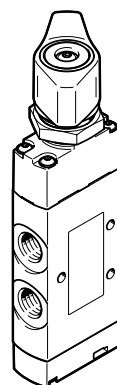
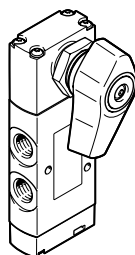
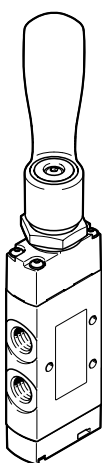
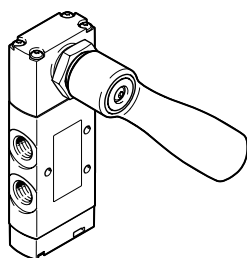
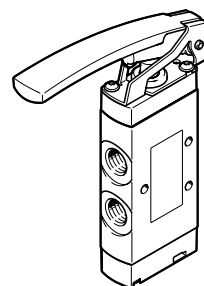
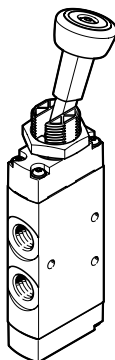
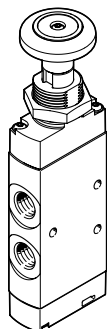


Manually actuated valves VHEF, NPT

FESTO



Key features



Innovative

- Small and compact for a wide range of pneumatic applications
- Numerous selectable valve functions: 3/2-way and 5/2-way functions
- With flow rates of up to 1200 l/min, the valves VHEF offer outstanding pneumatic performance for a wide range of applications
- Light weight
- Minimal actuating forces

Versatile

- Flexibility of the pneumatic working ports provides a practical solution to different requirements
- The 3/2-way valve can be used as normally closed or normally open
- Round silencer or ducted exhaust air
- Suitable for vacuum
- Reverse operation possible
- Pressure range from vacuum to 10 bar possible
- Design:
 - Pushbutton valve
 - Toggle lever valve
 - Finger lever valve
 - Hand lever valve, sideways
 - Hand lever valve
 - Selector valve, sideways
 - Selector valve

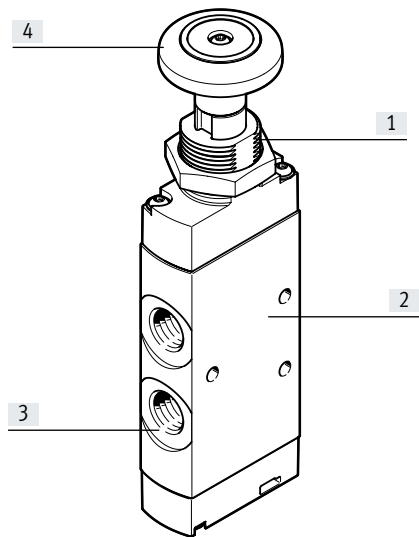
Reliable

- Durable with tried-and-tested piston spool valves and poppet valves
- Robust design: basic valve made from metal with plastic cover

Easy to install

- Mounted using mounting holes
- Front-panel mounting possible for nearly all valves (not possible for finger lever valve)

Key features



- [1] Front-panel mounting possible
- [2] Quick to mount: via retaining bracket or screwed in directly via through-hole
- [3] Practical connection with threaded connection or connecting pieces
- [4] Manually operated

Equipment options

Common features

- Mechanical spring
- Vacuum operation possible
- Reversible
- Directly actuated
- Ducted exhaust air

Differences

3/2-way valve monostable (M32)	5/2-way valve monostable (M52)	5/3-way valve detenting (B53C)	5/3-way valve non-detenting (P53C)
• Normally open/closed (NO, NC) • Non-detenting (monostable)	• Resetting • Non-detenting (monostable)	• Mid-position closed	• Mid-position closed
bistable (B32)	bistable (B32)	detenting (B53E)	non-detenting (P53E)
• Detenting (bistable)	• Detenting (bistable)	• Mid-position exhausted	• Mid-position exhausted

Valve selection

→ Internet: www.festo.com

You can order mechanically and manually operated directional control valves using the order code:

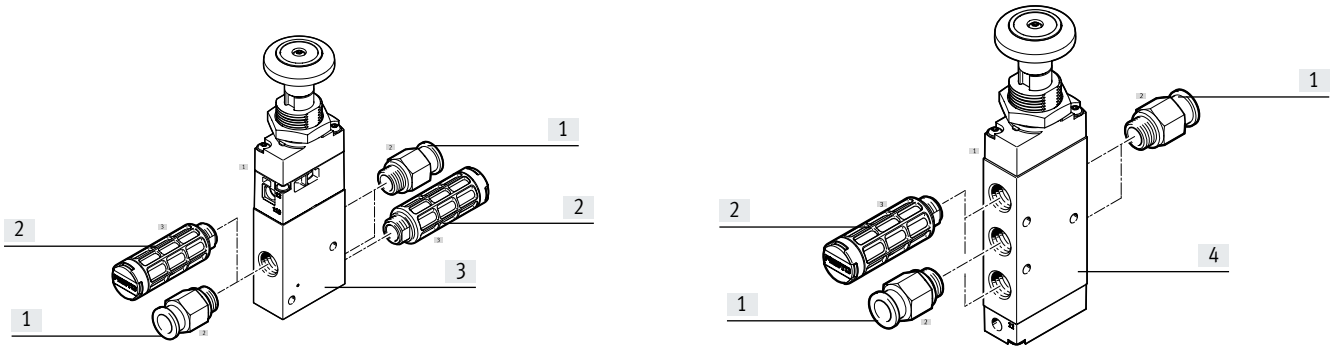
Ordering system for valves

→ Internet: vhf

Peripherals overview

Pushbutton valve, manually operated

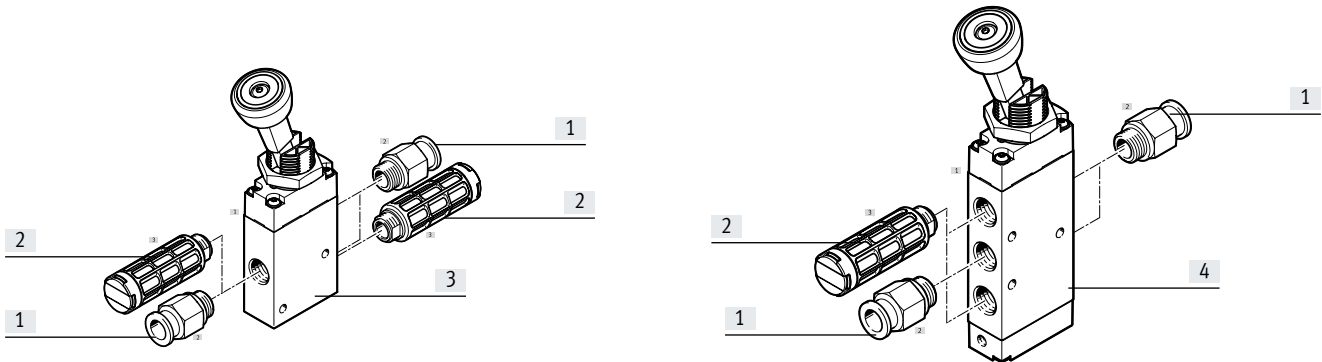
3/2-way valve5/2-way valve



		Brief description	→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
[2]	Silencers	For exhaust ports (3, 5)	52
[3]	3/2-way valve	VHEF-PTC-M32... , VHEF-PTCZ-M32...	12
[4]	5/2-way valve	VHEF-P-M52...	13

Toggle lever valve, manually operated

3/2-way valve5/2-way valve



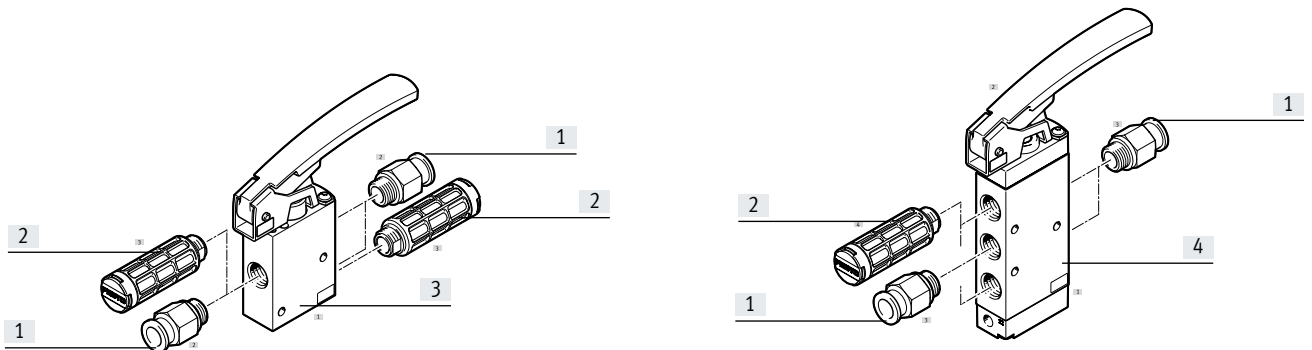
		Brief description	→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
[2]	Silencers	For exhaust ports (3, 5)	52
[3]	3/2-way valve	VHEF-VT-M32... , VHEF-VT-B32...	19
[4]	5/2-way valve	VHEF-V-M52... , VHEF-V-B52...	20

Peripherals overview

Finger lever valve, manually operated

3/2-way valve

5/2-way valve

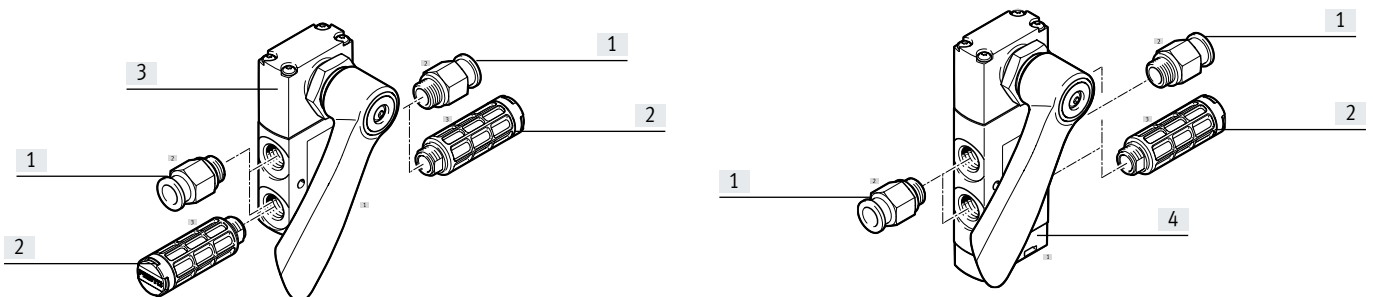


		Brief description	→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
[2]	Silencers	For exhaust ports (3, 5)	52
[3]	3/2-way valve	VHEF-LT-M32...	25
[4]	5/2-way valve	VHEF-L-M52...	26

Hand lever valve, sideways, manually operated

3/2-way valve

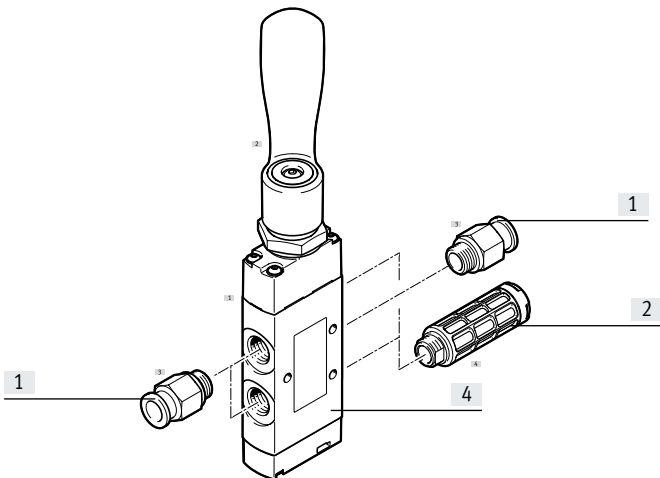
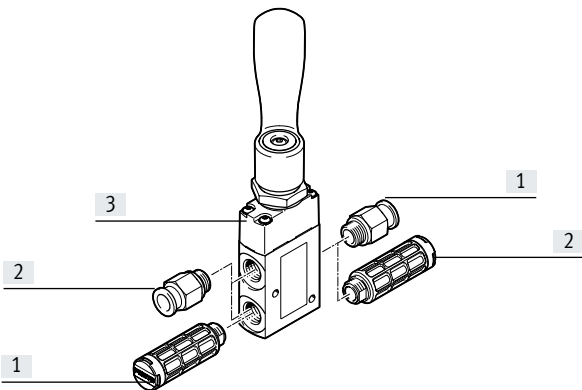
5/2-way valve, 5/3-way valve



		Brief description	→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
[2]	Silencers	For exhaust ports (3, 5)	52
[3]	3/2-way valve	VHEF-HST...32...	30
[4]	5/2- or 5/3-way valve	VHEF-HS...52..., VHEF-HS...53...	31

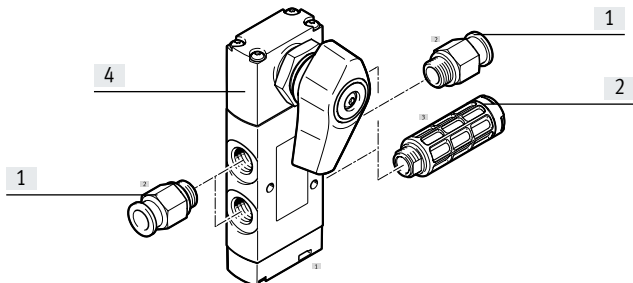
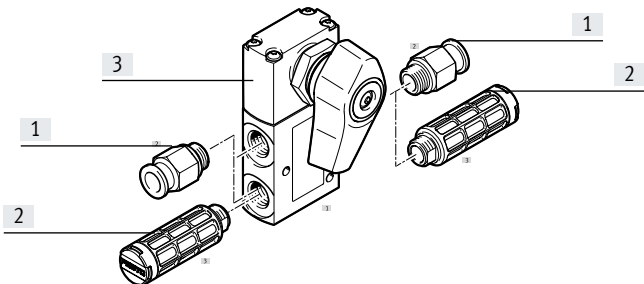
Peripherals overview

Hand lever valve, manually operated	
3/2-way valve	5/2-way valve, 5/3-way valve



	Brief description		→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
[2]	Silencers	For exhaust ports (3, 5)	52
[3]	3/2-way valve	VHEF-HT...32...	35
[4]	5/2- or 5/3-way valve	VHEF-H...52..., VHEF-H...53...	36

Selector valve, sideways, manually operated	
3/2-way valve	5/2-way valve, 5/3-way valve



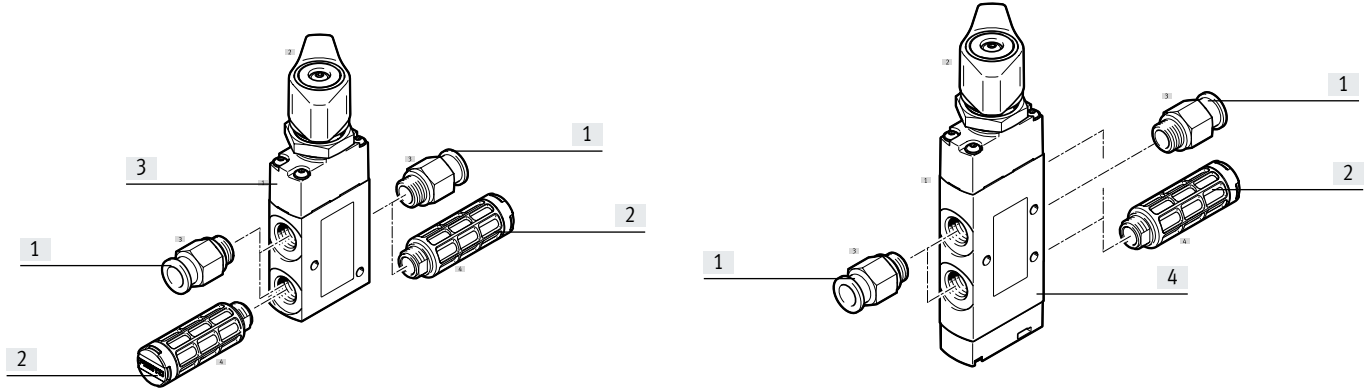
	Brief description		→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
[2]	Silencers	For exhaust ports (3, 5)	52
[3]	3/2-way valve	VHEF-EST...32...	41
[4]	5/2- or 5/3-way valve	VHEF-ES...52..., VHEF-ES...53...	42

Peripherals overview

Selector valve, manually operated

3/2-way valve

5/2-way valve, 5/3-way valve



		Brief description	→ Page/Internet
[1]	Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
[2]	Silencers	For exhaust ports (3, 5)	52
[3]	3/2-way valve	VHEF-ET...32...	46
[4]	5/2- or 5/3-way valve	VHEF-E...52..., VHEF-E...53...	47

Key features

Manually operated valves

Manually operated valves are used in all industrial sectors, as well as in the skilled trades.
They are used to carry out simple processes such as clamping or closing safety doors.

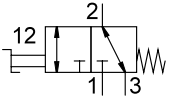
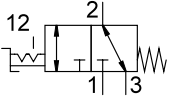
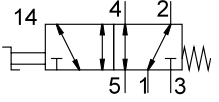
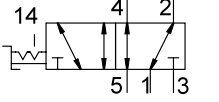
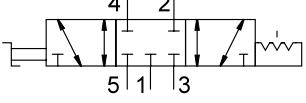
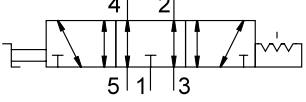
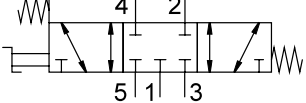
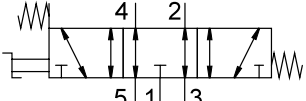
The valves are either resetting or non-resetting depending on the required actuation (pushing, rotating/swivelling or tilting).
The valves are directly or indirectly actuated.

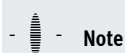
Valve functions		
Circuit symbol	Type	Description
Pushbutton valve		
	VHEF-PTC-M32-M-...	3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Pneumatically piloted, internal pilot air • Reversible
	VHEF-PTCZ-M32-M-...	3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Suitable for vacuum • Pneumatically piloted, external pilot air • Reversible
	VHEF-PTC-B32-...	3/2-way valve, bistable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Pneumatically piloted, internal pilot air • Reversible
	VHEF-PTCZ-B32-...	3/2-way valve, bistable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Suitable for vacuum • Pneumatically piloted, external pilot air • Reversible
	VHEF-P-M52-M-...	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum • Reversible
	VHEF-P-B52-...	5/2-way valve, bistable • Suitable for vacuum • Reversible

Key features

Valve functions		
Circuit symbol	Type	Description
Toggle lever valve		
The symbol shows a 3/2-way valve with a toggle lever actuator. Port 1 is the inlet, port 2 is the outlet, and port 3 is the return. The valve is normally closed (1 to 2) and normally open (3 to 2). It features a mechanical spring return and is pneumatically piloted with internal pilot air. It is suitable for vacuum and is reversible.	VHEF-VT-M32-M-...	3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Pneumatically piloted, internal pilot air • Suitable for vacuum • Reversible
The symbol shows a 5/2-way valve with a toggle lever actuator. Port 14 is the inlet, port 4 is the outlet, port 5 is the return, port 1 is the inlet, and port 3 is the outlet. The valve is normally closed (14 to 4) and normally open (5 to 1). It features a mechanical spring return and is pneumatically piloted with internal pilot air. It is suitable for vacuum and is reversible.	VHEF-V-M52-M-...	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum • Reversible
The symbol shows a 3/2-way valve with a toggle lever actuator. Port 12 is the inlet, port 2 is the outlet, and port 3 is the return. The valve is normally closed (12 to 2) and normally open (3 to 2). It features a mechanical spring return and is pneumatically piloted with internal pilot air. It is suitable for vacuum and is reversible.	VHEF-VT-B32-...	3/2-way valve, bistable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Pneumatically piloted, internal pilot air • Suitable for vacuum • Reversible
The symbol shows a 5/2-way valve with a toggle lever actuator. Port 14 is the inlet, port 4 is the outlet, port 5 is the return, port 1 is the inlet, and port 3 is the outlet. The valve is normally closed (14 to 4) and normally open (5 to 1). It features a mechanical spring return and is pneumatically piloted with internal pilot air. It is suitable for vacuum and is reversible.	VHEF-V-B52-...	5/2-way valve, bistable • Mechanical spring return • Suitable for vacuum • Reversible
Finger lever valve		
The symbol shows a 3/2-way valve with a finger lever actuator. Port 12 is the inlet, port 2 is the outlet, and port 3 is the return. The valve is normally closed (12 to 2) and normally open (3 to 2). It features a mechanical spring return and is pneumatically piloted with internal pilot air. It is suitable for vacuum and is reversible.	VHEF-LT-M32-M-...	3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Pneumatically piloted, internal pilot air • Suitable for vacuum • Reversible
The symbol shows a 5/2-way valve with a finger lever actuator. Port 14 is the inlet, port 4 is the outlet, port 5 is the return, port 1 is the inlet, and port 3 is the outlet. The valve is normally closed (14 to 4) and normally open (5 to 1). It features a mechanical spring return and is pneumatically piloted with internal pilot air. It is suitable for vacuum and is reversible.	VHEF-L-M52-M-...	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum • Reversible
The symbol shows a 5/2-way valve with a finger lever actuator. Port 14 is the inlet, port 4 is the outlet, port 5 is the return, port 1 is the inlet, port 3 is the outlet, and port 12 is the return. The valve is normally closed (14 to 4) and normally open (5 to 1). It features a pneumatic spring return and is pneumatically piloted with internal pilot air. It is suitable for vacuum and is reversible.	VHEF-L-M52-E-...	5/2-way valve, monostable • Pneumatic spring return • Suitable for vacuum • Reversible

Key features

Valve functions		
Circuit symbol	Type	Description
Hand lever valve, selector valve		
	VHEF-HST-M32-M-... VHEF-EST-M32-M-... VHEF-HT-M32-M-... VHEF-ET-M32-M-...	3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Suitable for vacuum • Reversible
	VHEF-HST-B32-... VHEF-EST-B32-... VHEF-HT-B32-... VHEF-ET-B32-...	3/2-way valve, bistable • Normally closed (1 → 2) • Normally open (3 → 2) • Mechanical spring return • Suitable for vacuum • Reversible
	VHEF-HS-M52-M-... VHEF-ES-M52-M-... VHEF-H-M52-M-... VHEF-E-M52-M-...	5/2-way valve, monostable • Mechanical spring return • Suitable for vacuum • Reversible
	VHEF-HS-B52-... VHEF-ES-B52-... VHEF-H-B52-... VHEF-E-B52-...	5/2-way valve, bistable • Suitable for vacuum • Reversible
	VHEF-HS-B53C-... VHEF-ES-B53C-... VHEF-H-B53C-... VHEF-E-B53C-...	5/3-way valve • Mid-position closed • Suitable for vacuum • Reversible
	VHEF-HS-B53E-... VHEF-ES-B53E-... VHEF-H-B53E-... VHEF-E-B53E-...	5/3-way valve • Mid-position open (exhausted) • Suitable for vacuum • Reversible
	VHEF-HS-P53C-M-... VHEF-ES-P53C-M-... VHEF-H-P53C-M-... VHEF-E-P53C-M-...	5/3-way valve • Mid-position closed • Mechanical spring return • Suitable for vacuum • Reversible
	VHEF-HS-P53E-M-... VHEF-ES-P53E-M-... VHEF-H-P53E-M-... VHEF-E-P53E-M-...	5/3-way valve • Mid-position open (exhausted) • Mechanical spring return • Suitable for vacuum • Reversible



Note

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

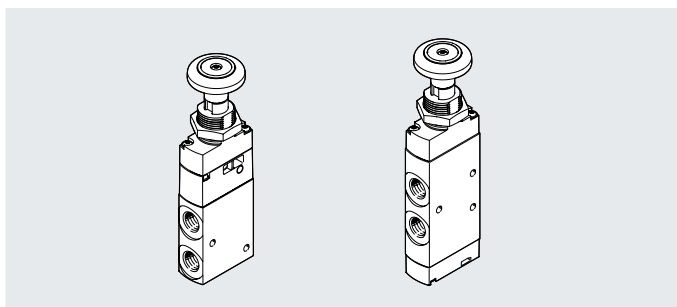
Type codes

001	Series	
VHEF	Manually actuated valve	
002	Actuation type	
E	Selector switch	
ES	Selector switch, on the side	
H	Hand lever, top	
HS	Hand lever, on the side	
L	Finger lever	
P	Pushbutton	
V	Toggle lever, top	
003	Design principle	
	Piston spool	
T	Poppet valve	
004	Type of control	
	Directly actuated	
C	Indirectly actuated	
005	Pilot air	
	Internal	
Z	External	

006	Valve function	
M32	3/2-way valve, normally closed or open	
B32	3/2-way valve, double solenoid/bistable	
M52	5/2-way valve, single solenoid/monostable	
B52	5/2-way valve, double solenoid/bistable	
P53E	5/3-way valve, mid-position exhausted	
B53E	5/3-way valve, detenting, mid-position exhausted	
P53C	5/3-way valve, mid-position closed	
B53C	5/3-way valve, detenting, mid-position closed	
007	Reset method for monostable/single solenoid valves	
	None	
E	Pneumatic spring, external	
M	Mechanical spring	
008	Pneumatic connection	
G18	G1/8	
G14	G1/4	
N18	1/8 NPT	
N14	1/4 NPT	

Datasheet – Pushbutton valve

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



General technical data	
Design	Pushbutton valve
Width [mm]	20
Application information	Manual actuation only
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust function	Can be throttled
Mounting position	Any
Max. switching frequency [Hz]	0.5

Technical data – 3/2-way valve					
Type		VHEF-...-B32...18	VHEF-...-B32...14	VHEF-...-M32...18	VHEF-...-M32...14
Design		Poppet valve			
Standard nominal flow rate	1 → 2 [l/min]	750	870	750	870
	3 → 2 [l/min]	665	750	665	750
Valve function		3/2-way valve, bistable		3/2-way valve, open/closed, monostable	
Overlap		Zero overlap		Zero overlap	
Reset method		–		Mechanical spring	
Type of control		Piloted		Piloted	
Pilot air supply		Internal, external only PTCZ types		Internal, external only PTCZ types	
Manual override		Detenting		–	
Actuating force at 6 bar	[N]	20	20	24.5	24.5
Release force at 6 bar	[N]	25	25	–	–
Pneumatic port 1, 2, 3		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Pilot air port 12		–	–	M5 ¹⁾	M5 ¹⁾
Nominal width	[mm]	5.6	6	5.6	6
Product weight	[g]	168	161	168	161

1) Only for PTCZ types (external pilot air)

- - Note

- An axial torque greater than 3 Nm on the pushbutton is to be avoided. This could overload it and cause it to break.
- The max. operating force exerted on the pushbutton must not exceed 200 N in all directions. This could overload it and cause it to break.

Datasheet – Pushbutton valve

Technical data – 5/2-way valve				
Type	VHEF-P-B52-...18	VHEF-P-B52-...14	VHEF-P-M52-M-...18	VHEF-P-M52-M-...14
Design	Piston slide			
Standard nominal flow rate 1 → 2 [l/min]	750	1200	750	1200
Valve function	5/2-way valve, bistable		5/2-way valve, monostable	
Overlap	Positive overlap		Positive overlap	
Reset method	–		Mechanical spring	
Type of control	Direct		Direct	
Manual override	Detenting		–	
Actuating force at 6 bar [N]	20		42	
Release force at 6 bar [N]	35		–	
Pneumatic port 1, 2, 3, 4, 5	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.2	7	5.2	7
Product weight [g]	182	215	182	215

**Note**

- An axial torque greater than 3 Nm on the pushbutton is to be avoided. This could overload it and cause it to break.
- The max. operating force exerted on the pushbutton must not exceed 200 N in all directions. This could overload it and cause it to break.

Materials

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

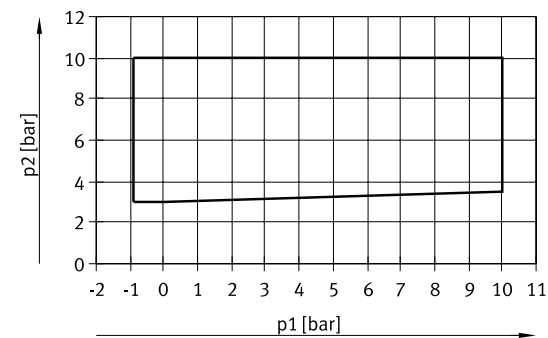
Datasheet – Pushbutton valve

Operating and environmental conditions		VHEF-PTC-M32-... VHEF-PTC-B32-...	VHEF-PTCZ-M32-... VHEF-PTCZ-B32-...	VHEF-P-...
Operating medium		Compressed air to ISO 8573-1:2010 [7:-:-]		
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Pilot air supply		Internal	External	–
Operating pressure	[MPa]	0.35 ... 1	–0.095 ... 1	–0.095 ... 1
	[bar]	3.5 ... 10	–0.95 ... 10	–0.95 ... 10
NC valves	[bar]	3.5 ... 10	3 ... 10	–
NO valves	[bar]	3.5 ... 10	3 ... 10	–
Pilot pressure	[bar]	3.5 ... 10	3 ... 10	–
Temperature of medium	[°C]	–10 ... +60		
Ambient temperature	[°C]	–10 ... +60		
Corrosion resistance class CRC ¹⁾		1		

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

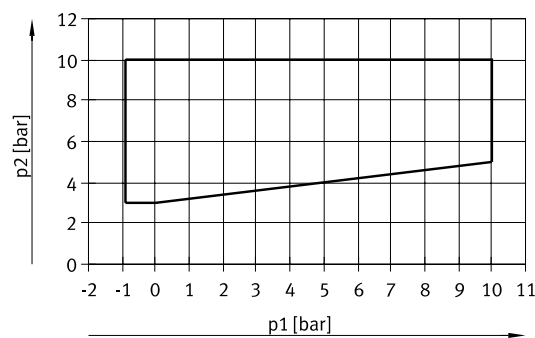
Pilot pressure p2 as a function of working pressure p1

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



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

For poppet valves VMEF-...-M32...
(normally open, NO)



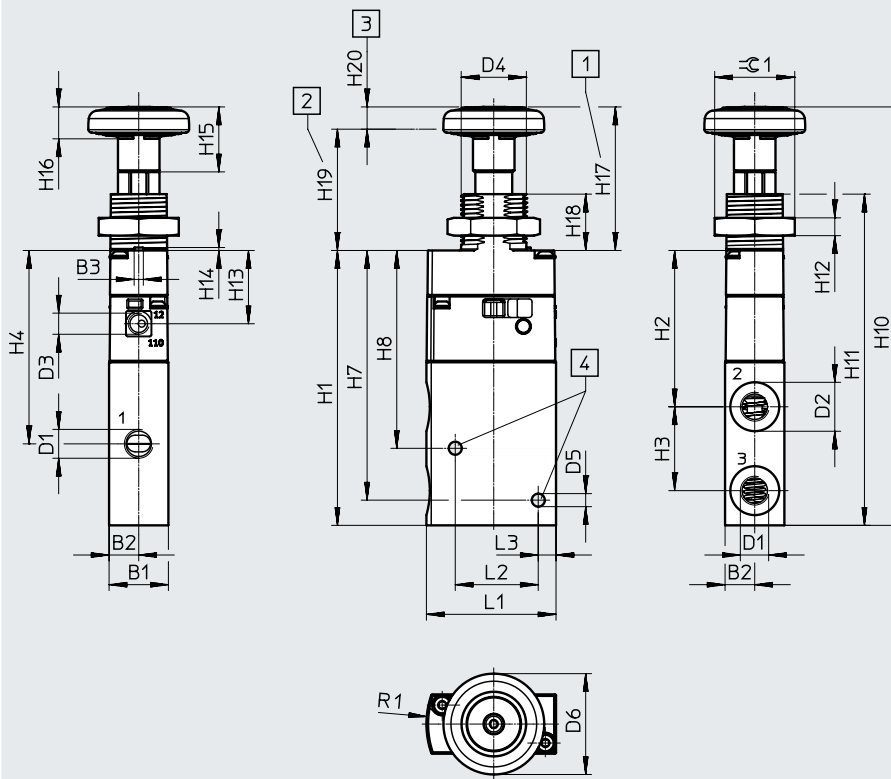
The framed area shows the operating range for external pilot air.

Datasheet – Pushbutton valve

Dimensions

Download CAD data → www.festo.com

3/2-way valve



[1] Normal position

[2] Actuated position

[3] Valve stroke

[4] Mounting holes for M4 screws

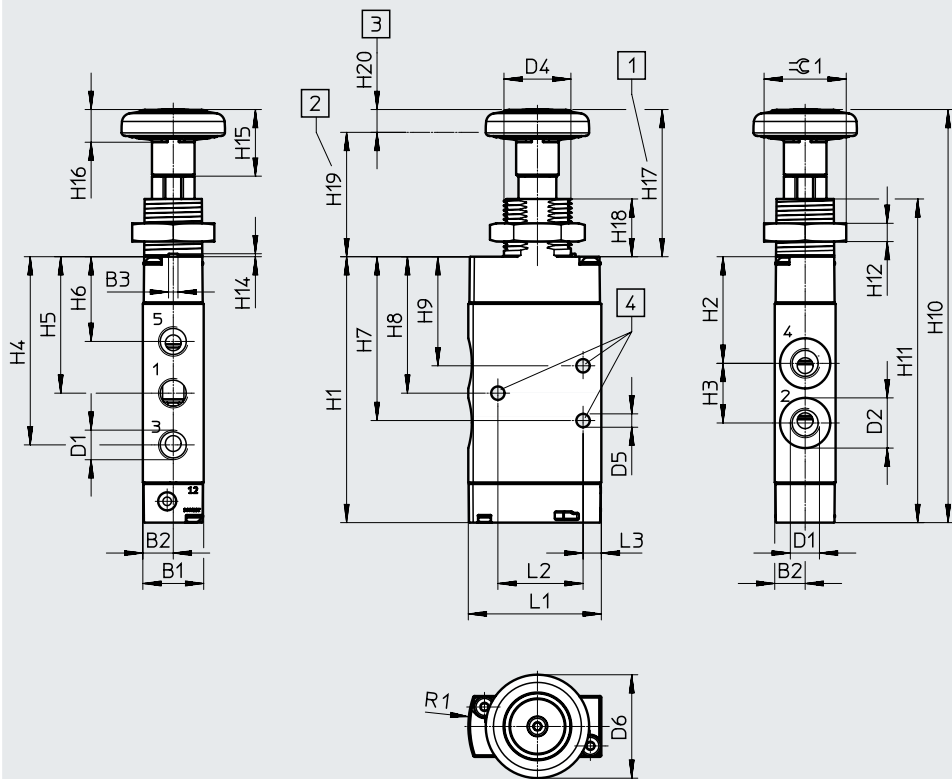
Type	B1	B2	B3	D1	D2 ø	D3 ø	D4	D5 ø	D6 ø	H1	H2	H3	H4	H7	H8	H10
VHEF-PTC-...32-...-N18	20	10	3.1	1/8 NPT	16.5	–	M22x1.5	4.4	34	92.7	52.7	28.3	65.2	84.2	66.7	141.1
VHEF-PTCZ-...32-...-N18						M5										
VHEF-PTC-...32-...-N14				1/4 NPT	22	–										
VHEF-PTCZ-...32-...-N14						M5										

Type	H11	H12	H13	H14	H15	H16	H17	H18	H19	H20	L1	L2	L3	R1	±1
VHEF-PTC-...32-...-N18	111.7	6	24.7	1	21.9	10.7	48.4	19	40.9	7.5	43.7	28	6	30	27
VHEF-PTCZ-...32-...-N18															
VHEF-PTC-...32-...-N14															
VHEF-PTCZ-...32-...-N14															

Datasheet – Pushbutton valve

Dimensions Download CAD data → www.festo.com

5/2-way valve, pneumatic port 1/8 NPT



[1] Normal position [2] Actuated position [3] Valve stroke [4] Mounting holes for M4 screws

Type	B1	B2	B3	D1	D2 Ø	D4	D5 Ø	D6 Ø	H1	H2	H3	H4	H5	H6	H7	H8
VHEF-P-M52-M-N18	20	10	3.1	1/8 NPT	16.5	M22x1.5	4.4	34	87.4	35.1	19.6	61.9	44.9	27.9	53.9	44.9
VHEF-P-B52-N18																

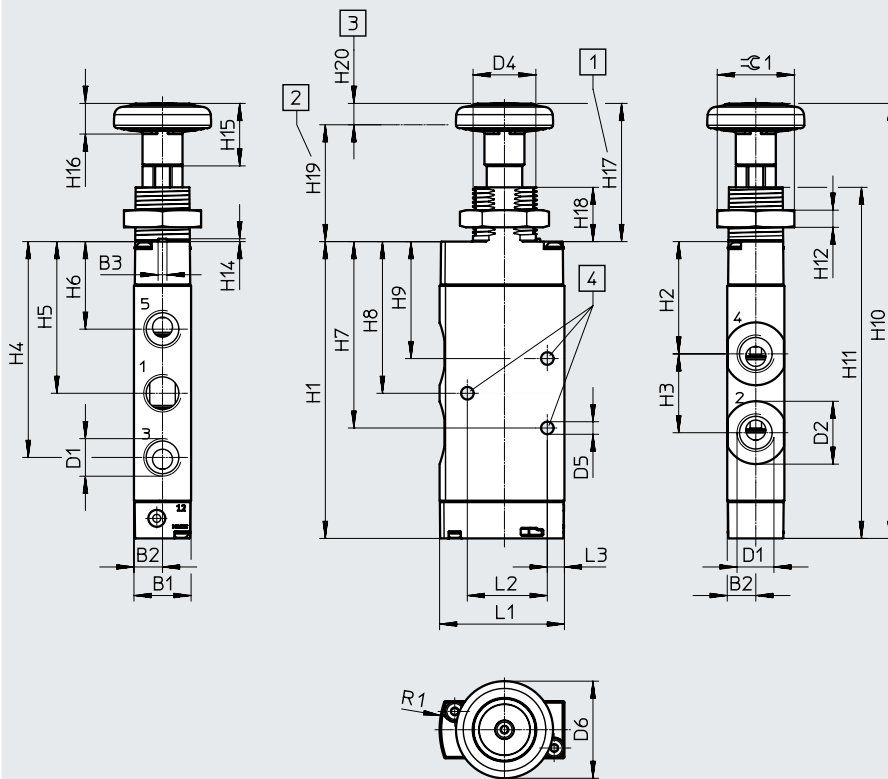
Type	H9	H10	H11	H12	H14	H15	H16	H17	H18	H19	H20	L1	L2	L3	R1	$\varnothing 1$
VHEF-P-M52-M-N18	35.9	135.8	106.4	6	1	21.9	10.7	48.4	19	40.9	7.5	43.7	28	6	30	27
VHEF-P-B52-N18																

Datasheet – Pushbutton valve

Dimensions

Download CAD data → www.festo.com

5/2-way valve, pneumatic port 1/4 NPT



[1] Normal position

[2] Actuated position

[3] Valve stroke

[4] Mounting holes for M4 screws

Type	B1	B2	B3	D1	D2 ø	D4	D5 ø	D6 ø	H1	H2	H3	H4	H5	H6	H7	H8
VHEF-P-M52-M-N14	20	10	3.1	1/4 NPT	22	M22x1.5	4.4	34	103.9	39.3	27.6	75.6	53.1	30.7	65.3	53.1
VHEF-P-B52-N14																

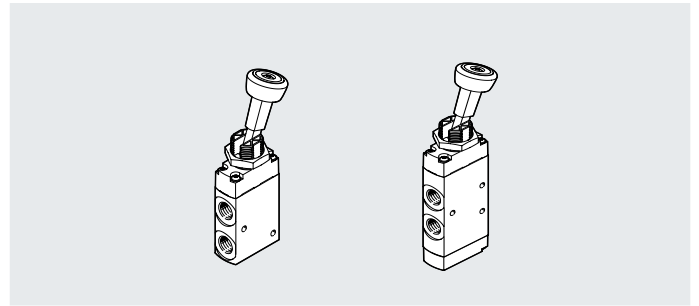
Type	H9	H10	H11	H12	H14	H15	H16	H17	H18	H19	H20	L1	L2	L3	R1	≅ 1
VHEF-P-M52-M-N14	41	152.3	122.9	6	1	21.9	10.7	48.4	19	40.9	7.5	43.7	28	6	30	27
VHEF-P-B52-N14																

Datasheet – Pushbutton valve

Ordering data					
Description	Reset method	Nominal flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valve	–	750	168	5299719	VHEF-PTC-B32-N18
		870	161	5299725	VHEF-PTC-B32-N14
	Mechanical spring	750	168	5299717	VHEF-PTC-M32-M-N18
		870	161	5299723	VHEF-PTC-M32-M-N14
	–	750	168	5299720	VHEF-PTCZ-B32-N18
		870	161	5299726	VHEF-PTCZ-B32-N14
	Mechanical spring	750	168	5299718	VHEF-PTCZ-M32-M-N18
		870	161	5299724	VHEF-PTCZ-M32-M-N14
5/2-way valve	–	750	182	5299722	VHEF-P-B52-N18
	Mechanical spring		182	5299721	VHEF-P-M52-M-N18
	–	1200	215	5299728	VHEF-P-B52-N14
	Mechanical spring		215	5299727	VHEF-P-M52-M-N14

Datasheet – Toggle lever valve

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

**General technical data**

Design	Toggle lever, top
Width [mm]	20
Application information	Manual actuation only
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust function	Can be throttled
Mounting position	Any
Max. switching frequency [Hz]	0.5

Technical data – 3/2-way valve

Type	VHEF-VT-B32...18	VHEF-VT-B32...14	VHEF-VT-M32...18	VHEF-VT-M32...14
Design	Poppet valve			
Standard nominal flow rate $1 \rightarrow 2$ [l/min]	750	870	750	870
flow rate $3 \rightarrow 2$ [l/min]	665	750	665	750
Valve function	3/2-way valve, bistable		3/2-way valve, open/closed, monostable	
Overlap	Zero overlap		Zero overlap	
Reset method	–		Mechanical spring	
Type of control	Direct		Direct	
Manual override	Detenting		–	
Actuating torque at 6 bar [Nm]	1.6	1.6	0.6	0.6
Release torque at 6 bar [Nm]	0.8	0.8	–	–
Max. force on actuation [N]	200	200	200	200
Max. lateral force on actuation [N]	140	140	140	140
Pneumatic port 1, 2, 3	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.6	6	5.6	6
Product weight [g]	174	181	174	181

Datasheet – Toggle lever valve

Technical data – 5/2-way valve					
Type		VHEF-V-B52-...18	VHEF-V-B52-...14	VHEF-V-M52-M-...18	VHEF-V-M52-M-...14
Design		Piston slide			
Standard nominal flow rate	1 → 2 [l/min]	750	1200	750	1200
Valve function		5/2-way valve, bistable		5/2-way valve, monostable	
Overlap		Positive overlap		Positive overlap	
Reset method		–		Mechanical spring	
Type of control		Direct		Direct	
Manual override		Detenting		–	
Actuating torque at 6 bar	[Nm]	1.1	1.1	0.6	0.6
Release torque at 6 bar	[Nm]	0.6	0.6	–	–
Max. force on actuation	[N]	200	200	200	200
Max. lateral force on actuation	[N]	140	140	140	140
Pneumatic port 1, 2, 3, 4, 5		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width	[mm]	5.2	7	5.2	7
Product weight	[g]	208	240	208	240

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[MPa] –0.095 ... 1
	[bar] –0.95 ... 10
Temperature of medium	[°C] –10 ... +60
Ambient temperature	[°C] –10 ... +60
Corrosion resistance class CRC ¹⁾	1

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

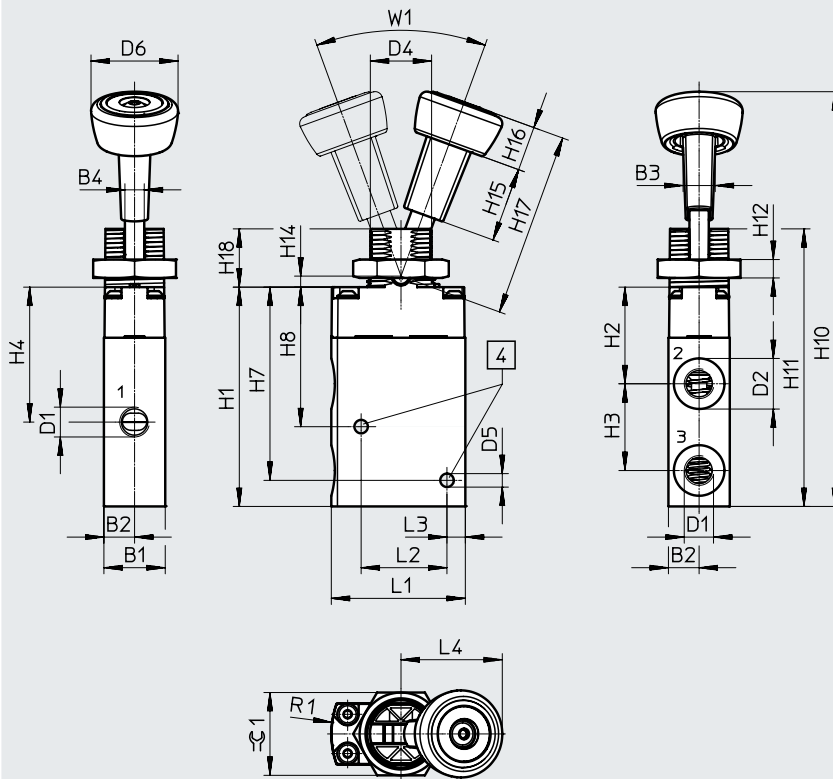
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

Datasheet – Toggle lever valve

Dimensions

Download CAD data → www.festo.com

3/2-way valve



[4] Mounting holes for M4 screws

Type	B1	B2	B3	B4	D1	D2 ø	D4	D5 ø	D6 ø	H1	H2	H3	H4	H7	H8	H10
VHEF-VT...M32-...-N18	20	10	10.5	6.3	1/8 NPT	16.5	M22x1.5	4.4	28.4	71.4	31.5	28.3	44	63	45.5	135.2
VHEF-VT...M32-...-N14					1/4 NPT	22										
VHEF-VT...B32-...-N18					1/8 NPT	16.5										
VHEF-VT...B32-...-N14					1/4 NPT	22										

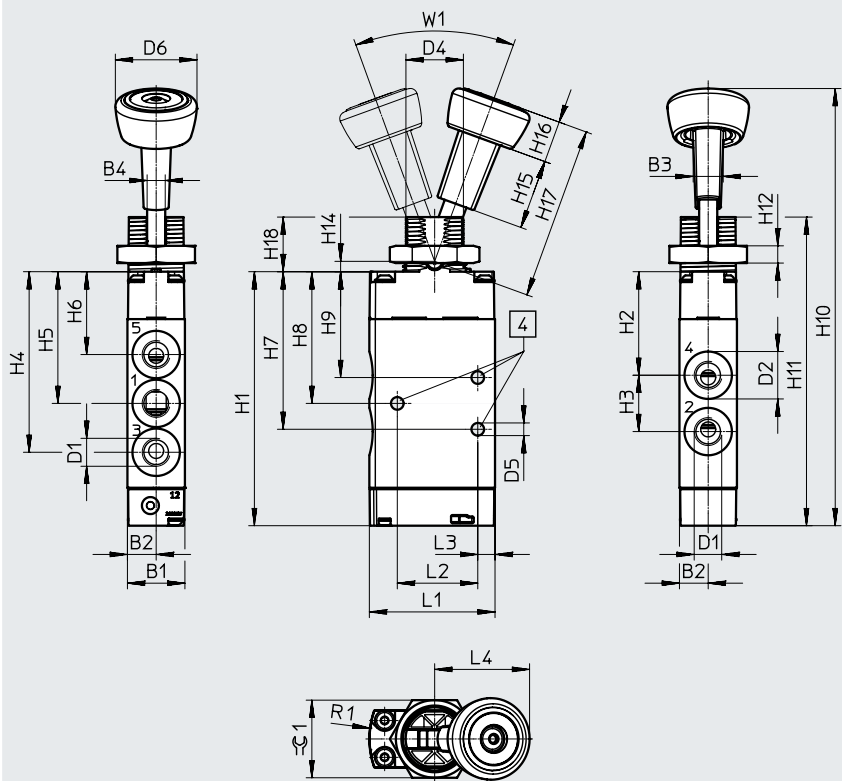
Type	H11	H12	H14	H15	H16	H17	H18	L1	L2	L3	L4	R1	W1	≈ 1
VHEF-VT...M32-...-N18	90.5	6	3.6	24.4	14.6	60	19	43.7	28	6	33	30	40°	27
VHEF-VT...M32-...-N14														
VHEF-VT...B32-...-N18														
VHEF-VT...B32-...-N14														

Datasheet – Toggle lever valve

Dimensions

Download CAD data → www.festo.com

5/2-way valve, pneumatic port 1/8 NPT



[4] Mounting holes for M4 screws

Type	B1	B2	B3	B4	D1	D2 Ø	D4	D5 Ø	D6 Ø	H1	H2	H3	H4	H5	H6	H7
VHEF-V-M52-M-N18	20	10	10.5	6.3	1/8 NPT	16.5	M22x1.5	4.4	28.4	88.4	36.1	19.6	62.9	45.9	28.9	54.9
VHEF-V-B52-N18																

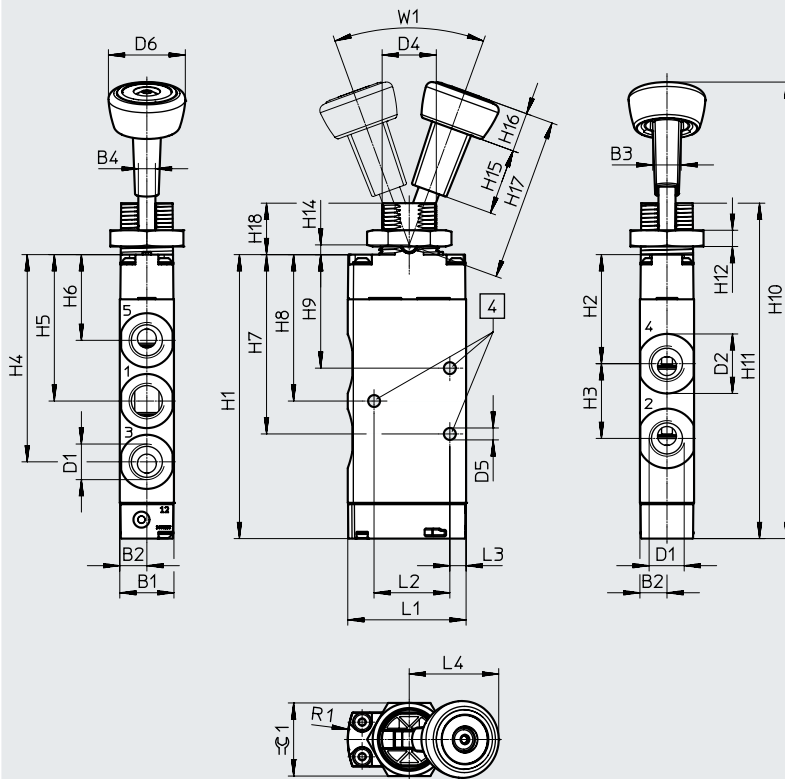
Type	H8	H9	H10	H11	H12	H14	H15	H16	H17	H18	L1	L2	L3	L4	R1	W1	± 1
VHEF-V-M52-M-N18	45.9	36.9	152.1	107.4	6	3.6	24.4	14.6	60	19	43.7	28	6	33	30	40°	27
VHEF-V-B52-N18																	

Datasheet – Toggle lever valve

Dimensions

Download CAD data → www.festo.com

5/2-way valve, pneumatic port 1/4 NPT



[4] Mounting holes for M4 screws

Type	B1	B2	B3	D1	D2 Ø	D4	D5 Ø	D6 Ø	H1	H2	H3	H4	H5	H6	H7	H8
VHEF-V-M52-M-N14	20	10	10.5	1/4 NPT	22	M22x1.5	4.4	28.4	104.9	40.3	27.6	76.6	54.1	31.7	66.3	54.1
VHEF-V-B52-N14																

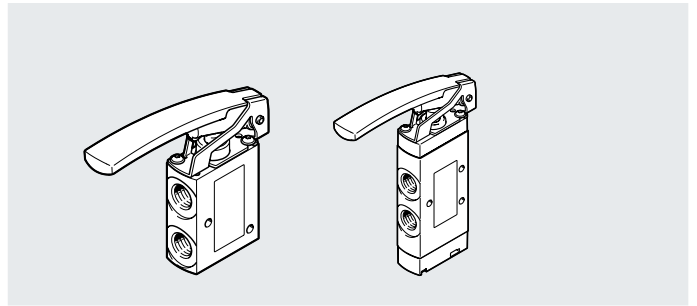
Type	H9	H10	H11	H12	H14	H15	H16	H17	H18	L1	L2	L3	L4	R1	W1	≈ 1
VHEF-V-M52-M-N14	42	168.6	123.9	6	3.6	24.4	14.6	60	19	43.7	28	6	33	30	40°	27
VHEF-V-B52-N14																

Datasheet – Toggle lever valve

Ordering data					
Description	Reset method	Nominal flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valve	–	750	174	5300045	VHEF-VT-B32-N18
		870	181	5300047	VHEF-VT-B32-N14
	Mechanical spring	750	174	5300044	VHEF-VT-M32-M-N18
		870	181	5300046	VHEF-VT-M32-M-N14
5/2-way valve	–	750	208	5300041	VHEF-V-B52-N18
		1200	240	5300043	VHEF-V-B52-N14
	Mechanical spring	750	208	5300040	VHEF-V-M52-M-N18
		1200	240	5300042	VHEF-V-M52-M-N14

Datasheet – Finger lever valve

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

**General technical data**

Design	Finger lever
Width [mm]	20
Type of control	Directly actuated
Application information	Manual actuation only
Actuation type	Manual
Type of mounting	Via through-hole
Sealing principle	Soft
Flow direction	Reversible
Exhaust function	Can be throttled
Mounting position	Any
Max. switching frequency [Hz]	0.5

Technical data – 3/2-way valve

Type	VHEF-LT-M32-M...18	VHEF-LT-M32-M...14
Design	Poppet valve	
Standard nominal flow rate [l/min] 1 → 2	750	870
Valve function	3/2-way valve, open/closed, monostable	
Overlap	Zero overlap	
Reset method	Mechanical spring	
Actuating force at 6 bar		
• normally closed [N]	14	14
• normally open [N]	24	24
Pneumatic port 1, 2, 3	1/8 NPT	1/4 NPT
Nominal width [mm]	5.6	6
Product weight [g]	156	150

Datasheet – Finger lever valve

Technical data – 5/2-way valve				
Type	VHEF-L-M52-M...18	VHEF-L-M52-M...14	VHEF-L-M52-E...18	VHEF-L-M52-E...14
Design	Piston slide		Piston slide	
Standard nominal flow rate 1 → 2 [l/min]	750	1200	750	1200
Valve function	5/2-way valve, monostable		5/2-way valve, monostable	
Overlap	Positive overlap		Positive overlap	
Reset method	Mechanical spring		Pneumatic spring	
Actuating force at 6 bar [N]	10	12	8	14
Pneumatic port 1, 2, 3, 4, 5	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.2	7	5.2	7
Product weight [g]	185	218	184	217

Materials	
Housing	Anodised wrought aluminium alloy
Lever	PA-reinforced
Cover	Reinforced PA (VHEF...-M52)
Seal	NBR
Note on materials	RoHS-compliant

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure [MPa]	–0.095 ... 1
[bar]	–0.95 ... 10
Temperature of medium [°C]	–10 ... +60
Ambient temperature [°C]	–10 ... +60
Corrosion resistance class CRC ¹⁾	1

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

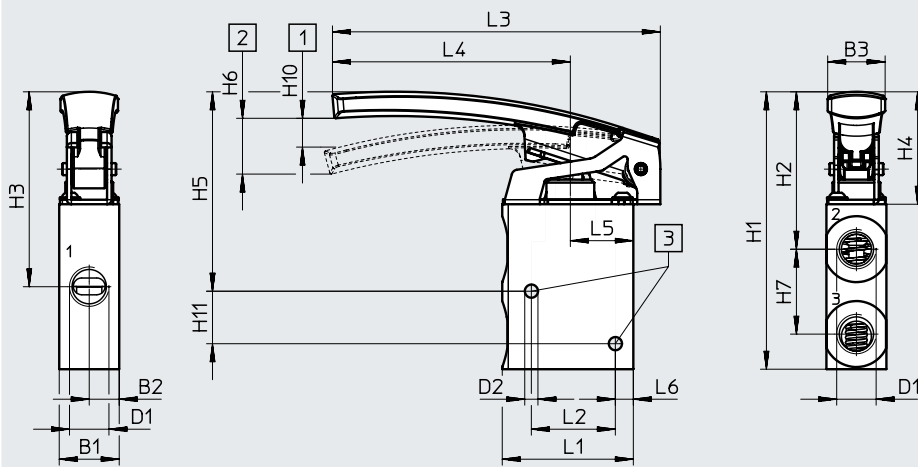
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

Datasheet – Finger lever valve

Dimensions

Download CAD data → www.festo.com

3/2-way valve



[1] Start of opening

[2] Maximum stroke

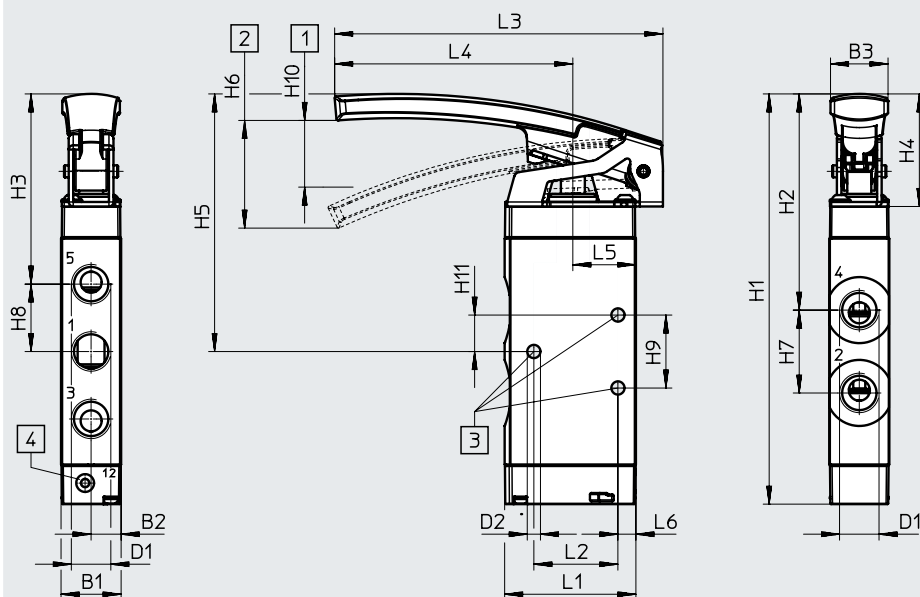
[3] Mounting holes for M4 screws

Type	B1	B2	B3	D1	D2 Ø	L1	L2	L3	L4	L5
VHEF-LT-M32-M-N14	20	10	19.1	1/4 NPT	4.4	43.7	28	109.3	79.3	21
VHEF-LT-M32-M-N18				1/8 NPT						

Type	L6	H1	H2	H3	H4	H5	H6	H7	H10	H11
VHEF-LT-M32-M-N14	6	92.5	52.5	65	37.5	66.5	18.6	28.3	6.3	17.5
VHEF-LT-M32-M-N18										

5/2-way valve

Download CAD data → www.festo.com



[1] Start of opening

[2] Maximum stroke

[3] Mounting holes for M4 screws

[4] Port 12: pneumatic spring, M5
(for VHEF-L-M52-E-...)

Type	B1	B2	B3	D1	D2 Ø	L1	L2	L3	L4	L5	L6
VHEF-L-M52-M-N18	20	10	19.1	1/8 NPT	4.4	43.7	28	109.3	79.3	21	6
VHEF-L-M52-E-N18				1/8 NPT							
VHEF-L-M52-M-N14				1/4 NPT							
VHEF-L-M52-E-N14				1/4 NPT							

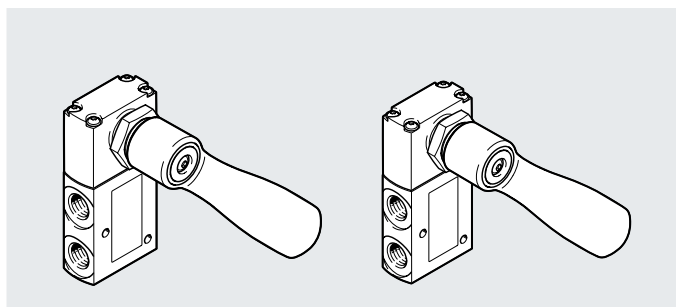
Type	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11
VHEF-L-M52-M-N18	120	67.7	60.5	37.5	77.5	35.8	19.6	17	18	13.2	9
VHEF-L-M52-E-N18											
VHEF-L-M52-M-N14	136.6	72	63.3		85.8		27.6	22.5	24.3	22.2	12.2
VHEF-L-M52-E-N14											

Datasheet – Finger lever valve

Ordering data					
Description	Reset method	Nominal flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valve	Mechanical spring	750	156	4500011	VHEF-LT-M32-M-N18
		870	150	4500010	VHEF-LT-M32-M-N14
5/2-way valve	Mechanical spring	750	185	4500003	VHEF-L-M52-M-N18
	Pneumatic spring	750	184	4500007	VHEF-L-M52-E-N18
	Mechanical spring	1200	218	4500002	VHEF-L-M52-M-N14
	Pneumatic spring	1200	217	4500006	VHEF-L-M52-E-N14

Datasheet – Hand lever valve, sideways

-  - Flow rate
530 ... 1200 l/min
-  - Pressure
-0.095 ... 1 MPa
-0.95 ... 10 bar
-  - Temperature range
-10 ... +60°C



General technical data	
Design	Hand lever, sideways
Width [mm]	20
Type of control	Directly actuated
Application information	Manual actuation only The hand lever valve can be rotated 90° during mounting.
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust function	Can be throttled
Mounting position	Any
Max. force when actuating the hand lever ¹⁾ [N]	200
Max. lateral force when actuating the hand lever ¹⁾ [N]	200
Max. switching frequency [Hz]	0.5

1) Measured at a distance of 80 mm from the centre of the hand lever fitting

Technical data – 3/2-way valve				
Type	VHEF-HST-B32...18	VHEF-HST-B32...14	VHEF-HST-M32...18	VHEF-HST-M32...14
Design	Poppet valve			
Standard nominal flow rate $1 \rightarrow 2$ [l/min]	750	870	750	870
flow rate $3 \rightarrow 2$ [l/min]	665	750	665	750
Valve function	3/2-way valve, bistable		3/2-way valve, open/closed, monostable	
Overlap	Zero overlap		Zero overlap	
Reset method	–		Mechanical spring	
Manual override	Detenting		–	
Actuating torque at 6 bar [Nm]	0.7		0.6	
Pneumatic port 1, 2, 3	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.6	6	5.6	6
Product weight [g]	236	230	236	230

Datasheet – Hand lever valve, sideways

Technical data – 5/2-way valve				
Type	VHEF-HS-M52-M-...18	VHEF-HS-M52-M-...14	VHEF-HS-B52-...18	VHEF-HS-B52-...14
Design	Piston slide			
Standard nominal flow rate $1 \rightarrow 2$ [l/min]	750	1200	750	1200
Valve function	5/2-way valve, monostable		5/2-way valve, bistable	
Overlap	Positive overlap		Positive overlap	
Reset method	Mechanical spring		–	
Manual override	–		Detenting	Detenting
Actuating torque at 6 bar [Nm]	0.6			
Pneumatic port 1, 2, 3, 4, 5	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.2	7	5.2	7
Product weight [g]	265	298	265	298

Technical data – 5/3-way valve											
Type VHEF-HS-			B53C-...18	B53C-...14	B53E-...18	B53E-...14	P53C-...18	P53C-...14	P53E-...18	P53E-...14	
Design			Piston slide								
Standard nominal flow rate	1 → 2	[l/min]	750	1200	530	900	700	1200	530	900	
	4 → 5	[l/min]	–	–	400	470	–	–	400	470	
	2 → 3	[l/min]	–	–	400	470	–	–	400	470	
Valve function			5/3-way valve, closed		5/3-way valve, exhausted		5/3-way valve, closed		5/3-way valve, exhausted		
Overlap			Positive overlap		Positive overlap		Positive overlap		Positive overlap		
Reset method			–		–		Mechanical spring		Mechanical spring		
Manual override			Detenting		Detenting		–		–		
Actuating torque at 6 bar		[Nm]	0.7								
Pneumatic port 1, 2, 3, 4, 5			1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	
Nominal width			[mm]	5.2	7	5.2	7	5.2	7	5.2	7
Product weight			[g]	265	298	265	298	265	298	265	298

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:--:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[MPa] –0.095 ... 1
	[bar] –0.95 ... 10
Temperature of medium [°C]	–10 ... +60
Ambient temperature [°C]	–10 ... +60
Corrosion resistance class CRC ¹⁾	1

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

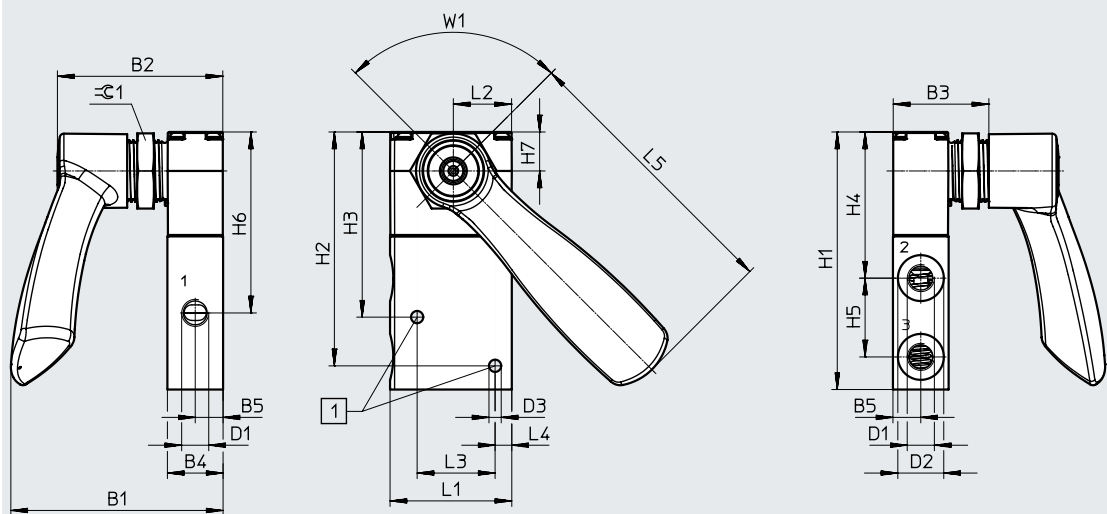
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

Datasheet – Hand lever valve, sideways

Dimensions

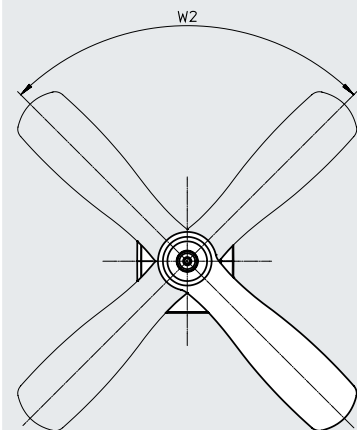
Download CAD data → www.festo.com

3/2-way valve



[1] Mounting holes for M4 screws

VHEF-HST...



Type	B1	B2	B3	B4	B5	D1	D2 Ø	D3 Ø	H1	H2	H3
VHEF-HST...32...-N18	76.2	59.5	34.5	20	10	1/8 NPT	16.5	4.4	92.5	84	66.5
VHEF-HST...32...-N14						1/4 NPT	22				

Type	H4	H5	H6	H7	L1	L2	L3	L4	L5	W1	⌀ 1
VHEF-HST...32...-N18	52.5	28.3	65	14	43.7	20.9	28	6	100.8	90°	27 mm
VHEF-HST...32...-N14											

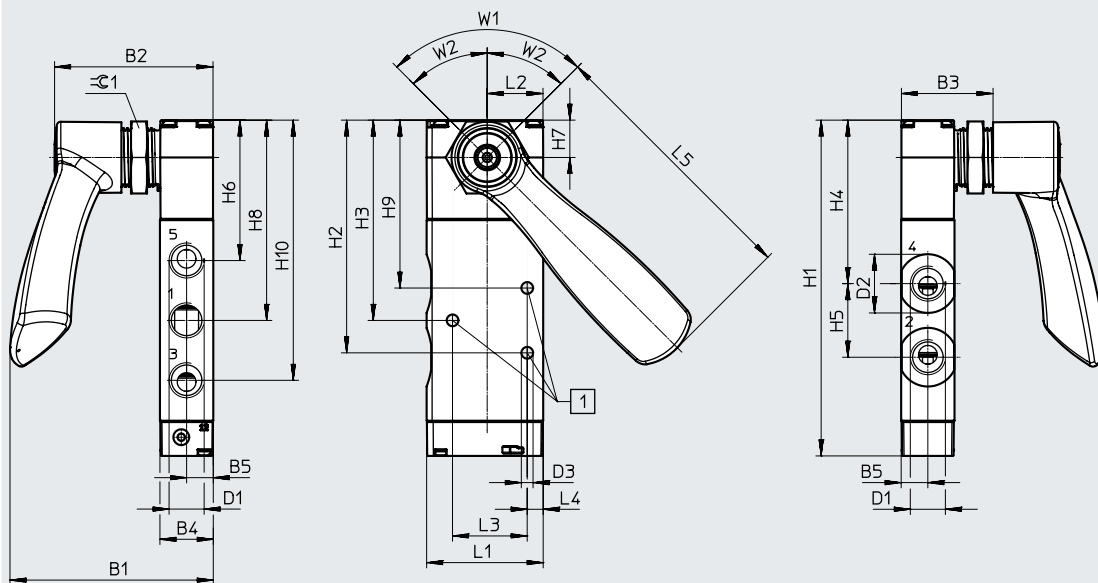
Type	W2
VHEF-HST...	90°

Datasheet – Hand lever valve, sideways

Dimensions

Download CAD data → www.festo.com

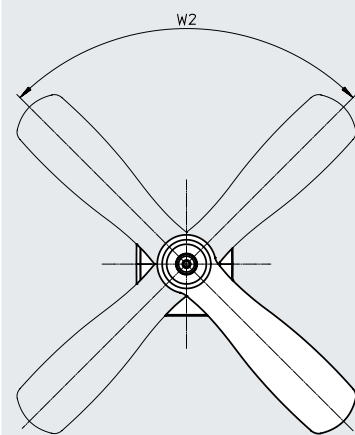
5/2-way and 5/3-way valve



[1] Mounting holes for M4 screws

W1 90° angle for 5/2-way valves
(2 switching positions)W2 2x45° angle for 5/3-way valves
(3 switching positions)

VHEF-HS...



Type	B1	B2	B3	B4	B5	D1	D2 Ø	D3 Ø	H1	H2	H3	H4
VHEF-HS...52...-N18	76.2	59.5	34.5	20	10	1/8 NPT	16.5	4.4	109.4	75.9	66.9	57.1
VHEF-HS...53...-N18						1/8 NPT						
VHEF-HS...52...-N14						1/4 NPT	22		125.9	87.3	75.1	61.3
VHEF-HS...53...-N14						1/4 NPT						

Type	H5	H6	H7	H8	H9	H10	L1	L2	L3	L4	W1	W2	≈ 1
VHEF-HS...52...-N18	19.6	49.9	14	66.9	57.9	83.9	43.7	20.9	28	6	90°	–	27 mm
VHEF-HS...53...-N18											–	45°	
VHEF-HS...52...-N14	26.7	52.7		75.1	63	97.6					90°	–	
VHEF-HS...53...-N14											–	45°	

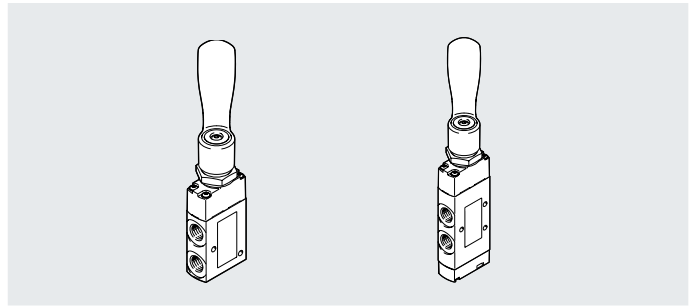
Type	W2
VHEF-HS...	90°

Datasheet – Hand lever valve, sideways

Ordering data					
Description	Reset method	Nominal flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valve	–	750	236	4414861	VHEF-HST-B32-N18
		870	230	4414862	VHEF-HST-B32-N14
	Mechanical spring	750	236	4414853	VHEF-HST-M32-M-N18
		870	230	4414854	VHEF-HST-M32-M-N14
5/2-way valve	Mechanical spring	750	265	4414855	VHEF-HS-M52-M-N18
		1200	298	4414856	VHEF-HS-M52-M-N14
	–	750	265	4414863	VHEF-HS-B52-N18
		1200	298	4414864	VHEF-HS-B52-N14
5/3-way valve	–	700	265	4414865	VHEF-HS-B53C-N18
		1200	298	4414866	VHEF-HS-B53C-N14
		530	265	4414867	VHEF-HS-B53E-N18
		900	298	4414868	VHEF-HS-B53E-N14
	Mechanical spring	700	265	4414857	VHEF-HS-P53C-M-N18
		1200	298	4414858	VHEF-HS-P53C-M-N14
		530	265	4414859	VHEF-HS-P53E-M-N18
		900	298	4414860	VHEF-HS-P53E-M-N14

Datasheet – Hand lever valve

-  - Flow rate
530 ... 1200 l/min
-  - Pressure
-0.095 ... 1 MPa
-0.95 ... 10 bar
-  - Temperature range
-10 ... +60°C

**General technical data**

Design	Hand lever
Width [mm]	20
Type of control	Directly actuated
Application information	Manual actuation only The hand lever valve can be rotated 90° during mounting.
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust function	Can be throttled
Mounting position	Any
Max. force when actuating the hand lever ¹⁾ [N]	200
Max. lateral force when actuating the hand lever ¹⁾ [N]	200
Max. switching frequency [Hz]	0.5

1) Measured at a distance of 80 mm from the centre of the hand lever fitting

Technical data – 3/2-way valve

Type	VHEF-HT-B32...18		VHEF-HT-B32...14		VHEF-HT-M32...18		VHEF-HT-M32...14	
Design			Poppet valve					
Standard nominal flow rate	1 → 2	[l/min]	750	870	750	870		
	3 → 2	[l/min]	665	750	665	750		
Valve function			3/2-way valve, bistable			3/2-way valve, open/closed, monostable		
Overlap			Zero overlap			Zero overlap		
Reset method			–			Mechanical spring		
Manual override			Detenting			–		
Actuating torque at 6 bar		[Nm]	0.7		0.6			
Release torque at 6 bar		[Nm]	0.4	0.4	–		–	
Pneumatic port 1, 2, 3			1/8 NPT		1/4 NPT		1/8 NPT	
Nominal width		[mm]	5.6		6		5.6	
Product weight		[g]	236		230		236	

Datasheet – Hand lever valve

Technical data – 5/2-way valve						
Type	VHEF-H-M52-M-...18		VHEF-H-M52-M-...14		VHEF-H-B52-...18	VHEF-H-B52-...14
Design	Piston slide					
Standard nominal flow rate	1 → 2	[l/min]	750	1200	750	1200
Valve function	5/2-way valve, monostable				5/2-way valve, bistable	
Overlap	Positive overlap				Positive overlap	
Reset method	Mechanical spring				–	
Manual override	–		–		Detenting	Detenting
Actuating torque at 6 bar	[Nm]		0.6		0.6	
Release torque at 6 bar	[Nm]		–		0.5	0.5
Pneumatic port 1, 2, 3, 4, 5			1/8 NPT		1/8 NPT	1/4 NPT
Nominal width	[mm]		5.2		7	7
Product weight	[g]		265		298	265
					298	

Technical data – 5/3-way valve										
Type VHEF-HS-			B53C-...18	B53C-...14	B53E-...18	B53E-...14	P53C-...18	P53C-...14	P53E-...18	P53E-...14
Design			Piston slide							
Standard nominal flow rate	1 → 2	[l/min]	700	1200	530	900	700	1200	530	900
	4 → 5	[l/min]	–	–	400	470	–	–	400	470
	2 → 3	[l/min]	–	–	400	470	–	–	400	470
Valve function			5/3-way valve, closed		5/3-way valve, exhausted		5/3-way valve, closed		5/3-way valve, exhausted	
Overlap			Positive overlap		Positive overlap		Positive overlap		Positive overlap	
Reset method			–		–		Mechanical spring		Mechanical spring	
Manual override			Detenting		Detenting		–		–	
Actuating torque at 6 bar [Nm]			0.7				0.7			
Release torque at 6 bar [Nm]			0.6	0.6	0.6	0.6	–	–	–	–
Pneumatic port 1, 2, 3, 4, 5			1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]			5.2	7	5.2	7	5.2	7	5.2	7
Product weight [g]			265	298	265	298	265	298	265	298

Datasheet – Hand lever valve

Materials	
Housing	Anodised wrought aluminium alloy
Lever	PA-reinforced
Cover	PA-reinforced
Seal	NBR
Note on materials	RoHS-compliant
Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[MPa] -0.095 ... 1
	[bar] -0.95 ... 10
Temperature of medium	[°C] -10 ... +60
Ambient temperature	[°C] -10 ... +60
Corrosion resistance class CRC ¹⁾	1

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

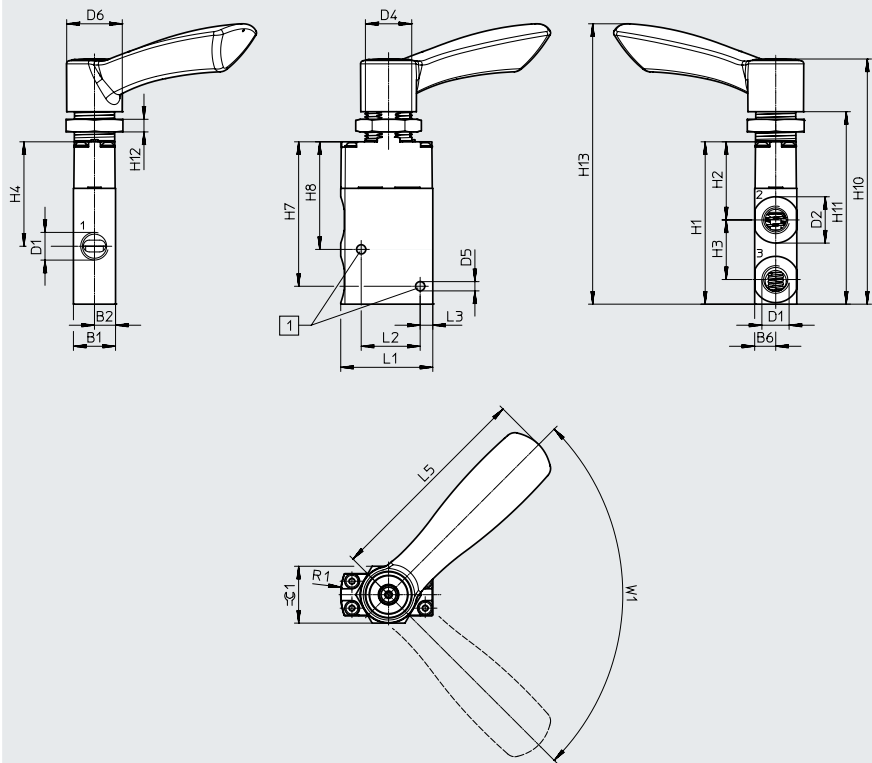
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

Datasheet – Hand lever valve

Dimensions

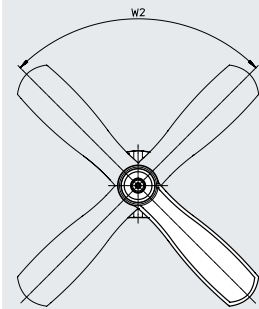
Download CAD data → www.festo.com

3/2-way valve



[1] Mounting holes for M4 screws

VHEF-HT...



Type	B1	B2	B6	D1	D2 Ø	D4	D5 Ø	D6 Ø	H1	H2	H3	H4	H7
VHEF-HT...32...-N18	20	10	10	1/8 NPT	16.5	M22x1.5	4.4	26.4	77.1	37.1	28.3	49.6	68.6
VHEF-HT...32...-N14				1/4 NPT	22								

Type	H8	H10	H11	H12	H13	L1	L2	L3	L5	R1	W1	≈ 1
VHEF-HT...32...-N18	51.1	116.4	91.4	6	133.1	43.7	28	6	100.9	30	90°	27 mm
VHEF-HT...32...-N14												

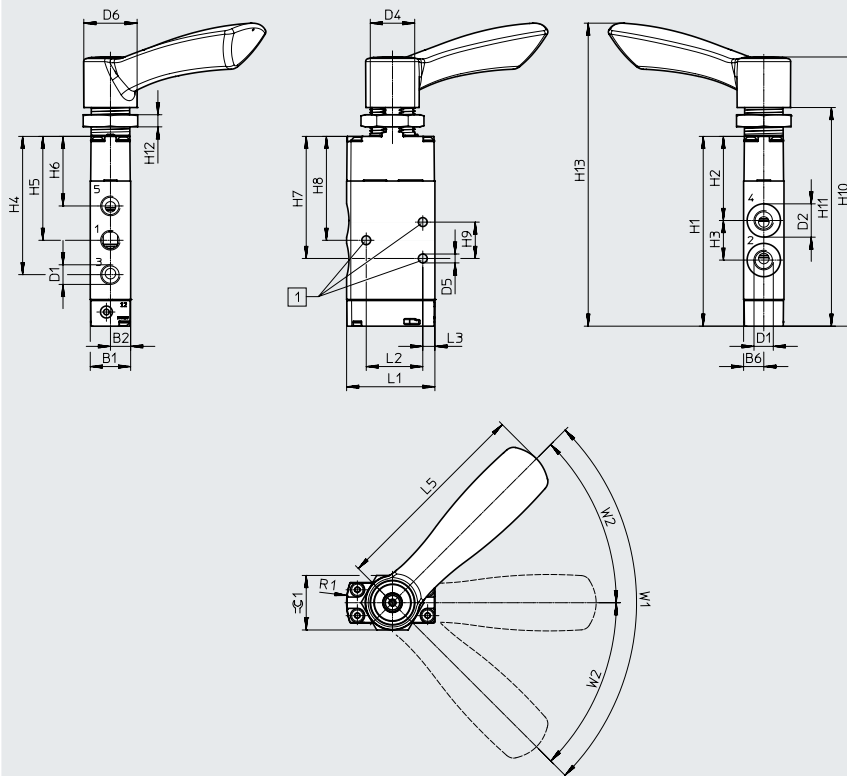
Type	W2
VHEF-HT...	90°

Datasheet – Hand lever valve

Dimensions

Download CAD data → www.festo.com

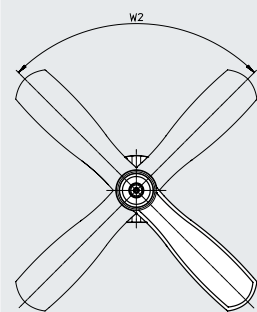
5/2-way and 5/3-way valve



[1] Mounting holes for M4 screws

W1 90° angle for 5/2-way valves
(2 switching positions)W2 2x45° angle for 5/3-way valves
(3 switching positions)

VHEF-HS...



Type	B1	B2	B6	D1	D2 Ø	D4	D5 Ø	D6 Ø	H1	H2	H3	H4	H5	H6
VHEF-H...52...-N18	20	10	10	1/8 NPT	16.5	M22x1.5	4.4	26.4	94	41.7	19.6	68.5	51.5	34.5
VHEF-H...53...-N18				1/8 NPT	22									
VHEF-H...52...-N14				1/4 NPT										
VHEF-H...53...-N14				1/4 NPT										

Type	H7	H8	H9	H10	H11	H12	H13	L1	L2	L3	L5	R1	W1	W2	≈G 1
VHEF-HS...52...-N18	60.5	51.5	18	133.3	108.3	6	150	43.7	28	6	100.9	30	90°	–	27 mm
VHEF-HS...53...-N18													–	45°	
VHEF-HS...52...-N14	71.9	59.7	24.3	149.8	124.8	6	166.5						90°	–	
VHEF-HS...53...-N14													–	45°	

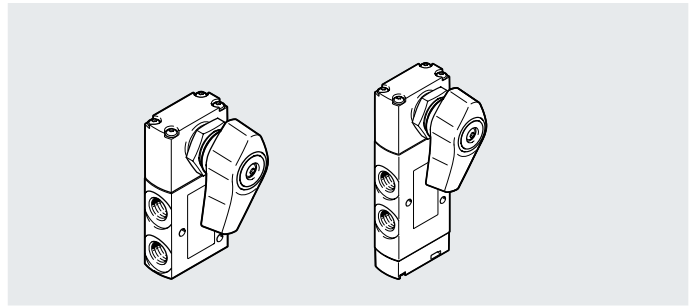
Type	W2
VHEF-HS...	90°

Datasheet – Hand lever valve

Ordering data					
Description	Reset method	Nominal flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valve	–	750	236	8080942	VHEF-HT-B32-N18
		870	230	8080941	VHEF-HT-B32-N14
	Mechanical spring	750	236	8080938	VHEF-HT-M32-M-N18
		870	230	8080937	VHEF-HT-M32-M-N14
5/2-way valve	–	750	265	8080933	VHEF-H-B52-N18
		1200	298	8080934	VHEF-H-B52-N14
	Mechanical spring	750	265	8080935	VHEF-H-M52-M-N18
		1200	298	8081005	VHEF-H-M52-M-N14
5/3-way valve	–	700	265	8080946	VHEF-H-B53C-N18
		1200	298	8080944	VHEF-H-B53C-N14
		530	265	8080950	VHEF-H-B53E-N18
		900	298	8080949	VHEF-H-B53E-N14
	Mechanical spring	700	265	8080954	VHEF-H-P53C-M-N18
		1200	298	8080953	VHEF-H-P53C-M-N14
		530	265	8080958	VHEF-H-P53E-M-N18
		900	298	8080957	VHEF-H-P53E-M-N14

Datasheet – Selector valve, sideways

-  Flow rate
530 ... 1200 l/min
-  Pressure
-0.095 ... 1 MPa
-0.95 ... 10 bar
-  Temperature range
-10 ... +60°C

**General technical data**

Design	Selector switch, sideways
Width [mm]	20
Type of control	Directly actuated
Application information	Manual actuation only The hand lever valve can be rotated 90° during mounting.
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust function	Can be throttled
Mounting position	Any
Max. force when actuating the hand lever ¹⁾ [N]	200
Max. lateral force when actuating the hand lever ¹⁾ [N]	200
Max. switching frequency [Hz]	0.5

1) Measured at a distance of 30 mm from the centre of the selector switch fitting

Technical data – 3/2-way valve

Type	VHEF-EST-B32...18	VHEF-EST-B32...14	VHEF-EST-M32...18	VHEF-EST-M32...14
Design	Poppet valve			
Standard nominal flow rate $1 \rightarrow 2$ [l/min]	750	870	750	870
flow rate $3 \rightarrow 2$ [l/min]	665	750	665	750
Valve function	3/2-way valve, bistable		3/2-way valve, open/closed, monostable	
Overlap	Zero overlap		Zero overlap	
Reset method	–		Mechanical spring	
Manual override	Detenting		–	
Actuating torque at 6 bar [Nm]	0.4		0.4	
Pneumatic port 1, 2, 3	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.6	6	5.6	6
Product weight [g]	206	200	206	200

Datasheet – Selector valve, sideways

Technical data – 5/2-way valve						
Type	VHEF-ES-M52-M-...18		VHEF-ES-M52-M-...14		VHEF-ES-B52-...18	VHEF-ES-B52-...14
Design	Piston slide					
Standard nominal flow rate	1 → 2 [l/min]	750	1200	750	1200	
Valve function	5/2-way valve, monostable			5/2-way valve, bistable		
Overlap	Positive overlap			Positive overlap		
Reset method	Mechanical spring			–		
Manual override	–		–	Detenting	Detenting	
Actuating torque at 6 bar	[Nm]	0.3		0.2		
Pneumatic port 1, 2, 3, 4, 5		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	
Nominal width	[mm]	5.2	7	5.2	7	
Product weight	[g]	235	268	235	268	

Technical data – 5/3-way valve										
Type VHEF-ES-			B53C-...18	B53C-...14	B53E-...18	B53E-...14	P53C-...18	P53C-...14	P53E-...18	P53E-...14
Design			Piston slide							
Standard nominal flow rate	1 → 2	[l/min]	700	1200	530	900	700	1200	530	900
	4 → 5	[l/min]	–	–	400	470	–	–	400	470
	2 → 3	[l/min]	–	–	400	470	–	–	400	470
Valve function			5/3-way valve, closed		5/3-way valve, exhausted		5/3-way valve, closed		5/3-way valve, exhausted	
Overlap			Positive overlap		Positive overlap		Positive overlap		Positive overlap	
Reset method			–		–		Mechanical spring		Mechanical spring	
Manual override			Detenting		Detenting		–		–	
Actuating torque at 6 bar		[Nm]	0.3				0.7			
Pneumatic port 1, 2, 3, 4, 5			1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width		[mm]	5.2	7	5.2	7	5.2	7	5.2	7
Product weight		[g]	235	268	235	268	235	268	235	268

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:--:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[MPa] –0.095 ... 1
	[bar] –0.95 ... 10
Temperature of medium [°C]	–10 ... +60
Ambient temperature [°C]	–10 ... +60
Corrosion resistance class CRC ¹⁾	1

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

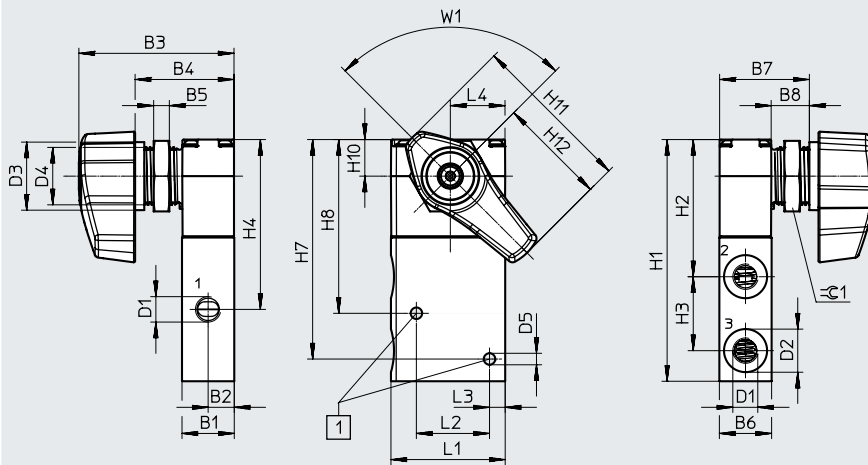
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

Datasheet – Selector valve, sideways

Dimensions

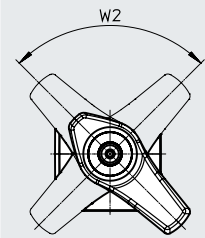
Download CAD data → www.festo.com

3/2-way valve



[1] Mounting holes for M4 screws

VHEF-EST...



Type	B1	B2	B3	B4	B5	B6	B7	B8	D1	D2 Ø	D3 Ø	D4	D5 Ø	H1
VHEF-EST...32...N18	20	10	59.4	38	6	10	34.5	14.6	1/8 NPT	16.5	26	M22x1.5	4.4	92.5
VHEF-EST...32...N14									1/4 NPT	22				

Type	H2	H3	H4	H7	H8	H10	H11	H12	L1	L2	L3	L4	W1	±C 1
VHEF-EST...32...N18	52.5	28.3	65	84	66.5	14	62.2	41.5	43.7	28	6	20.9	90°	27 mm
VHEF-EST...32...N14														

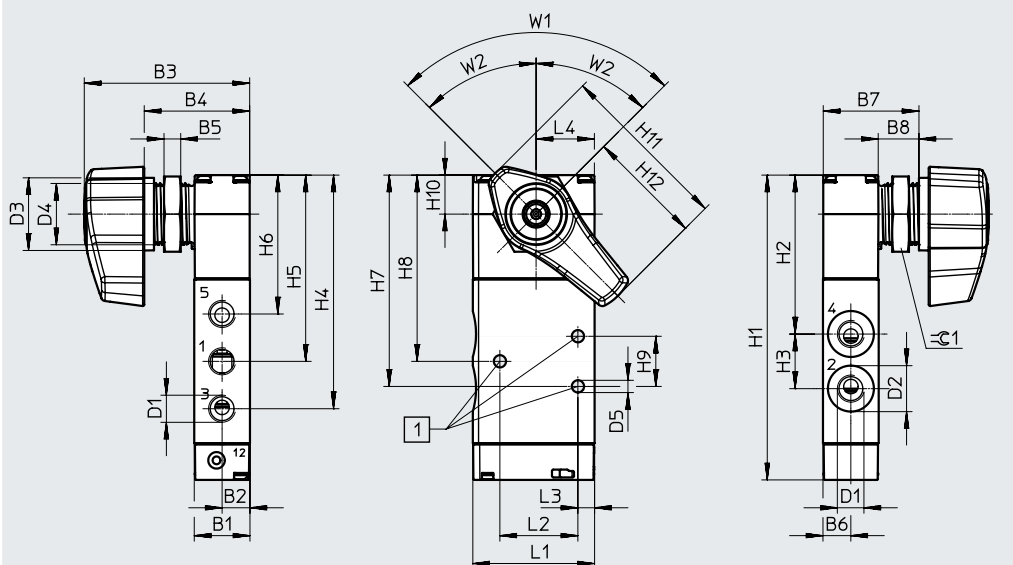
Type	W2
VHEF-EST...	90°

Datasheet – Selector valve, sideways

Dimensions

Download CAD data → www.festo.com

5/2-way and 5/3-way valve

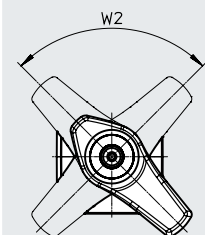


[1] Mounting holes for M4 screws

W1 90° angle for 5/2-way valves
(2 switching positions)

W2 2x45° angle for 5/3-way valves
(3 switching positions)

VHEF-ES...



Type	B1	B2	B3	B4	B5	B6	B7	B8	D1	D2 Ø	D3 Ø	D4	D5 Ø	H1	H2	H3
VHEF-ES...52...N18	20	10	59.4	38	6	10	34.5	14.6	1/8 NPT	16.5	26	M22x1.5	4.4	109.4	57.1	19.6
VHEF-ES...53...N18									1/8 NPT							
VHEF-ES...52...N14									1/4 NPT	22				125.9	61.3	27.6
VHEF-ES...53...N14									1/4 NPT							

Type	H4	H5	H6	H7	H8	H9	H10	H11	H12	L1	L2	L3	L4	W1	W2	±1
VHEF-ES...52...N18	83.9	66.9	49.9	75.9	66.9	18	14	62.2	41.5	43.7	28	6	20.9	90°	–	27 mm
VHEF-ES...53...N18														–	45°	
VHEF-ES...52...N14	97.6	75.1	52.7	87.3	75.1	24.3								90°	–	
VHEF-ES...53...N14														–	45°	

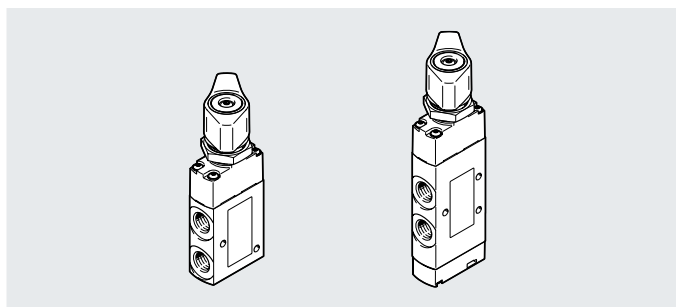
Type	W2
VHEF-ES...	90°

Datasheet – Selector valve, sideways

Ordering data					
Description	Reset method	Nominal flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valve	–	750	206	4414814	VHEF-EST-B32-N18
		870	200	4414815	VHEF-EST-B32-N14
	Mechanical spring	750	206	4414806	VHEF-EST-M32-M-N18
		870	200	4414807	VHEF-EST-M32-M-N14
5/2-way valve	Mechanical spring	750	235	4414808	VHEF-ES-M52-M-N18
		1200	268	4414809	VHEF-ES-M52-M-N14
	–	750	235	4414816	VHEF-ES-B52-N18
		1200	268	4414817	VHEF-ES-B52-N14
5/3-way valve	–	700	235	4414818	VHEF-ES-B53C-N18
		1200	268	4414819	VHEF-ES-B53C-N14
		530	235	4414820	VHEF-ES-B53E-N18
		900	268	4414821	VHEF-ES-B53E-N14
	Mechanical spring	700	235	4414810	VHEF-ES-P53C-M-N18
		1200	268	4414811	VHEF-ES-P53C-M-N14
		530	235	4414812	VHEF-ES-P53E-M-N18
		900	268	4414813	VHEF-ES-P53E-M-N14

Datasheet – Selector valve

-  Flow rate
530 ... 1200 l/min
-  Pressure
-0.095 ... 1 MPa
-0.95 ... 10 bar
-  Temperature range
-10 ... +60°C



General technical data	
Design	Selector switch
Width [mm]	20
Type of control	Directly actuated
Application information	Manual actuation only The hand lever valve can be rotated 90° during mounting.
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust function	Can be throttled
Mounting position	Any
Max. force when actuating the hand lever ¹⁾ [N]	200
Max. lateral force when actuating the hand lever ¹⁾ [N]	200
Max. switching frequency [Hz]	0.5

1) Measured at a distance of 30 mm from the centre of the selector switch fitting

Technical data – 3/2-way valve		VHEF-ET-B32...18	VHEF-ET-B32...14	VHEF-ET-M32...18	VHEF-ET-M32...14
Type		Poppet valve			
Design		Poppet valve			
Standard nominal flow rate	1 → 2 [l/min] 3 → 2 [l/min]	750 665	870 750	750 665	870 750
Valve function		3/2-way valve, bistable		3/2-way valve, open/closed, monostable	
Overlap		Zero overlap		Zero overlap	
Reset method		–		Mechanical spring	
Manual override		Detenting		–	
Actuating torque at 6 bar [Nm]		0.7		0.4	
Release torque at 6 bar [Nm]		0.4	0.4	–	–
Pneumatic port 1, 2, 3		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]		5.6	6	5.6	6
Product weight [g]		206	200	206	200

Datasheet – Selector valve

Technical data – 5/2-way valve				
Type	VHEF-E-M52-M-...18	VHEF-E-M52-M-...14	VHEF-E-B52-...18	VHEF-E-B52-...14
Design	Piston slide			
Standard nominal flow rate  [l/min]	750	1200	750	1200
Valve function	5/2-way valve, monostable		5/2-way valve, bistable	
Overlap	Positive overlap		Positive overlap	
Reset method	Mechanical spring		–	
Manual override	–		Detenting	Detenting
Actuating torque at 6 bar [Nm]	0.3		0.3	
Release torque at 6 bar [Nm]	–		0.3	0.3
Pneumatic port 1, 2, 3, 4, 5	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.2	7	5.2	7
Product weight [g]	235	268	235	268

Technical data – 5/3-way valve											
Type VHEF-E-			B53C-...18	B53C-...14	B53E-...18	B53E-...14	P53C-...18	P53C-...14	P53E-...18	P53E-...14	
Design			Piston slide								
Standard nominal flow rate	1 → 2	[l/min]	700	1200	530	900	700	1200	530	900	
	4 → 5	[l/min]	–	–	400	470	–	–	400	470	
	2 → 3	[l/min]	–	–	400	470	–	–	400	470	
Valve function			5/3-way valve, closed		5/3-way valve, exhausted		5/3-way valve, closed		5/3-way valve, exhausted		
Overlap			Positive overlap		Positive overlap		Positive overlap		Positive overlap		
Reset method			–		–		Mechanical spring		Mechanical spring		
Manual override			Detenting		Detenting		–		–		
Actuating torque at 6 bar		[Nm]	0.4				0.7				
Release torque at 6 bar		[Nm]	0.4	0.4	0.4	0.4	–	–	–	–	
Pneumatic port 1, 2, 3, 4, 5			1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	
Nominal width			[mm]	5.2	7	5.2	7	5.2	7	5.2	7
Product weight			[g]	235	268	235	268	235	268	235	268

Datasheet – Selector valve

Materials	
Housing	Anodised wrought aluminium alloy
Lever	PA-reinforced
Cover	PA-reinforced
Seal	NBR
Note on materials	RoHS-compliant
Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[MPa] -0.095 ... 1
	[bar] -0.95 ... 10
Temperature of medium	[°C] -10 ... +60
Ambient temperature	[°C] -10 ... +60
Corrosion resistance class CRC ¹⁾	1

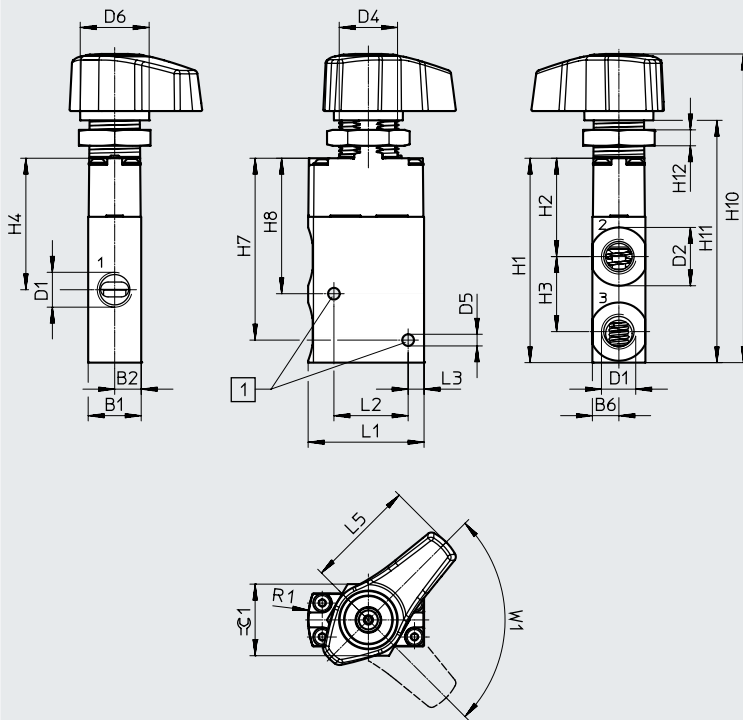
1) Corrosion resistance class CRC 1 to Festo standard FN 940070

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

Datasheet – Selector valve

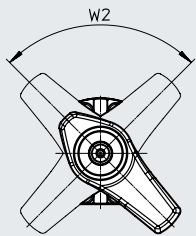
Dimensions

3/2-way valve

Download CAD data → www.festo.com

[1] Mounting holes for M4 screws

VHEF-ET...



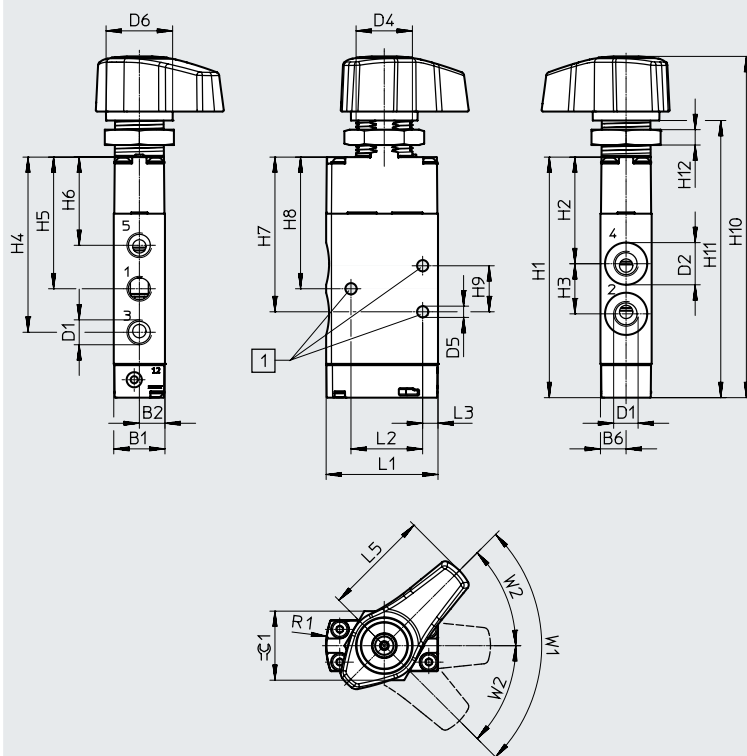
Type	B1	B2	B6	D1	D2 Ø	D4	D5 Ø	D6 Ø	H1	H2	H3	H4
VHEF-ET...32...N18	20	10	10	1/8 NPT	16.5	M22x1.5	4.4	26	77.1	37.1	28.3	49.6
VHEF-ET...32...N14				1/4 NPT	22							

Type	H7	H8	H10	H11	H12	L1	L2	L3	L5	R1	W1	≈ 1
VHEF-ET...32...N18	68.6	51.1	116.5	91.5	6	43.7	28	6	41.5	30	90°	27 mm
VHEF-ET...32...N14												

Type	W2
VHEF-ET...	90°

Download CAD data → www.festo.com

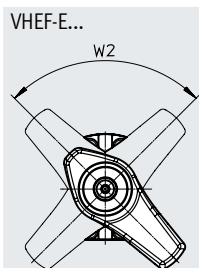
5/2-way and 5/3-way valve



[1] Mounting holes for M4 screws

W1 90° angle for 5/2-way valves
(2 switching positions)

W2 2x45° angle for 5/3-way valves
(3 switching positions)



Type	B1	B2	B6	D1	D2 Ø	D4	D5 Ø	D6 Ø	H1	H2	H3	H4	H5	H6
VHEF-E...52...-N18	20	10	10	1/8 NPT	16.5	M22x1.5	4.4	26	94	41.7	19.6	68.5	51.5	34.5
VHEF-E...53...-N18				1/8 NPT										
VHEF-E...52...-N14				1/4 NPT	22				110.5	45.9	27.6	82.2	59.7	37.3
VHEF-E...53...-N14				1/4 NPT										

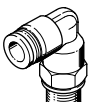
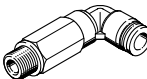
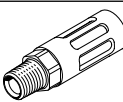
Type	H7	H8	H9	H10	H11	H12	L1	L2	L3	L5	R1	W1	W2	±G 1
VHEF-E...52...-N18	60.5	51.5	18	133.3	108.3	6	43.7	28	6	41.5	30	90°	–	27 mm
VHEF-E...53...-N18												–	45°	
VHEF-E...52...-N14	71.9	59.7	24.3	149.8	124.8							90°	–	
VHEF-E...53...-N14												–	45°	

Type	W2
VHEF-E...	90°

Datasheet – Selector valve

Ordering data					
Description	Reset method	Nominal flow rate [l/min]	Weight [g]	Part no.	Type
3/2-way valve	–	750	206	8080966	VHEF-ET-B32-N18
		870	200	8080965	VHEF-ET-B32-N14
	Mechanical spring	750	206	8080970	VHEF-ET-M32-M-N18
		870	200	8080969	VHEF-ET-M32-M-N14
5/2-way valve	–	750	235	8080962	VHEF-E-B52-N18
		1200	268	8080961	VHEF-E-B52-N14
	Mechanical spring	750	235	8080974	VHEF-E-M52-M-N18
		1200	268	8080973	VHEF-E-M52-M-N14
5/3-way valve	–	700	235	8080978	VHEF-E-B53C-N18
		1200	268	8080977	VHEF-E-B53C-N14
		530	235	8080982	VHEF-E-B53E-N18
		900	268	8080981	VHEF-E-B53E-N14
	Mechanical spring	700	235	8080986	VHEF-E-P53C-M-N18
		1200	268	8080985	VHEF-E-P53C-M-N14
		530	235	8080990	VHEF-E-P53E-M-N18
		900	268	8080989	VHEF-E-P53E-M-N14

Accessories

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

1) Packaging unit