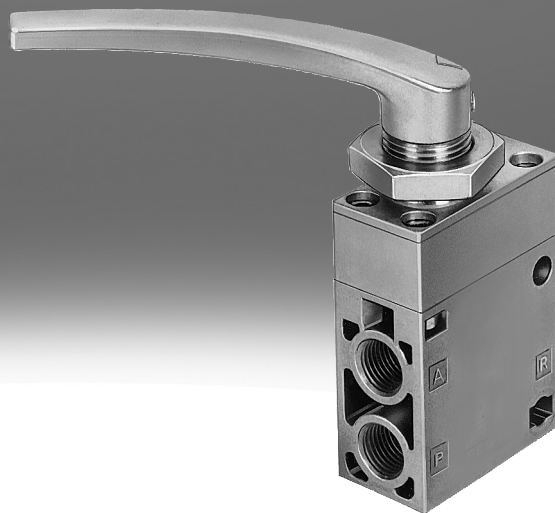


Valve VHEM

FESTO



Characteristics

At a glance

Innovative:

- Small and compact for a wide range of pneumatic applications
- Numerous valve functions can be selected: 3/2-way and 5/2-way functions
- With a flow rate of up to 600 l/min, the valves offer outstanding pneumatic performance for a wide range of applications
- Lightweight
- Minimal actuating forces

Versatile:

- The flexibility of pneumatic working ports provides a practical way of solving individual requirements
- Round silencer for ducted exhaust air
- Partially suitable for vacuum
- Partial reverse operation possible
- Actuation: direct
- Pressure range from vacuum to 10 bar possible
- Design as pushbutton valve, toggle lever valve, hand lever valve, finger lever valve or foot valve

Operationally safe:

- Durable thanks to proven poppet valves
- Sturdy thanks to metal or polymer housing and connection thread or connecting pieces

Easy to assemble:

- Front panel mounting, or mounting on bracket

Manually operated valves are used in all areas of industry, including the building trades. They are also used for simple operations, such as clamping or closing safety doors. Depending on the required actuation (pushing, rotating/swivelling or tilting), the valves are resetting or non-resetting. The valves are directly actuated.

- 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).

Valve function

[32] 3/2-way valve

Equipment options as 3/2-way valve:

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

[52] 5/2-way valve

Equipment options as 5/2-way valve:

- Mechanical spring
- Vacuum operation possible
- Directly actuated
- Ducted exhaust air
- detenting (bistable) or non-detenting (monostable)

Actuation type



[M] Toggle lever, top

[L] Finger lever



Characteristics

[H] Hand lever, top



[F] Foot lever



Datasheet

Pushbutton valve, general technical data

Pneumatic connection, port 1 ¹⁾	M5	PK-3
Product weight	28 g	235 g
Standard nominal flow rate (standardised to DIN 1343)	80 l/min	
Valve function	3/2-way, closed, monostable	3/2-way, monostable, open/closed
Design	Piston seat	–
Nominal size	2 mm	–
Actuating force, normally closed	–	24 N
Actuating force, normally open	–	17 N

1) PK-3=Barbed connector for plastic tubing, nominal width 3 mm

Pushbutton valve, materials

Pneumatic connection, port 1	M5	PK-3
Material seals	NBR	
Material housing	Die-cast zinc	Polymer

Pushbutton valve, operating and environmental conditions

Pneumatic connection, port 1	M5	PK-3
Operating medium	Compressed air to ISO 8573-1:2010 [:-:-]	
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)	–
Operating pressure	-0.95 ... 8 bar	0 ... 8 bar
Ambient temperature	-10 ... 60°C	

Toggle lever valve, general technical data

Pneumatic connection, port 1 ¹⁾	PK-3	
Standard nominal flow rate (standardised to DIN 1343)	80 l/min	
Valve function	3/2-way, monostable, open/closed	
Design	Piston seat	
Nominal size	2.5 mm	
Product weight	20 g	
Actuating force, normally closed	7.5 N	
Actuating force, normally open	6.5 N	

1) PK-3=Barbed connector for plastic tubing, nominal width 3 mm

Toggle lever valve, materials

Pneumatic connection, port 1	PK-3	
Material seals	NBR	
Material housing	Polymer	

Toggle lever valve, operating and ambient conditions

Pneumatic connection, port 1	PK-3	
Operating medium	–	
Note on operating and pilot medium	–	
Operating pressure	0 ... 8 bar	
Ambient temperature	-10 ... 60°C	

Datasheet

Finger lever valve, general technical data				
Pneumatic connection, port 1	M5	G1/4		PK-3
Product weight	37 g	210 g	320 g	18 g
Standard nominal flow rate (standardised to DIN 1343)	80 l/min	600 l/min	550 l/min	80 l/min
Valve function	3/2-way, closed, monostable	3/2-way, closed, monostable, 3/2 open, single solenoid	5/2-way, monostable	3/2-way, monostable, open/closed
Design	Poppet seat			Piston seat
Nominal size	2 mm	7 mm		2.5 mm
Actuating force, normally open	–			6 N
Actuating force, normally closed	–			8 N

Materials, finger lever valve				
Pneumatic connection, port 1	M5	G1/4		PK-3
Material seals	NBR			
Material housing	Die-cast zinc	Die-cast aluminium	Polymer	

Finger lever valve, operating and environment conditions				
Pneumatic connection, port 1	M5	G1/4		PK-3
Operating medium	Compressed air to ISO 8573-1:2010 [:-:-]		–	Compressed air to ISO 8573-1:2010 [:-:-]
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		–	
Operating pressure	-0.95 ... 8 bar		-0.95 ... 10 bar	0 ... 8 bar
Ambient temperature	-10 ... 60°C			

Hand lever valve, general technical data				
Valve function	3/2 double solenoid		5/2 double solenoid	
Pneumatic connection, port 1	G1/4			
Standard nominal flow rate (standardised to DIN 1343)	600 l/min		550 l/min	
Design	Poppet seat			
Nominal size	7 mm			
Product weight	320 g		510 g	
Actuating torque	0.5 Nm		–	

Hand lever valve, materials				
Pneumatic connection, port 1	G1/4			
Material seals	NBR			
Material housing	Die-cast aluminium			

Hand lever valve, operating and ambient conditions				
Pneumatic connection, port 1	G1/4			
Operating medium	–			
Note on operating and pilot medium	–			
Operating pressure	-0.95 ... 10 bar			
Ambient temperature	-10 ... 60°C			

Datasheet

Foot valve, general technical data

Pneumatic connection, port 1	G1/4					
Standard nominal flow rate (standardised to DIN 1343)	550 l/min			600 l/min		
Valve function	3/2 double solenoid	5/2 double solenoid	5/2-way, monostable	3/2 double solenoid	3/2-way, closed, monostable	3/2 open, single solenoid
Design	Poppet seat					
Nominal size	7 mm					
Product weight	610 g	725 g, 1,845 g	705 g	1,760 g	595 g	
Actuating force	31.5 N	67.5 N, 82 N	78 N	58.5 N	50 N	55 N

Foot valve, materials

Pneumatic connection, port 1	G1/4
Material seals	NBR
Material housing	Die-cast aluminium

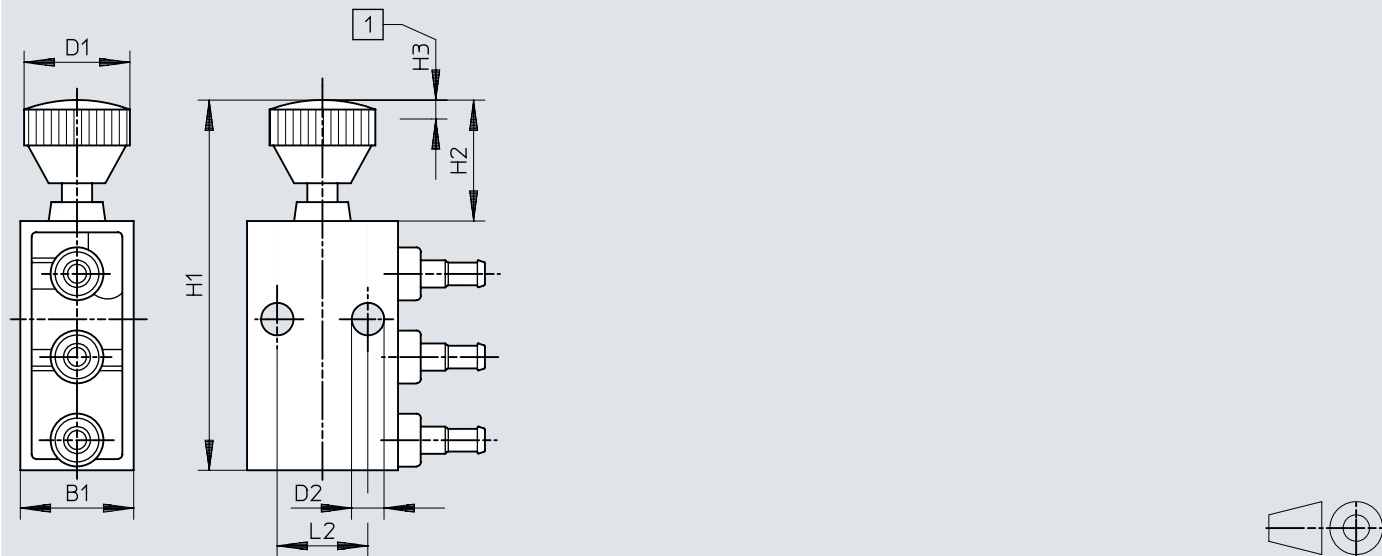
Foot valve, operating and environmental conditions

Pneumatic connection, port 1	G1/4
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Operating pressure	-0.95 ... 10 bar
Ambient temperature	-10 ... 60°C

Dimensions

Dimensions – Pushbutton valve K/O-3-PK-3

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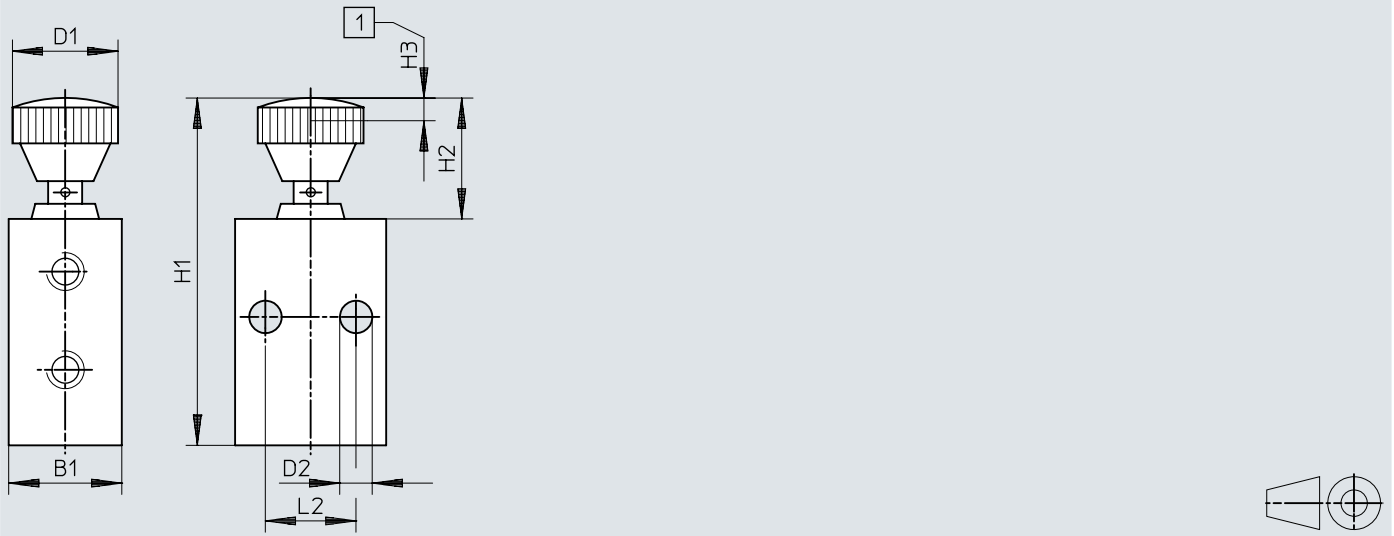
[1] Switching travel

	B1	D1	D2	H1	H2	H3	L2
K/O-3-PK-3	15	14	4,3	49	16	2,5	12

Dimensions

Dimensions – Pushbutton valve K-3-M5

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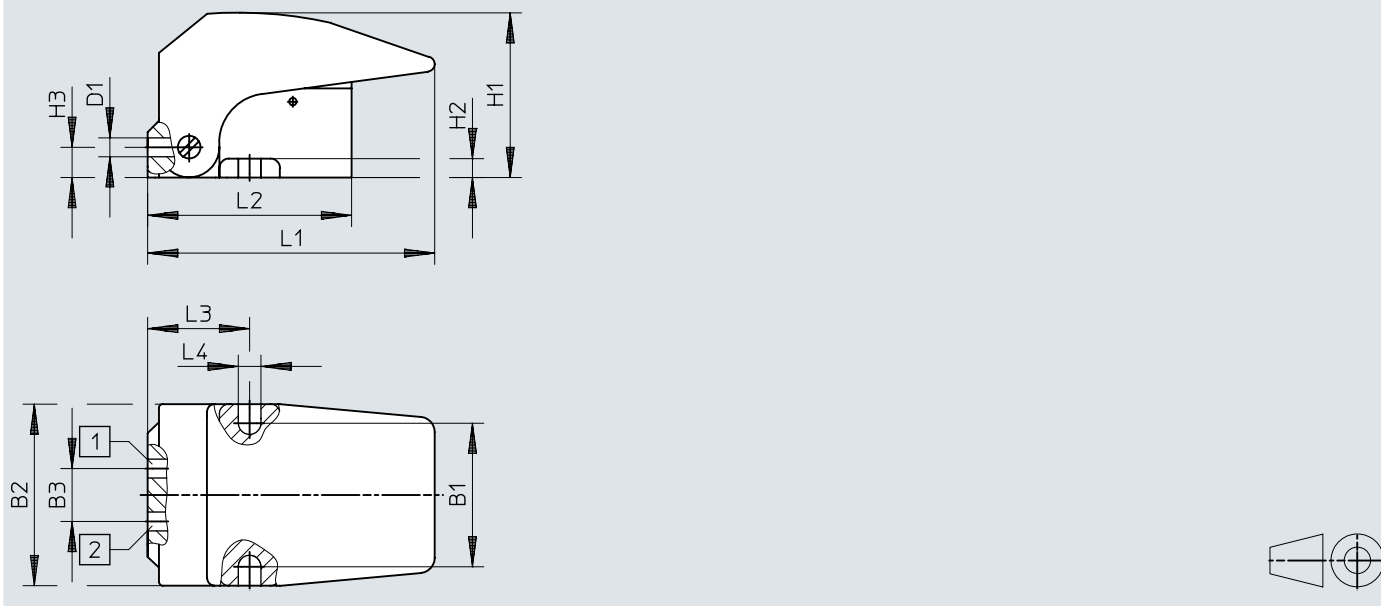


[1] Switching travel

	B1	D1	D2	H1	H2	H3	L2
K-3-M5	15	14	4,3	46	16	3	12

Dimensions

Dimensions – Pushbutton valve F-3-M5

Download CAD data www.festo.com

[1] Compressed air supply port

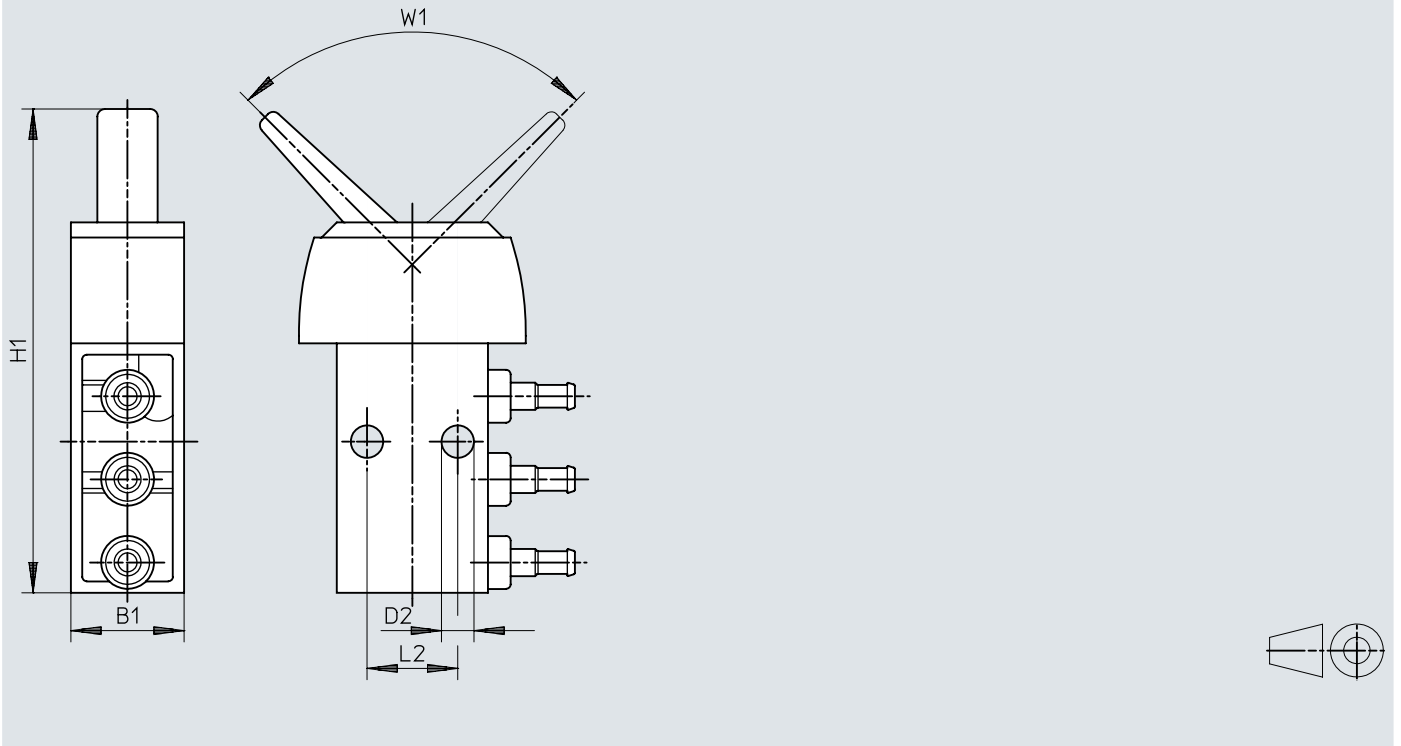
[2] Working and output line

	B1	B2	B3	D1	H1	H2	H3	L1	L2	L3	L4
F-3-M5	38	48	15	M5	43	5	7,5	76,5	54	27	6,5

Dimensions

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

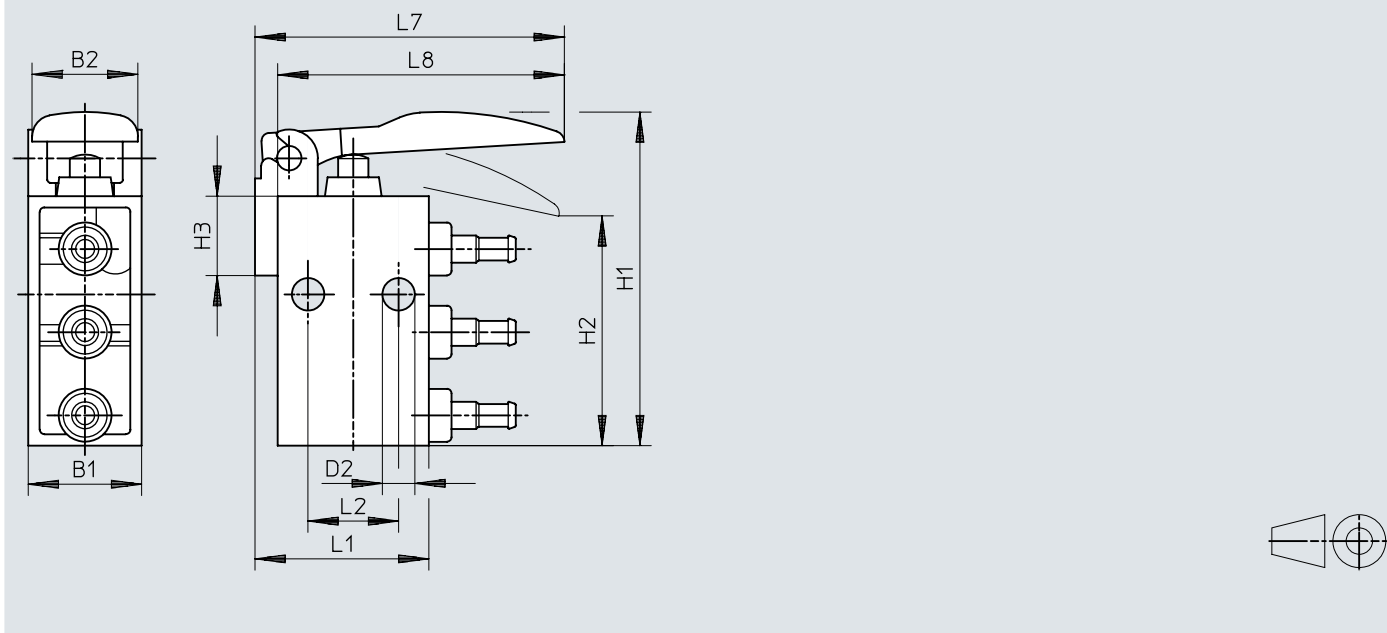
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	B1	D2	H1	L2	W1
KH/O-3-PK-3	15	4,3	64	12	90°

Dimensions

Dimensions – Finger lever valve TH/O-3-PK-3

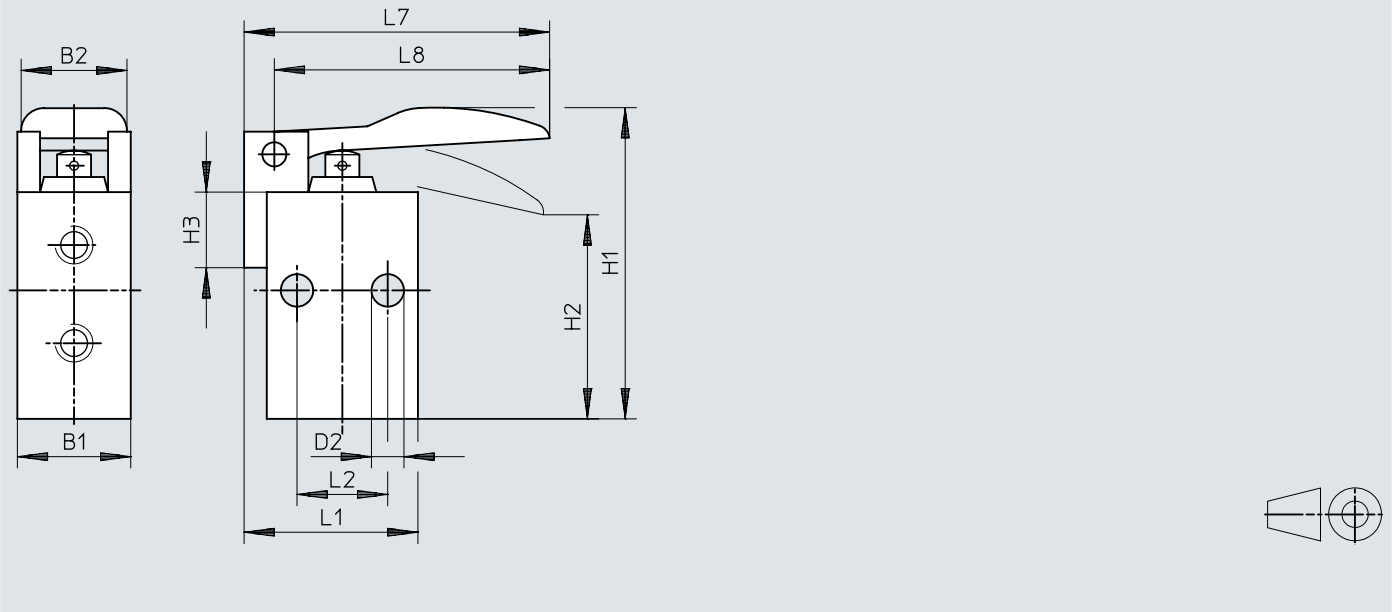
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	B1	B2	D2	H1	H2	H3	L1	L2	L7	L8
TH/O-3-PK-3	15	14	4,3	44,6	30,4	10,5	23	12	41	38

Dimensions

Dimensions – Finger lever valve TH-3-M5

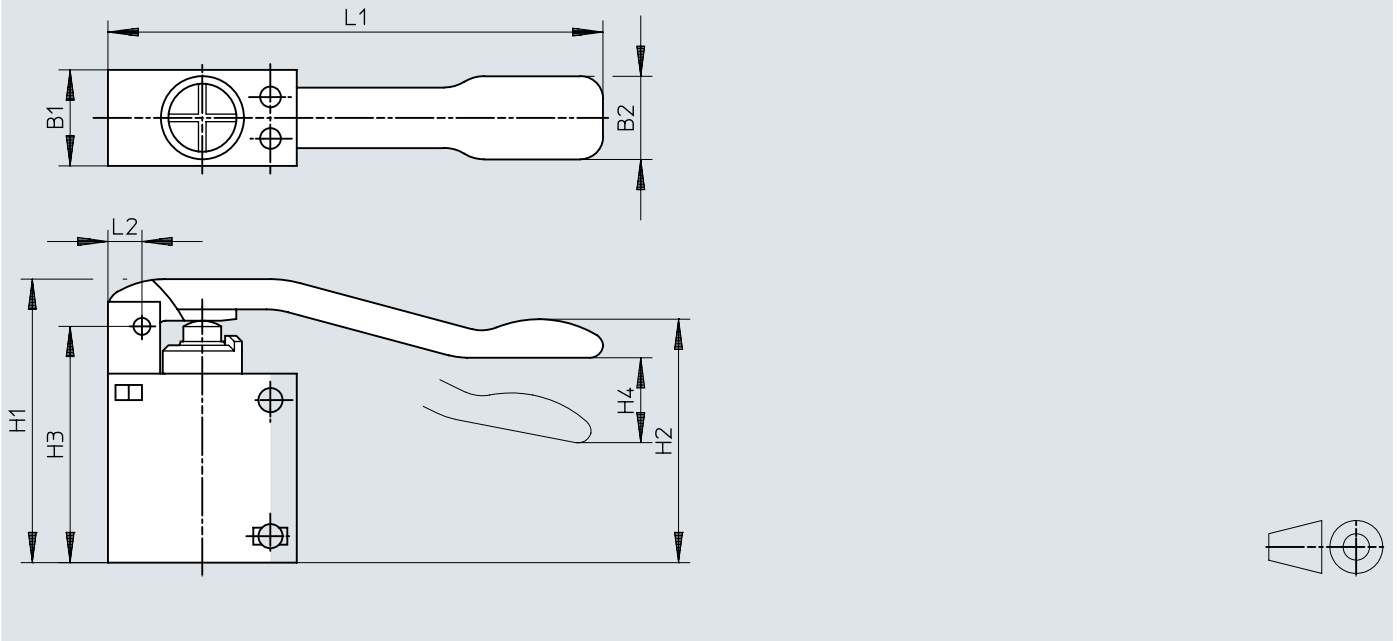
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	B1	B2	D2	H1	H2	H3	L1	L2	L7	L8
TH-3-M5	14,8	14	4,3	42	27	10	23	12	40,5	36,5

Dimensions

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

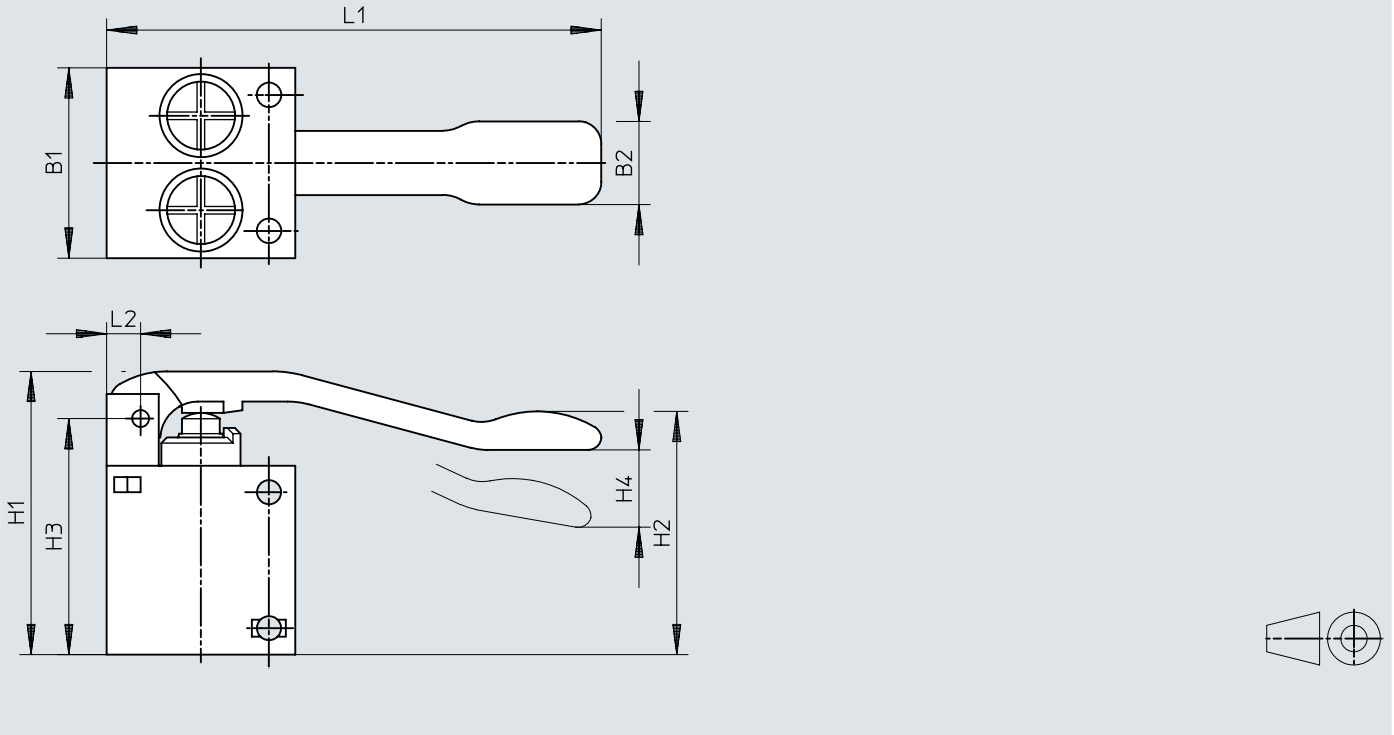
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	B1	B2	H1	H2	H3	H4	L1	L2
TH-3-1/4-B	25,4	22	75	68	62,5	23	131	9
THO-3-1/4-B								

Dimensions

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

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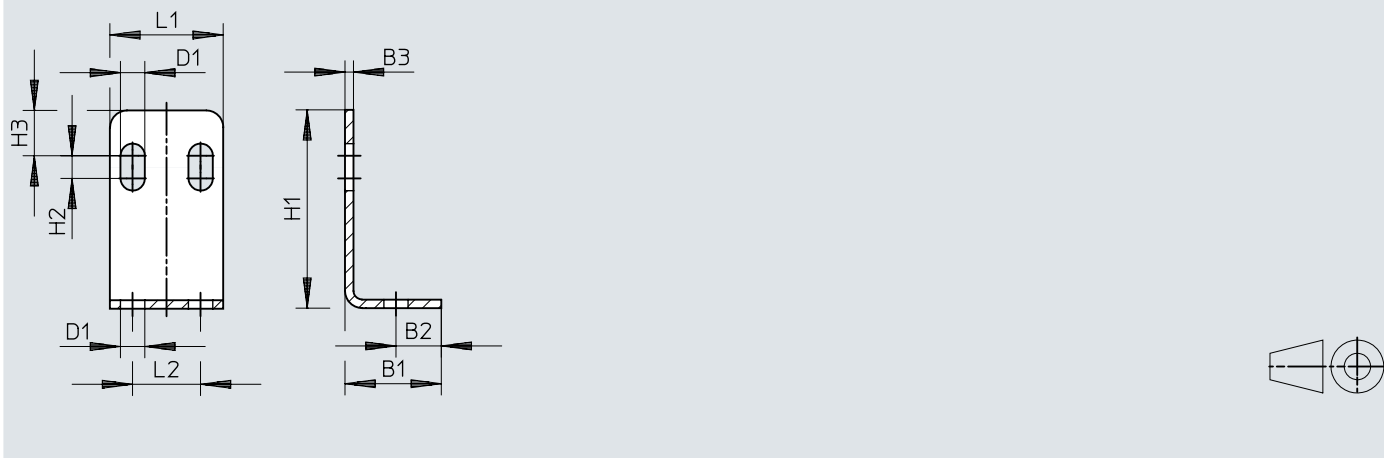


	B1	B2	H1	H2	H3	H4	L1	L2
TH-5-1/4-B	50,4	22	75	68	62,5	23	131	9

Dimensions

Dimensions – Mounting bracket HV-M5

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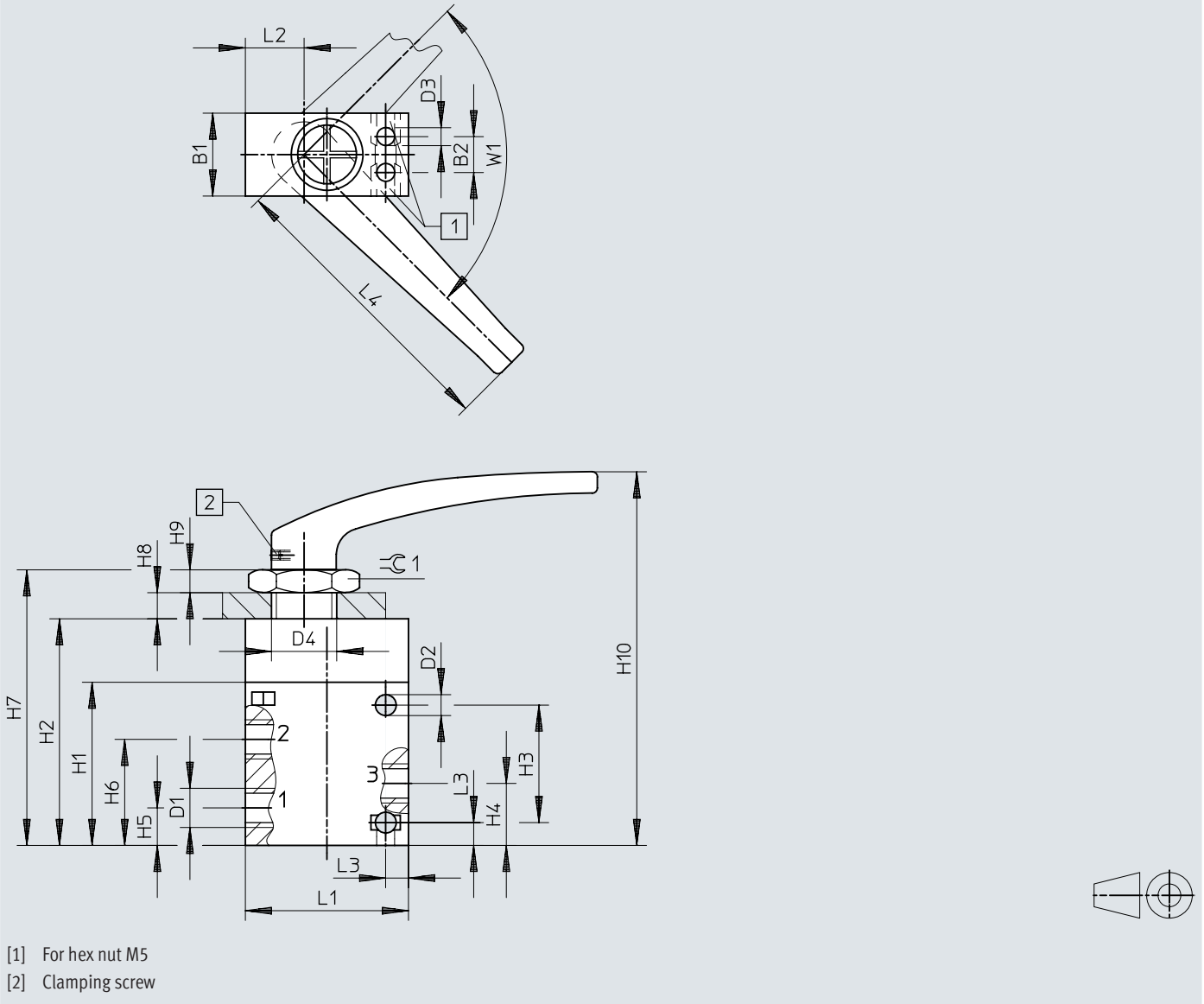


	B1	B2	B3	D1	H1	H2	H3	L1	L2
HV-M5	17	8	1,5	4,3	35	4	8	20	12

Dimensions

Dimensions – Hand lever valve H-3-1/4-B

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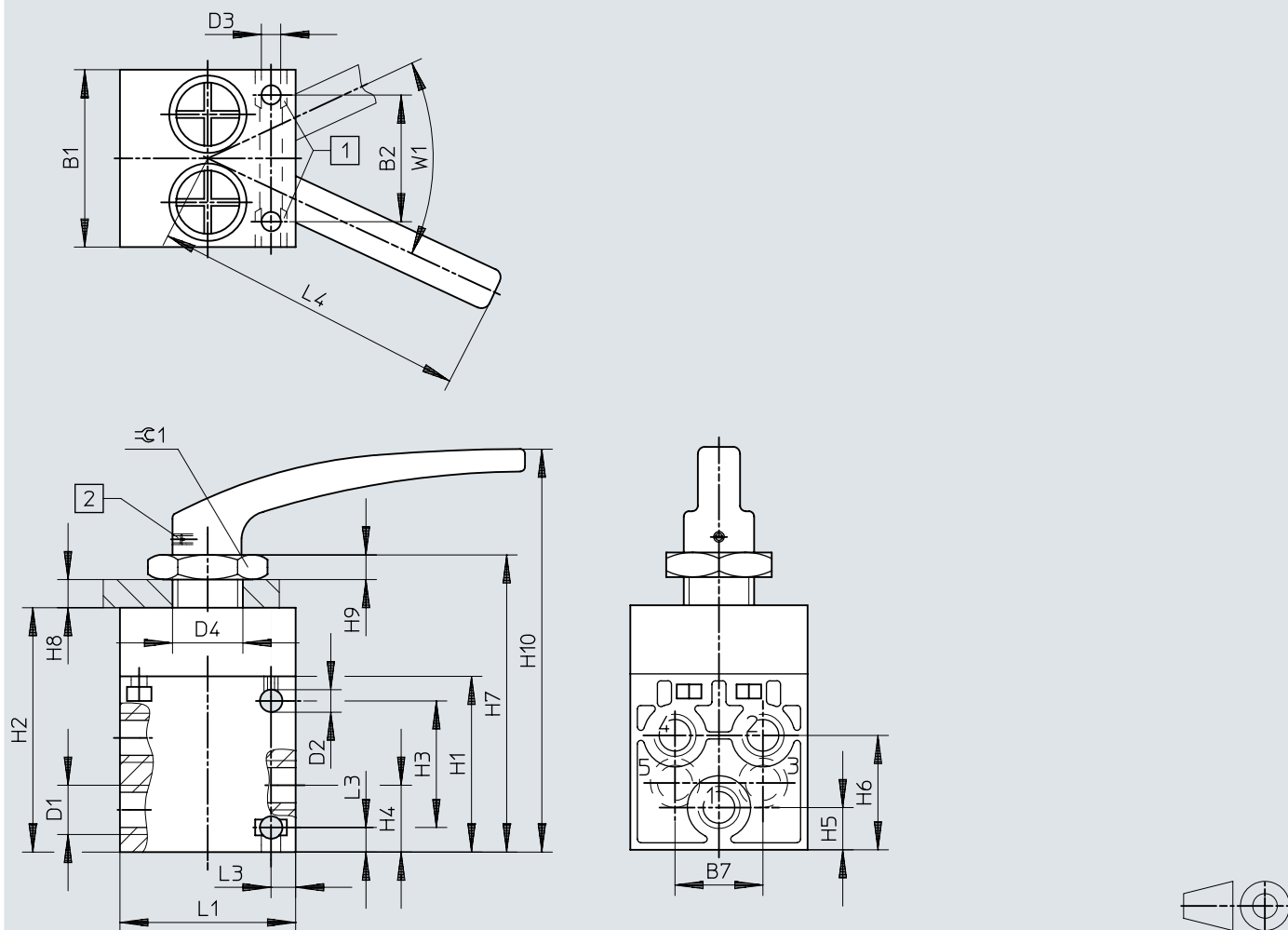
	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
H-3-1/4-B	50	69,5	36	19	11,5	32,5	84,5	0 ... 8	7	114,5

	B1	B2	D1	D2	D3	D4	L1	L2	L3	L4	W1	∠ 1
H-3-1/4-B	25,4	11	G1/4	6,4	5,5	M20x1,5	50	18	7	90	90°	30

Dimensions

Dimensions – Hand lever valve H-5-1/4-B

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- [1] For hex nut M5
- [2] Clamping screw

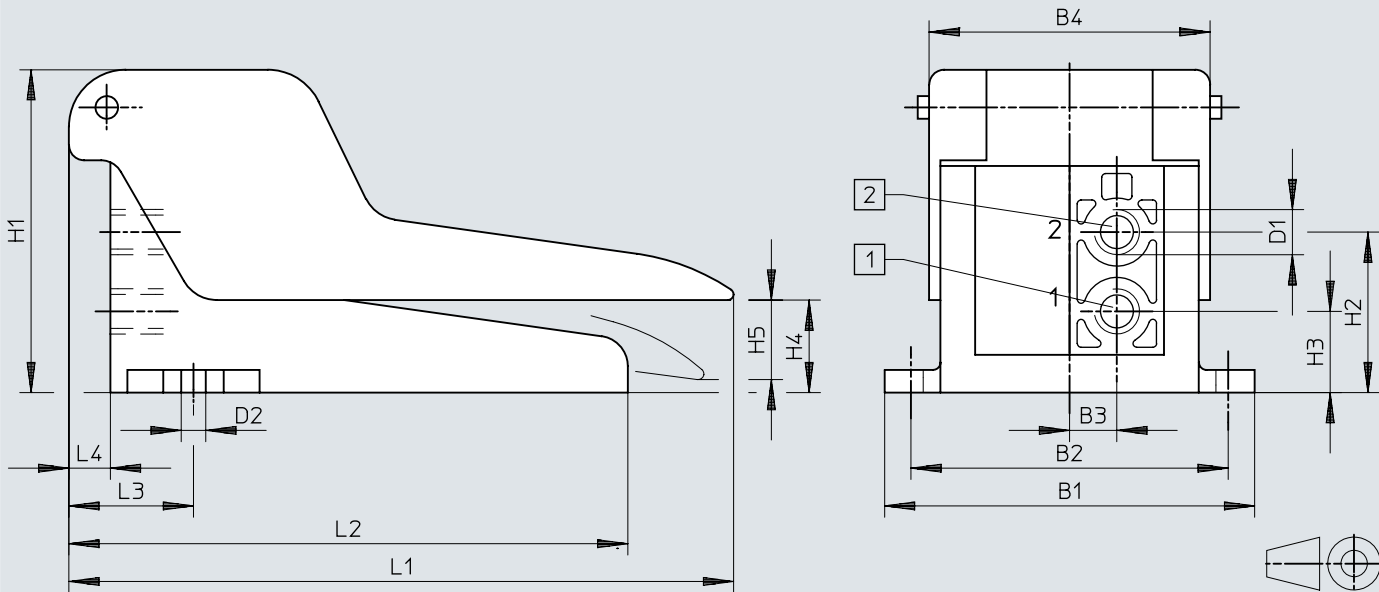
	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
H-5-1/4-B	50	69,5	36	19	11,5	32,5	84,5	0 ... 8	7	114,5

	B1	B2	B7	D1	D2	D3	D4	L1	L3	L4	W1	∠1
H-5-1/4-B	50,4	36	25	G1/4	6,4	5,5	M20x1,5	50	7	90	50°	30

Dimensions

Dimensions – Foot valve F...3, foot valve with detent FPB-3...

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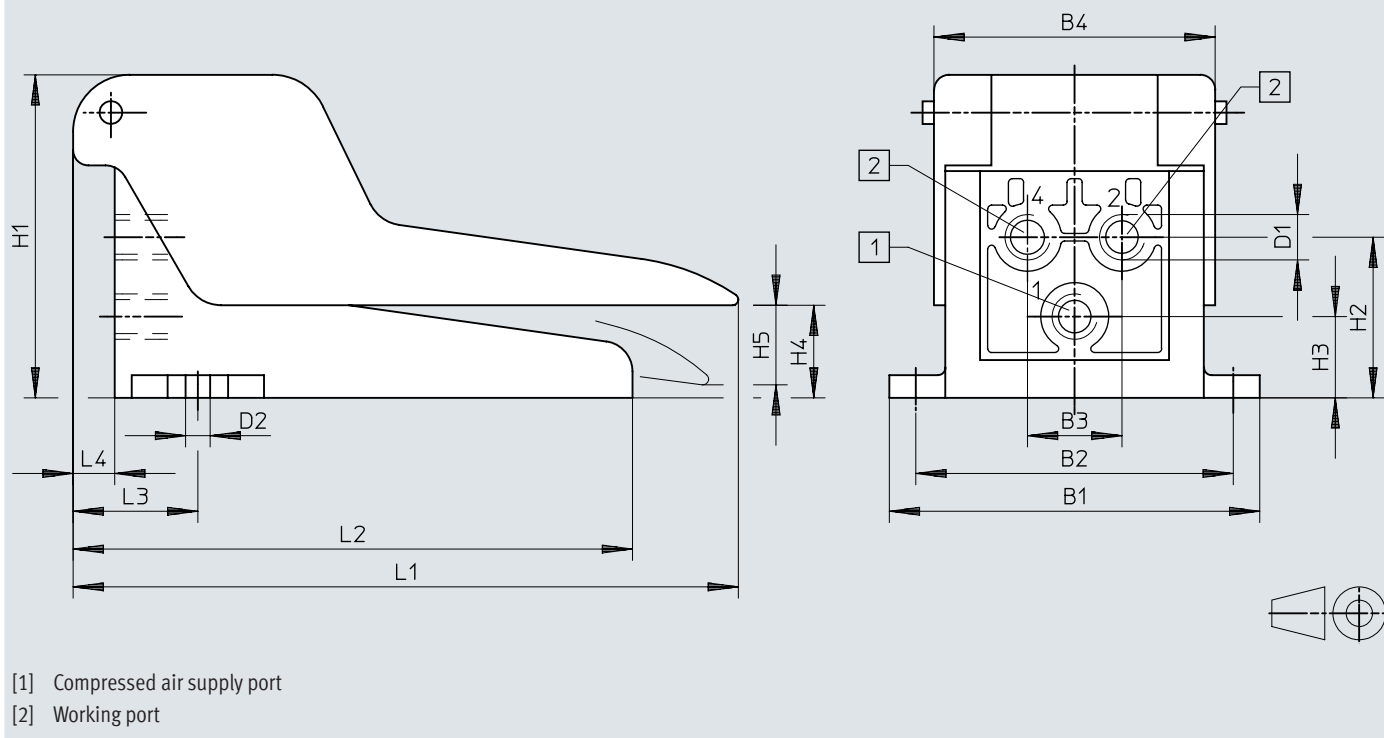
- [1] Compressed air supply port
- [2] Working port

	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	H5	L1	L2	L3	L4
F... 3 ...	98	84	12,5	74,4	G1/4	6,5	85,5	42,5	21,5	29	24	176	148	33	11
FPB-3 ...															

Dimensions

Dimensions – Foot valve F-5..., foot valve with detent FPB-5...

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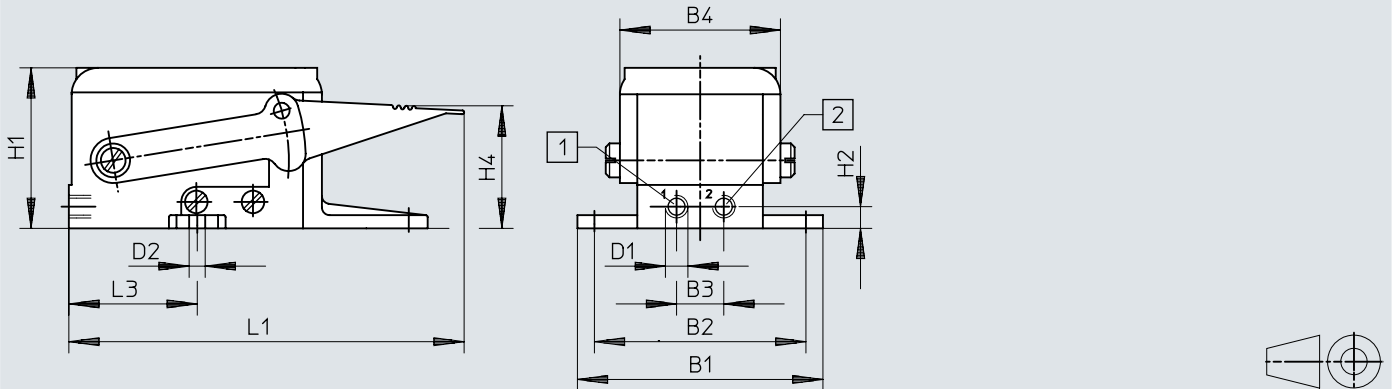


	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	H5	L1	L2	L3	L4
F-5 ...	98	84	25	74,4	G1/4	6,5	85,5	42,5	21,5	29	24	176	148	33	11
FPB-5 ...															

Dimensions

Dimensions – Foot valve with detent FP-3-1/4-B

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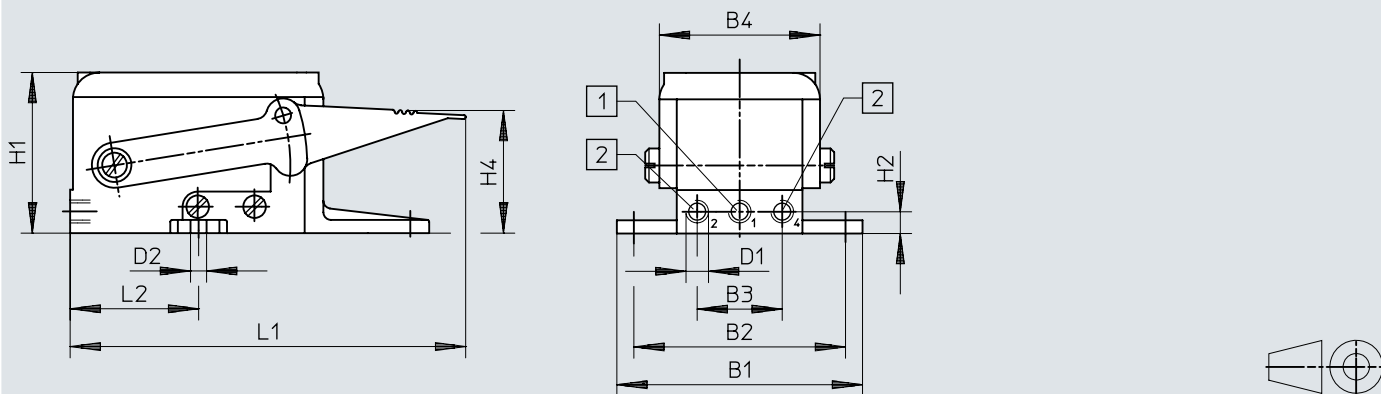
- [1] Compressed air supply port
- [2] Working port

	B1	B2	B3	B4	D1	D2	H1	H2	H4	L1	L3
FP-3-1/4-B	130	112	25	85	G1/4	8,5	85	11,5	65	210	68

Dimensions

Dimensions – Foot valve with detent FP-5-1/4-B

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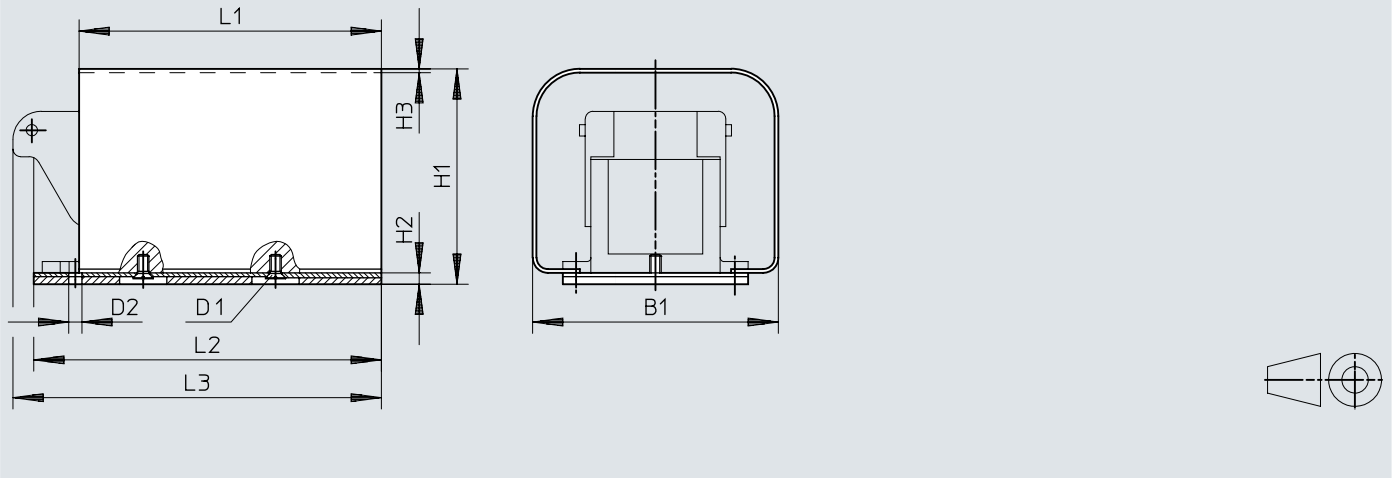
- [1] Compressed air supply port
- [2] Working port

	B1	B2	B3	B4	D1	D2	H1	H2	H4	L1	L3
FP-5-1/4-B	130	112	45	85	G1/4	8,5	85	11,5	65	210	68

Dimensions

Dimensions – Protective hood FH, for foot valve F and foot valve with detent
FPB

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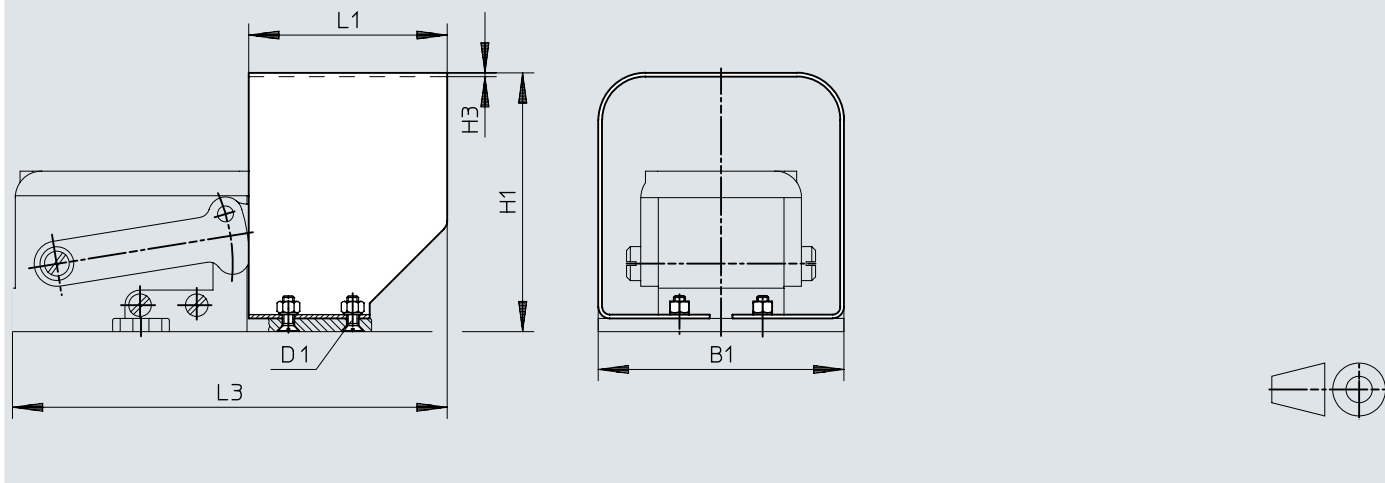


	B1	D1	D2	H1	H2	H3	L1	L2	L3
FH	130	M6	7	114	6	2	160	184	195

Dimensions

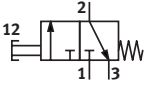
Dimensions – Protective hood FPH-121, for foot valve with detent FP

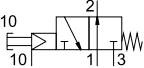
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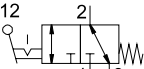


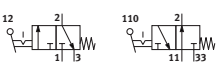
	B1	D1	H1	H3	L1	L3
FPH-121	130	M6	137	2	105	230

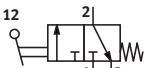
Ordering data

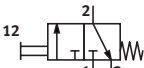
Pushbutton valve					
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type
	80 l/min	3/2-way, closed, monostable	M5	3660	K-3-M5
				4452	F-3-M5

Pushbutton valve					
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type
	80 l/min	3/2-way, monostable, open/closed	PK-3	13793	K/O-3-PK-3

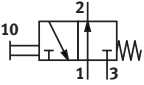
Toggle lever valve					
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type
	80 l/min	3/2-way, monostable, open/closed	PK-3	33003	KH/O-3-PK-3

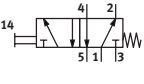
Finger lever valve					
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type
	80 l/min	3/2-way, monostable, open/closed	PK-3	13794	TH/O-3-PK-3

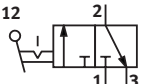
Finger lever valve					
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type
	80 l/min	3/2-way, closed, monostable	M5	6758	TH-3-M5

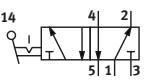
Finger lever valve					
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type
	600 l/min	3/2-way, closed, monostable	G1/4	8983	TH-3-1/4-B

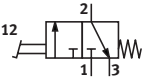
Ordering data

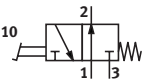
Finger lever valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type	
	600 l/min	3/2 open, single solenoid	G1/4	8990	TH0-3-1/4-B	

Finger lever valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type	
	550 l/min	5/2-way, monostable	G1/4	8994	TH-5-1/4-B	

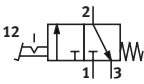
Hand lever valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type	
	600 l/min	3/2 double solenoid		8987	H-3-1/4-B	

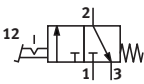
Hand lever valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Pneumatic connection, port 1	Part no.	Type	
	550 l/min	5/2 double solenoid		8995	H-5-1/4-B	

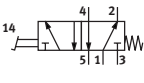
Foot valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Product weight	Actuating force	Part no.	Type
	600 l/min	3/2-way, closed, monostable	595 g	50 N	8984	F-3-1/4-B

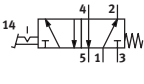
Foot valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Product weight	Actuating force	Part no.	Type
	600 l/min	3/2 open, single solenoid	595 g	55 N	8988	F0-3-1/4-B

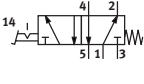
Ordering data

Foot valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Product weight	Actuating force	Part no.	Type
	600 l/min	3/2 double solenoid	1,760 g	58.5 N	8986	FP-3-1/4-B

Foot valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Product weight	Actuating force	Part no.	Type
	550 l/min	3/2 double solenoid	610 g	31.5 N	526984	FPB-3-1/4

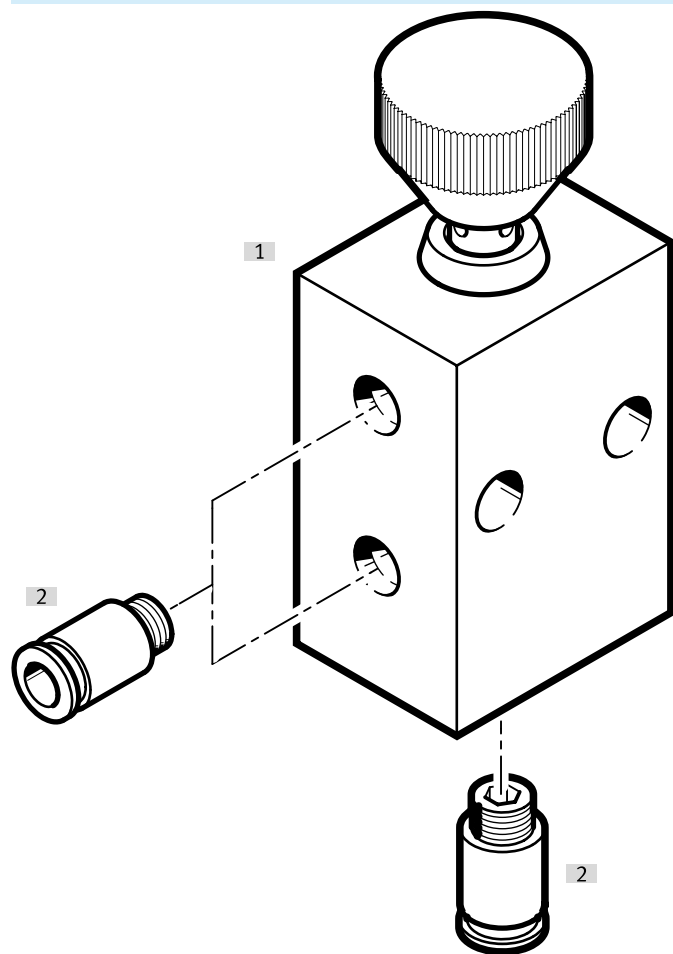
Foot valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Product weight	Actuating force	Part no.	Type
	550 l/min	5/2-way, monostable	705 g	78 N	8992	F-5-1/4-B

Foot valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Product weight	Actuating force	Part no.	Type
	550 l/min	5/2 double solenoid	1,845 g	82 N	8997	FP-5-1/4-B

Foot valve						
	Standard nominal flow rate (standardised to DIN 1343)	Valve function	Product weight	Actuating force	Part no.	Type
	550 l/min	5/2 double solenoid	725 g	67.5 N	526985	FPB-5-1/4

Peripherals

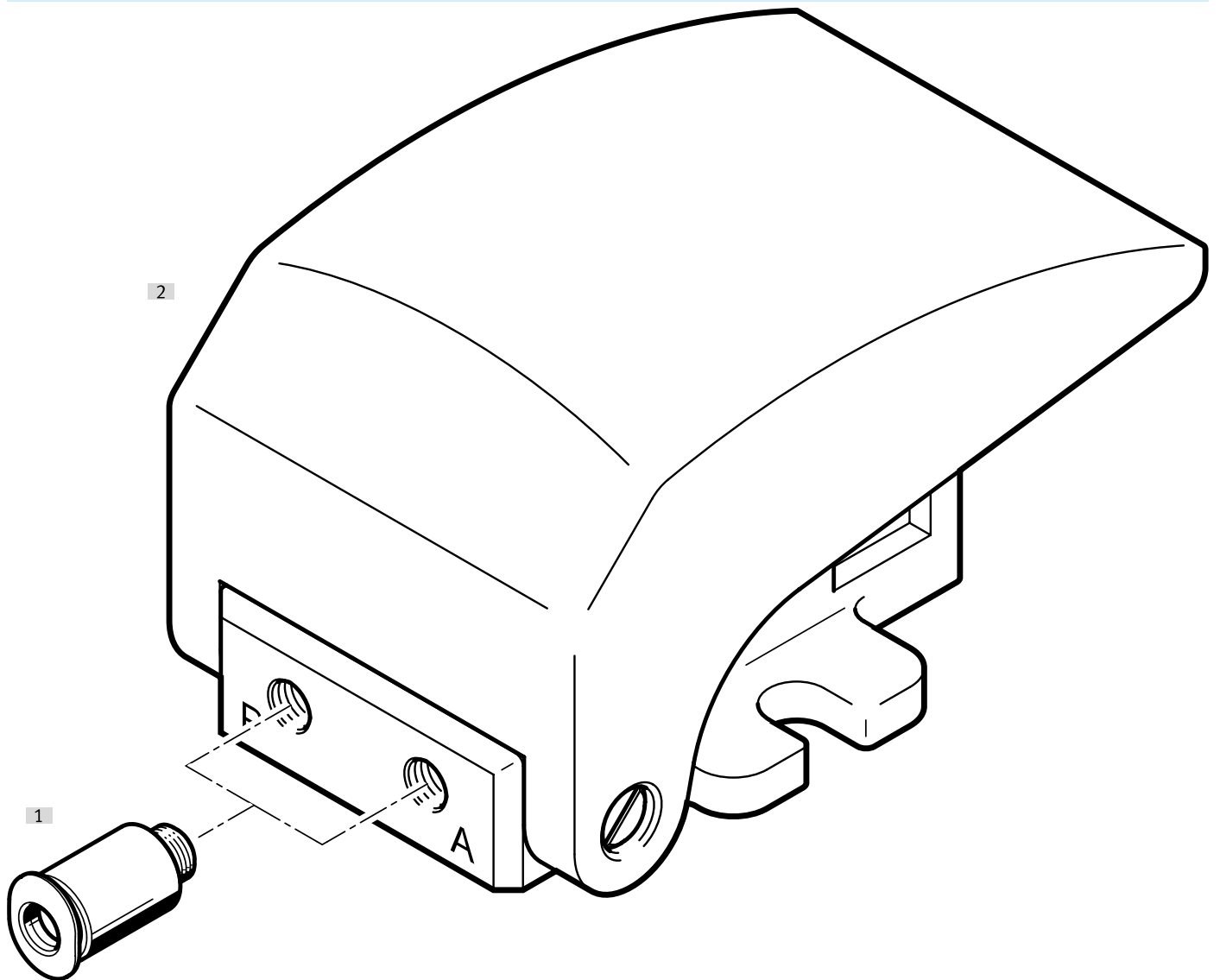
Pushbutton valve



Accessories			→ Link
Type/order code	Description		
[1] Fitting	For working/exhaust ports		30
[2] Pushbutton valve	-		-

Peripherals

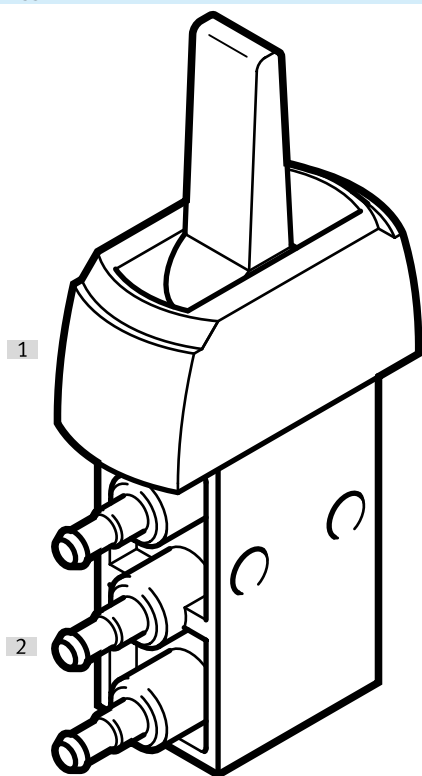
Foot valve



Accessories			→ Link
Type/order code	Description		
[1] Fitting	For working/exhaust ports		30
[2] Foot valve	-		-

Peripherals

Toggle lever valve



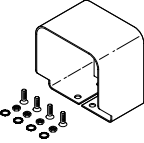
Accessories			→ Link
Type/order code	Description		
[1] Tubing connection	For I.D. tubing		-
[2] Toggle lever valve	-		-

Accessories


Protective hood for foot valve F and foot valve with detent FPB

	Product weight	Part no.	Type
	660 g	2071	FPH-121
	1,200 g	4500	FH


Protective hood for foot valve FP

	Product weight	Part no.	Type
	660 g	2071	FPH-121
	1,200 g	4500	FH


Push-in fitting with external hexagon

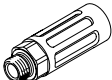
	Pneumatic connection, port 1	Pneumatic connection, port 2	Size	Size of pack	Part no.	Type		
	Male thread M5	For tubing outer diameter of 3 mm	Mini	10	153302	QSM-M5-3		
		For tubing outside diameter of 4 mm			★ 153304	QSM-M5-4		
		For tubing outside diameter of 6 mm			★ 153306	QSM-M5-6		
	Male thread G1/8	For tubing outside diameter of 4 mm	Standard		★ 186264	QSM-G1/8-4		
		For tubing outside diameter of 6 mm	Mini		★ 186095	QS-G1/8-4		
	Male thread G1/4	For tubing outside diameter of 6 mm	Standard		★ 186265	QSM-G1/8-6		
					★ 186096	QS-G1/8-6		
		For tubing outside diameter of 8 mm	Standard		★ 186097	QS-G1/4-6		
					For tubing outside diameter of 10 mm	Standard	★ 186099	QS-G1/4-8
							★ 186101	QS-G1/4-10

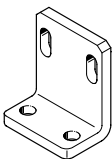
Push-in fitting with internal hexagon

	Pneumatic connection, port 1	Pneumatic connection, port 2	Size	Size of pack	Part no.	Type
	Male thread M5	For tubing outer diameter of 3 mm	Mini	10	153313	QSM-M5-3-l
		For tubing outside diameter of 4 mm			★ 153315	QSM-M5-4-l
		For tubing outside diameter of 6 mm			★ 153317	QSM-M5-6-l
	Male thread G1/8	For tubing outside diameter of 4 mm	Standard		★ 186266	QSM-G1/8-4-l
					★ 186106	QS-G1/8-4-l
		For tubing outside diameter of 6 mm	Mini		★ 186267	QSM-G1/8-6-l

Accessories

Push-in fitting with internal hexagon						
	Pneumatic connection, port 1	Pneumatic connection, port 2	Size	Size of pack	Part no.	Type
	Male thread G1/8	For tubing outside diameter of 6 mm	Standard	10	★ 186107	QS-G1/8-6-I
		For tubing outside diameter of 8 mm			★ 186109	QS-G1/8-8-I
	Male thread G1/4	For tubing outside diameter of 6 mm			★ 186108	QS-G1/4-6-I
		For tubing outside diameter of 8 mm			★ 186110	QS-G1/4-8-I
		For tubing outside diameter of 10 mm			★ 186112	QS-G1/4-10-I

Silencer			
	Pneumatic connection	Part no.	Type
	G1/8	★ 2307	U-1/8
		★ 161419	UC-1/8
	G1/4	★ 165004	UC-1/4
		6842	U-1/4-B
		★ 2316	U-1/4

Mounting bracket for valves			
	Product weight	Part no.	Type
	11 g	9634	HV-M5
	32 g	9635	HV-1/8