

Hand lever valves VHER, NPT




# Hand lever valves VHER, NPT

Key features

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## Powerful

-  - Flow rate  
600 ... 3800 l/min

## Versatile

- 4/3-way valve  
Mid-position closed  
Mid-position exhausted
- Connection 1/8 NPT, 1/4 NPT, 1/2 NPT
- 3/3-way valve  
The hand lever valve VHER can be used as a 3/3-way valve by sealing port 2

## Practical

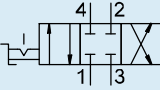
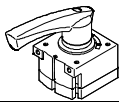
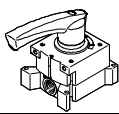
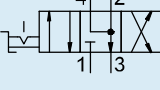
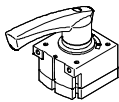
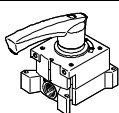
These valves can be used to stop single-acting cylinders (3/3-way valve) or double-acting cylinders (4/3-way valve) within the stroke range.

With the mid-position closed, the drive piston moves until the forces are balanced.

With the mid-position exhausted, the piston can be moved manually (only the frictional forces have to be overcome).

# Hand lever valves VHER-B43, NPT

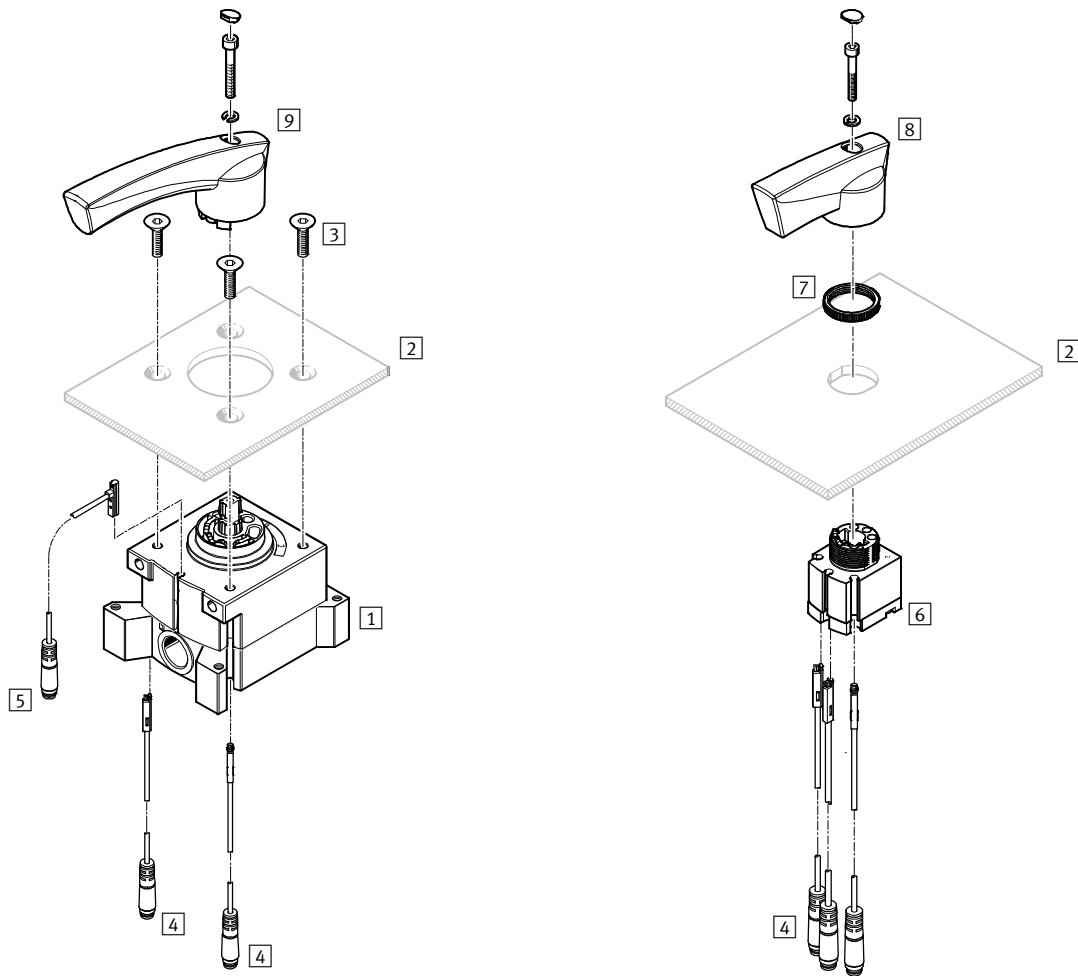
Product range overview

Function	Version	Type	Nominal flow rate [l/min]	Hand lever	→ Page/ Internet
	<b>Port underneath, mid-position closed</b>				
		VHER-H-B43C-B-N18	800	Metal	7
		VHER-H-B43C-B-N14	1500	Metal	7
		VHER-H-B43C-B-N12	3800	Metal	7
	<b>Port at the side, mid-position closed</b>				
		VHER-H-B43C-N18	600	Metal	7
VHER-H-B43C-N14		1150	Metal	7	
VHER-H-B43C-N12		3200	Metal	7	
	<b>Port underneath, mid-position exhausted</b>				
		VHER-H-B43E-B-N12	3800	Metal	7
	<b>Port at the side, mid-position exhausted</b>				
		VHER-H-B43E-N12	3200	Metal	7

# Hand lever valves VHER, NPT

Overview of peripherals

## Control panel installation



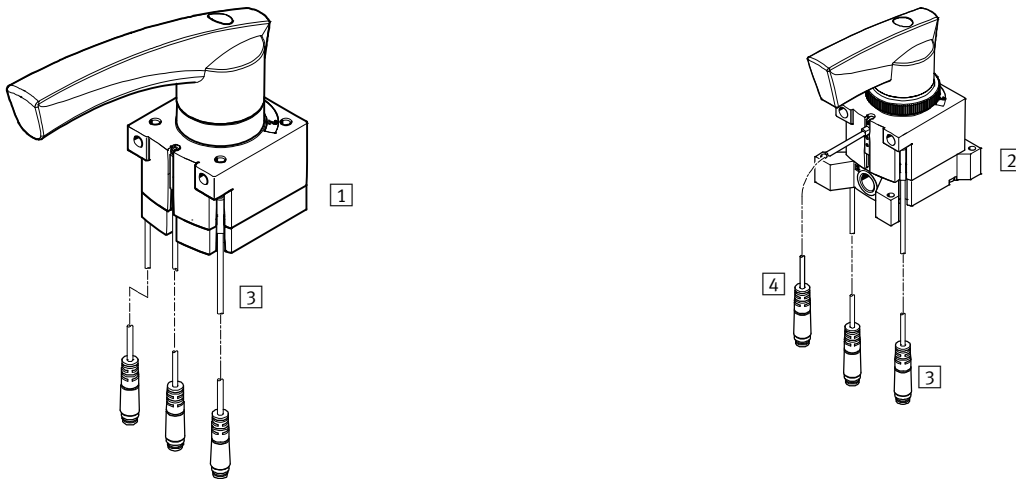
Component parts and accessories	Brief description	→ Page/Internet
1 Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT (lateral pneumatic connections)	7
2 Control panel	Not included in the scope of delivery	-
3 Mounting screws <sup>1)</sup>	Not included in the scope of delivery	-
4 Proximity sensors SM...-10-... -L-...	Not included in the scope of delivery (electrical connection, in-line outlet)	17
5 Proximity sensors SM...-10-... -Q-...	Not included in the scope of delivery (electrical connection, lateral outlet)	17
6 Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT (pneumatic connections underneath)	7
7 Knurled nut	Control panel mounting	-
8 Actuating lever	Small, metal	-
9 Actuating lever	Large, metal	-

1) For design reasons, it is not possible for every valve spool VHER to be screwed to a control panel on the lever side using mounting screws.

# Hand lever valves VHER, NPT

Overview of peripherals

## Assembled valves with accessories



Component parts and accessories	Brief description	→ Page/Internet
1 Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT with metal lever (pneumatic connections underneath)	7
2 Hand lever valve VHER	Connection size 1/8 NPT, 1/4 NPT, 1/2 NPT with metal lever (lateral pneumatic connections)	7
3 Proximity sensors SM...-10-...-L-...	Not included in the scope of delivery (electrical connection, in-line outlet)	17
4 Proximity sensors SM...-10-...-Q-...	Not included in the scope of delivery (electrical connection, lateral outlet)	17

-  - Note

For design reasons, it is not possible for every valve spool VHER to be screwed to a control panel on the lever side using mounting screws.

# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever




Type codes

VHER		-		-	H	-		-		-		-		-	
<b>Type</b>															
VHER	Hand lever valve with detent														
<b>Design</b>															
-	Hand lever, metal version														
<b>Type of actuation</b>															
H	Hand lever, top														
<b>Valve function</b>															
B43C	4/3-way valve, detenting, mid-position closed														
B43E	4/3-way valve, detenting, mid-position open														
<b>Direction of flow</b>															
-	Non-reversible														
<b>Connection direction, pneumatic connection</b>															
-	At the side														
B	Underneath														
<b>Connection size, pneumatic connection</b>															
N18	1/8NPT														
N14	1/4NPT														
N12	1/2NPT														

# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

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Technical data VHER-H-B43, NPT

-  Flow rate  
600 ... 3800 l/min
-  Pressure  
-0.95 ... +10 bar
-  Temperature range  
-20 ... +80 °C



General technical data					
Connection size		1/8 NPT	1/4 NPT	1/2 NPT	
Valve function		4/3-way, detenting, mid-position closed, exhausted or pressurised			
Design		Rotary slide valve			
Sealing principle		Hard			
Type of mounting		Option of front panel mounting or through-holes			
Type of pilot control		Direct			
Type of actuation		Manual			
Actuating lever (can be removed)		Metal (die-cast aluminium)			
Actuator lock		None			
Switching position indication		Via accessories			
Mounting position		Any			
Direction of flow		Non-reversible			
Non-overlapping		Yes			
Exhaust air function		With flow control			
Nominal flow rate	Port at side	[l/min.]	600	1150	3200
	Port underneath	[l/min.]	800	1500	3800
Nominal width		[mm]	6	8	12
Pneumatic connection 1, 2, 3, 4			1/8 NPT	1/4 NPT	1/2 NPT
Actuating torque at 6 bar		[Nm]	0.9	2	5

Operating and environmental conditions	
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure	[bar] 0 ... 10 (vacuum only permitted at port 3)
Ambient temperature	[°C] -20 ... +80
Temperature of medium	[°C] -20 ... +80
Corrosion resistance class CRC <sup>1)</sup>	2

1) Corrosion resistance class 2 according to Festo standard 940070  
Components subject to moderate corrosion stress. External visible parts with primarily decorative surface requirements which are in direct contact with the surrounding industrial environment or media such as coolants or lubricating agents.

Proximity sensors for switching position indication			
Connection size	Connection direction	Type	
		SME-10-... -L-...	SME-10-... -Q-...
1/8 NPT	Underneath	■	■
	At the side	-	■
1/4 NPT	Underneath	■	■
	At the side	-	■
1/2 NPT	Underneath	■	■
	At the side	-	■

# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

Technical data VHER-H-B43, NPT


## Operation with different pressures

### Vacuum operation


The direction of flow of the VHER-B43 valves is clearly defined and cannot be reversed.


The vacuum may only be connected to port 3 to maintain the direction of flow.

Vacuum operation at port 3:  
-0.95 ... 0 bar

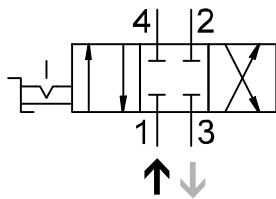
 Note  
A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in

the intake air getting into the valve (e.g. when operating a suction cup).

 Note  
During vacuum operation, the valve function changes from exhausted (VHER-...-B43E-...) to pressurised (VHER-...-B43U-...) and vice versa.

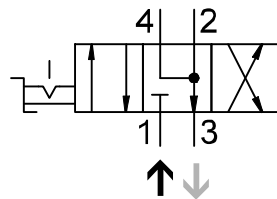
 Note  
Vacuum must not be connected to port 1.

During vacuum operation:  
mid-position closed  
(VHER-...-B43C-...)



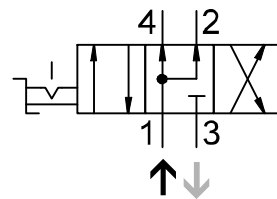
(During normal operation: mid-position closed VHER-...-B43C-...)

During vacuum operation:  
mid-position pressurised  
(VHER-...-B43U-...)



(During normal operation: mid-position exhausted VHER-...-B43E-...)

During vacuum operation:  
mid-position exhausted  
(VHER-...-B43E-...)



(During normal operation: mid-position pressurised VHER-...-B43U-...)


Connections with vacuum:

- Vacuum is generated by connecting vacuum generator to port 3
- Exhaust (or pressurisation) takes place via port 1
- Vacuum operation (e.g. suction cup) takes place at port 2 (or 4)

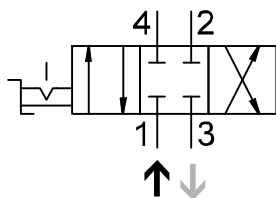
## Dual-pressure operation

Valves VHER-B43 are suitable for dual-pressure operation.

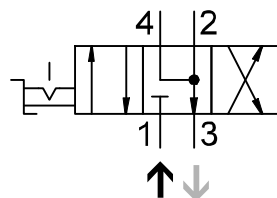
Please note that for design reasons compressed air may only be applied to port 1 and 3.

 Note  
In the case of dual-pressure operation, the higher pressure must always be applied to port 1.

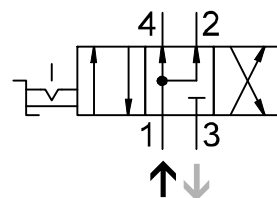
mid-position closed  
VHER-...-B43C-...



mid-position exhausted  
VHER-...-B43E-...



mid-position pressurised  
VHER-...-B43U-...



Connections with dual-pressure operation:

- Supply port: port 1 (high pressure)
- Supply port: port 3 (lower pressure)



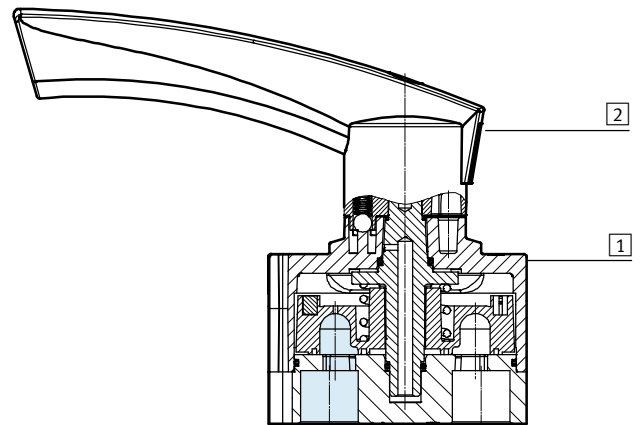
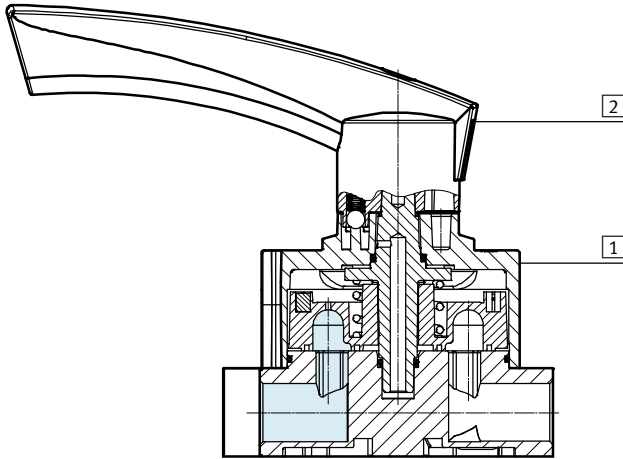
# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

Technical data VHER-H-B43, NPT

## Sectional view

Hand lever valve VHER-H-B43-...

Hand lever valve VHER-H-B43...-B-...



## Materials

1	Housing	Die-cast aluminium
2	Actuating lever	Metal (die-cast aluminium)
-	Seals	NBR
-	Note on materials	RoHS compliant
-	Note on materials	Free of copper and PTFE

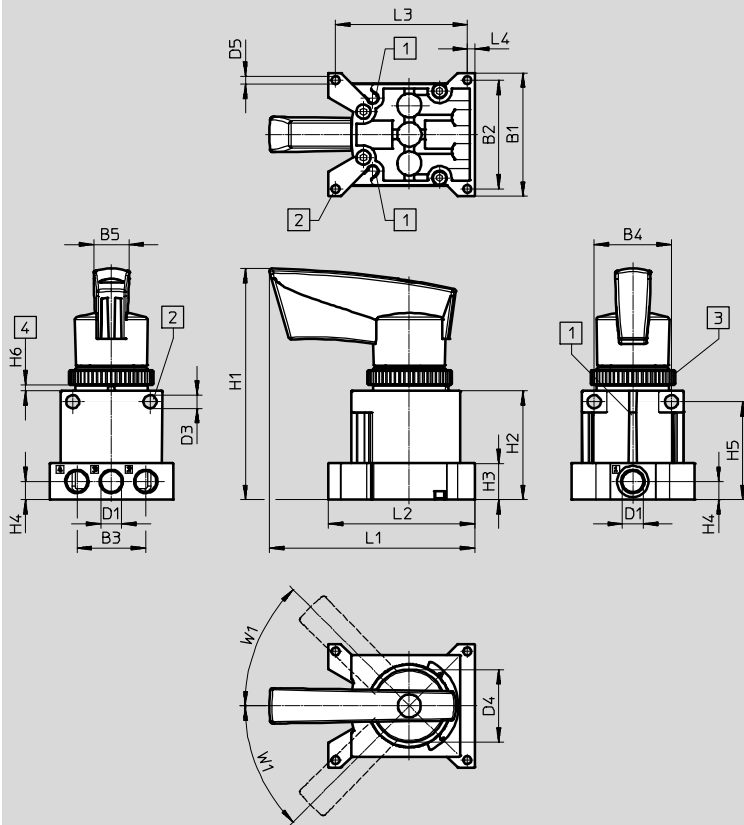
# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

Technical data VHER-H-B43, NPT

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Pneumatic connection 1/8 NPT, at the side



- 1 Slot for proximity sensor SM...-10...
- 2 Mounting hole
- 3 Knurled nut M30
- 4 Control panel

Type	B1	B2	B3	B4	B5	D1	D3	D4	D5
VHER-H-B43...-N18	51	45	28.5	32	14.6	1/8 NPT	5.5	30.2	3.3

Type	H1	H2	H3	H4	H5	H6		L1	L2	L3	L4	W1
						min.	max.					
VHER-H-B43...-N18	95.6	45	15	7.5	40.5	2	4	84.9	60.5	54.5	3	45°

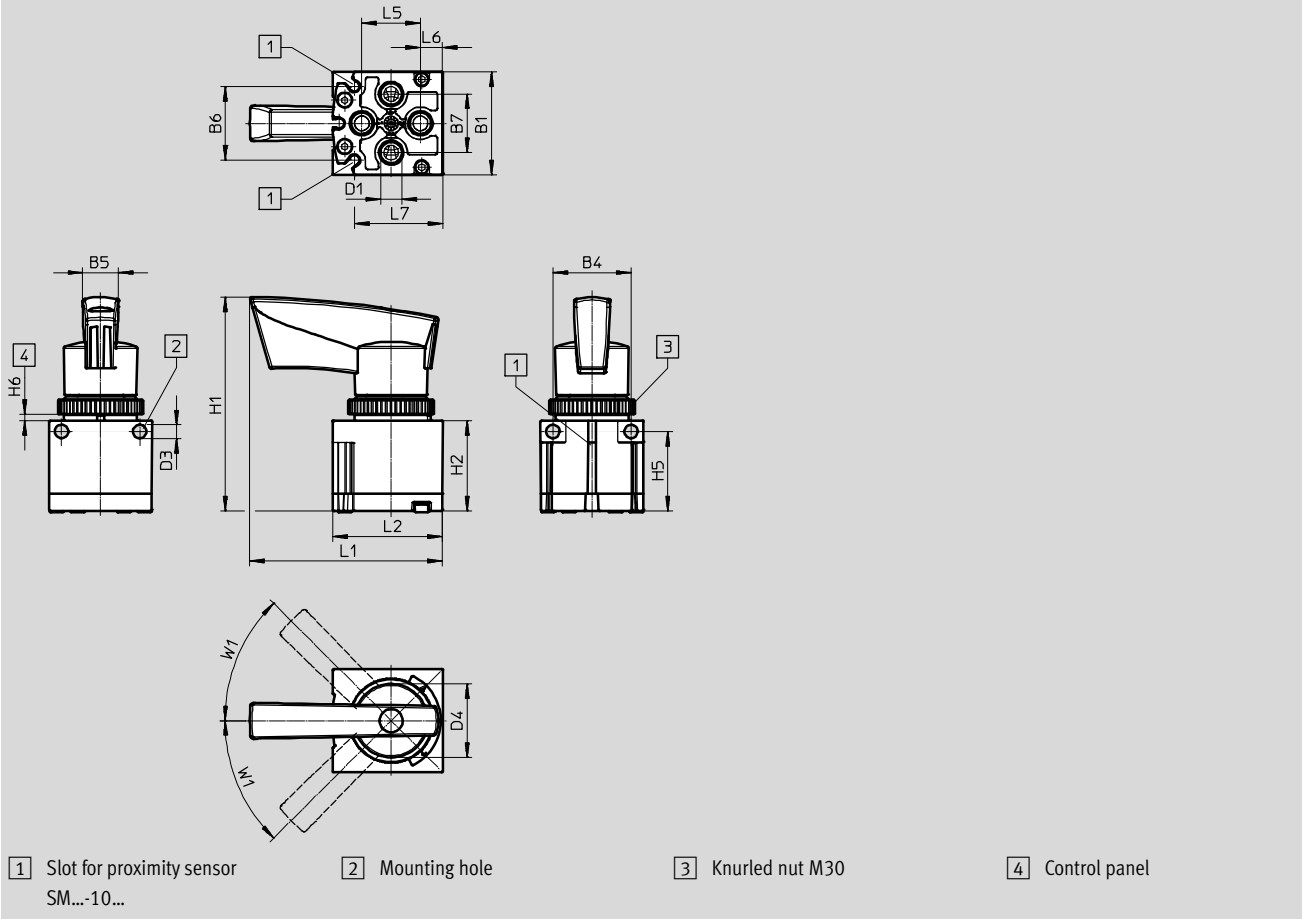
# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

Technical data VHER-H-B43, NPT

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Pneumatic connection 1/8 NPT, underneath



Type	B1	B4	B5	B6	B7	D1	D3 ∅	D4 ∅
VHER-H-B43...-B-N18	42.2	32	14.6	30.4	24	1/8 NPT	5.5	30.2

Type	H1	H2	H5	H6		L1	L2	L5	L6	L7	W1
				min.	max.						
VHER-H-B43...-B-N18	87.6	37	32.5	2	4	78.6	44.9	24	9	36.2	45°

# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

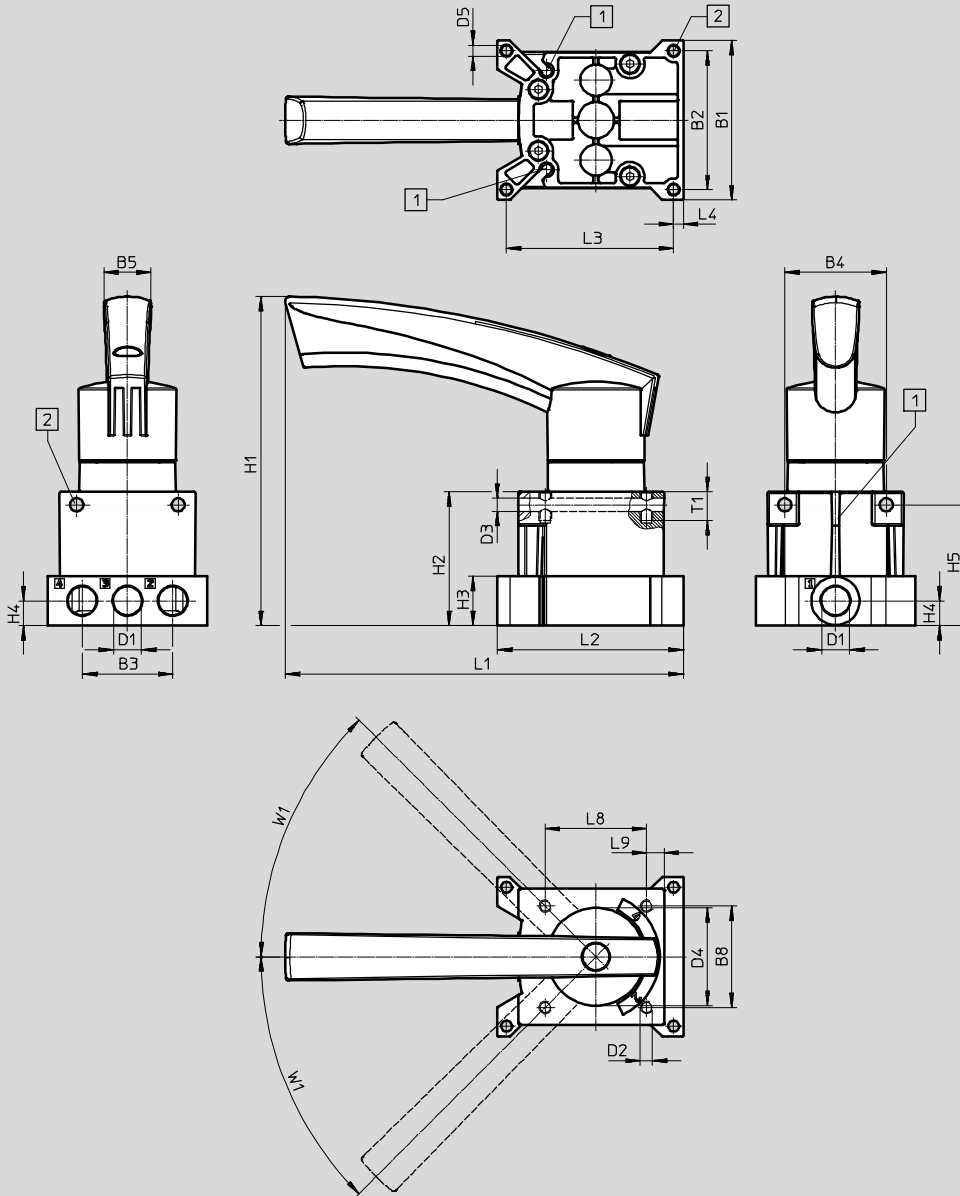
Technical data VHER-H-B43, NPT

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## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Pneumatic connection 1/4 NPT, at side



1 Slot for proximity sensor  
SM...-10...

2 Mounting hole

Type	B1	B2	B3	B4	B5	B8	D1	D2	D3	D4	D5
VHER-H-B43...-N14	66	57.5	37.5	42	19.5	42	1/4 NPT	M5	5.5	40.5	4.5

Type	H1	H2	H3	H4	H5	L1	L2	L3	L4	L8	L9	T1	W1
VHER-H-B43...-N14	136.3	55.5	20.5	10.3	50	164.8	77	69.2	4	42	7.2	12	45°

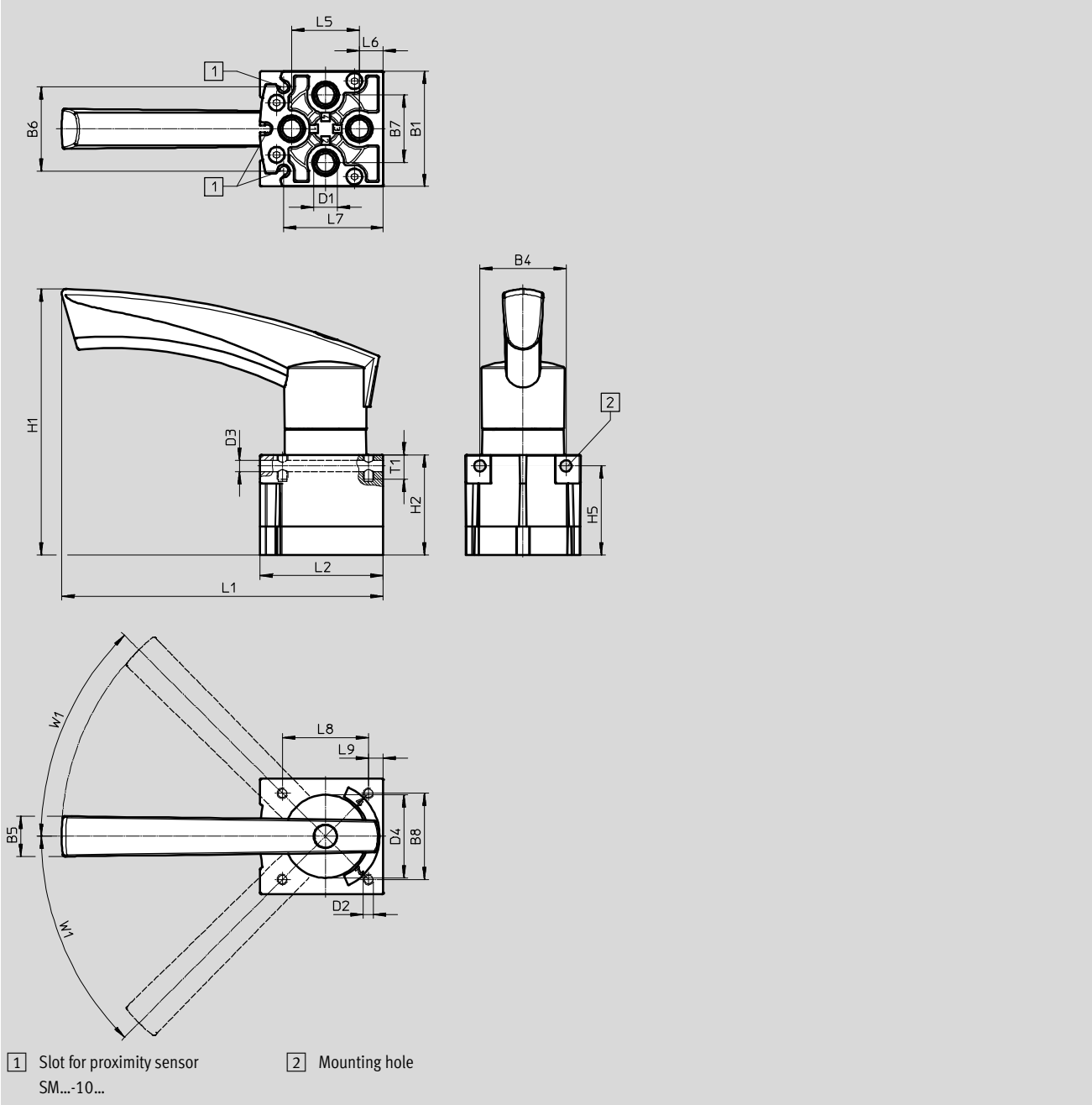
# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

Technical data VHER-H-B43, NPT

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Pneumatic connection 1/4 NPT, underneath



Type	B1	B4	B5	B6	B7	B8	D1	D2	D3	D4
VHER-H-B43...-B-N14	56.3	42	19.5	40.4	33	42	1/4 NPT	M5	5.5	40.5

Type	H1	H2	H5	L1	L2	L5	L6	L7	L8	T1	W1
VHER-H-B43...-B-N14	129.8	49	43.5	156.6	59.8	33	11	48.2	42	12	45°

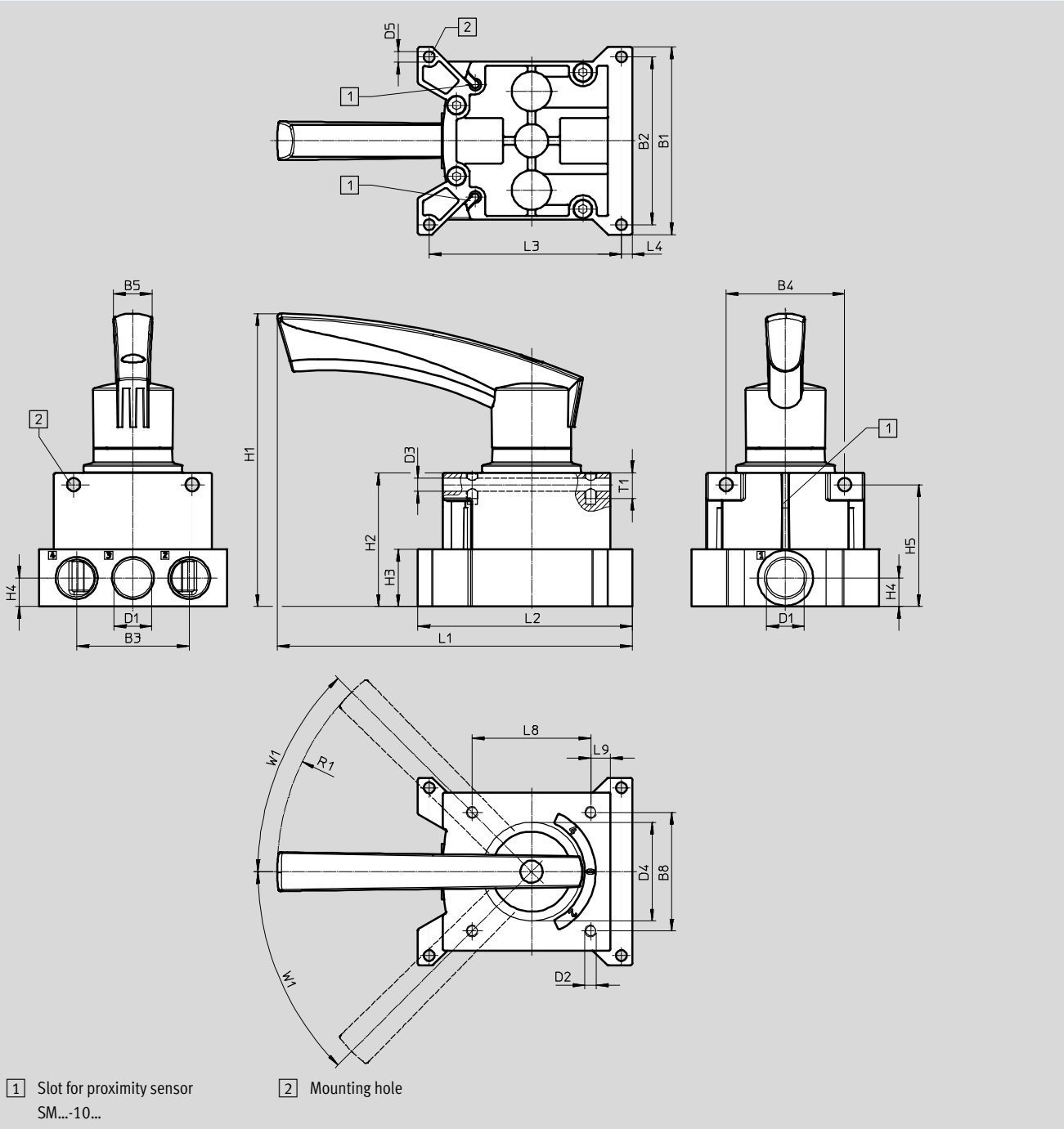
# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

Technical data VHER-H-B43, NPT

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

Pneumatic connection 1/2 NPT, at the side



Type	B1	B2	B3	B4	B5	B8	D1	D2	D3	D4	D5
VHER-H-B43-...-N12	95	85	57	60	19.5	60	1/2 NPT	M5	6.6	51	5.5

Type	H1	H2	H3	H4	H5	L1	L2	L3	L4	L8	L9	R1	T1	W1
VHER-H-B43-...-N12	149	68	29	14.5	61.8	180	108.8	97.3	5.5	60	10	128	13	45°

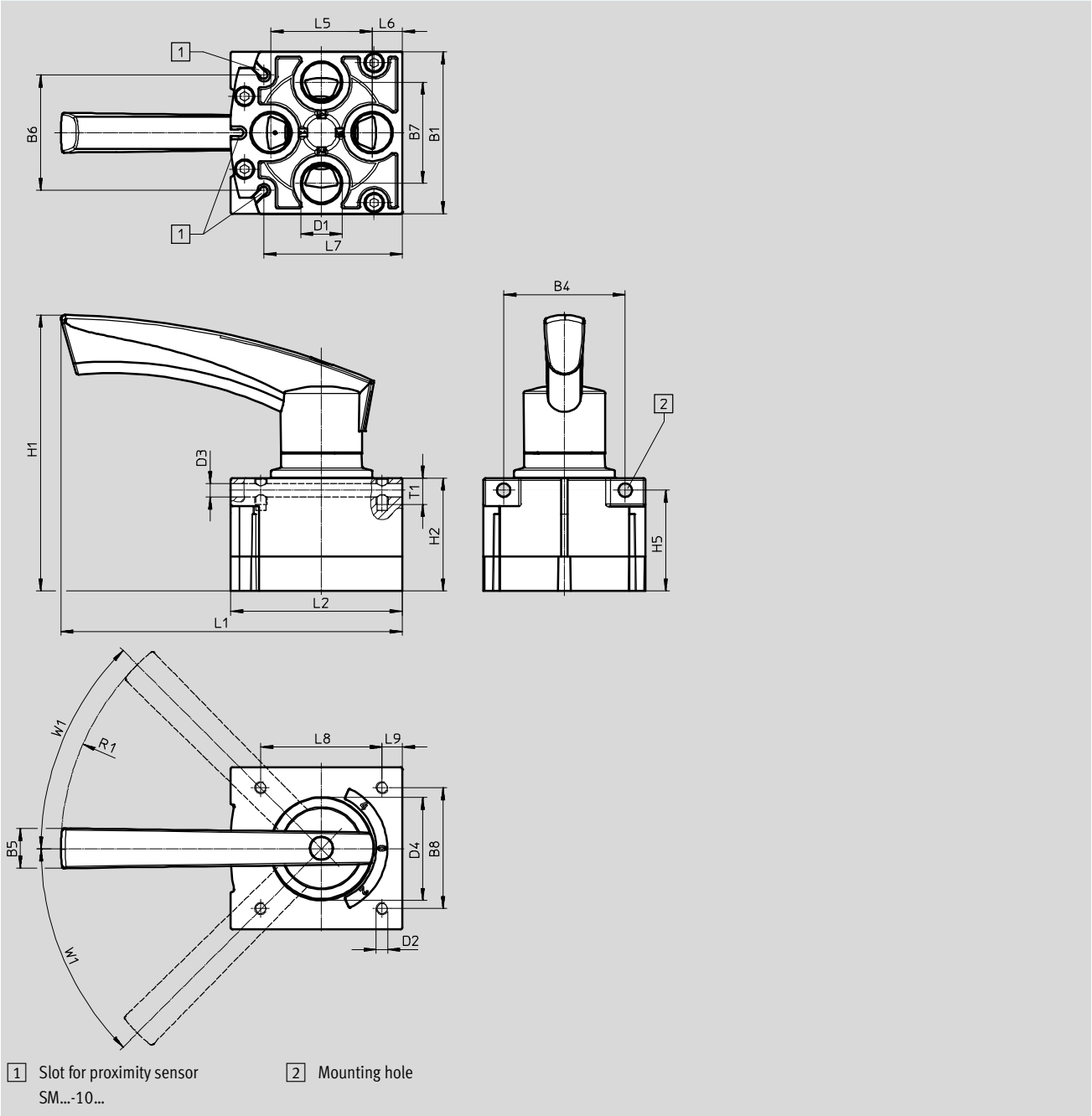
# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

Technical data VHER-H-B43, NPT

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

Pneumatic connection 1/2 NPT, underneath



Type	B1	B4	B5	B6	B7	B8	D1	D2	D3	D4
VHER-H-B43-...-B-N12	80	60	19.5	56.9	50	60	1/2 NPT	M5	6.6	51

Type	H1	H2	H5	L1	L2	L5	L6	L7	L8	L9	R1	T1	W1
VHER-H-B43-...-B-N12	136.5	55.8	49.8	168.8	84.8	50	15	68.5	60	10	128	13	45°

# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever

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Ordering data

Ordering data – Hand lever valves							
Circuit symbol	Description	Actuating lever	Pneumatic connection	Weight [g]	Width [mm]	Part No.	Type
4/3-way valve <sup>1)</sup>							
	mid-position closed	Metal	Underneath	220	42	3488213	VHER-H-B43C-B-N18
			At the side	260	51	3488212	VHER-H-B43C-N18
			Underneath	510	56	3520389	VHER-H-B43C-B-N14
			At the side	560	66	3520365	VHER-H-B43C-N14
			Underneath	860	80	3192086	VHER-H-B43C-B-N12
			At the side	1010	95	3192085	VHER-H-B43C-N12
	mid-position exhausted	Metal	Underneath	860	80	3192088	VHER-H-B43E-B-N12
			At the side	1010	95	3192087	VHER-H-B43E-N12

1) The hand lever valve can be used as a 3/3-way valve by sealing port 2.


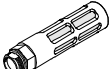

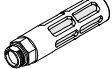
Ordering data – Push-in fittings						
Description	Connection			Part No.	Type	PU <sup>1)</sup>
Pneumatic connection: underneath, external hexagon						
	1/8 NPT	NPT thread with sealing ring for (short design)	Tubing O.D. 1/8 “	533270	QBM-1/8-1/8-U	10
			Tubing O.D. 5/32 “	572305	QBM-1/8-5/32-U	10
	1/8 NPT	NPT thread with sealing ring for	Tubing O.D. 5/32 “	533271	QB-1/8-5/32-U	10
	1/4 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 “	533276	QB-1/4-1/4-U	10
			Tubing O.D. 5/32 “	567772	QB-1/4-5/32-U	10
			Tubing O.D. 3/16 “	533275	QB-1/4-3/16-U	10
			Tubing O.D. 5/16 “	533277	QB-1/4-5/16-U	10
	1/2 NPT	NPT thread with sealing ring for	Tubing O.D. 3/8 “	533283	QB-1/2-3/8-U	5
			Tubing O.D. 1/2 “	533284	QB-1/2-1/2-U	5
Pneumatic connection: underneath, internal hexagon						
	1/8 NPT	NPT thread with sealing ring for	Tubing O.D. 5/16 “	572319	QB-1/8-5/16-I-U	10
			Tubing O.D. 1/4 “	572318	QB-1/8-1/4-I-U	10
			Tubing O.D. 5/32 “	572317	QB-1/8-5/32-I-U	10
			Tubing O.D. 3/16 “	572315	QB-1/8-3/16-I-U	10
	1/4 NPT	NPT thread with sealing ring for (short design)	Tubing O.D. 1/8 “	572306	QBM-1/4-1/8-U	10
	1/4 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 “	572320	QB-1/4-1/4-I-U	10
			Tubing O.D. 5/16 “	572321	QB-1/4-5/16-I-U	10
			Tubing O.D. 3/8 “	572322	QB-1/4-3/8-I-U	10
	1/2 NPT	NPT thread with sealing ring for	Tubing O.D. 1/2 “	572326	QB-1/2-1/2-I-U	5
Pneumatic connection: at the side, internal hexagon						
	1/8 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 “	572318	QB-1/8-1/4-I-U	10
			Tubing O.D. 5/32 “	572317	QB-1/8-5/32-I-U	10
	1/4 NPT	NPT thread with sealing ring for	Tubing O.D. 1/4 “	572320	QB-1/4-1/4-I-U	10
			Tubing O.D. 5/16 “	572321	QB-1/4-5/16-I-U	10
			Tubing O.D. 3/8 “	572322	QB-1/4-3/8-I-U	10
	1/2 NPT	NPT thread with sealing ring for	Tubing O.D. 1/2 “	572326	QB-1/2-1/2-I-U	5

1) Packaging unit

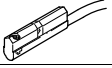
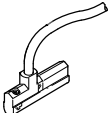


# Hand lever valves, VHER-H-B43, NPT, non-reversible, metal lever


Accessories

Ordering data – Silencers							
Description	Connection	Materials			Part No.	Type	PU <sup>1)</sup>
		Threaded plug	Silencer insert	Housing			
Pneumatic connection: underneath							
	1/8 NPT	Die-cast aluminium	PE	Die-cast aluminium	12638	U-1/8-B-NPT	1
	1/4 NPT	Die-cast aluminium	PE	Die-cast aluminium	12639	U-1/4-B-NPT	1
	1/2 NPT	Die-cast aluminium	PE	Die-cast aluminium	12741	U-1/2-B-NPT	1
Pneumatic connection: at the side							
	1/8 NPT	Die-cast aluminium	PE	Die-cast aluminium	12638	U-1/8-B-NPT	1
	1/4 NPT	Die-cast aluminium	PE	Die-cast aluminium	12639	U-1/4-B-NPT	1
	1/2 NPT	Die-cast aluminium	PE	Die-cast aluminium	12741	U-1/2-B-NPT	1

1) Packaging unit

Ordering data – Proximity sensors								
	Connection outlet direction	Measuring principle	Switching output	Electrical connection	Cable length [m]	Part No.	Type	PU <sup>1)</sup>
	In-line	Magnetic reed	Contacting, bipolar	Cable, 3-wire	2.5	173210	SME-10-KL-LED-24	1
				Plug M8x1, 3-pin	0.3	173212	SME-10-SL-LED-24	1
	Lateral	Magnetic reed	Contacting, bipolar	Cable, 3-wire	2.5	173211	SME-10-KQ-LED-24	1
				Plug M8x1, 3-pin	0.3	173213	SME-10-SQ-LED-24	1

1) Packaging unit

Ordering data						
	Description	Connection	Part No.	Type	PU <sup>1)</sup>	
Blanking plug						
	With sealing ring, internal hexagon, for sealing ports	1/8 NPT	173985	B-1/8-NPT	1	
		1/4 NPT	174165	B-1/4-NPT	1	
		1/2 NPT	31785	B-1/2-NPT	1	

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