

Panel-mounting valves and actuating attachments

FESTO

Key features



Mushroom pushbutton with detent

The actuator is unlocked by turning the detent ring at the mushroom button.

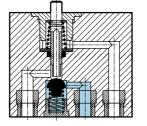
Mushroom pushbutton with detent PRS Lockable

After pressing, the button remains locked and can only be unlatched with the key. The key can be removed in either switch position.

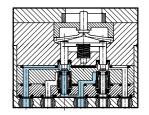
Key actuator Q With key

The key actuator can only be activated with the key. The key can be removed in either switch position.

Basic valve SV-3-M5



Basic valve SV-5-M5-B



Panel-mounting valves and actuating attachments Technical data

- N - Flow rate 65 ... 95 l/min

- **-** Pressure -0.9 ... +8 bar

0 ... 8 bar

-

Temperature range

-10 ... +60°C



General techni	General technical data – Basic valves						
Function			3/2-way valve	5/2-way valve			
Operating medium			Filtered compressed air, lubricated or unlubricated Vacuum ¹⁾				
Constructional	design		Poppet valve, directly actuated in or	e direction, with spring return			
Type of mounting	ng		Front panel mounting, mounting dia	meters 22.5 and 30.5 mm, also 2 through-holes			
Pneumatic con	nection		M5				
Nominal size		[mm]	2	2.3			
Standard nomi	nal flow rate 1 2	[l/min]	65	95			
Operating press	sure range	[bar]	-0.95 +8	0 +8			
Actuating force	at 6 bar	[N]	12	17			
Temperature ra	nge	[°C]	-10 +60				
Materials	Housing		Plastic				
	Valve stem		Brass				
	Seals		Nitrile rubber				
Weight		[g]	40	53			

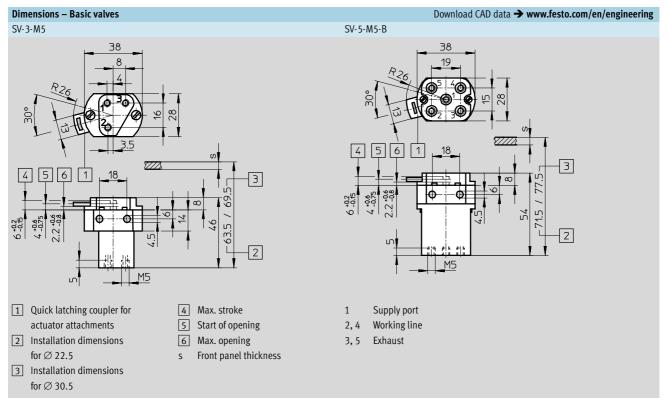
¹⁾ SV-3-M5: Vacuum connection at port 1

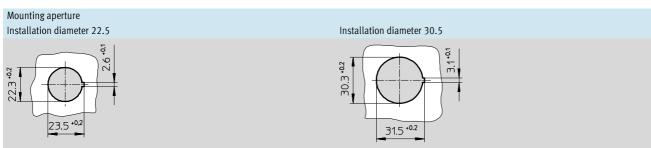
General techn	ical data – Actuator att	achments							
			Pushbutton actuator	Mushroom pushbutton					Key actuator with key
					Red	Red Lockable			
Actuating force	e / actuating torque at	[Nm]	14	14	25	23	0.4	0.14	23
Weights	Installation diameter 22.5	[g]	14	20	26	82	21	19	80
	Installation diameter 30.5	[g]	22	28	37	91	30	27	88

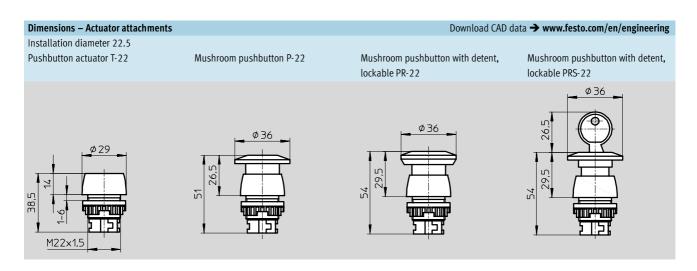
Panel-mounting valves and actuating attachments

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Technical data

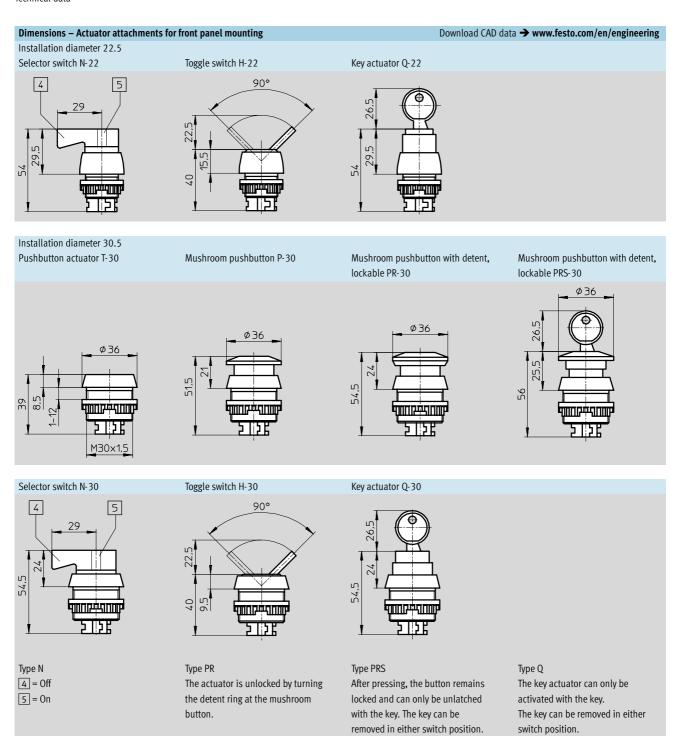






Panel-mounting valves and actuating attachments

Technical data

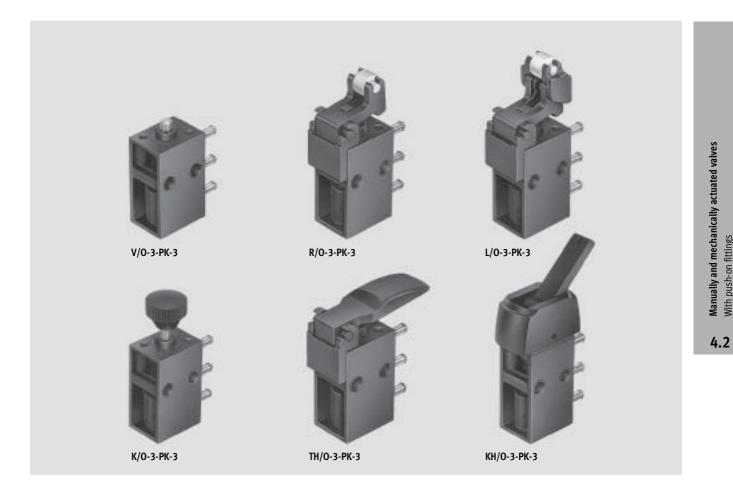


Panel-mounting valves and actuating attachments Technical data

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Ordering data – Basic valves						
Circuit symbol	Description	Part No.	Туре			
2 1 V3	3/2-way valve	6817	SV-3-M5			
4 1 2 W 5√√3	5/2-way valve	11 914	SV-5-M5-B			

Ordering data - Actua	tor attachments		
Circuit symbol	Description	Installation diameter 22.5	Installation diameter 30.5
		Part No. Type	Part No. Type
Pushbutton actuator			Pushbutton actuator
Ħ	Black	9 289 T-22-SW	9 291 T-30-SW
	Yellow	9 290 T-22-GE	9 292 T-30-GE
	Red	9 997 T-22-RT	10 014 T-30-RT
Mushroom pushbuttor			
H	Black	9 293 P-22-SW	9 295 P-30-SW
7			
Mushroom pushbuttor	with dotont		
	Red	9 297 PR-22-RT	9 298 PR-30-RT
(Red, lockable	9 299 PRS-22-RT	9 300 PRS-30-RT
	Red, lockable	9 299 FR3-22-RI	9 300 FK3-30-K1
Selector switch			
	Black	9 301 N-22-SW	9 302 N-30-SW
			
		<u> </u>	
Toggle switch			
/	Black	9 305 H-22-SW	9 306 H-30-SW
Key actuator with key			
₩	-	9 303 Q-22	9 304 Q-30
' L			



Push-on fitting connection

- Directly actuated valves
- Polymer design
- Ducted exhaust air

The push-on fitting is suitable for plastic tubing with a standard internal diameter → Volume 3

V/0-3-PK-3

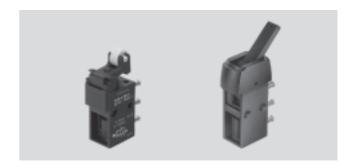
Valves with push-on fittings

Technical data

Flow rate 80 l/min

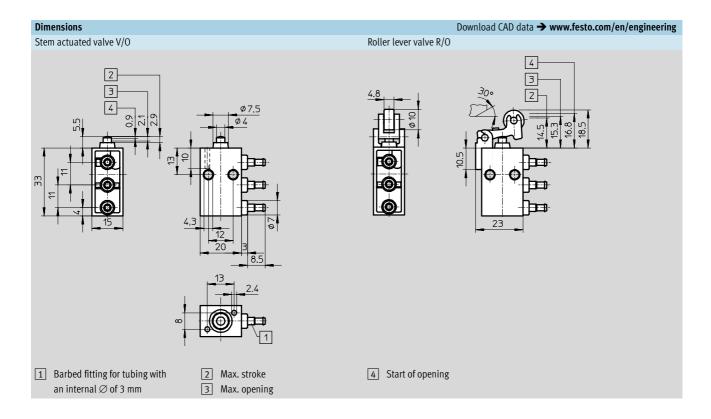
Pressure 0 ... 8 bar

Temperature range

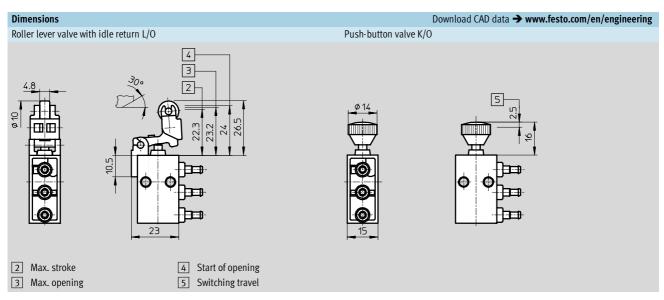


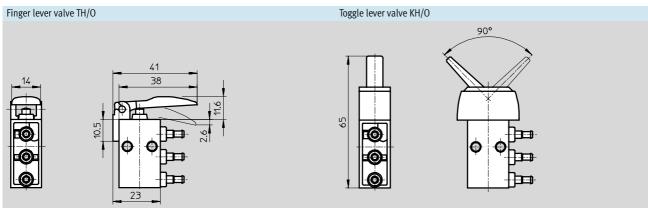
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General technica	al data							
Actuation type			Stem actuated valve	Roller lever valve	Roller lever valve with idle return	Push-button valve	Finger lever valve	Toggle lever valve
Constructional d	esign		Poppet valve, dire	ectly actuated				
Type of mounting	<u> </u>		Through-holes in	housing				
Pneumatic conne	ection		Barbed fitting for	3 mm plastic tub	ing			
Nominal size		[mm]	2.5					
Standard nomina	al flow rate 1 2	[l/min]	80					
Operating pressu	ıre range	[bar]	08					
Actuating force a	t 6 bar							
Normally closed		[N]	17	10	10	17	6	6.5
Normally open		[N]	24	15	13	24	8	7.5
Temperature ran	ge	[°C]	-10 +60					
Materials	Housing		Plastic					
	Seals		Nitrile rubber					
Weight		[g]	20	18	19	20	18	20



Valves with push-on fittings Technical data





Ordering data		
Circuit symbol	Actuation type	Part No. Type
2 T T T T T T T T T T T T T T T T T T T	<u>_</u> m	10 747 V/O-3-PK-3
2 2 1	Roller lever valve	10 748 R/O-3-PK-3
2 1 V3	Roller lever valve with idle return 733	10 749 L/O-3-PK-3
2 1 V3	Push-button valve	13 793 K/O-3-PK-3
	Finger lever valve	13 794 TH/O-3-PK-3
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Toggle lever valve → → → → → → → → → → → → →	33 003 KH/O-3-PK-3

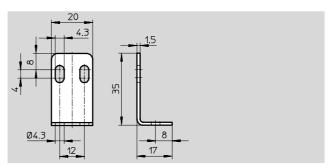
4.2

Valves with push-on fittings Accessories

Mounting bracket HV-M5

Material: Galvanised steel

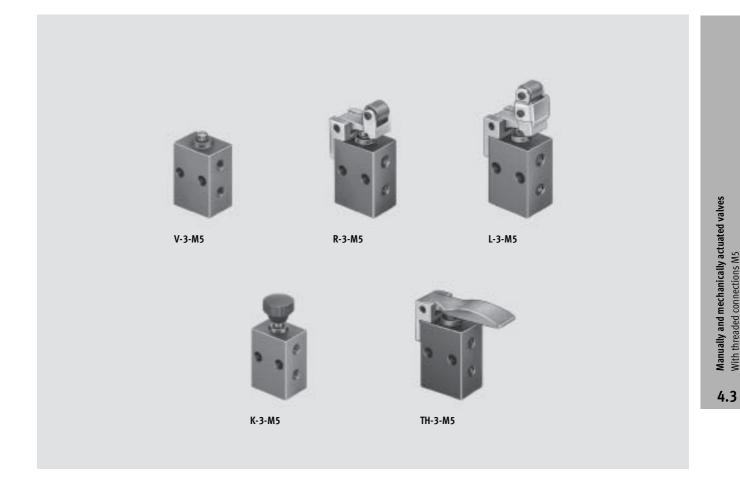




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Ordering data			
	Weight	Part No.	Туре
	[g]		
Mounting bracket	11	9 634	HV-M5

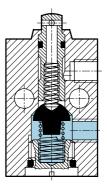
2 / 4.2-4



- 11 -Flow rate 80 l/min

- 3/2-way valve normally closed
- Connection M5
- Compact design

V-3-M5



4.3

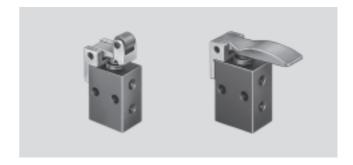
Valves with threaded connections M5

Technical data

Flow rate 80 l/min

Pressure -0.95 ... +8 bar

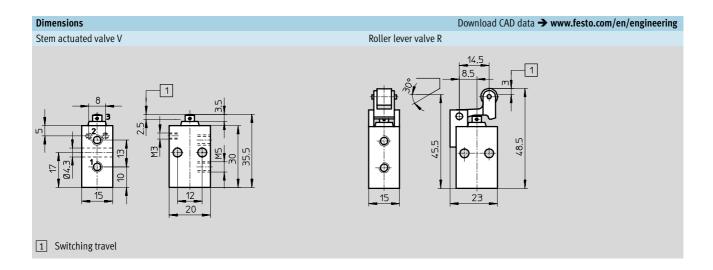
Temperature range −10 ... +60°C



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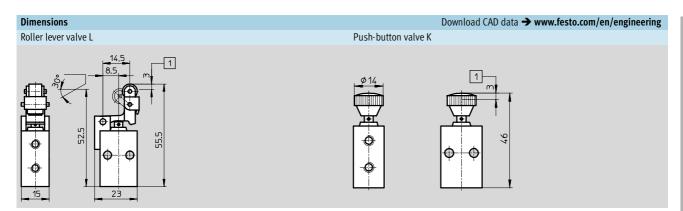
General technic	cal data						
Actuation type			Stem actuated valve	Roller lever valve	Roller lever valve with idle return	Push-button valve	Finger lever valve
Operating media	um		Filtered compresse Vacuum ¹⁾	ed air, lubricated or unlu	ubricated		
Constructional o	design		Poppet valve, dire	ctly actuated			
Type of mountin	Type of mounting 2 through-holes in housing						
Pneumatic conn	nection		M5				
Nominal size		[mm]	2				
Standard nomin	nal flow rate 1 2	[l/min]	80				
Operating press	sure range	[bar]	-0.95 8				
Actuating force a	at 6 bar	[N]	23	12.5	12.5	23	8
Temperature rar	nge	[°C]	-10 +60	•	•	•	•
Materials	Housing		Die-cast zinc				
	Seals		Nitrile rubber				
Weight		[g]	25	40	43	28	37

1) Vacuum connection at port 1



Valves with threaded connections M5

Technical data





Ordering data – Basic valves			
Circuit symbol	Actuation type	Part No.	Туре
2 1 \ \sqrt{3}	Stem actuated valve	3 626	V-3-M5
	Roller lever valve	3 629	R-3-M5
2 1 × 3	Roller lever valve with idle return	3 628	L-3-M5
1 V3	Push-button valve	3 660	K-3-M5
	Finger lever valve	6 758	TH-3-M5

Ordering data – Actuator attachments					
Circuit symbol	Actuation type	Part No.	Туре		
	Roller lever with mounting screws	6 512	AR-05		
	Idle return roller lever with mounting screws	6 513	AL-05		

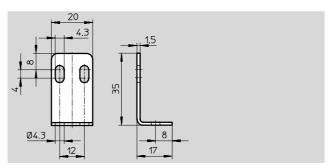
Valves with threaded connections M5

Accessories

Mounting bracket HV-M5

Material: Galvanised steel





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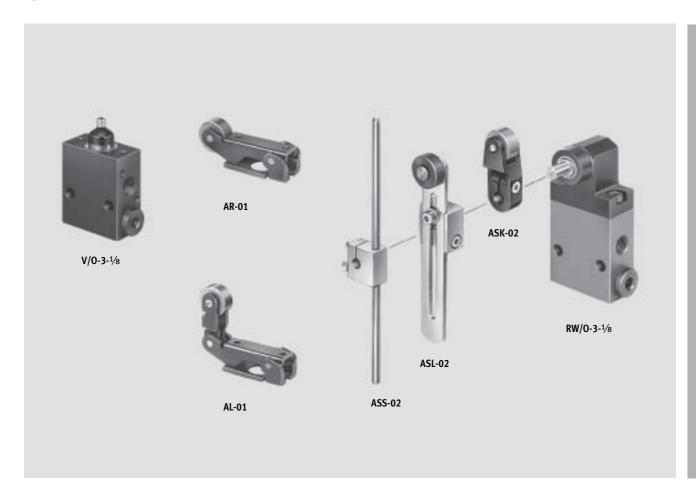
Ordering data		
	Weight	Part No. Type
	[g]	
Mounting bracket	11	9 634 HV-M5

Valves with threaded connections $G^{1}\!/\!\epsilon$, directly actuated

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Key features





Flow rate

- 3/2-way valve

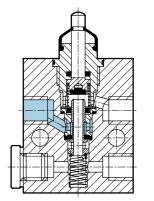
 Normally closed Normally open
 depending upon selected
 connections
- Connection G½8
- Actuator attachments as desired

The swivel lever valve is mechanically actuated with an eccentric rod.

Various actuating ranges can be selected by repositioning

2 components in the control actuator.

Normally closed



Valves with threaded connections G $^1\!/_8$, directly actuated $_{\text{Technical data}}$

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General technical data – Basic valves	General technical data – Basic valves						
Actuation type		Stem actuated valve	Swivel lever valve				
Operating medium		Filtered compressed air, lubricated or unlubricated Vacuum ¹⁾					
Constructional design		Poppet valve, directly actuated					
Type of mounting		2 through-holes in housing					
Pneumatic connection		G1/8					
Nominal size	[mm]	3.5					
Standard nominal flow rate 1 2	[l/min]	140					
Operating pressure range	[bar]	-0.95 +8					
Actuating force at 6 bar	[N]	28					
Temperature range	[°C]	-10 +60					
Materials Housing		Blue anodised aluminium					
Seals		Nitrile rubber					
Weight	[g]	90	150				

¹⁾ Vacuum connection at port 1 or 11

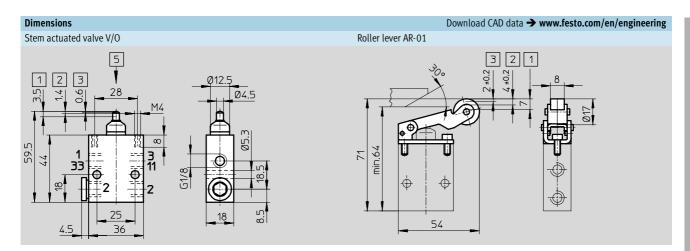
General technical data – Actuator attachments								
		Roller lever	Idle return roller lever	Swivel lever, short	Swivel lever, long	Swivel lever rod		
Actuating force [N]	min.	-	-	-	-	-		
	max.	10	12	7	1)	1)		
Material		Galvanised steel		Aluminium, steel	Aluminium, steel			
Weight	[g]	42	52	30	35	30		

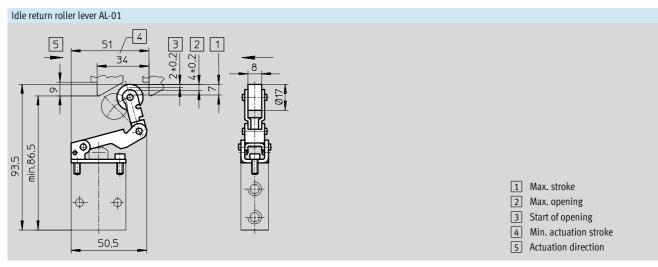
¹⁾ Dependent upon starting height

Valves with threaded connections $G^{1}/8$, directly actuated

FESTO

Technical data

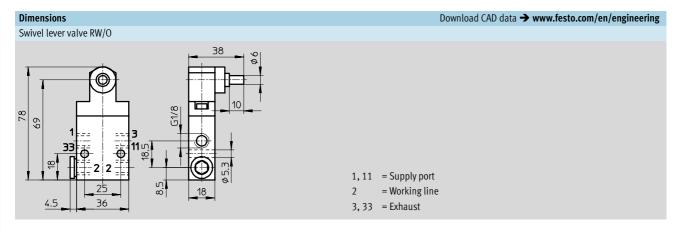


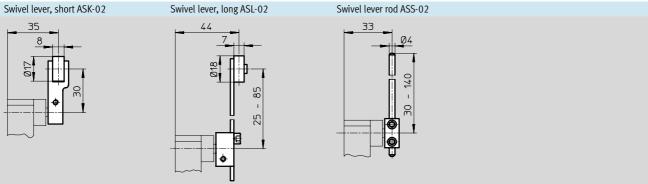


Valves with threaded connections G½, directly actuated

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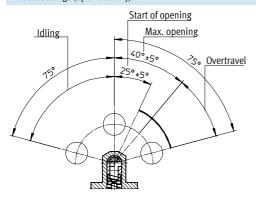
Technical data

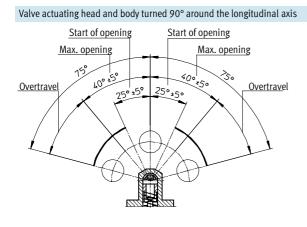




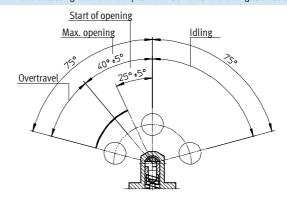
Actuating ranges are set by converting the switching head

Default settings (upon delivery)





Valve actuating head and body turned 180° around the longitudinal axis



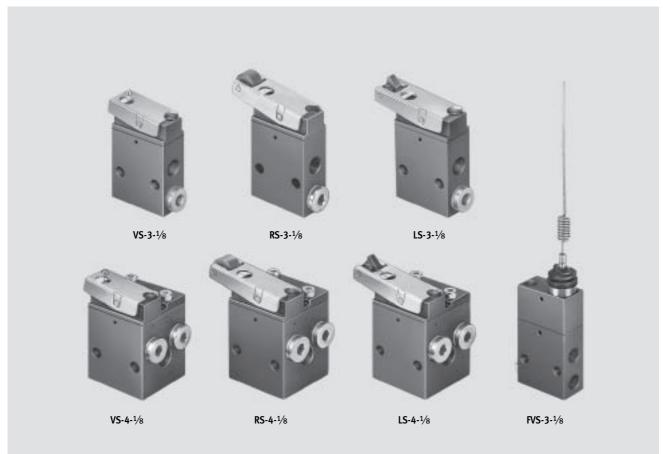
Valves with threaded connections G½, directly actuated $_{\text{Technical data}}$

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Ordering data						
Circuit symbol	Actuation type	Part No.	Туре			
Stem actuated valve						
2	Basic valve	4 938	V/0-3-1/8			
Actuator attachments						
• <u> </u>	Roller lever	4 936	AR-01			
Ø.	Idle return roller lever	4 941	AL-01			
Swivel lever valve						
2 1 \ \sqrt{3}	Basic valve	4 937	RW/0-3-1/8			
Actuator attachments						
<u>)</u>	Swivel lever, short	5 835	ASK-02			
<u>)</u> <u>=</u> [Swivel lever, long	5 836	ASL-02			
)ac	Swivel lever rod	4 789	ASS-02			

Valves with threaded connections $G^{1}\!/\!\mathrm{8}$, indirectly actuated $_{\text{Key features}}$

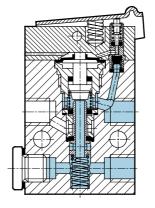




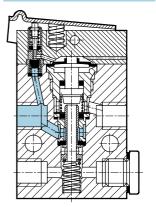
- N - Flow rate 120 l/min

- 3/2-way valves normally closed normally open, changed by repositioning the housing top
- 4/2-way valves
- Minimal actuating force with pilot control
- Can also be used as 2/2-way valve by plugging the exhaust

Normally closed



Normally open



Valves with threaded connections G1/8, indirectly actuated

Technical data - 3/2-way valves



- **-** Pressure 3.5 ... 8 bar



Wearing parts kits

→ 2 / 4.4-9



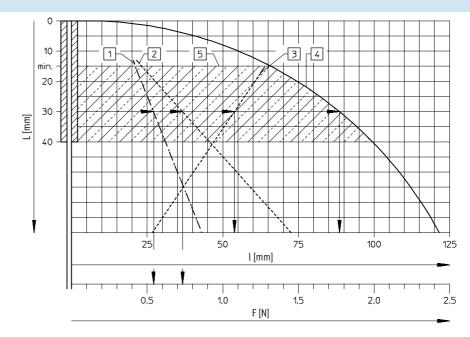
Technical data						
Actuation type			Stem actuated valve	Roller lever valve	Toggle lever valve	Whisker valve
Constructional design			Poppet valve, indirect	ly actuated		
Type of mounting			2 through-holes in ho	using		
Pneumatic connection			G1/8			
Nominal size		[mm]	3.5			
Standard nominal flow rate 1 2		[l/min]	120			
Operating pressure range		[bar]	3.5 8			
Actuating force at 6 bar		[N]	3.1	1.8	1.8	→ Diagram
Repetition accuracy (+/-)		[mm]	±0.1			
Temperature range		[°C]	-10 +60			
Materials	Housing		Blue anodised alumin	ium		
	Seals		Nitrile rubber			
Weight		[g]	110	120	110	130

Switching forces F and switching travel l at 6 bar in relation to approach distance L

Whisker valve

This piloted valve with extremely low actuating forces is particularly suited for units where dissimilar parts or actuating elements without precision positioning are to be sensed, or where the actuating levels are different. The whisker can be approached from any direction perpendicular to the whisker axis, or can be passed.

- 1 Switching force
- 2 Passing force
- 3 Switching travel
- 4 Overtravel
- 5 Permissible approach range



Example:

A distance of 30 mm from the end of the spring results in:

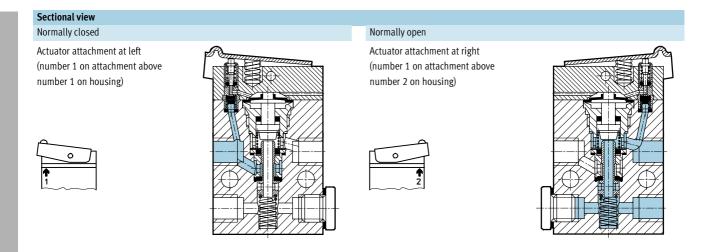
Switching travel of 54 mm A switching force of 0.57 N

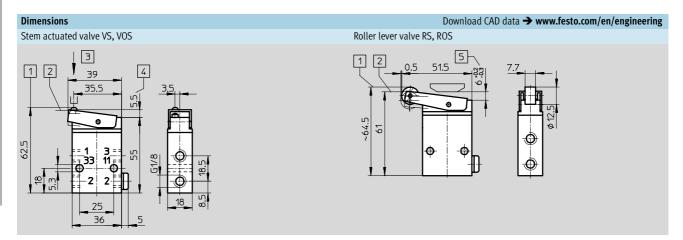
Overtravel of 88 mm A passing force of 0.75 N

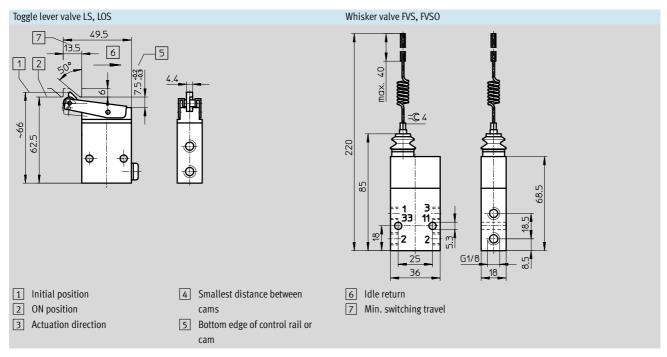
Valves with threaded connections G¹/8, indirectly actuated

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Technical data - 3/2-way valves







Valves with threaded connections $G^{1}/8$, indirectly actuated Technical data – 3/2-way valves

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Ordering data			
Circuit symbol	Actuation type	Part No.	Туре
3/2-way valves, normally closed			
2 1 1 3	Stem actuated valve	2 334	VS-3-1/8
	Roller lever valve	2 272	RS-3-1/8
2 NW	Toggle lever valve	2 186	LS-3-1/8
2 1 V3	Whisker valve	3 876	FVS-3-1/8
3/2-way valves, normally open			
11 V33	Stem actuated valve	2 952	VOS-3-1/8
	Roller lever valve	2 270	ROS-3-1/8
2 11 2 33	Toggle lever valve	2 950	LOS-3-1/8
2 11 V33	Whisker valve	3 877	FVS0-3-1/8

Ordering data – Wearing parts kits		
	Part No.	Туре
For 3/2-way valves	104 222	VS-3-1/8

Valves with threaded connections G $^{1}\!/_{8}$, indirectly actuated Technical data – $^{4}\!/_{2}$ -way valves

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Temperature range -10 ... +60°C



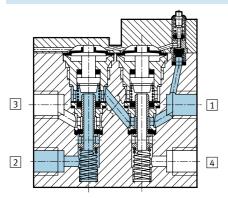
Wearing parts kits **→** 2 / 4.4-11



Technical data					
Actuation type			Stem actuated valve	Roller lever valve	Toggle lever valve
Constructional design			Poppet valve, indirectly a	ctuated	
Type of mounting			2 through-holes in housir	ıg	
Pneumatic connection			G1/8		
Nominal size		[mm]	3.5		
Standard nominal flow rate 1 2		[l/min]	120		
Operating pressure range		[bar]	3.5 8		
Actuating force at 6 bar		[N]	3.1	1.8	2.2
Repetition accuracy (+/-)		[mm]	±0.1		•
Temperature range		[°C]	-10 +60		
Materials	Housing		Blue anodised aluminium		
	Seals		Nitrile rubber		
Weight		[g]	220	230	230

Sectional view

Stem actuated valve VS-4-1/8

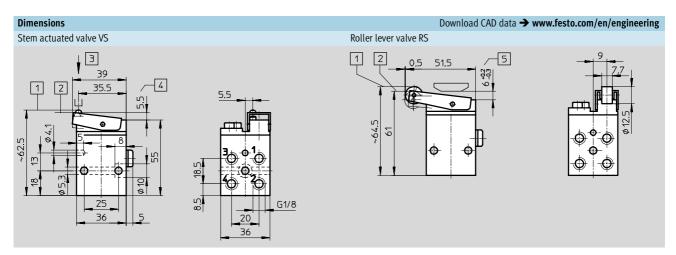


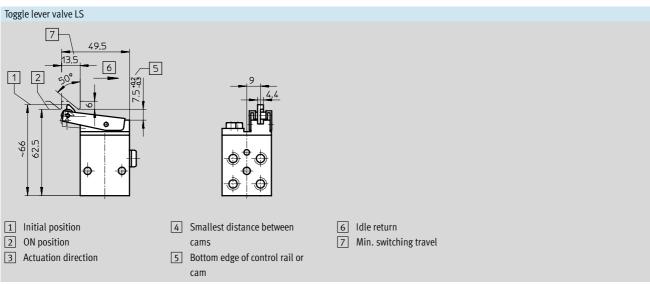
- Supply port
- 2,4 Working line
- Exhaust 3

Valves with threaded connections G½, indirectly actuated

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Technical data – 4/2-way valves





Ordering data			
Circuit symbol	Actuation type	Part No.	Туре
	Stem actuated valve	3 394	VS-4-1/8
	Roller lever valve	2 949	RS-4-1/8
	Toggle lever valve	3 416	LS-4- ¹ / ₈

Ordering data – Wearing parts kits		
	Part No.	Туре
For 4/2-way valves	104 201	VS-4-1/8

4.4

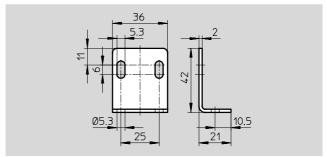
Valves with threaded connections $G^{1}\!/8$, indirectly actuated Accessories

FESTO

Mounting bracket HV-1/8

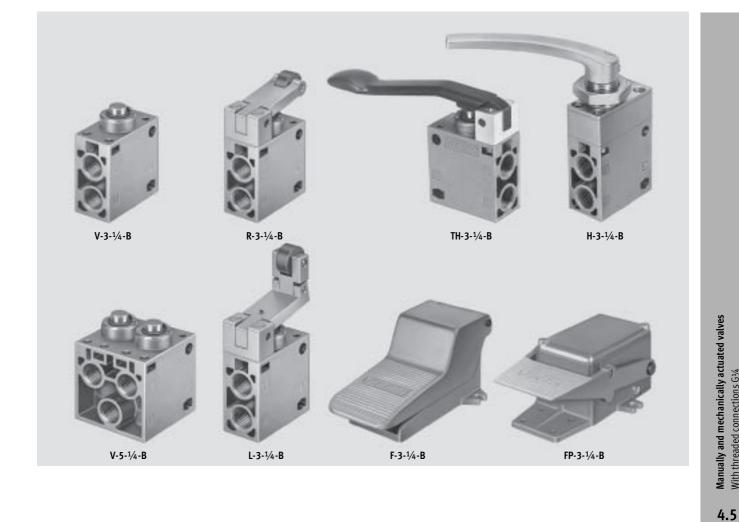
Material: Galvanised steel





Ordering data						
	Weight	Part No.	Туре			
	[g]					
Mounting bracket	32	9 635	HV-1/8			

2 / 4.4-12

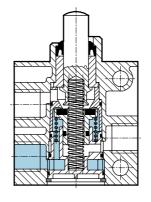




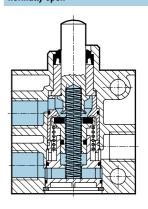


- 5/2-way valves
- 7 actuator types





VO-3-1/4-B, normally open



Valves with threaded connections G1/4

Technical data −3/2-way valves





Temperature range -10 ... +60°C



Wearing parts kits **→** 2 / 4.5-6

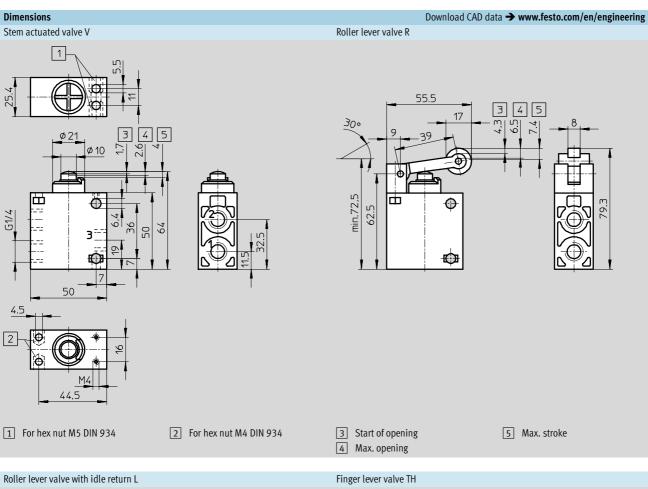


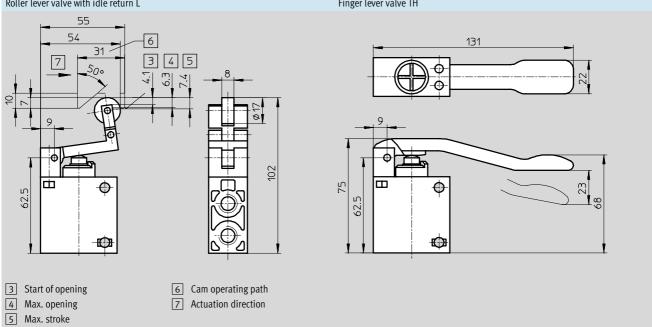
General tech	ınical data									
Actuation ty	oe		Stem actuated valve	Roller lever valve	Roller lever valve with idle return	Finger lever valve	Hand lever valve	Foot valve	Foot valve with mechanical detent	
Operating m	edium		Filtered comp Vacuum ¹⁾	ressed air, lubr	icated or unlub	oricated				
Construction	al design		Poppet valve,	directly actuat	ed					
Type of mou	nting		2 through-hol	es in housing ²						
Connection	Connection			G1/4						
Nominal size	Nominal size [mm]			7						
Standard no	minal flow rate 1 2	[l/min]	600							
Operating p	essure range	[bar]	-0.95 +10							
Actuating fo	rce at 6 bar	[N]								
	Normally closed		37	10	15	6.7	5.5	26	45	
	Normally open		93	26	38	17	-	37	-	
Temperature	range	[°C]	-10 +60			•	•	1	•	
Materials	Housing		Die-cast alum	inium						
			Foot valves: d	ie-cast zinc						
	Seals		Nitrile rubber							
Weight	Valve	[g]	130	230	250	210	320	595	1,760	
	Safety guard	[g]	-	-	-	-	-	1,200	660	

Vacuum connection at port 1
 Hand lever valve suitable for panel mounting
 Foot valves with flange eye on housing

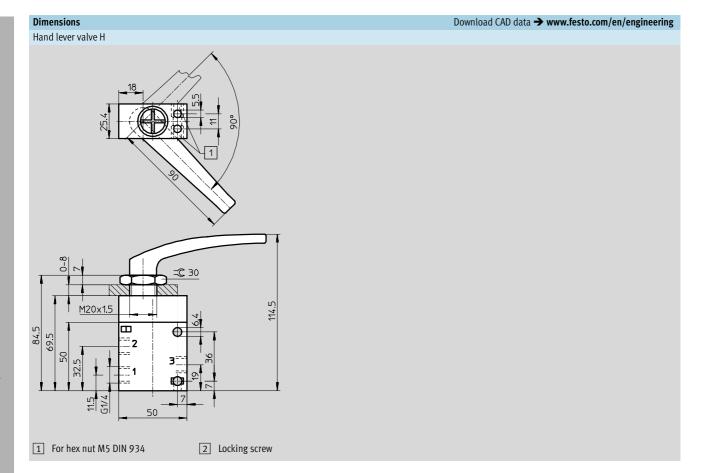
Valves with threaded connections $G^{1/4}$

Technical data - 3/2-way valves



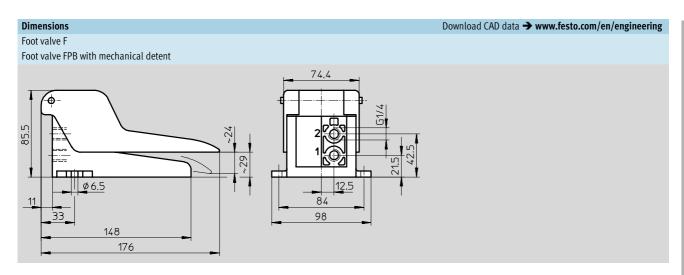


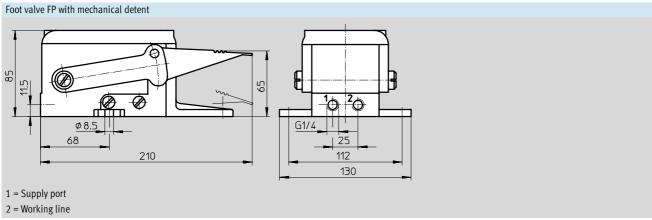
4.5



Valves with threaded connections G1/4

Technical data – 3/2-way valves







Foot valves with detent are actuated by means of a foot lever with mechanical detent. The valve engages when it is first actuated, and when the foot lever is actuated again, the valve returns to its initial position.

4.5

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Valves with threaded connections $G^{1}/_{4}$ Technical data – 3/2-way valves

Ordering data			
Circuit symbol	Actuation type	Part No.	Туре
Normally closed			
21	Stem actuated valve	6 808	V-3-1/4-B
2 1 V 3	Roller lever valve	8 985	R-3-1/4-B
2 1 V 3	Roller lever valve with idle return	8 982	L-3-1/4-B
1 V3	Finger lever valve	8 983	TH-3-1/4-B
21 7 3	Hand lever valve	8 987	H-3- ¹ ⁄ ₄ -B
21 T T T T T T T T T T T T T T T T T T T	Foot valve	8 984	F-3-1/4-B
2	Foot valve with mechanical detent	8 986	FP-3-1/4-B
		526 985	FPB-3- ¹ / ₄
		•	
Normally open	Stem actuated valve	9 157	VO-3-1/4-B
② T T T T T T T T T T T T T T T T T T T	Roller lever valve	8 991	RO-3-1/4-B
2 11 \sqrt{333}	Roller lever valve with idle return	8 989	LO-3-1/4-B
□ 1 V333	Finger lever valve	8 990	THO-3-1/4-B
	Foot valve	8 988	FO-3-1⁄4-B

Ordering data – Wearing parts kits		
	Part No.	Туре
For 3/2-way valves ¹⁾	104 503	V-,VO-3-1/4-B

¹⁾ not for foot valves F, FO, FP, FPB

Valves with threaded connections G1/4

Technical data – 5/2-way valves



-

Temperature range

−10 ... +60°C



Wearing parts kits

→ 2 / 4.5-11



General tec	chnical data								
Actuation ty	/pe		Stem actuated valve	Roller lever valve	Roller lever valve with idle return	Finger lever valve	Hand lever valve	Foot valve	Foot valve with mechanical detent
Operating medium			Filtered compressed air, lubricated or unlubricated Vacuum ¹⁾						
Constructional design			Poppet valve, directly actuated						
Type of mounting			2 through-holes in housing ²⁾						
Connection			G1/4						
Nominal size [mm]			7						
Standard nominal flow rate 1 2 [l/min]		550							
Pressure range [bar]		-0.95 +10							
Actuating force at 6 bar		[N]	132	35	53	24	22	52	69
Temperature range [°C]		-10 +60							
Materials	Housing		Die-cast aluminium, types F and FP: die-cast zinc						
	Seals		Nitrile rubber						
Weight	Valve	[g]	240	340	360	320	510	705	1,845
	Safety guard	[g]	-	-	-	_	-	1,200	660

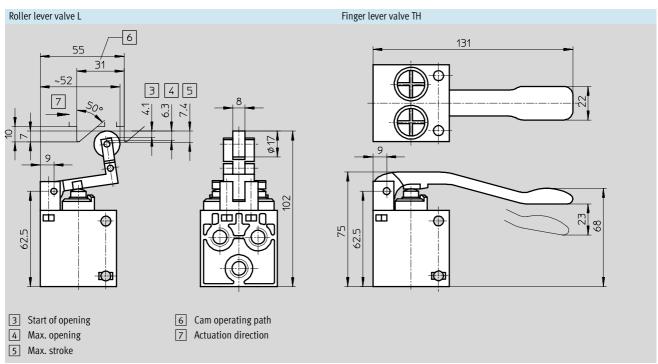
¹⁾ Vacuum connection at port 1

Hand lever valve suitable for panel mounting
 Foot valves with flange eye on housing

Dimensions

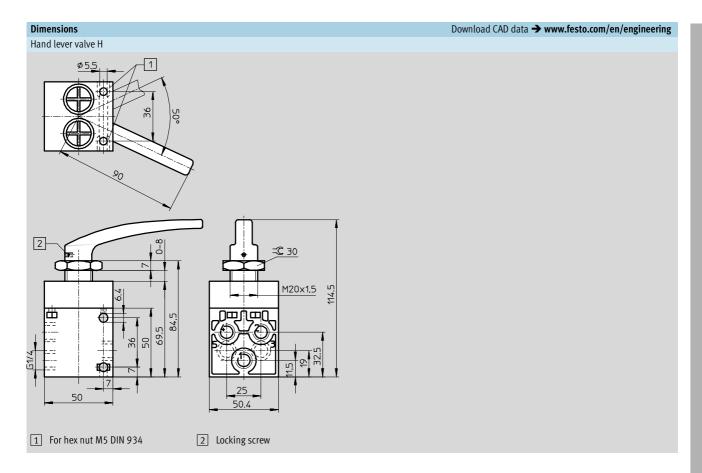
Download CAD data → www.festo.com/en/engineering

4.5

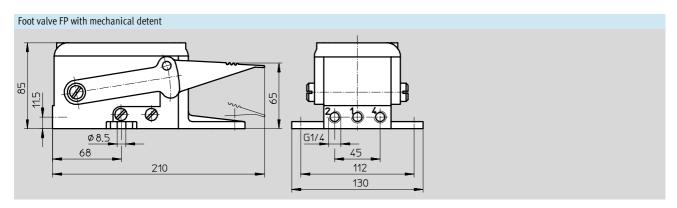


Valves with threaded connections G1/4

Technical data – 5/2-way valves



4.5





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

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

Valves with threaded connections G¹/₄ Technical data – 5/2-way valves

Ordering data			
Circuit symbol	Actuation type	Part No.	Туре
5√√3	Stem actuated valve	6 809	V-5-1/4-B
	Roller lever valve	8 996	R-5-1/4-B
5V 7 3	Roller lever valve with idle return	8 993	L-5-1/4-B
	Finger lever valve	8 994	TH-5-1/4-B
P	Hand lever valve	8 995	H-5-1⁄4-B
5V V 3	Foot valve	8 992	F-5-1/4-B
724 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Foot valve with mechanical detent	8 997	FP-5-1/4-B
5∇ ∇3		526 985	FPB-5- ¹ / ₄

Ordering data – Wearing parts kits					
	Part No.	Туре			
For 5/2-way valves ¹⁾	104 502	V-5-1/4-B			

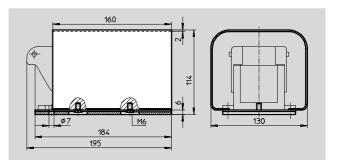
¹⁾ not for foot valves F, FP, FPB

Manually and mechanically actuated valves With threaded connections 6%

4.5

Safety guard FH

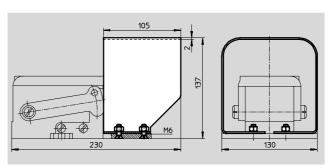




Ordering data					
	Weight	Part No. Type			
	[g]				
Safety guard for foot valve F	1,240	4 500 FH			

Safety guard FPH-121





Ordering data					
	Weight	Part No.	Туре		
	[g]				
Safety guard for foot valve FP	670	2 071	FPH-121		
with mechanical detent					