

Angle seat valves VZXF, NPT

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Angle seat valves VZXF, NPT

Key features and product range overview

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Function

The angle seat valve VZXF is an externally controlled 2/2-way valve. Valves of this design are switched by means of an additional pilot medium. The valve is closed by spring force when at rest. It is opened when pilot pressure is applied to

the drive. The supply of the pilot medium into the drive chamber is controlled by an external valve that must be additionally integrated into the supply line for the pilot medium.

General

-  - Connecting thread
NPT1/2 ... NPT2
-  - Flow rate Kv
2.8 ... 47.5 m³/h

Design

- Gunmetal (red brass) design
- Stainless steel design

Advantages

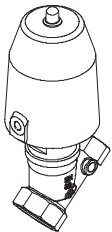
- Insensitive to steam or slightly contaminated media
- No pressure differential required between the inlet and outlet
- Low flow resistance
- Long service life
- Low maintenance

Application

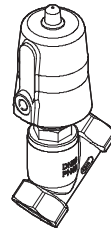
- Angle seat valves control suitable gaseous and liquid media in rigid piping systems without the need for any pressure differential

Variants

Gunmetal (red brass) design



Stainless steel design



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Key features and product range overview

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Version	Type	Process valve connection	Nominal size (DN)	Process valve nominal pressure (PN)	➔ Page/Internet
Gunmetal (red brass) design					
	VZXF-L-...-H3B1-...	NPT1½	15	16	6
		NPT¾	20		
		NPT1	25		
		NPT1¼	32		
		NPT1½	40		
		NPT2	50		
Stainless steel design					
	VZXF-L-...-V4V4T-...	NPT1½	15	40	9
		NPT¾	20		
		NPT1	25		
		NPT1¼	32		
		NPT1½	40		
		NPT2	50		

Angle seat valves VZXF, NPT

Type codes

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		VZXF	-	L	-	M22C	-	M	-	A	-	NPT12	-	130	-	M1	-
Type																	
VZXF	Angle seat valve, externally controlled																
Type of directional control valve																	
L	In-line valve																
Valve function																	
M22C	2/2-way valve, normally closed																
Reset method for single solenoid valves																	
	None																
M	Mechanical spring																
Media flow																	
A	Over valve seat, closes with the flow of media																
B	Under valve seat, closes against the flow of media																
Process valve connection																	
N12	NPT 1/2																
N34	NPT G3/4																
N1	NPT G1																
N114	NPT G1 1/4																
N112	NPT G1 1/2																
N2	NPT G2																
Nominal size																	
120	12 mm																
130	13 mm																
160	16 mm																
180	18 mm																
230	23 mm																
240	24 mm																
290	29 mm																
310	31 mm																
350	35 mm																
430	43 mm																
450	45 mm																
Temperature range of medium																	
	Standard, -10 ... +80 °C																
M1	-40 ... +200 °C																

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Type codes

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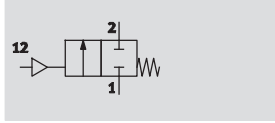
		H3	B1		-	50	-	10
Housing material								
H3	Gunmetal (red brass)							
V4	Stainless steel							
Housing, drive material								
B1	Brass							
V4	Stainless steel							
Sealing material								
	Standard, NBR							
T	PTFE							
Drive size								
50	50 mm							
80	80 mm							
Operating pressure								
3	Max. 3 bar							
4	Max. 4 bar							
5	Max. 5 bar							
6	Max. 6 bar							
7	Max. 7 bar							
8	Max. 8 bar							
9	Max. 9 bar							
10	Max. 10 bar							
12	Max. 12 bar							
16	Max. 16 bar							
20	Max. 20 bar							
22	Max. 22 bar							
25	Max. 25 bar							
40	Max. 40 bar							

Angle seat valves VZXF, NPT

Technical data – Gunmetal (red brass) design

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Function



Flow rate Kv
2.8 ... 33.8 m³/h

Connecting thread
NPT1/2 ... NPT2



General technical data			
Process valve connection	NPT1/2	NPT3/4	NPT1
Auxiliary pilot air connection	G1/8		
Nominal size (DN)	15	20	25
Valve function	2/2-way, single solenoid, closed		
Design	Poppet valve with spring return		
Type of mounting	In-line installation		
Mounting position	Any		
Direction of flow	Non-reversible		
Exhaust function	No flow control		
Sealing principle	Soft		
Reset method	Mechanical spring		
Actuation type	Pneumatic		
Type of control	External		
Pilot medium	Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated		
Switching time on [ms]	100		
Switching time off [ms]	310		
Product weight [g]	1,200	1,300	1,500

Process valve connection	NPT1 1/4	NPT1 1/2	NPT2
Auxiliary pilot air connection	G1/8		
Nominal size (DN)	32	40	50
Valve function	2/2-way, single solenoid, closed		
Design	Poppet valve with spring return		
Type of mounting	In-line installation		
Mounting position	Any		
Direction of flow	Non-reversible		
Exhaust function	No flow control		
Sealing principle	Soft		
Reset method	Mechanical spring		
Actuation type	Pneumatic		
Type of control	External		
Pilot medium	Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated		
Switching time on [ms]	110		120
Switching time off [ms]	320		320
Product weight [g]	1,800	2,400	3,500

Angle seat valves VZXF, NPT

Technical data – Gunmetal (red brass) design

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Operating and environmental conditions			
Process valve connection	NPT1/2	NPT3/4	NPT1
Process valve nominal pressure (PN)	16		
Pilot pressure [bar]	4 ... 10		
Standard nominal flow rate [l/min]	3,000	6,800	12,000
Flow rate [m³/h]	2.8	6.4	11.2
Process valve operating medium	Neutral gases		
	Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated		
	Non-aggressive liquid		
	Water		
	Mineral oil-based hydraulic oil		
	Compressed air		
	Mineral oil		
Max. viscosity [mm²/s]	600		
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +80		
CE marking (see declaration of conformity)	–		
Corrosion resistance class CRC ¹⁾	1		

- 1) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Process valve connection	NPT1 1/4	NPT1 1/2	NPT2
Process valve nominal pressure (PN)	16		
Pilot pressure [bar]	4 ... 10		
Standard nominal flow rate [l/min]	18,600	23,500	36,100
Flow rate [m³/h]	17.5	22	33.8
Process valve operating medium	Neutral gases		
	Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated		
	Non-aggressive liquid		
	Water		
	Mineral oil-based hydraulic oil		
	Compressed air		
	Mineral oil		
Max. viscosity [mm²/s]	600		
Ambient temperature [°C]	-10 ... +60		
Temperature of medium [°C]	-10 ... +80		
CE marking (see declaration of conformity)	To EU Pressure Equipment Directive		
Corrosion resistance class CRC ¹⁾	1		

- 1) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials		
Angle seat valves		Material number
1 Housing	Gunmetal (red brass)	CC499K
2 Drive head	Brass	–
3 Seals	NBR	–
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	–

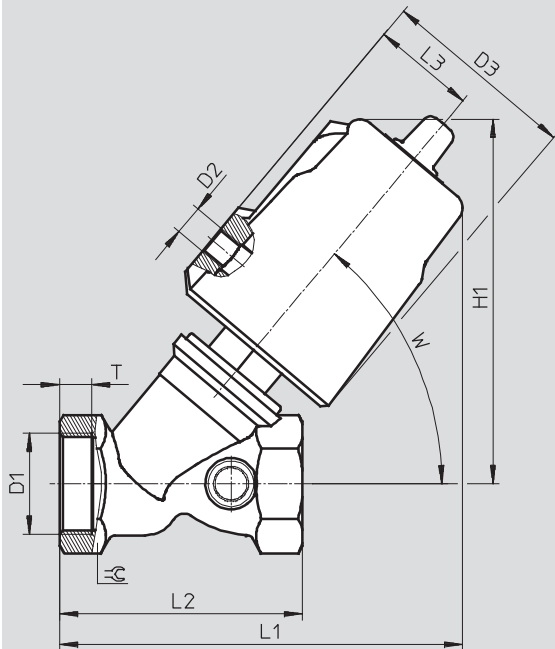
Angle seat valves VZXF, NPT

Technical data – Gunmetal (red brass) design

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Dimensions

Download CAD data → www.festo.com



	D1	D2	D3 Ø	H1	L1	L2	L3	T	W	50°
VZXF-L-...-N12-...-H3B1-50-...	NPT1/2	G1/8	62	112	123	66	34	8	50°	27
VZXF-L-...-N34-...-H3B1-50-...	NPT3/4			117	130	75		9		33
VZXF-L-...-N1-...-H3B1-50-...	NPT1			121	133	80		10.5		41
VZXF-L-...-N114-...-H3B1-50-...	NPT1 1/4			139	154	97		12.5		50
VZXF-L-...-N112-...-H3B1-50-...	NPT1 1/2			145	161	107		14.5		56
VZXF-L-...-N2-...-H3B1-50-...	NPT2			154	171	124		16.5		68

Ordering data: Angle seat valve VZXF

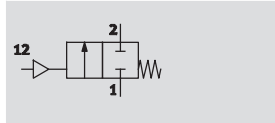
	Process valve connection	Part No.	Type
	NPT1/2	1002533	VZXF-L-M22C-M-A-N12-120-H3B1-50-16
		1002534	VZXF-L-M22C-M-B-N12-120-H3B1-50-16
	NPT3/4	1002535	VZXF-L-M22C-M-A-N34-160-H3B1-50-16
		1002536	VZXF-L-M22C-M-B-N34-160-H3B1-50-16
	NPT1	1002537	VZXF-L-M22C-M-A-N1-230-H3B1-50-16
		1002538	VZXF-L-M22C-M-B-N1-230-H3B1-50-10
	NPT1 1/4	1002539	VZXF-L-M22C-M-A-N114-290-H3B1-50-10
		1002540	VZXF-L-M22C-M-B-N114-290-H3B1-50-7
	NPT1 1/2	1002541	VZXF-L-M22C-M-A-N112-350-H3B1-50-8
		1002542	VZXF-L-M22C-M-B-N112-350-H3B1-50-6
	NPT2	1002543	VZXF-L-M22C-M-A-N2-430-H3B1-50-4
		1002544	VZXF-L-M22C-M-B-N2-430-H3B1-50-3

Angle seat valves VZXF, NPT

Technical data – Stainless steel design

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Function



-  - Flow rate Kv
2.8 ... 47.5 m³/h

-  - Connecting thread
NPT1½ ... NPT2



General technical data						
Process valve connection		NPT1½	NPT¾	NPT1		NPT1¼
Auxiliary pilot air connection		G1/8				
Nominal size (DN)		15	20	25	25	32
Valve function		2/2-way, single solenoid, closed				
Design		Poppet valve with spring return				
Type of mounting		In-line installation				
Mounting position		Any				
Direction of flow		Non-reversible				
Exhaust function		No flow control				
Sealing principle		Soft				
Reset method		Mechanical spring				
Actuation type		Pneumatic				
Type of control		External				
Pilot medium		Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated				
Switching time on	[ms]	100			150	110
Switching time off	[ms]	310			390	320
Product weight	[g]	1,300	1,400	1,600	3,600	2,200

Process valve connection	NPT1¼		NPT1½		NPT2	
Auxiliary pilot air connection	G1/8					
Nominal size (DN)	32	40	40	50	50	
Valve function	2/2-way, single solenoid, closed					
Design	Poppet valve with spring return					
Type of mounting	In-line installation					
Mounting position	Any					
Direction of flow	Non-reversible					
Exhaust function	No flow control					
Sealing principle	Soft					
Reset method	Mechanical spring					
Actuation type	Pneumatic					
Type of control	External					
Pilot medium	Filtered compressed air, grade of filtration 40 µm, lubricated or unlubricated					
Switching time on [ms]	150	110	150	120	150	
Switching time off [ms]	390	320	390	320	390	
Product weight [g]	4,200	2,500	4,400	3,500	5,500	

Angle seat valves VZXF, NPT

Technical data – Stainless steel design

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Operating and environmental conditions					
Process valve connection	NPT½	NPT¾	NPT1		NPT1¼
Process valve nominal pressure (PN)	40				
Pilot pressure [bar]	4 ... 10				
Standard nominal flow rate [l/min]	3,000	6,800	12,000	15,200	18,600
Flow rate [m³/h]	2.8	6.4	11.2	14.3	17.4
Process valve operating medium	Neutral gases				
	Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated				
	Non-aggressive liquid				
	Water				
	Mineral oil-based hydraulic oil				
	Compressed air				
	Mineral oil				
Max. viscosity [mm²/s]	600				
Ambient temperature [°C]	−10 ... +60				
Temperature of medium [°C]	−40 ... +200				
CE marking (see declaration of conformity)	–				To EU Pressure Equipment Directive
Corrosion resistance class CRC ¹⁾	3				

1) Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

Process valve connection	NPT1¼	NPT1½			NPT2
Process valve nominal pressure (PN)	40				
Pilot pressure [bar]	4 ... 10				
Standard nominal flow rate [l/min]	23,000	23,500	28,200	36,100	50,700
Flow rate [m³/h]	21.5	22	26.4	33.8	47.5
Process valve operating medium	Neutral gases				
	Filtered compressed air, filter with pore width 0.2 mm, lubricated or unlubricated				
	Non-aggressive liquid				
	Water				
	Mineral oil-based hydraulic oil				
	Compressed air				
	Mineral oil				
Max. viscosity [mm²/s]	600				
Ambient temperature [°C]	−10 ... +60				
Temperature of medium [°C]	−40 ... +200				
CE marking (see declaration of conformity)	To EU Pressure Equipment Directive				
Corrosion resistance class CRC ¹⁾	3				

1) Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

Materials		
Angle seat valves		Material number
1 Housing	Stainless steel casting	1.4408
2 Drive head	Stainless steel	–
3 Seals	PTFE	–
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	–

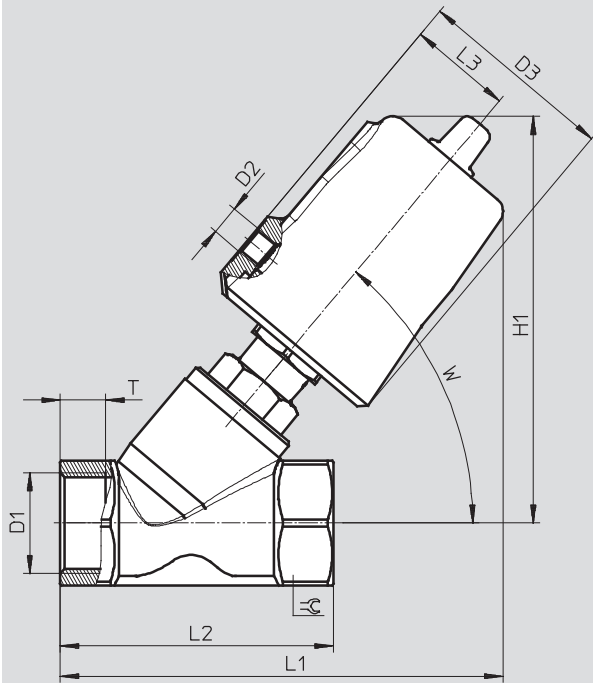
Angle seat valves VZXF, NPT

Technical data – Stainless steel design

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Dimensions

Download CAD data → www.festo.com

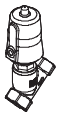


	D1	D2	D3 Ø	H1	L1	L2	L3	T	W	≈C
VZXF-L-...-N12-...-V4V4T-50-...	NPT1/2	G1/8	62	129	135	65	34	12	50°	27
VZXF-L-...-N34-...-V4V4T-50-...	NPT3/4			130	138	75		13		32
VZXF-L-...-N1-...-V4V4T-50-...	NPT1			135	146	90		15		42
VZXF-L-...-N1-...-V4V4T-80-...	NPT1		94	177	184	48	17	50		
VZXF-L-...-N114-...-V4V4T-50-...	NPT1 1/4		62	151	155	110				34
VZXF-L-...-N114-...-V4V4T-80-...	NPT1 1/4		94	183	194	48	19	55		
VZXF-L-...-N112-...-V4V4T-50-...	NPT1 1/2		62	155	174	120				34
VZXF-L-...-N112-...-V4V4T-80-...	NPT1 1/2		94	187	202	48	21	70		
VZXF-L-...-N2-...-V4V4T-50-...	NPT2		62	167	193	150				34
VZXF-L-...-N2-...-V4V4T-80-...	NPT2		94	199	222	48				

Angle seat valves VZXF, NPT

Technical data – Stainless steel design

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Ordering data: Angle seat valve VZXF			
	Process valve connection	Part No.	Type
	NPT $\frac{1}{2}$	1002545	VZXF-L-M22C-M-A-N12-130-M1-V4V4T-50-25
		1002546	VZXF-L-M22C-M-B-N12-130-M1-V4V4T-50-40
	NPT $\frac{3}{4}$	1002547	VZXF-L-M22C-M-A-N34-180-M1-V4V4T-50-20
		1002548	VZXF-L-M22C-M-B-N34-180-M1-V4V4T-50-20
	NPT1	1002549	VZXF-L-M22C-M-A-N1-240-M1-V4V4T-50-16
		1002550	VZXF-L-M22C-M-B-N1-240-M1-V4V4T-50-10
		1002551	VZXF-L-M22C-M-A-N1-240-M1-V4V4T-80-40
		1002552	VZXF-L-M22C-M-B-N1-240-M1-V4V4T-80-22
	NPT1 $\frac{1}{4}$	1002553	VZXF-L-M22C-M-A-N114-310-M1-V4V4T-50-9
		1002554	VZXF-L-M22C-M-B-N114-310-M1-V4V4T-50-7
		1002555	VZXF-L-M22C-M-A-N114-310-M1-V4V4T-80-25
		1002556	VZXF-L-M22C-M-B-N114-310-M1-V4V4T-80-10
	NPT1 $\frac{1}{2}$	1002557	VZXF-L-M22C-M-A-N112-350-M1-V4V4T-50-7
		1002558	VZXF-L-M22C-M-B-N112-350-M1-V4V4T-50-6
		1002559	VZXF-L-M22C-M-A-N112-350-M1-V4V4T-80-20
		1002560	VZXF-L-M22C-M-B-N112-350-M1-V4V4T-80-8
	NPT2	1002561	VZXF-L-M22C-M-A-N2-450-M1-V4V4T-50-4
		1002562	VZXF-L-M22C-M-B-N2-450-M1-V4V4T-50-3
		1002563	VZXF-L-M22C-M-A-N2-450-M1-V4V4T-80-12
		1002564	VZXF-L-M22C-M-B-N2-450-M1-V4V4T-80-5