mounting either via through-hole or  
on front panel

-  Pressure  
-0.95 ... 10 bar

-  Temperature range  
-10 ... +60 °C



General technical data					
Type	TH/O-3-PK-3	TH-3-M5	TH-5-1/4-B	TH-3-1/4-B	THO-3-1/4-B
Standard nominal flow rate [l/min] 1 → 2	80		550	600	
Valve function	3/2-way valve		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	PK-3 <sup>1)</sup>	M5	G1/4	G1/4	G1/4
Nominal size [mm]	2.5	2.0	7.0	7.0	7.0
Weight [g]	18	37	320	210	210
Actuating force [N]	-	8.0	24.0	6.7	17.0
• at 6 bar					
• with normally closed position	[N]	8.0	-	-	
• with normally open position	[N]	6.0	-	-	

1) PK-3=Barbed fitting for plastic tubing with 3 mm nominal diameter

Materials					
Type	TH/O-3-PK-3	TH-3-M5	TH-5-1/4-B	TH-3-1/4-B	THO-3-1/4-B
Seal	NBR				
Housing	Plastic	Die-cast zinc	Die-cast aluminium		

Operating and environmental conditions					
Type	TH/O-3-PK-3	TH-3-M5	TH-5-1/4-B	TH-3-1/4-B	THO-3-1/4-B
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]				
Note about the operating/ pilot medium	Lubricated operation possible (required during subsequent operation)				
Operating pressure range [bar]	0 ... 8	-0.95 ... 8	-0.95 ... 10		
Ambient temperature [°C]	-10 ... +60				

# Finger lever valves VHEM

Technical data – Finger lever valve, standard nominal flow rate 500 ... 1,000 l/min

General technical data						
Type	VHEM-LT	VHEM-L	VHEM-L ... M	VHEM-L	VHEM-L ... M	
Standard nominal flow rate [l/min] 1 → 2	500	1,000	500	1,000		
Valve function	3/2-way valve	3/2-way valve	5/2-way valve		5/2-way valve	
Reset method	Mechanical spring	Mechanical spring	Pneumatic spring	Mechanical spring	Pneumatic spring	Mechanical spring
Design	Disk seat valve, directly actuated	Disk seat valve, directly actuated	Piston spool valve, directly actuated	Piston spool valve, directly actuated	Piston spool valve, directly actuated	Piston spool valve, directly actuated
Pneumatic connection	G <sup>1</sup> / <sub>8</sub>	G <sup>1</sup> / <sub>4</sub>	G <sup>1</sup> / <sub>8</sub>	G <sup>1</sup> / <sub>8</sub>	G <sup>1</sup> / <sub>4</sub>	G <sup>1</sup> / <sub>4</sub>
Pilot air supply	–	–	–	–	–	–
Nominal size [mm]	4.0	6.0	4.0	4.0	6.0	6.0
Weight [g]	148	216	164	164	336	336
Actuating force [N]	23.5 <sup>1)</sup> 34.7	31.0 <sup>2)</sup> 47.4	10.2	6.8	23.8	12.8

- 1) Value 23.5 with normally closed valve, value 34.7 with normally open valve  
 2) Value 31.0 with normally closed valve, value 47.4 with normally open valve

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

Operating and environmental conditions					
Type	VHEM-LT	VHEM-L	VHEM-L ... M	VHEM-L	VHEM-L ... M
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]				
Note about the operating/pilot medium	Lubricated operation possible (required during subsequent operation)				
Operating pressure range	[bar]	-0.95 ... 10	-0.95 ... 10 <sup>1)</sup>	-0.95 ... 10 <sup>1)</sup>	-0.95 ... 10 <sup>1)</sup>
	[bar]		2.5 ... 10 <sup>2)</sup>		2.5 ... 10 <sup>2)</sup>
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)

# Finger lever valves VHEM

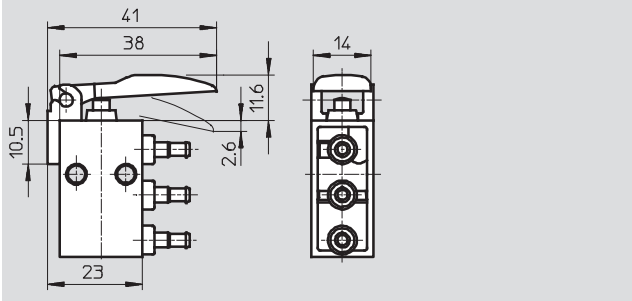
Technical data

FESTO

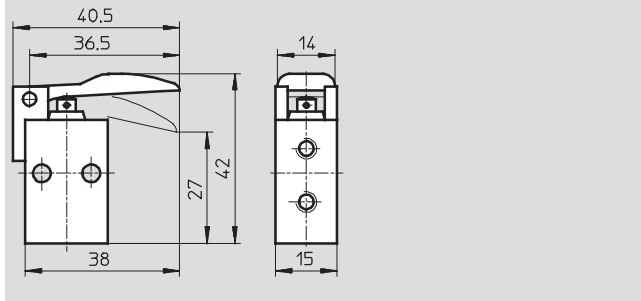
## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

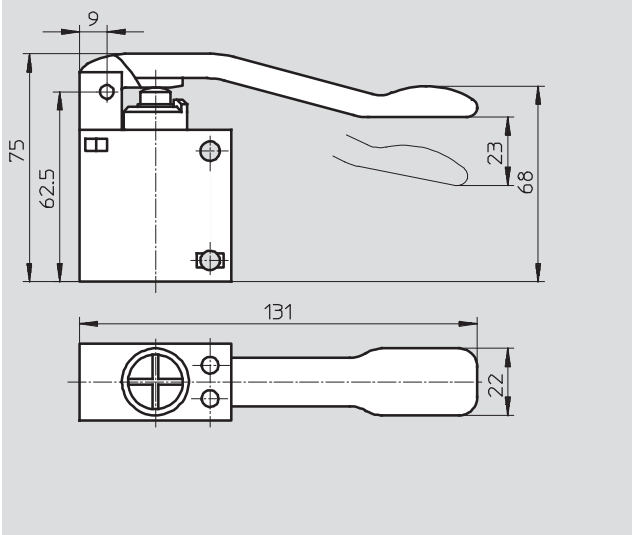
Finger lever valve TH/0-3-PK-3



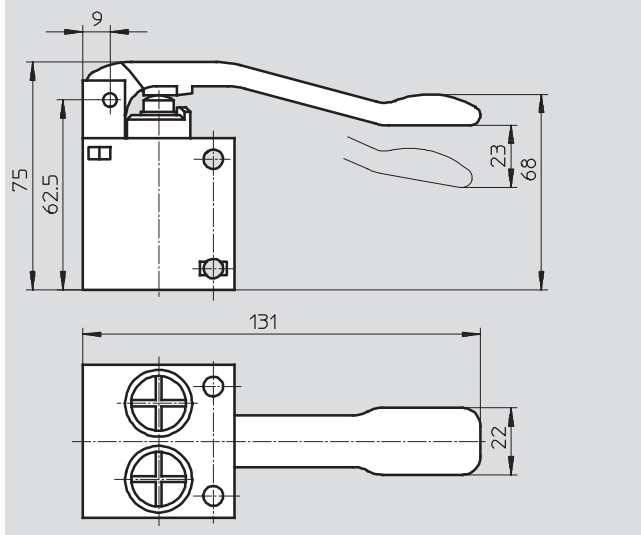
Finger lever valve TH-3-M5



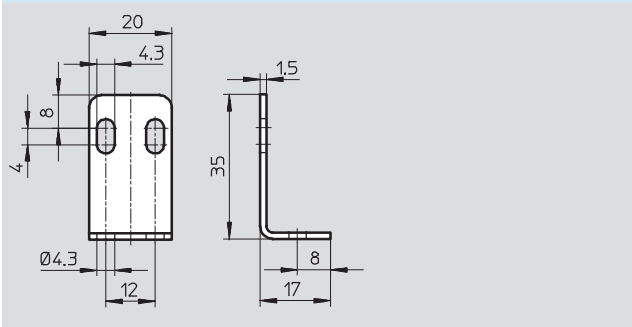
Finger lever valve TH-3-1/4-B, THO-3-1/4-B



Finger lever valve TH-5-1/4-B



Mounting bracket HV-M5



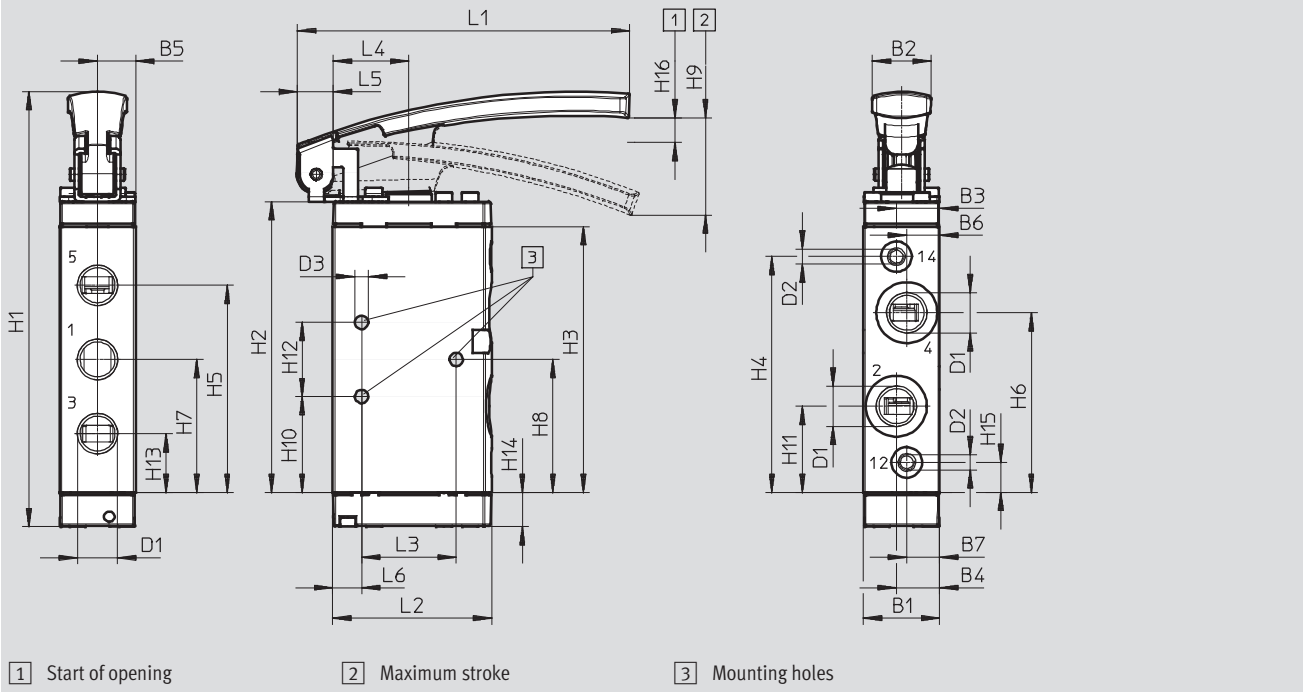
# Finger lever valves VHEM

Technical data

**Dimensions**

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Finger lever valve VHEM-L- ... 52 ... G14



Finger lever valve	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	L1	L2	L3	L4	L5	L6
VHEM-L...52...G14	25	19.3	14.2	14.2	12.5	10.8	10.8	G1/4	M5	4.4	109.1	52.1	31	25	11.7	9.5

Finger lever valve	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16
VHEM-L...52...G14	142.5	95.3	87	77.2	67.8	58.8	43.5	43.5	31.9	31.4	28.2	24.3	19.2	11.3	9.8	8.1

# Finger lever valves VHEM

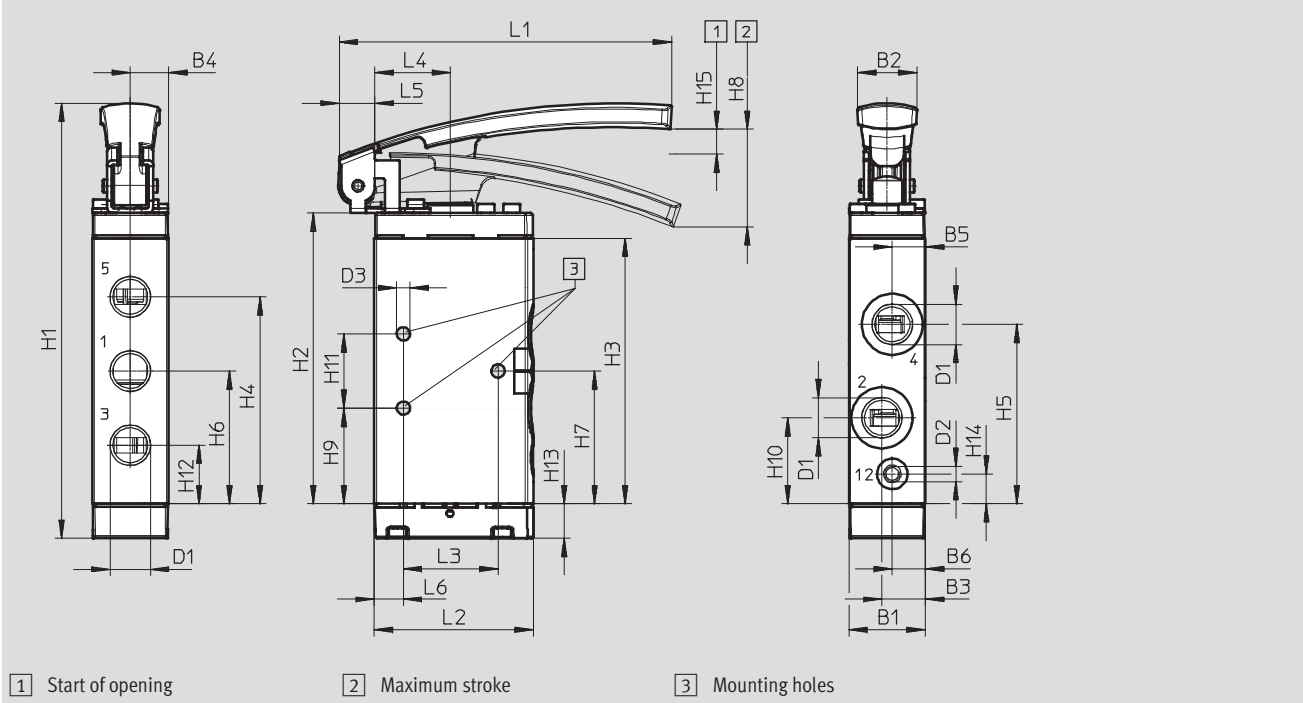
Technical data

FESTO

## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Finger lever valve VHEM-L- ... 52 ... G18



Finger lever valve	B1	B2	B3	B4	B5	B6	D1	D2	D3	L1	L2	L3	L4	L5	L6
VHEM-L...52...G18	20	19.3	11.5	8.5	8.5	8.5	G $\frac{1}{8}$	M5	4.4	108.6	41.7	25	20	10.5	7

Finger lever valve	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15
VHEM-L...52...G18	120.3	82.9	64	49.5	41.7	32	32	35.9	23	22.2	18	14.5	11.8	9.3	9.1

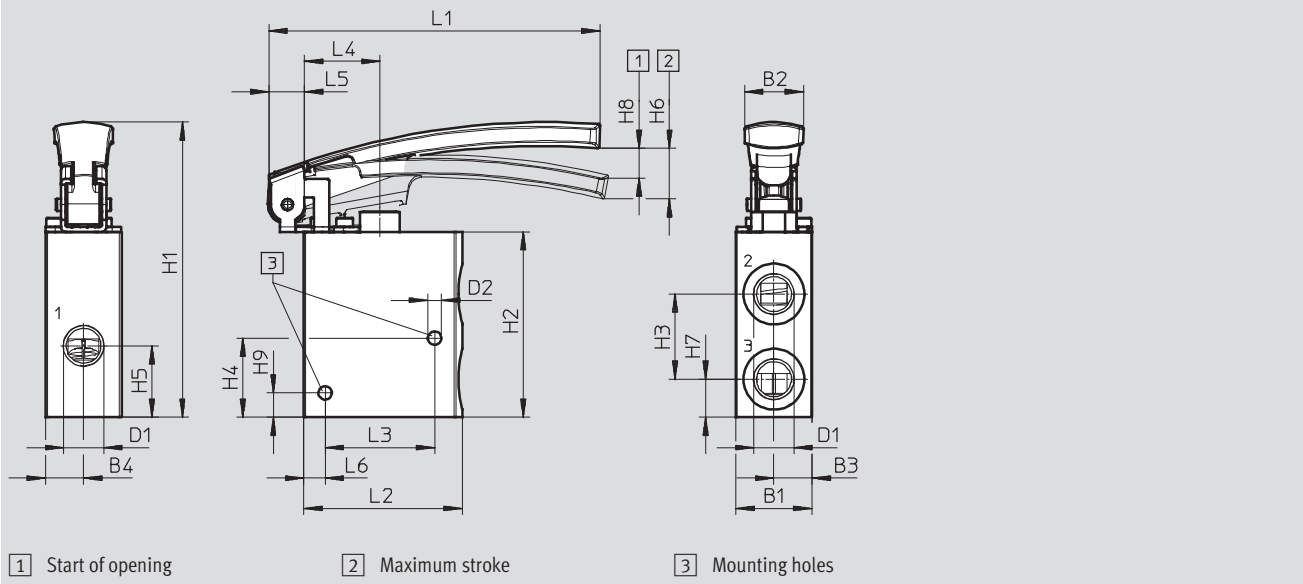
# Finger lever valves VHEM

Technical data

## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Finger lever valve VHEM-LT... 32




Finger lever valve	B1	B2	B3	B4	D1	D2	L1	L2	L3	L4	L5	L6
VHEM-LT...32...G14	25	19.3	12.5	12.5	G $\frac{1}{4}$	4.4	109.1	52.1	36	25	11.7	7
VHEM-LT...32...G18	20	19.3	10	10	G $\frac{1}{8}$	4.4	108.5	41.7	28	20	10.4	6


Finger lever valve	H1	H2	H3	H4	H5	H6	H7	H8	H9
VHEM-LT...32...G14	97	61	28	26	23.5	16.6	12.5	9.8	8
VHEM-LT...32...G18	88.4	51	25	26	17.5	15.1	10	7.65	8.5


# Hand lever valves VHEM

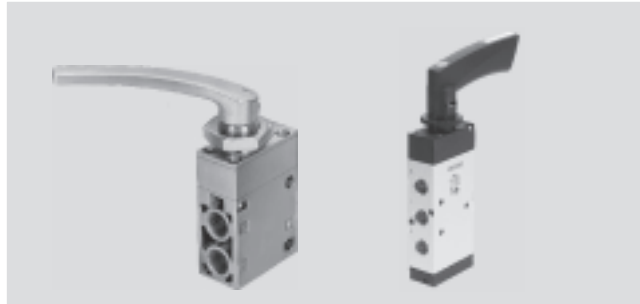
Technical data – Hand lever valve, standard nominal flow rate 550 ... 600 l/min

-  - Flow rate  
550 ... 600 l/min

Mounting either via through-hole or on front panel

-  - Pressure  
-0.95 ... 10 bar

-  - Temperature range  
-10 ... +60 °C



General technical data		
Type	H-5-1/4-B	H-3-1/4-B
Standard nominal flow rate [l/min] 1 → 2	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	G1/4	G1/4
Nominal size [mm]	7.0	7.0
Weight [g]	510	320
Actuating force [N]	22.0	5.5

Materials	
Seal	NBR
Housing	Die-cast aluminium

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



# Hand lever valves VHEM

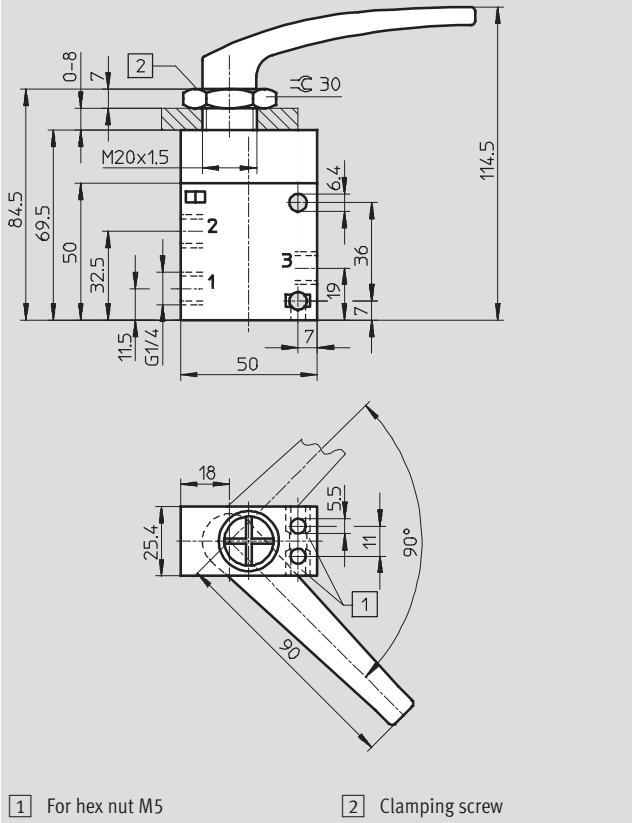
Technical data

FESTO

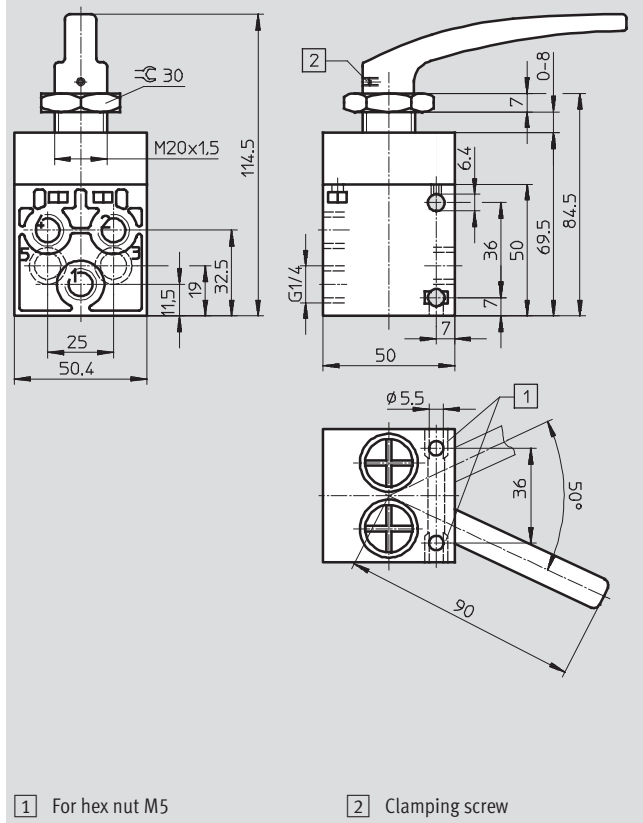
## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

### Hand lever valve H-3-1/4-B




### Hand lever valve H-5-1/4-B





# Foot valves, foot valves with detent VHEM

Technical data – Foot valve, standard nominal flow rate 550 ... 600 l/min

-  Flow rate  
550 ... 600 l/min

Mounted via flange eyes on the housing

-  Pressure  
-0.95 ... 10 bar

-  Temperature range  
-10 ... +60 °C



General technical data							
Type	FPB-3-1/4	F-5-1/4-B	FP-5-1/4-B	FPB-5-1/4	F-3-1/4-B	FO-3-1/4-B	FP-3-1/4-B
Standard nominal flow rate [l/min] 1 → 2	550				600		
Valve function	3/2-way valve	5/2-way valve			3/2-way valve		
Design	Disk seat valve, directly actuated	Disk seat valve, directly actuated	Disk seat valve, directly actuated	Disk seat valve, directly actuated	Disk seat valve, directly actuated	Disk seat valve, directly actuated	Disk seat valve, directly actuated
Pneumatic connection	G1/4	G1/4	G1/4	G1/4	G1/4	G1/4	G1/4
Nominal size [mm]	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Weight [g]	610	705	1,845	725	595	595	1,760
Actuating force [N]	34.0	52.0	69.0	66.0	26.0	37.0	45.0

Materials	
Seal	NBR
Housing	Die-cast aluminium

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Operating pressure range [bar]	-0.95 ... 10
Ambient temperature [°C]	-10 ... +60

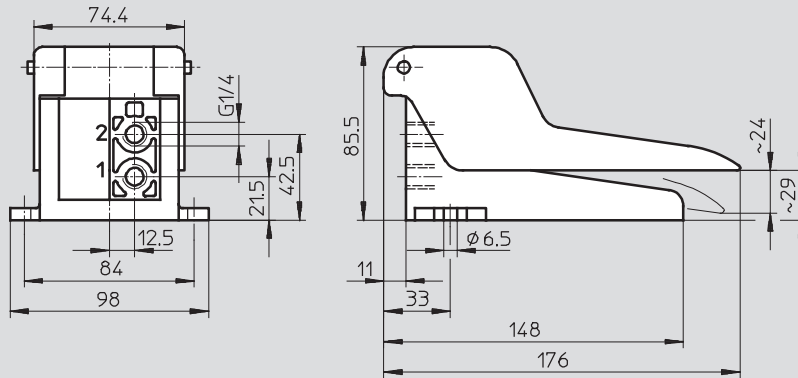
# Foot valves, foot valves with detent VHEM

Technical data

## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

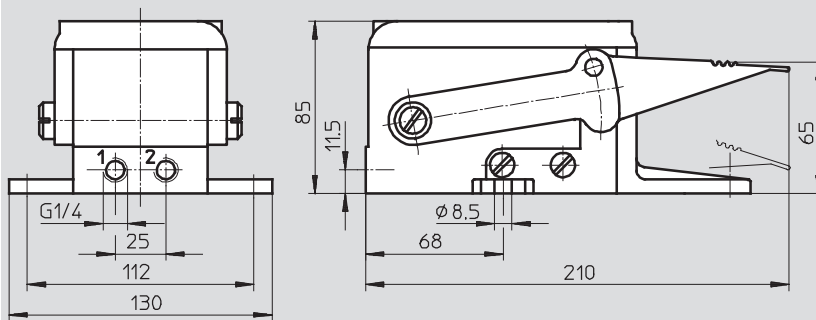
Foot valve F, foot valve with detent FPB



1 Supply port

2 Working line

Foot valve with detent FP



1 Supply port

2 Working line

### Note

Foot valves with detent are actuated by means of a foot lever with mechanical detent.

The valve engages when it is first actuated, and when the foot lever is actuated again, the valve returns to its normal position.

# Foot valves, foot valves with detent VHEM

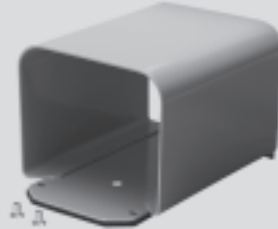
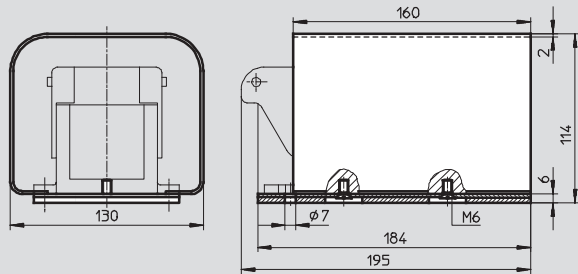
Accessories

FESTO

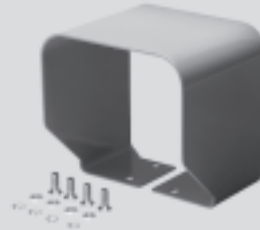
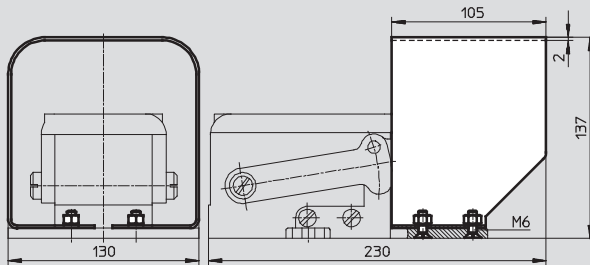
## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Safety guard FH, for foot valve F and foot valve with detent FPB



Safety guard FPH-121, for foot valve with detent FP



# Valves VHEM, manually operated

Ordering data

Ordering data								
Nominal flow rate	Valve function	Description	Mechanical reset	Normal position	Pilot air <sup>1)</sup>	Part No.	Type	
<b>Pushbutton valve</b>								
80 l/min	3/2-way valve, monostable	With PK-3, tubing connector	■	Open/closed	–	13793	K/O-3-PK3	
		With M5 threaded connection	■	Closed	–	3660	K-3-M5	
					–	4452	F-3-M5	
500 l/min	3/2-way valve, monostable	–	■	Closed	Internal	558405	VHEM-PTC-M32C-M-G18	
					External	558426	VHEM-PTCZ-M32C-M-G18	
				Open	Internal	558425	VHEM-PTC-M32U-M-G18	
					External	558411	VHEM-PTCZ-M32U-M-G18	
	5/2-way valve, monostable	Suitable for vacuum, reversible	■	–	–	–	558414	VHEM-P-M52-M-G18
				–	–	–	558419	VHEM-P-M52-E-G18
				–	–	–	558418	VHEM-P-M52-A-G18
	5/2-way valve, bistable	Suitable for vacuum, reversible	■	–	–	–	558420	VHEM-PA-B52-G18
				–	–	–	–	–
1000 l/min	5/2-way valve, monostable	Suitable for vacuum, reversible	■	–	–	558421	VHEM-P-M52-M-G14	
		Suitable for vacuum, reversible	–	–	–	558424	VHEM-P-M52-E-G14	
		–	–	–	–	558423	VHEM-P-M52-A-G14	
	5/2-way valve, bistable	Suitable for vacuum	■	–	–	558422	VHEM-PA-B52-G14	
<b>Toggle lever valve</b>								
80 l/min	3/2-way valve, monostable	With PK-3, tubing connector	■	Open/closed	–	33003	KH/O-3-PK3	

1) With piloted valves

# Valves VHEM, manually operated

Ordering data





Ordering data							
Nominal flow rate	Valve function	Description	Mechanical reset	Normal position	Pilot air <sup>1)</sup>	Part No.	Type
<b>Finger lever valve</b>							
80 l/min	3/2-way valve, monostable	With PK-3, tubing connector	■	Open/closed	–	13794	TH/O-3-PK3
			■	Closed	–	6758	TH-3-M5
500 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Closed	–	563777	VHEM-LT-M32C-M-G18
				Open	–	563781	VHEM-LT-M32U-M-G18
	5/2-way valve, monostable	Suitable for vacuum	■	–	–	561323	VHEM-L-M52-M-G18
				–	–	561324	VHEM-L-M52-A-G18
	Reversible	–	–	–	561325	VHEM-L-M52-E-G18	
550 l/min	5/2-way valve, monostable	–	■	Closed	–	8994	TH-5-¼-B
600 l/min	3/2-way valve, monostable	–	■	Closed	–	8983	TH-3-¼-B
		–	■	Open	–	8990	THO-3-¼-B
1000 l/min	3/2-way valve, monostable	Suitable for vacuum	■	Closed	–	561326	VHEM-LT-M32C-M-G14
				Open	–	563977	VHEM-LT-M32U-M-G14
	5/2-way valve, monostable	Suitable for vacuum	■	–	–	563978	VHEM-L-M52-M-G14
				–	–	563979	VHEM-L-M52-A-G14
	Reversible	–	–	–	563980	VHEM-L-M52-E-G14	
<b>Hand lever valve</b>							
600 l/min	3/2-way valve, bistable	–	–	–	–	8987	H-3-¼-B
	5/2-way valve, bistable	–	–	–	–	8995	H-5-¼-B
<b>Foot valve</b>							
550 l/min	3/2-way valve, bistable	Suitable for vacuum	■	–	–	526984	FPB-3-¼
		Suitable for vacuum	■	–	–	526985	FPB-5-¼
	5/2-way valve, bistable	Suitable for vacuum	■	–	–	8997	FP-5-¼-B
		Suitable for vacuum	■	Open	–	8992	F-5-¼-B
600 l/min	3/2-way valve, bistable	Suitable for vacuum	■	–	–	8986	FP-3-¼-B
		Suitable for vacuum	■	Closed	–	8984	F-3-¼-B
	3/2-way valve, monostable	Suitable for vacuum	■	Open	–	8988	FO-3-¼-B

1) With piloted valves

# Valves VHEM, manually operated

Accessories

**FESTO**

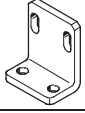
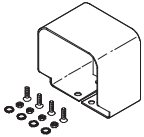




Ordering data					
	Description		Part No.	Type	PU <sup>1)</sup>
<b>Push-in fitting with external hex</b>					
	Connecting thread M5 for tubing O.D.	3 mm	153302	QSM-M5-3	10
		4 mm	153304	QSM-M5-4	10
		6 mm	153306	QSM-M5-6	10
	Connecting thread G $\frac{1}{8}$ for tubing O.D.	4 mm	186095	QS-G $\frac{1}{8}$ -4	10
			186264	QSM-G $\frac{1}{8}$ -4	10
		6 mm	186096	QS-G $\frac{1}{8}$ -6	10
			186265	QSM-G $\frac{1}{8}$ -6	10
	Connecting thread G $\frac{1}{4}$ for tubing O.D.	6 mm	186097	QS-G $\frac{1}{4}$ -6	10
		8 mm	186099	QS-G $\frac{1}{4}$ -8	10
		10 mm	186101	QS-G $\frac{1}{4}$ -10	10
<b>Push-in fitting with internal hex</b>					
	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 G $\frac{1}{8}$ for tubing O.D.	4 mm	186106	QS-G $\frac{1}{8}$ -4-I	10
			186266	QSM-G $\frac{1}{8}$ -4-I	10
		6 mm	186107	QS-G $\frac{1}{8}$ -6-I	10
			186267	QSM-G $\frac{1}{8}$ -6-I	10
	Connecting thread G $\frac{1}{4}$ for tubing O.D.	8 mm	186109	QS-G $\frac{1}{8}$ -8-I	10
		6 mm	186108	QS-G $\frac{1}{4}$ -6-I	10
		8 mm	186110	QS-G $\frac{1}{4}$ -8-I	10
10 mm	186112	QS-G $\frac{1}{4}$ -10-I	10		
<b>Tubing</b>					
	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	
<b>Silencer</b>					
	Connecting thread	G $\frac{1}{8}$	2307	U- $\frac{1}{8}$	1
			161419	UC- $\frac{1}{8}$	1
		G $\frac{1}{4}$	2316	U- $\frac{1}{4}$	1
			6842	U- $\frac{1}{4}$ -B	1
			165004	UC- $\frac{1}{4}$	1

1) Packaging unit

# Valves VHEM, manually operated

Accessories

**FESTO**

Ordering data					
	Description	Part No.	Type	PU <sup>1)</sup>	
<b>Mounting bracket</b>					
	For valves with push-in connector and threaded connection	11 g	<b>9634</b>	<b>HV-M5</b>	<b>1</b>
		32 g	<b>9635</b>	<b>HV-1/8</b>	<b>1</b>
<b>Safety guard</b>					
	For foot valve F and foot valve with detent FPB	1,240 g	<b>4500</b>	<b>FH</b>	<b>1</b>
	For foot valve FP	670 g	<b>2071</b>	<b>FPH-121</b>	<b>1</b>
<b>Actuator attachment</b>					
	For stem actuated valve V/O-3-1/8, roller lever		<b>4936</b>	<b>AR-01</b>	<b>1</b>
	For stem actuated valve V/O-3-1/8, roller lever with idle return		<b>4941</b>	<b>AL-01</b>	<b>1</b>
	For roller lever valve R-3-M5, roller lever with mounting screws		<b>6512</b>	<b>AR-05</b>	<b>1</b>
	For roller lever valve with idle return L-3-M5, roller lever with idle return with mounting screws		<b>6513</b>	<b>AL-05</b>	<b>1</b>

1) Packaging unit



# Product Range and Company Overview

## A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**  
Complete custom engineered solutions



**Custom Control Cabinets**  
Comprehensive engineering support and on-site services



**Complete Systems**  
Shipment, stocking and storage services

## The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



**Electromechanical**  
Electromechanical actuators, motors, controllers & drives



**Pneumatics**  
Pneumatic linear and rotary actuators, valves, and air supply



**PLCs and I/O Devices**  
PLC's, operator interfaces, sensors and I/O devices

## Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

## Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmentally friendly printing plant.

# Festo North America

## Festo Regional Contact Center

5300 Explorer Drive  
Mississauga, Ontario L4W 5G4  
Canada

### USA Customers:

For ordering assistance,

**Call:** 1.800.99.FESTO (1.800.993.3786)

**Fax:** 1.800.96.FESTO (1.800.963.3786)

**Email:** [customer.service@us.festo.com](mailto:customer.service@us.festo.com)

For technical support,

**Call:** 1.866.GO.FESTO (1.866.463.3786)

**Fax:** 1.800.96.FESTO (1.800.963.3786)

**Email:** [product.support@us.festo.com](mailto:product.support@us.festo.com)

### Canadian Customers:

**Call:** 1.877.GO.FESTO (1.877.463.3786)

**Fax:** 1.877.FX.FESTO (1.877.393.3786)

**Email:** [festo.canada@ca.festo.com](mailto:festo.canada@ca.festo.com)

---

## USA Headquarters

Festo Corporation  
395 Moreland Road  
P.O. Box 18023  
Hauppauge, NY 11788, USA  
[www.festo.com/us](http://www.festo.com/us)

---

## USA Sales Offices

### Appleton

North 922 Tower View Drive, Suite N  
Greenville, WI 54942, USA

### Boston

120 Presidential Way, Suite 330  
Woburn, MA 01801, USA

### Chicago

1441 East Business Center Drive  
Mt. Prospect, IL 60056, USA

### Dallas

1825 Lakeway Drive, Suite 600  
Lewisville, TX 75057, USA

### Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320  
Auburn Hills, MI 48326, USA

### New York

395 Moreland Road  
Hauppauge, NY 11788, USA

### Silicon Valley

4935 Southfront Road, Suite F  
Livermore, CA 94550, USA

## United States



**USA Headquarters, East:** Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: [info@festo-usa.com](mailto:info@festo-usa.com)

[www.festo.com/us](http://www.festo.com/us)

## Canada



**Headquarters:** Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: [festo.canada@ca.festo.com](mailto:festo.canada@ca.festo.com)

[www.festo.ca](http://www.festo.ca)

## Mexico



**Headquarters:** Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,  
54020 Tlalneantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: [festo.mexico@mx.festo.com](mailto:festo.mexico@mx.festo.com)

[www.festo.com/mx](http://www.festo.com/mx)

---

## Central USA

Festo Corporation  
1441 East Business  
Center Drive  
Mt. Prospect, IL 60056, USA  
Phone: 1.847.759.2600  
Fax: 1.847.768.9480



## Western USA

Festo Corporation  
4935 Southfront Road,  
Suite F  
Livermore, CA 94550, USA  
Phone: 1.925.371.1099  
Fax: 1.925.245.1286



---

## Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark  
Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia  
Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore  
Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela

[www.festo.com](http://www.festo.com)