

Manually operated valves VHEF, NPT

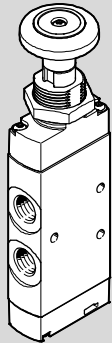
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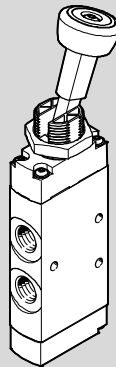
Manually operated valves VHEF, NPT

Key features

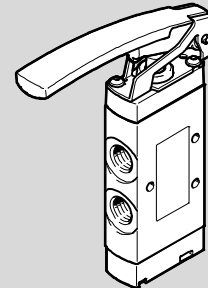
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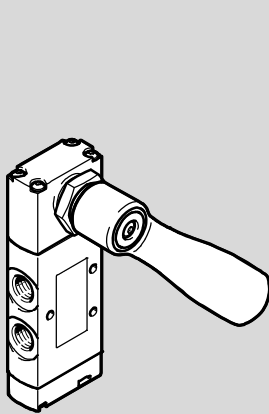
Pushbutton valve



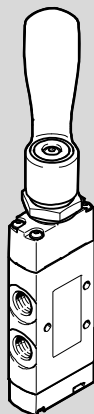
Toggle lever valve



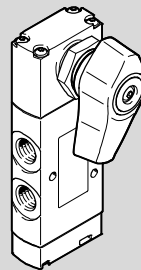
Finger lever valve



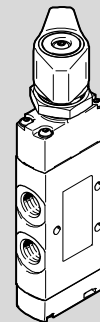
Hand lever valve, on the side



Hand lever valve



Selector valve, on the side



Selector valve

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, valves VHEF offer outstanding pneumatic performance for a wide range of applications
- Light weight
- Minimal actuating forces

Versatile

- Flexibility of the pneumatic working lines provides a practical solution to different requirements
- The 3/2-way valve be used as normally closed (NC) or normally open (NO)
- Round silencer or ducted exhaust air
- Suitable for vacuum
- Reverse operation possible
- Pressure range from vacuum to 10 bar possible
- Version:
 - Pushbutton valve
 - Toggle lever valve
 - Finger lever valve
 - Hand lever valve, on the side
 - Hand lever valve
 - Selector valve, on the side
 - Selector valve

Reliable

- Durable thanks to tried and tested piston spool and disc seat valves
- Robust construction: basic valve made from metal, cover made from plastic

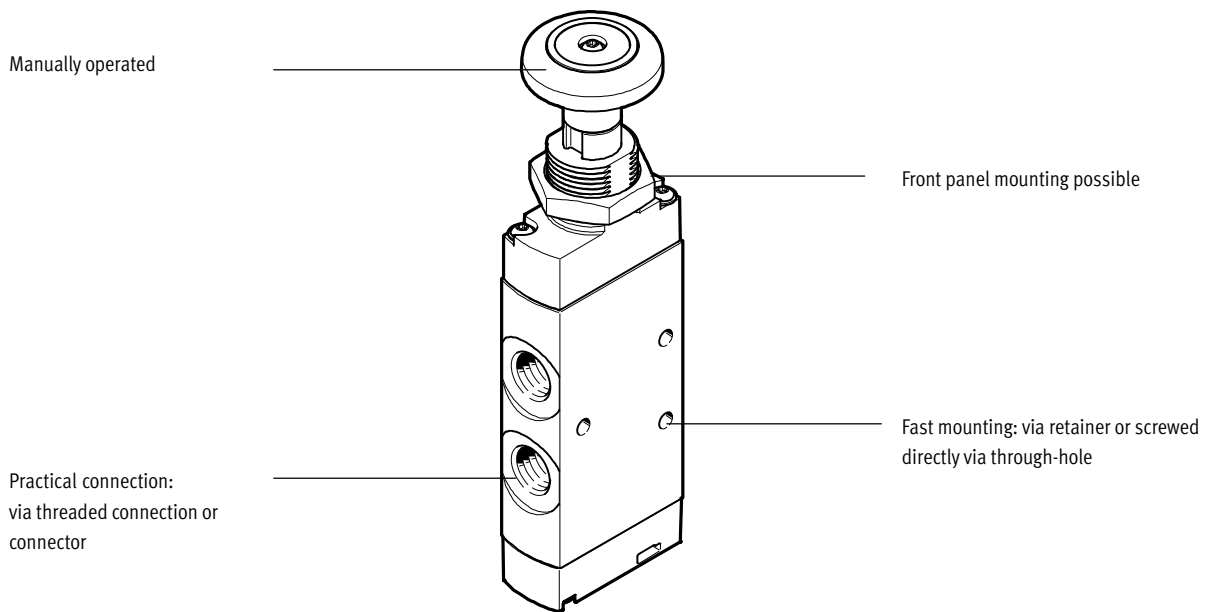
Easy to install

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

Manually operated valves VHEF, NPT

Key features

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Equipment options

Similarities

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

Differences

3/2-way valve,
monostable (M32)

- Normally open/closed (NO, NC)
- Non-detenting (monostable)

bistable (B32)
detenting (bistable)

5/2-way valve,
monostable (M52)

- Resetting
- Non-detenting (monostable)

bistable (B52)
detenting (bistable)

5/3-way valve,
detenting (B53C)
mid-position closed

detenting (B53E)
mid-position exhausted

non-detenting (P53C)
mid-position closed

non-detenting (P53E)
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

Manually operated valves VHEF, NPT

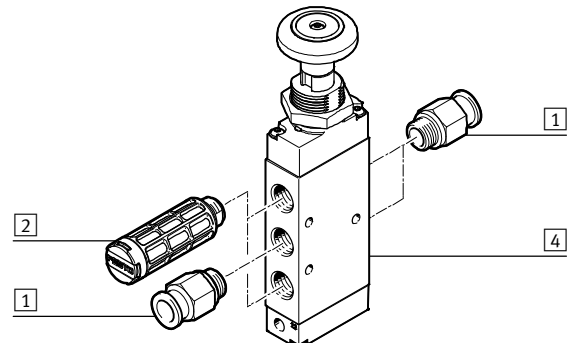
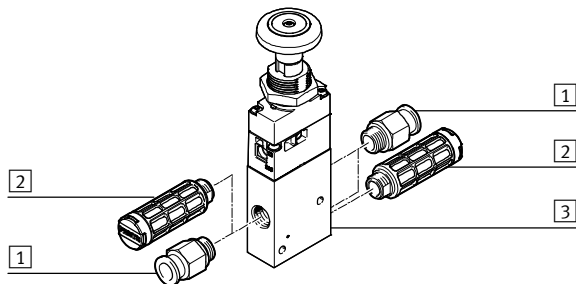
Peripherals overview

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Pushbutton valve, manually operated

3/2-way valve

5/2-way valve

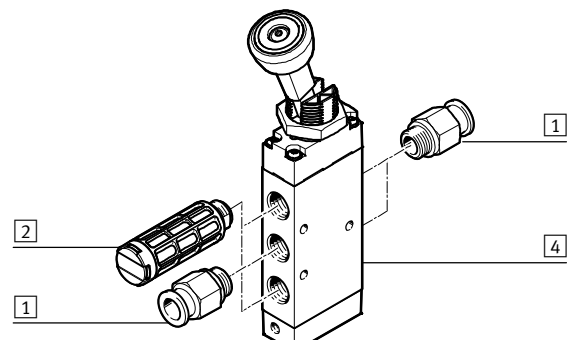
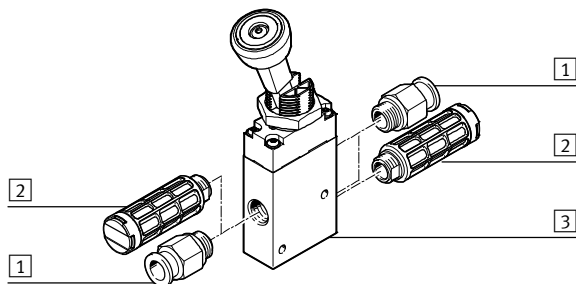


	Brief description	→ Page/Internet
1 Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
2 Silencers	For exhaust ports (3, 5)	52
3 3/2-way valve	VHEF-PTC-M32..., VHEF-PTCZ-M32...	12
4 5/2-way valve	VHEF-P-M52...	12

Toggle 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-VT-M32..., VHEF-VT-B32...	19
4 5/2-way valve	VHEF-V-M52..., VHEF-V-B52...	19

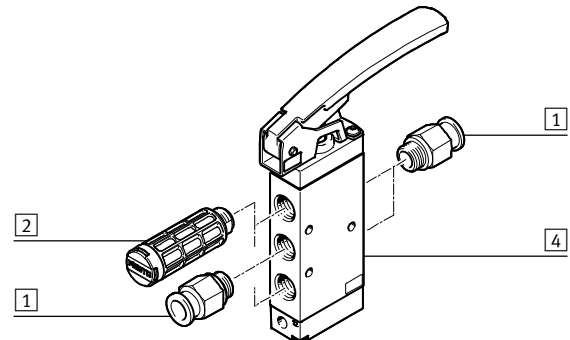
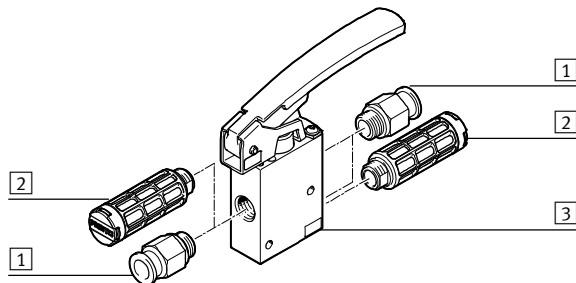
Manually operated valves VHEF, NPT

Peripherals overview

Finger lever valve, manually operated

3/2-way valve

5/2-way valve

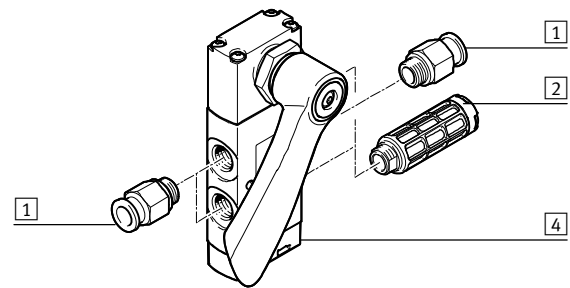
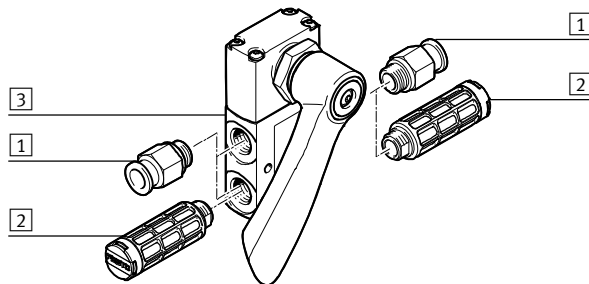


	Brief description	→ Page/Internet
1 Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
2 Silencers	For exhaust ports (3, 5)	52
3 3/2-way valve	VHEF-LT-M32...	25
4 5/2-way valve	VHEF-L-M52...	25

Hand lever valve, on the side, 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...	 30

Manually operated valves VHEF, NPT

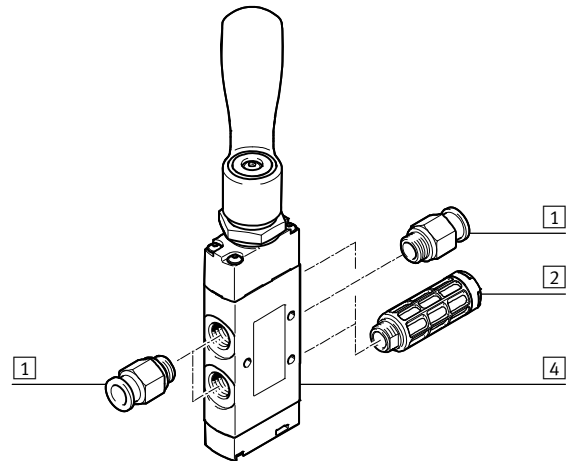
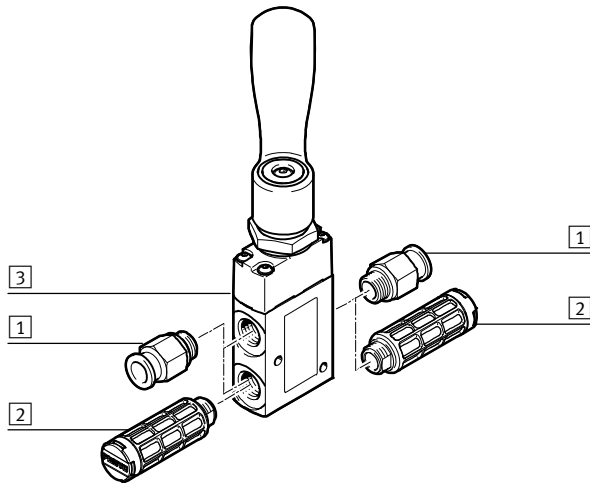
Peripherals overview

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Hand lever valve, manually operated

3/2-way valve

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

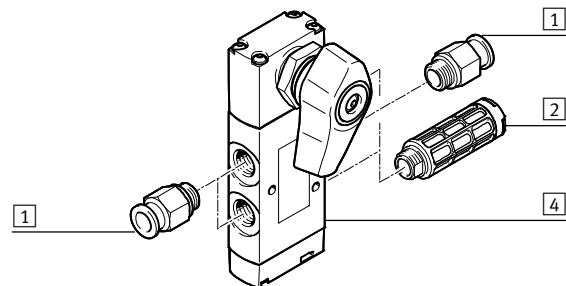
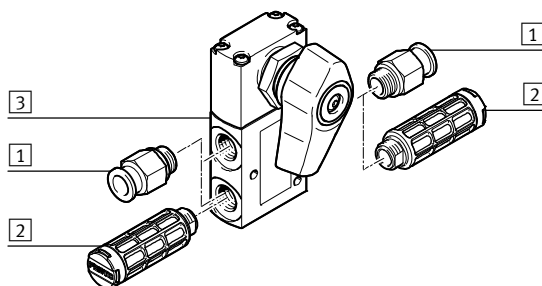


	Brief description	→ Page/Internet
1 Fitting	For supply air/exhaust ports (1, 3, 5) and working ports (2, 4)	52
2 Silencers	For exhaust ports (3, 5)	52
3 3/2-way valve	VHEF-HT...32...	35
4 5/2- or 5/3-way valve	VHEF-H...52..., VHEF-H...53...	35

Selector valve, on the side, 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...	41

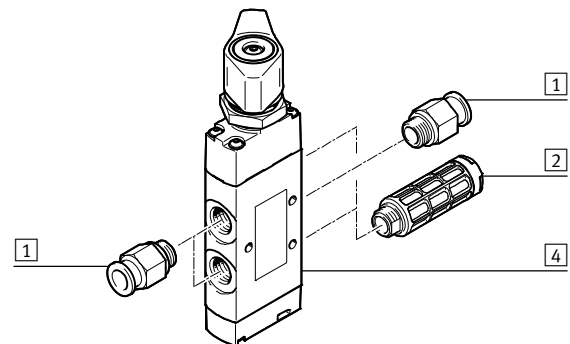
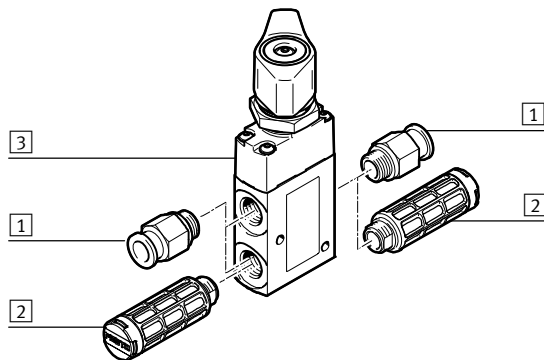
Manually operated valves VHEF, NPT

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...	46

Manually operated valves VHEF, NPT

Key features

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Manually operated valves

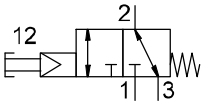
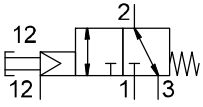
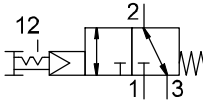
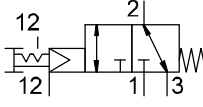
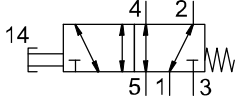
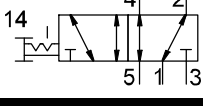
Manually operated valves are used in all industrial sectors, as well as in the skilled trades.

They are used to carry out simple processes such as clamping or closing safety doors.

Depending on the required actuation (pushing, rotating/swivelling or tilting), the valves are either resetting

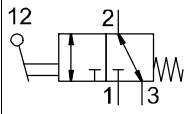
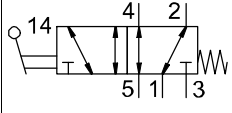
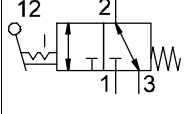
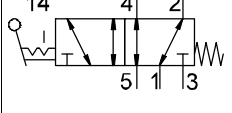
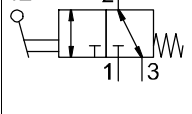
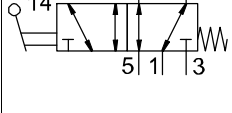
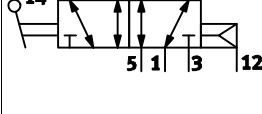
or non-resetting.

The valves are directly 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) • Reset via mechanical spring • Pneumatically piloted, pilot air, internal • Reversible
	VHEF-PTCZ-M32-M-...	3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Reset via mechanical spring • Suitable for vacuum • Pneumatically piloted, pilot air, internal • Reversible
	VHEF-PTC-B32-...	3/2-way valve, bistable • Normally closed (1 → 2) • Normally open (3 → 2) • Reset via mechanical spring • Pneumatically piloted, pilot air, internal • Reversible
	VHEF-PTCZ-B32-...	3/2-way valve, bistable • Normally closed (1 → 2) • Normally open (3 → 2) • Reset via mechanical spring • Suitable for vacuum • Pneumatically piloted, pilot air, internal • Reversible
	VHEF-P-M52-M-...	5/2-way valve, monostable • Reset via mechanical spring • Suitable for vacuum • Reversible
	VHEF-P-B52-...	5/2-way valve, bistable • Suitable for vacuum • Reversible

Manually operated valves VHEF, NPT

Key features

Valve functions		
Circuit symbol	Type	Description
Toggle lever valve		
 12 2 1 3	VHEF-VT-M32-M-...	 3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Reset via mechanical spring • Pneumatically piloted, pilot air, internal • Suitable for vacuum • Reversible
 14 4 2 5 1 3	VHEF-V-M52-M-...	 5/2-way valve, monostable • Reset via mechanical spring • Suitable for vacuum • Reversible
 12 2 1 3	VHEF-VT-B32-...	 3/2-way valve, bistable • Normally closed (1 → 2) • Normally open (3 → 2) • Reset via mechanical spring • Pneumatically piloted, pilot air, internal • Suitable for vacuum • Reversible
 14 4 2 5 1 3	VHEF-V-B52-...	5/2-way valve, bistable • Reset via mechanical spring • Suitable for vacuum • Reversible
Finger lever valve		
 12 2 1 3	VHEF-LT-M32-M-...	3/2-way valve, monostable • Normally closed (1 → 2) • Normally open (3 → 2) • Reset via mechanical spring • Pneumatically piloted, pilot air, internal • Suitable for vacuum • Reversible
 14 4 2 5 1 3	VHEF-L-M52-M-...	5/2-way valve, monostable • Reset via mechanical spring • Suitable for vacuum • Reversible
 14 4 2 5 1 3 12	VHEF-L-M52-E-...	5/2-way valve, monostable • Reset via pneumatic spring • Suitable for vacuum • Reversible

**New**

VHEF-H/HT..., VHEF-E/ET...

Manually operated valves VHEF, NPT

Key features

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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) • Reset via mechanical spring • 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) • Reset via mechanical spring • 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 • Reset via mechanical spring • 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 • Reset via mechanical spring • 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) • Reset via mechanical spring • 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).

**New**

VHEF-V..., VHEF-E..., VHEF-H...

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Manually actuated valves VHEF, NPT

Type codes

VHEF		-	P	T	C	Z	-	M32	-	M	-	N14
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Valve series	
VHEF	Manually actuated valves

Version	
Actuation	
E	Selector switch
H	Hand lever
L	Finger lever
P	Pushbutton
V	Toggle lever
ES	Selector switch, on the side
HS	Hand lever, on the side

Design principle	
-	Piston slide
T	Disc seat

Type of control	
-	Directly actuated
C	Indirectly actuated

Pilot air	
-	Internal
Z	External

Valve function	
B32	3/2-way valve, detenting
B52	5/2-way valve, detenting
M32	3/2-way valve, monostable, normally closed or open
M52	5/2-way valve, monostable, resetting
B53C	5/3-way valve, detenting, mid-position closed
B53E	5/3-way valve, detenting, mid-position exhausted
P53C	5/3-way valve, mid-position closed
P53E	5/3-way valve, mid-position exhausted

Reset method for monostable valves	
-	None (for bistable valves)
E	Pneumatic spring
M	Mechanical spring

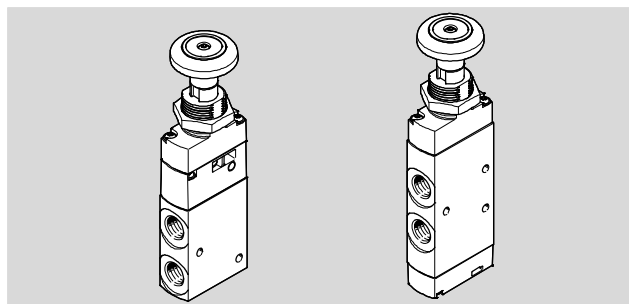
Pneumatic connection	
N14	Thread 1/4 NPT
N18	Thread 1/8 NPT

Manually actuated valves VHEF, NPT

Technical data – Pushbutton valve

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



General technical data	
Design	Pushbutton valve
Width [mm]	20
Note regarding use	Actuate manually only
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust air function	With flow control option
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
Version		Disc seat 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
Unlocking force at 6 bar [N]		25	25	–	–
Pneumatic connection 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

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.
- It must be ensured that the max. operating force exerted on the pushbutton does not exceed 200 N in all directions. This could overload it and cause it to break.

Manually actuated valves VHEF, NPT

Technical data – 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
Version	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	Overlap		Overlap	
Reset method	–		Mechanical spring	
Type of control	Direct		Direct	
Manual override	Detenting		–	
Actuating force at 6 bar [N]	20		42	
Unlocking force at 6 bar [N]	35		–	
Pneumatic connection 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



Note

- An axial torque greater than 3 Nm on the pushbutton is to be avoided. This could overload it and cause it to break.
- It must be ensured that the max. operating force exerted on the pushbutton does 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

Manually actuated valves VHEF, NPT

Technical data – Pushbutton valve

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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 operating/ pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Operating pressure range	[bar]	3.5 ... 10	-0.95 ... 10	-0.95 ... 10
With internal or external pilot air		Internal	External	–
NC valves	[bar]	3.5 ... 10	3 ... 10	–
NO valves	[bar]	3.5 ... 10	3 ... 10	–
Operating pressure range	[psi]	51 ... 145	-14 ... 145	-14 ... 145
With internal or external pilot air		Internal	External	–
NC valves	[psi]	51 ... 145	44 ... 145	–
NO valves	[psi]	51 ... 145	44 ... 145	–
Pilot pressure range	[bar]	3.5 ... 10	3 ... 10	–
Temperature of medium	[°C]	-10 ... +60		
Ambient temperature	[°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾		1		

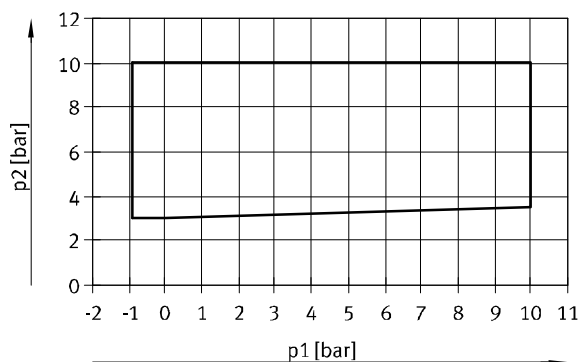
1) Corrosion resistance class CRC 1 to Festo standard FN 940070

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

Pilot pressure p2 as a function of working pressure p1

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

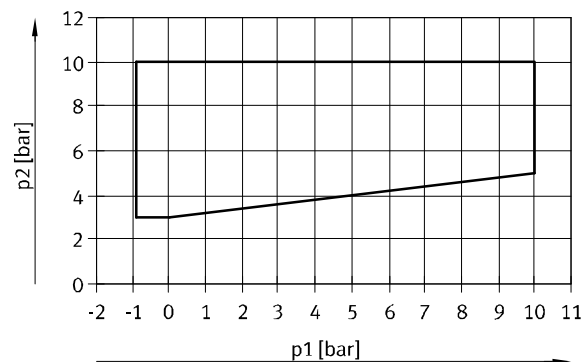
(normally closed, NC)



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

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

(normally open, NO)



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

Manually actuated valves VHEF, NPT

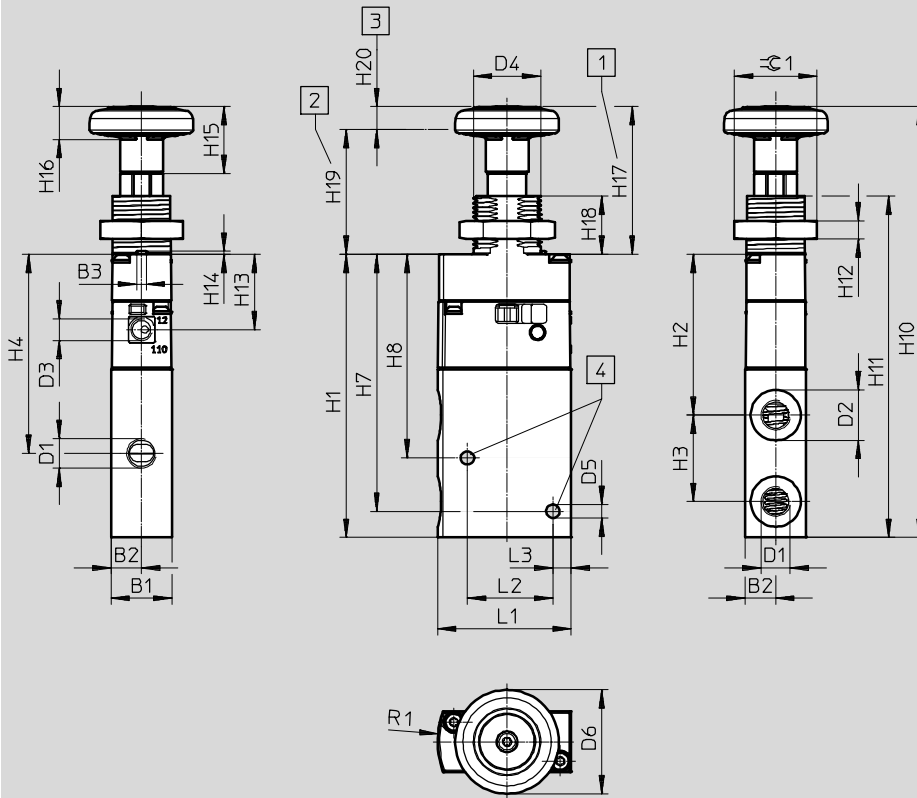
Technical data – Pushbutton valve

FESTO

Dimensions

Download CAD data → www.festo.com

3/2-way valve



1 Normal position

2 Actuated position

3 Valve stroke

4 Mounting holes for screws M4

Type	B1	B2	B3	D1	D2	D3	D4	D5	D6	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															

Manually actuated valves VHEF, NPT

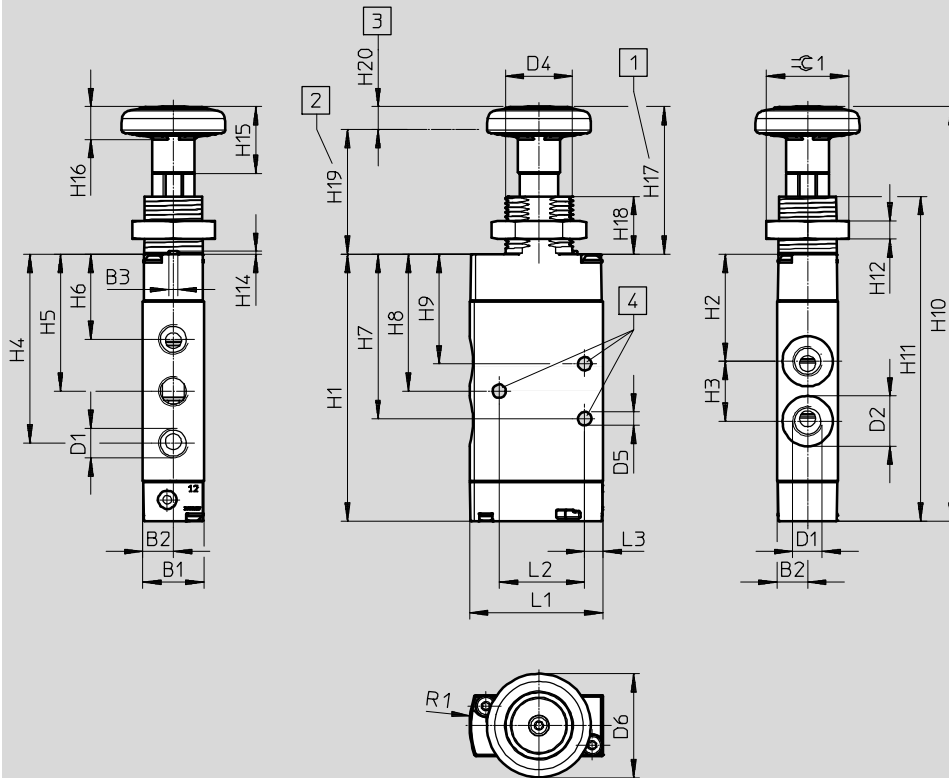
Technical data – Pushbutton valve

FESTO

Dimensions

Download CAD data → www.festo.com

5/2-way valve, -N18



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

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	≈ 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																

Manually actuated valves VHEF, NPT

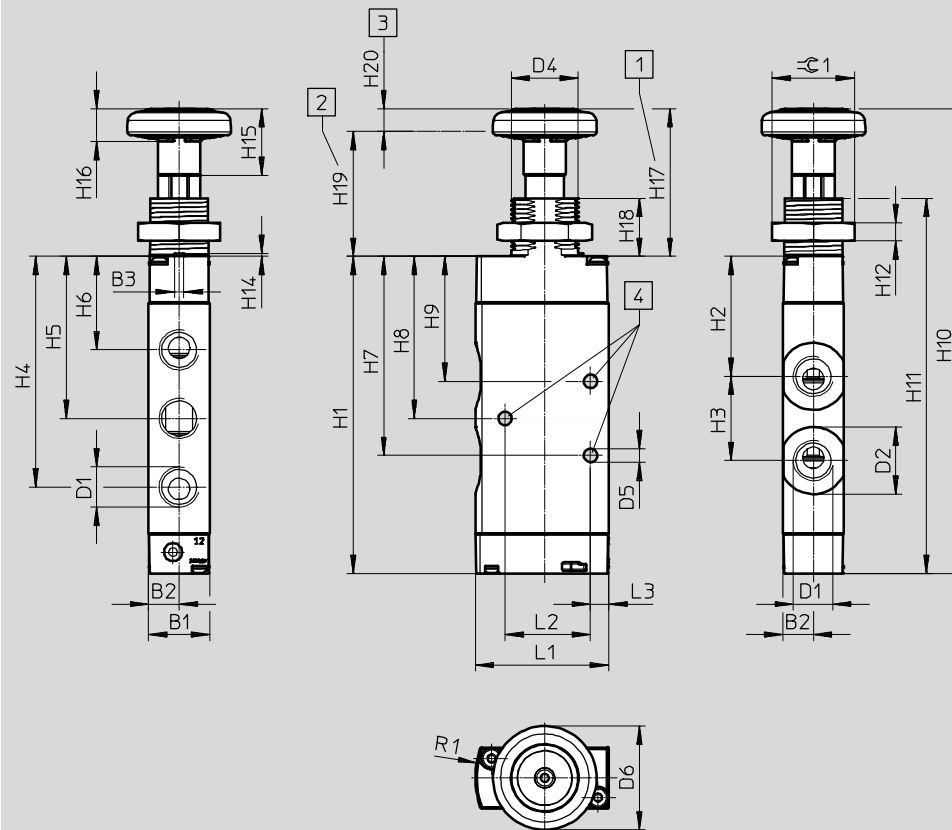
Technical data – Pushbutton valve

FESTO

Dimensions

Download CAD data → www.festo.com

5/2-way valve, -N14



1 Normal position

2 Actuated position

3 Valve stroke

4 Mounting holes for screws M4

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																

Manually actuated valves VHEF, NPT

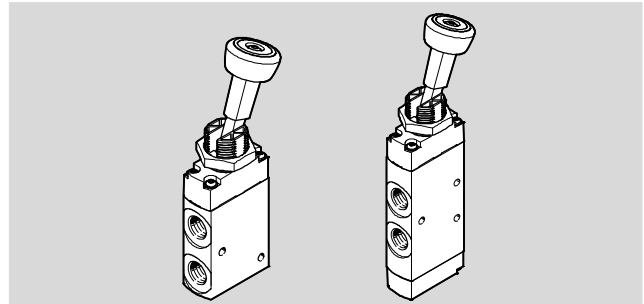
Technical data – Pushbutton valve

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

Manually actuated valves VHEF, NPT

Technical data – Toggle lever valve

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



General technical data	
Design	Toggle lever, top
Width [mm]	20
Note regarding use	Actuate manually only
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust air function	With flow control option
Mounting position	Optional
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
Version	Disc seat valve			
Standard nominal flow rate 1 → 2 [l/min]	750	870	750	870
Standard nominal flow rate 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	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. transverse force on actuation [N]	140	140	140	140
Pneumatic connection 1, 2, 3	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]	5.6	6	5.6	6

Manually actuated valves VHEF, NPT

Technical data – Toggle lever valve

FESTO

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
Version	Piston slide			
Standard nominal flow rate $1 \rightarrow 2$ [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. transverse force on actuation [N]	140	140	140	140
Pneumatic connection 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

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range [bar]	–0.95 ... 10
[psi]	–14 ... 145
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. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Manually actuated valves VHEF, NPT

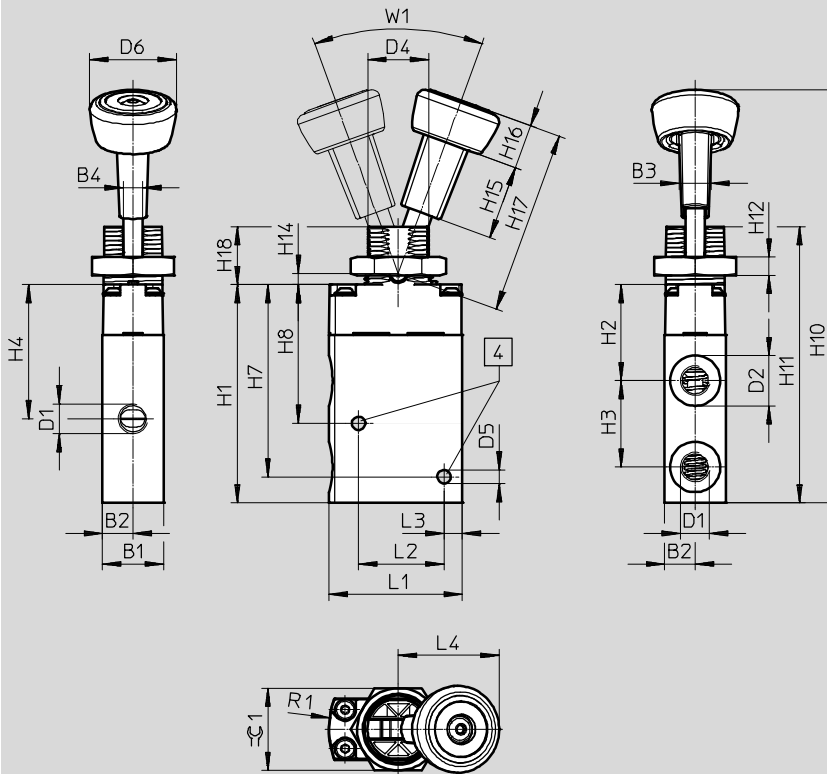
Technical data – Toggle lever valve

FESTO

Dimensions

Download CAD data → www.festo.com

3/2-way valve



4 Mounting holes for screws M4

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														

Manually actuated valves VHEF, NPT

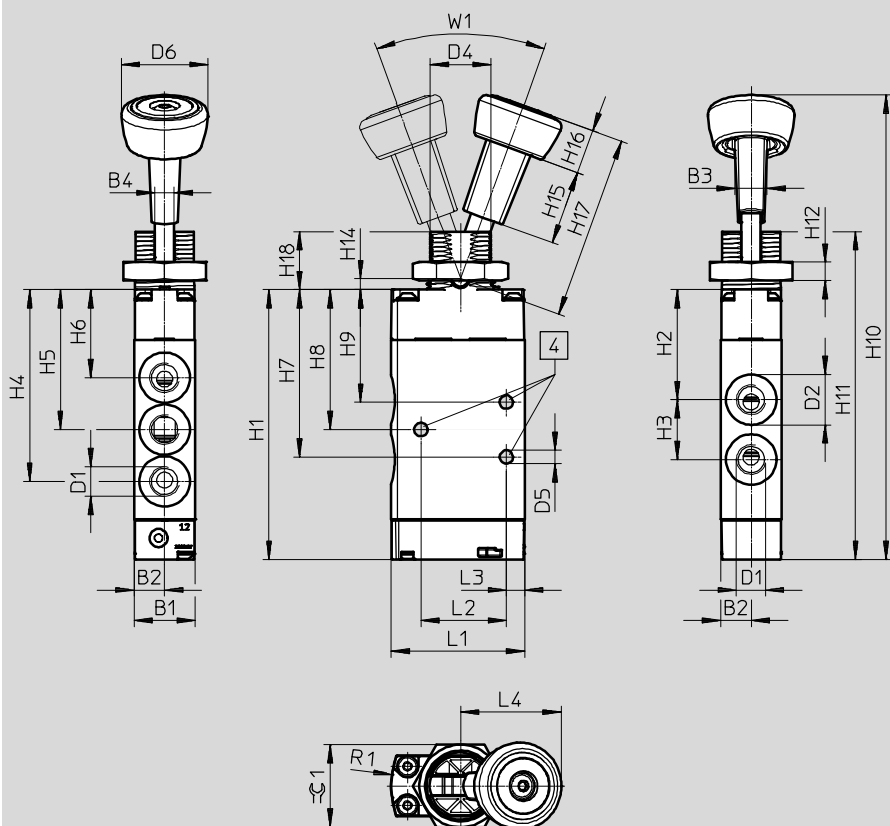
Technical data – Toggle lever valve

FESTO

Dimensions

Download CAD data → www.festo.com

5/2-way valve, -N18



4 Mounting holes for screws M4

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																	

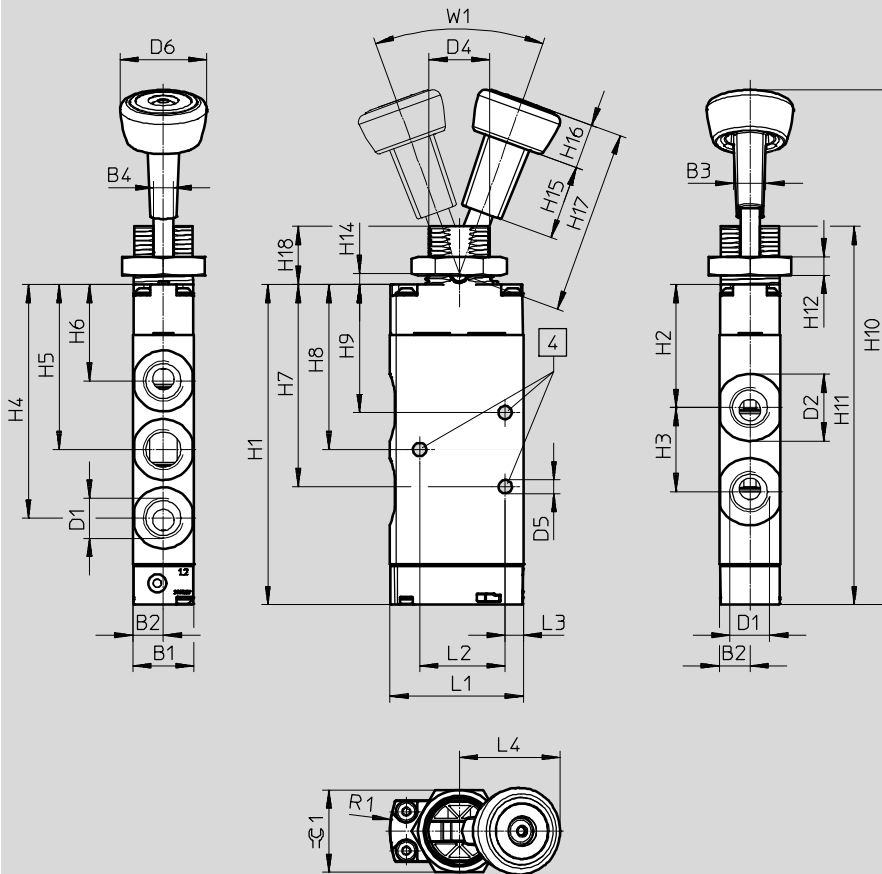
Manually actuated valves VHEF, NPT

Technical data – Toggle lever valve

Dimensions

Download CAD data → www.festo.com

5/2-way valve, -N14



4 Mounting holes for screws M4

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																

Manually actuated valves VHEF, NPT

Technical data – Toggle lever valve

Ordering data					
Description	Reset	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	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	750	208	5300040	VHEF-V-M52-M-N18
		1200	240	5300042	VHEF-V-M52-M-N14

Manually operated valves VHEF, NPT

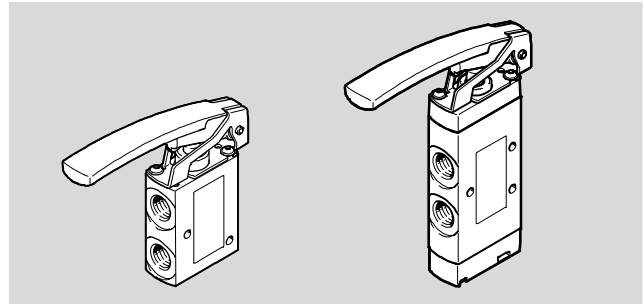
FESTO

Technical data – Finger lever valve

-  - Flow rate
750 ... 1200 l/min

-  - Pressure
-0.95 ... 10 bar

-  - Temperature range
-10 ... +60 °C



General technical data	
Design	Finger lever
Width [mm]	20
Type of control	Directly actuated
Note regarding use	Actuate manually only
Actuation type	Manual
Type of mounting	Via through-hole
Sealing principle	Soft
Flow direction	Reversible
Exhaust air function	With flow control option
Mounting position	Optional
Max. switching frequency [Hz]	0.5

Technical data – 3/2-way valve		
Type	VHEF-LT-M32-M...18	VHEF-LT-M32-M...14
Version	Disc seat 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 connection 1, 2, 3	1/8 NPT	1/4 NPT
Nominal size [mm]	5.6	6

Manually operated valves VHEF, NPT



Technical data – 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
Version	Piston slide		Piston slide	
Standard nominal flow rate [l/min] 1 → 2	750	750	750	750
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 connection 1, 2, 3, 4, 5	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal size [mm]	5.2	7	5.2	7

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating/ pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range [bar]	–0.95 ... 10
[psi]	–14 ... 145
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. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Manually operated valves VHEF, NPT

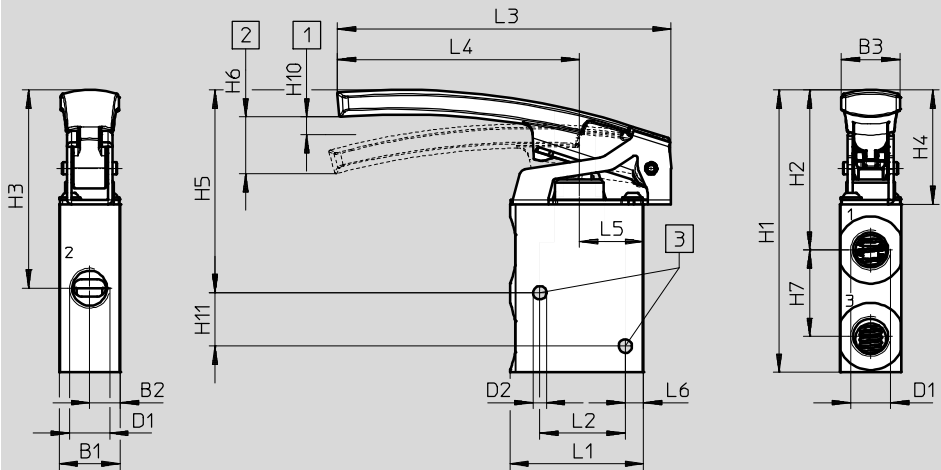
Technical data – Finger lever valve

FESTO

Dimensions

Download CAD data → www.festo.com

3/2-way valve



1 Start of opening

2 Maximum stroke

3 Mounting holes for screws M4

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										

Manually operated valves VHEF, NPT

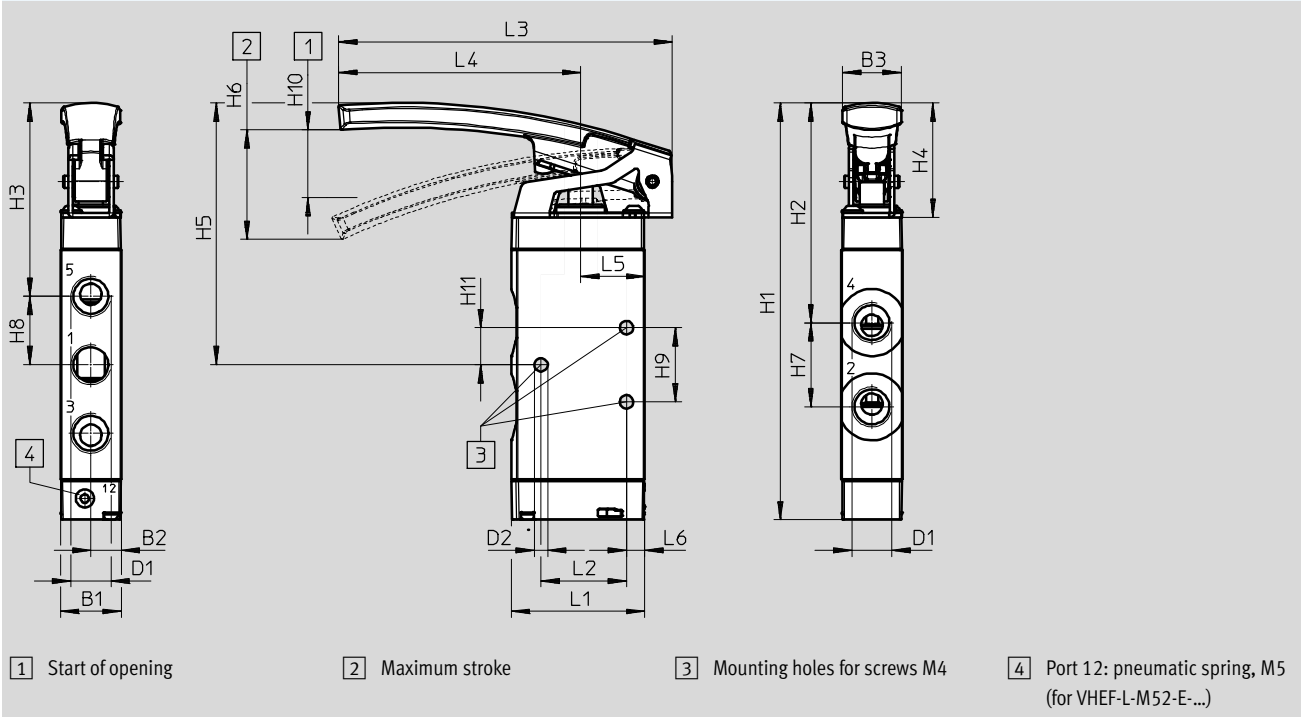
Technical data – Finger lever valve

FESTO

Dimensions

Download CAD data → www.festo.com

5/2-way valve



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												

Manually operated valves VHEF, NPT

FESTO

Technical data – Finger lever valve

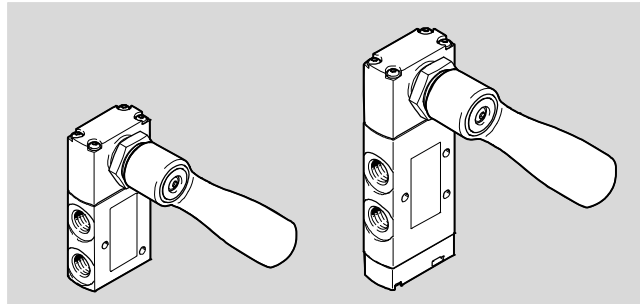
Ordering data					
Description	Reset	Nominal flow rate [l/min]	Weight [g]	Part No.	Type
3/2-way valve	Mechanical	750	156	4500011	VHEF-LT-M32-M-N18
		870	150	4500010	VHEF-LT-M32-M-N14
5/2-way valve	Mechanical	750	185	4500003	VHEF-L-M52-M-N18
	Pneumatic	750	184	4500007	VHEF-L-M52-E-N18
	Mechanical	1200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

Manually operated valves VHEF, NPT

FESTO

Technical data – Hand lever valve, on the side

-  Flow rate
650 ... 1200 l/min
-  Pressure
-0.95 ... 10 bar
-  Temperature range
-10 ... +60 °C



General technical data		
Design	Hand lever, at the side	
Width [mm]	20	
Type of control	Directly actuated	
Notes regarding use	Actuate manually only	
	The hand lever can be mounted on the axis rotated through 90° in each case	
Actuation type	Manual	
Type of mounting	Via through-hole or front panel using retaining nut	
Sealing principle	Soft	
Flow direction	Reversible	
Exhaust air function	With flow control option	
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) Determined 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	
Version			Disc seat 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		
Type of reset			–			Mechanical spring		
Manual override			Detenting			–		
Actuating torque at 6 bar			[Nm]		0.7	0.6		
Pneumatic connection 1, 2, 3			1/8 NPT		1/4 NPT	1/8 NPT	1/4 NPT	
Nominal width			[mm]		5.6	6	5.6	6

Manually operated valves VHEF, NPT

FESTO

Technical data – Hand lever valve, on the side

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
Version	Piston spool			
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	Overlap		Overlap	
Type of reset	Mechanical spring		–	
Manual override	–	–	Detenting	Detenting
Actuating torque at 6 bar [Nm]	0.6			
Pneumatic connection 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

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
Version		Piston spool							
Standard	1 → 2 [l/min]	750	1200	530	900	700	1200	530	900
nominal flow	4 → 5 [l/min]	–	–	400	470	–	–	400	470
rate	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		Overlap		Overlap		Overlap		Overlap	
Type of reset		–		–		Mechanical spring		Mechanical spring	
Manual override		Detenting		Detenting		–		–	
Actuating torque [Nm] at 6 bar		0.7							
Pneumatic connection 1, 2, 3, 4, 5		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT
Nominal width [mm]		5.2	7	5.2	7	5.2	7	5.2	7

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:–1:–]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range [bar]	–0.95 ... 10
[psi]	–14 ... 145
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. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Manually operated valves VHEF, NPT

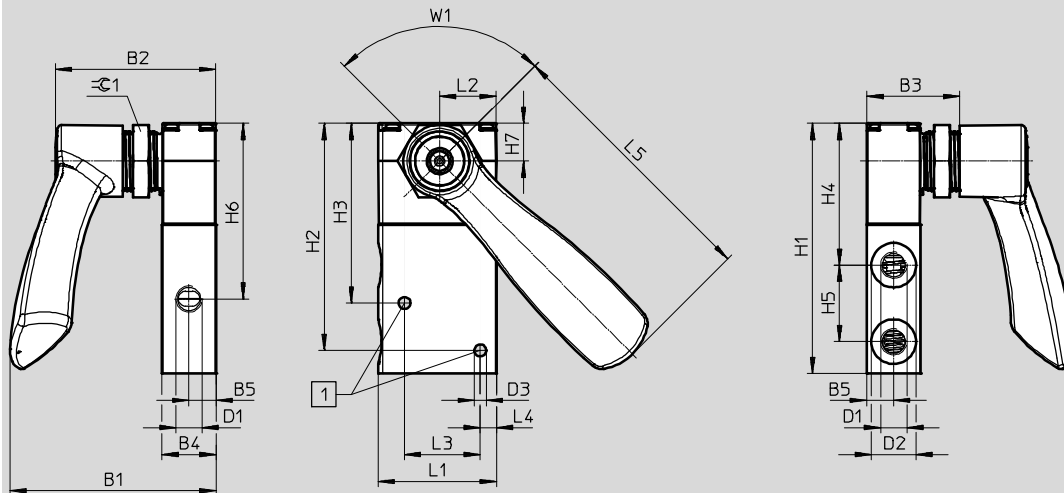
Technical data – Hand lever valve, on the side

FESTO

Dimensions

Download CAD data → www.festo.com

3/2-way valve



1 Mounting holes for screws M4

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°	A/F 27
VHEF-HST...32...-N14											

Manually operated valves VHEF, NPT

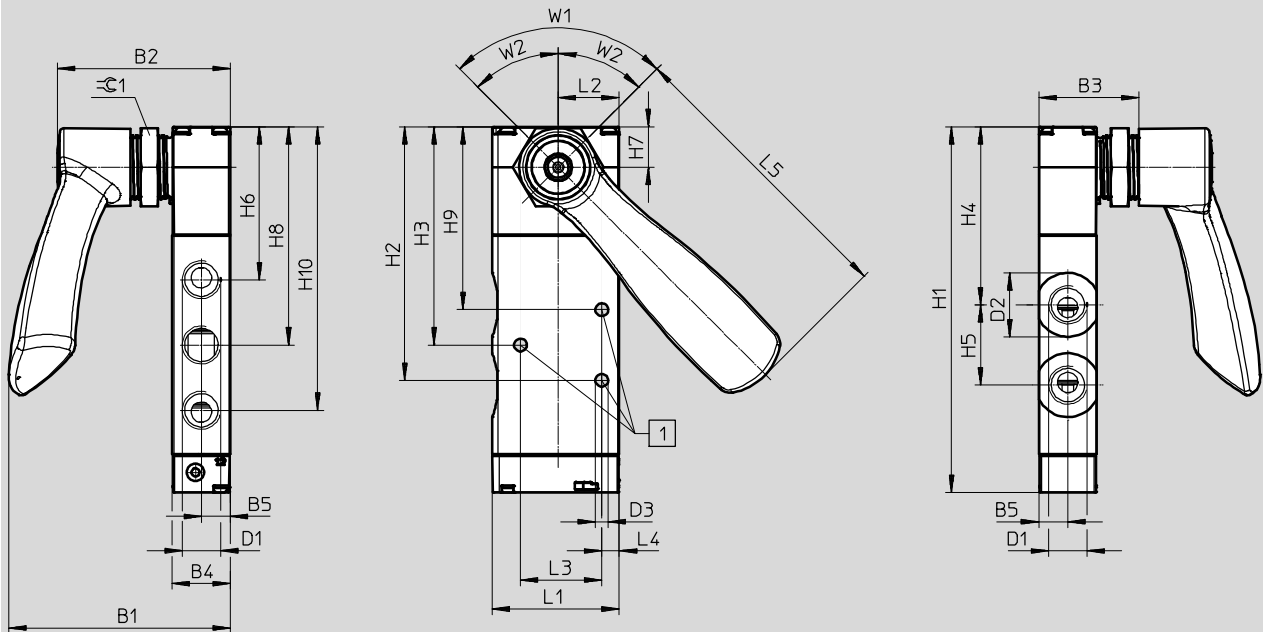
Technical data – Hand lever valve, on the side

FESTO

Dimensions

Download CAD data → www.festo.com

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



1 Mounting holes for screws M4

W1 Angle 90° for 5/2-way valve
(2 switching positions)

W2 Angle 2x45° for 5/3-way valve
(3 switching positions)

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°	

Manually operated valves VHEF, NPT

FESTO

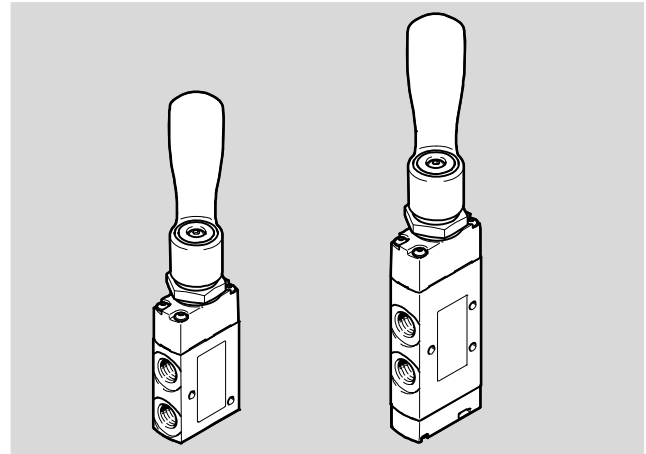
Technical data – Hand lever valve, on the side

Ordering data					
Description	Reset	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
		650	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
		650	265	4414859	VHEF-HS-P53E-M-N18
		900	298	4414860	VHEF-HS-P53E-M-N14

Manually actuated valves VHEF, NPT

Technical data – Hand lever valve

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



General technical data	
Design	Hand lever
Width [mm]	20
Type of control	Directly actuated
Note regarding use	Actuate manually only
	The hand lever can be mounted on the axis rotated through 90° in each case
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust air function	With flow control option
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) Determined 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
Version		Disc seat 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 connection					
1, 2, 3		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal size [mm]		5.6	6	5.6	6

Manually actuated valves VHEF, NPT

Technical data – Hand lever valve

FESTO

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
Version	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 connection 1, 2, 3, 4, 5	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal size [mm]	5.2	7	5.2	7

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
Version		Piston slide							
Standard	1 → 2 [l/min]	700	1200	530	900	700	1200	530	900
nominal flow	4 → 5 [l/min]	–	–	400	470	–	–	400	470
rate	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 connection 1, 2, 3, 4, 5		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT
Nominal size [mm]		5.2	7	5.2	7	5.2	7	5.2	7

Manually actuated valves VHEF, NPT

Technical data – Hand lever valve

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating/ pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range	[bar] -0.95 ... 10
	[psi] -14 ... 145
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. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

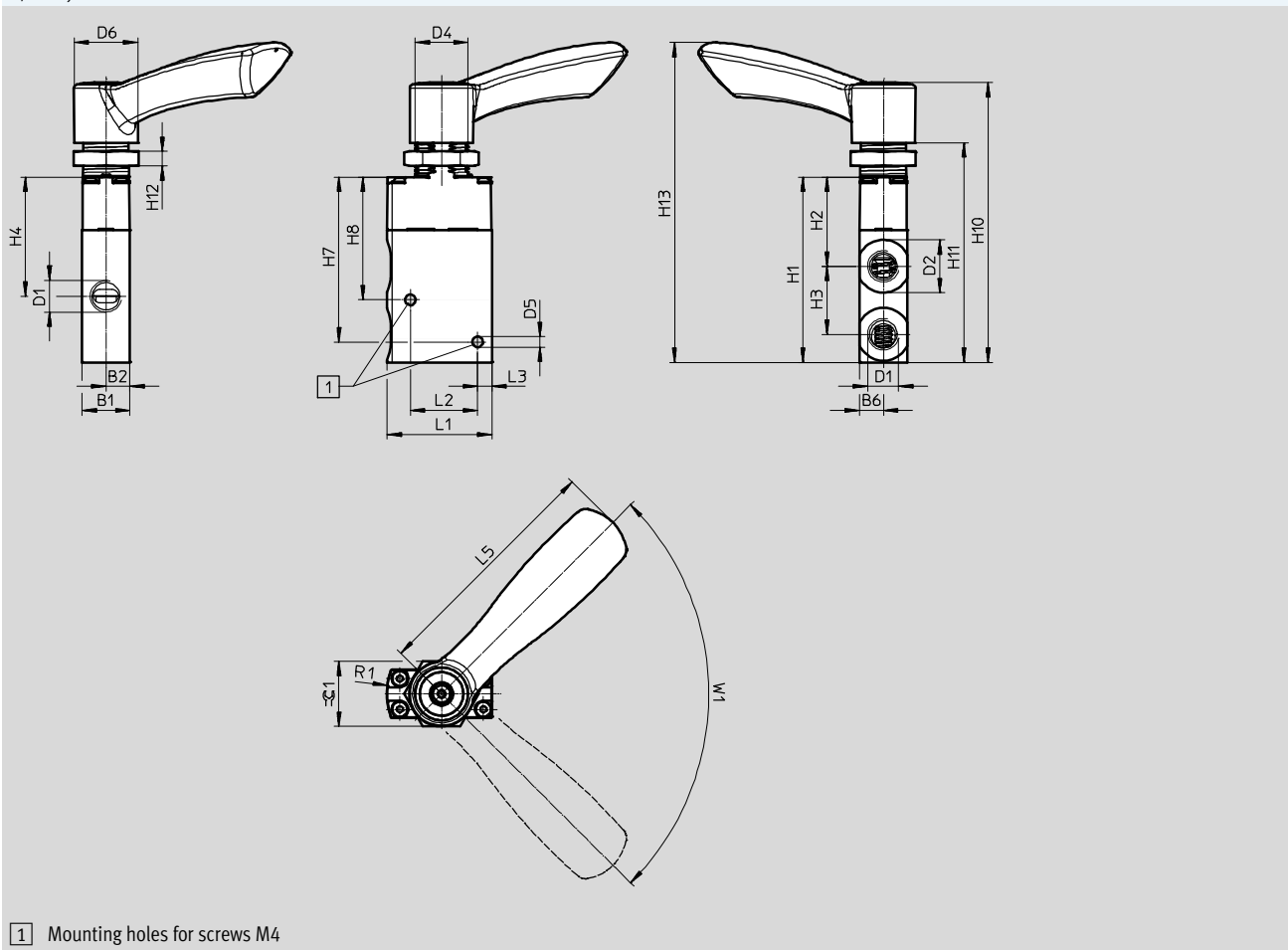
Manually actuated valves VHEF, NPT

Technical data – Hand lever valve

Dimensions

Download CAD data → www.festo.com

3/2-way valve



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												

Manually actuated valves VHEF, NPT

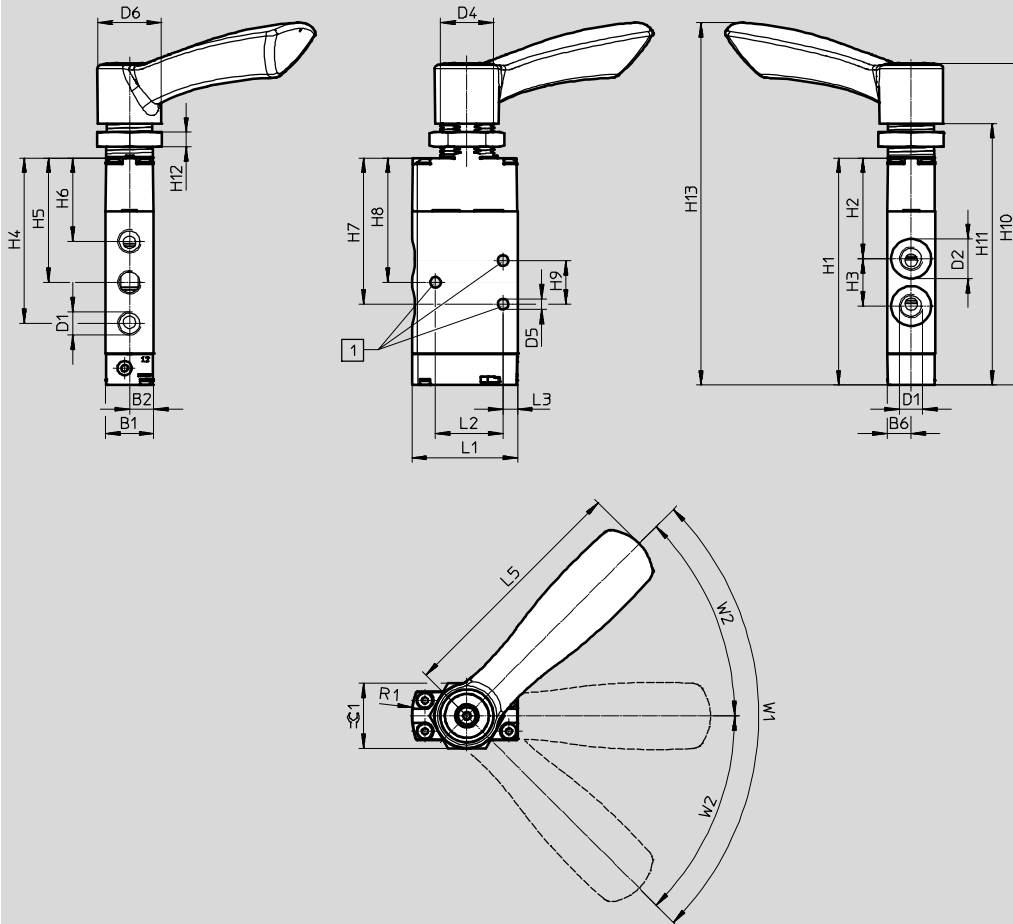
Technical data – Hand lever valve

FESTO

Dimensions

Download CAD data → www.festo.com

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



1 Mounting holes for screws M4

W1 Angle 90° for 5/2-way valve
(2 switching positions)

W2 Angle 2x45° for 5/3-way valve
(3 switching positions)

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				110.5	45.9	27.6	82.2	59.7	37.3
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	±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°	

Manually actuated valves VHEF, NPT

Technical data – Hand lever valve

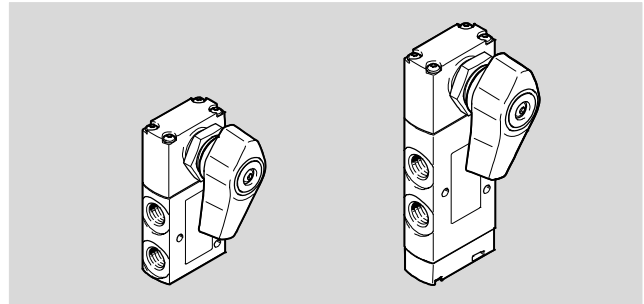
Ordering data					
Description	Reset	Nominal flow rate [l/min]	Weight [g]	Part No.	Type
3/2-way valve	–	750	236	8080942	VHEF-HT-B32-N18
		870	230	8080941	VHEF-HT-B32-N14
	Mechanical spring	750	236	8080938	VHEF-HT-M32-M-N18
		870	230	8080937	VHEF-HT-M32-M-N14
5/2-way valve	–	750	265	8080933	VHEF-H-B52-N18
		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

Manually operated valves VHEF, NPT

FESTO

Technical data – Selector valve, on the side

-  Flow rate
650 ... 1200 l/min
-  Pressure
-0.95 ... 10 bar
-  Temperature range
-10 ... +60 °C



General Technical data	
Design	Selector switch, at the side
Width [mm]	20
Type of control	Directly actuated
Notes regarding use	Actuate manually only The hand lever can be mounted on the axis rotated through 90° in each case
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust air function	With flow control option
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) Determined at a distance of 80 mm from the centre of the hand lever fitting

Technical data – 3/2-way valve					
Type		VHEF-EST-B32...18	VHEF-EST-B32...14	VHEF-EST-M32...18	VHEF-EST-M32...14
Version		Disc seat 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	
Type of reset		–		Mechanical spring	
Manual override		Detenting		–	
Actuating torque at 6 bar [Nm]		0.4			
Pneumatic connection 1, 2, 3		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal width [mm]		5.6	6	5.6	6

Manually operated valves VHEF, NPT

FESTO

Technical data – Selector valve, on the side

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
Version	Piston spool			
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	Overlap		Overlap	
Type of reset	Mechanical spring		–	
Manual override	–		Detenting	Detenting
Actuating torque at 6 bar [Nm]	0.3		0.2	
Pneumatic connection 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

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
Version			Piston spool							
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			Overlap		Overlap		Overlap		Overlap	
Type of reset			–		–		Mechanical spring		Mechanical spring	
Manual override			Detenting		Detenting		–		–	
Actuating torque at 6 bar [Nm]			0.3				0.7			
Pneumatic connection 1, 2, 3, 4, 5			1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT
Nominal width [mm]			5.2	7	5.2	7	5.2	7	5.2	7

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

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range [bar]	–0.95 ... 10
[psi]	–14 ... 145
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. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Manually operated valves VHEF, NPT

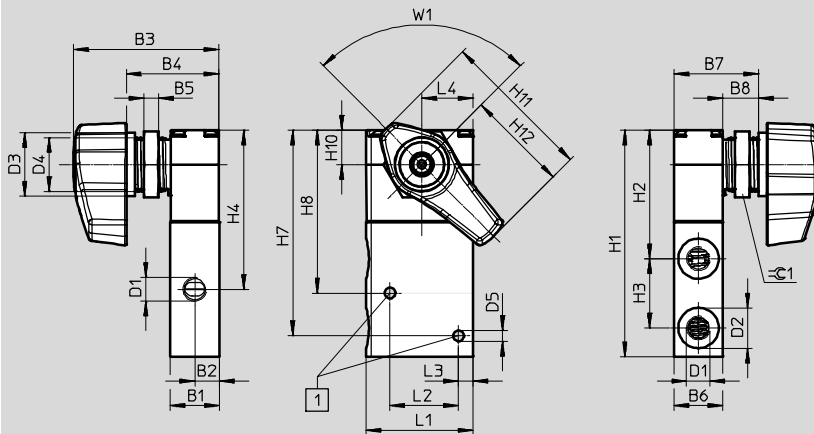
Technical data – Selector valve, on the side

FESTO

Dimensions

Download CAD data → www.festo.com

3/2-way valve



1 Mounting holes for screws M4

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	±0.1
VHEF-EST...32...N18	52.5	28.3	65	84	66.5	14	62.2	41.5	43.7	28	6	20.9	90°	A/F 27
VHEF-EST...32...N14														

Manually operated valves VHEF, NPT

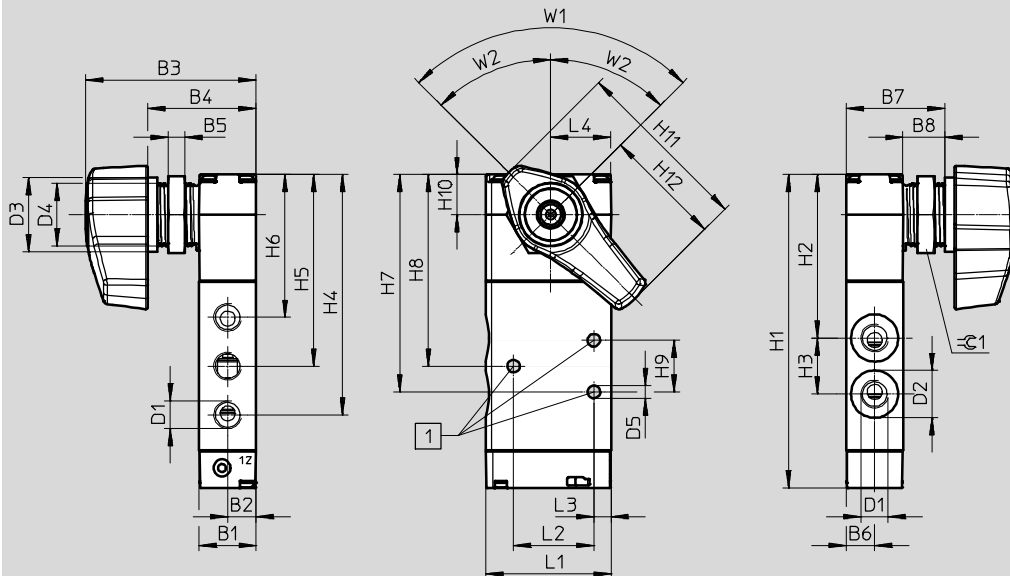
Technical data – Selector valve, on the side

FESTO

Dimensions

Download CAD data → www.festo.com

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



1 Mounting holes for screws M4

W1 Angle 90° for 5/2-way valve
(2 switching positions)

W2 Angle 2x45° for 5/3-way valve
(3 switching positions)

Type	B1	B2	B3	B4	B5	B6	B7	B8	D1	D2	D3	D4	D5	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	±0.1
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°	

Manually operated valves VHEF, NPT

Technical data – Selector valve, on the side

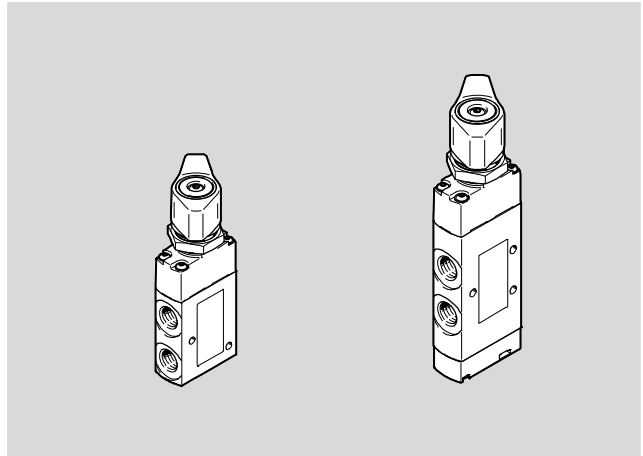
Ordering data					
Description	Reset	Nominal flow rate [l/min]	Weight [g]	Part No.	Type
3/2-way valve	–	750	206	4414814	VHEF-EST-B32-N18
		870	200	4414815	VHEF-EST-B32-N14
	Mechanical spring	750	206	4414806	VHEF-EST-M32-M-N18
		870	200	4414807	VHEF-EST-M32-M-N14
5/2-way valve	Mechanical spring	750	235	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
		650	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
		650	235	4414812	VHEF-ES-P53E-M-N18
		900	268	4414813	VHEF-ES-P53E-M-N14

Manually actuated valves VHEF, NPT

Technical data – Selector valve

FESTO

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



General technical data	
Design	Selector switch
Width [mm]	20
Type of control	Directly actuated
Note regarding use	Actuate manually only
	The hand lever can be mounted on the axis rotated through 90° in each case
Actuation type	Manual
Type of mounting	Via through-hole or front panel using retaining nut
Sealing principle	Soft
Flow direction	Reversible
Exhaust air function	With flow control option
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) Determined at a distance of 30 mm from the centre of the selector switch fitting

Technical data – 3/2-way valve					
Type		VHEF-ET-B32...18	VHEF-ET-B32...14	VHEF-ET-M32...18	VHEF-ET-M32...14
Version		Disc seat 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		0.4	
Release torque at 6 bar [Nm]		0.4	0.4	–	–
Pneumatic connection					
1, 2, 3		1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal size [mm]		5.6	6	5.6	6

Manually actuated valves VHEF, NPT

Technical data – 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
Version	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		0.3	
Release torque at 6 bar [Nm]	–	–	0.3	0.3
Pneumatic connection 1, 2, 3, 4, 5	1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT
Nominal size [mm]	5.2	7	5.2	7

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
Version			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 connection 1, 2, 3, 4, 5			1/8 NPT	1/4 NPT	1/8 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT
Nominal size		[mm]	5.2	7	5.2	7	5.2	7	5.2	7

Manually actuated valves VHEF, NPT

Technical data – Selector valve

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

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:-:-]
Note on operating/ pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure range	[bar]	–0.95 ... 10
	[psi]	–14 ... 145
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. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

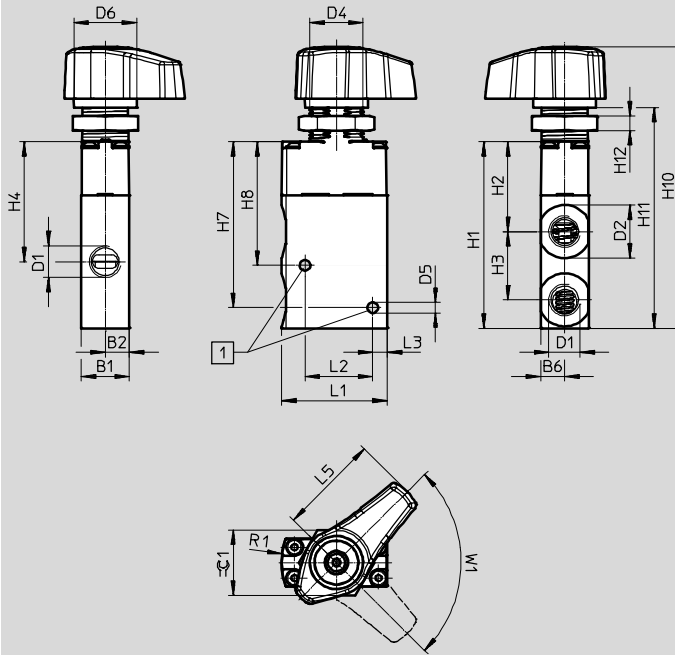
Manually actuated valves VHEF, NPT

Technical data – Selector valve

Dimensions

Download CAD data → www.festo.com

3/2-way valve



1 Mounting holes for screws M4

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												

Manually actuated valves VHEF, NPT

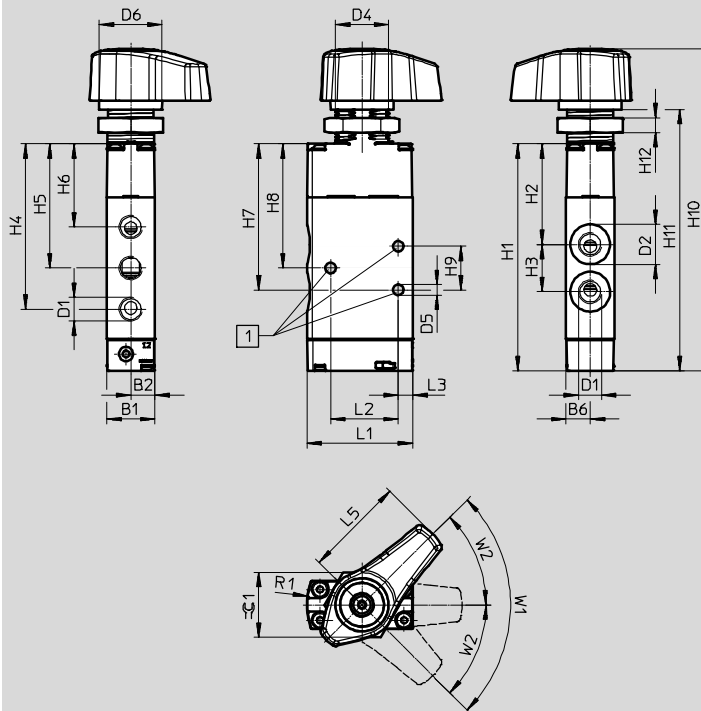
Technical data – Selector valve

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Dimensions

Download CAD data → www.festo.com

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



1 Mounting holes for screws M4

W1 Angle 90° for 5/2-way valve
(2 switching positions)

W2 Angle 2x45° for 5/3-way valve
(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	22				110.5	45.9	27.6	82.2	59.7	37.3			
VHEF-E...52...-N14				1/4 NPT													
VHEF-E...53...-N14				1/4 NPT													

Type	H7	H8	H9	H10	H11	H12	L1	L2	L3	L5	R1	W1	W2	±C 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	6	43.7	28	6	41.5	30	90°	–	
VHEF-E...53...-N14												–	45°	

Manually actuated valves VHEF, NPT

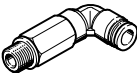
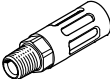
Technical data – Selector valve

Ordering data					
Description	Reset	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

Manually operated valves VHEF, NPT

Accessories

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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	10
			3/8"	572322	QB-1/4-3/8-I-U	10
			1/2"	567771	QB-1/4-1/2-U	10
Push-in fitting, angled						
	With external hex	Connecting thread 1/8 NPT for tubing O.D.	5/32"	533290	QBL-1/8-5/32-U	10
			1/4"	533292	QBL-1/8-1/4-U	10
			5/16"	533293	QBL-1/8-5/16-U	10
		Connecting thread 1/4 NPT for tubing O.D.	5/16"	533296	QBL-1/4-5/16-U	10
			3/8"	533297	QBL-1/4-3/8-U	5
			1/2"	567775	QBL-1/4-1/2-U	5
Push-in fitting, angled, long						
	With external hex	Connecting thread 1/8 NPT for tubing O.D.	5/32"	564668	QBLL-1/8-5/32-U	10
			1/4"	564670	QBLL-1/8-1/4-U	10
			5/16"	564671	QBLL-1/8-5/16-U	10
Silencer						
	Metal design	With connecting thread	1/8 NPT	12638	U-1/8-B-NPT	1
			1/4 NPT	12639	U-1/4-B-NPT	1

1) Packaging unit