Angle seat valves VZXF, NPT

FESTO

Angle seat valves VZXF, NPT

Key features and product range overview

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 m^3/h

Design

- Gunmetal (red brass) design
- Stainless steel design

Advantages

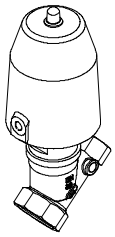
- Insensitive to steam or slightly contaminated media
- No pressure differential required between the inlet and outlet
- Low flow resistance
- Long service life
- Low maintenance

Application

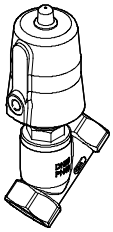
- Angle seat valves control suitable gaseous and liquid media in rigid piping systems without the need for any pressure differential

Variants

Gunmetal (red brass) design

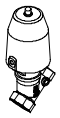
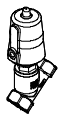


Stainless steel design



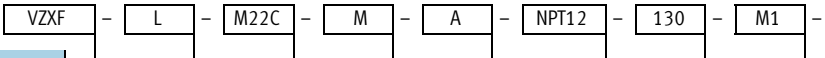
Angle seat valves VZXF, NPT

Key features and product range overview

Version	Type	Process valve connection	Nominal size (DN)	Process valve nominal pressure (PN)	➔ Page/Internet
Gunmetal (red brass) design					
	VZXF-L-...-H3B1-...	NPT½	15	16	6
		NPT¾	20		
		NPT1	25		
		NPT1¼	32		
		NPT1½	40		
		NPT2	50		
Stainless steel design					
	VZXF-L-...-V4V4T-...	NPT½	15	40	9
		NPT¾	20		
		NPT1	25		
		NPT1¼	32		
		NPT1½	40		
		NPT2	50		

Angle seat valves VZXF, NPT

Type codes



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	
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 ½
N34	NPT G¾
N1	NPT G1
N114	NPT G1¼
N112	NPT G1½
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

Angle seat valves VZXF, NPT

Type codes

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

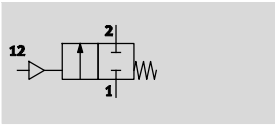
Drive size	
50	50 mm
80	80 mm

Medium 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

Function



- Flow rate Kv
  2.8 ... 33.8 m³/h

- Connecting thread
  NPT½ ... NPT2

General technical data				
Process valve connection		NPT½	NPT¾	NPT1
Auxiliary pilot air connection		G⅛		
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		NPT1¼	NPT1½	NPT2
Auxiliary pilot air connection		G⅛		
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

Operating and environmental conditions				
Process valve connection		NPT1½	NPT¾	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	[m^3/h]	2.8	6.4	11.2
Medium		Filtered compressed air, grade of filtration 200 µm		
		Mineral oil-based hydraulic oil		
		Inert gases		
		Mineral oil		
		Neutral fluids		
		Water		
Max. viscosity	[mm^2/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		NPT1¼	NPT1½	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	[m^3/h]	17.5	22	33.8
Medium		Filtered compressed air, grade of filtration 200 µm		
		Mineral oil-based hydraulic oil		
		Inert gases		
		Mineral oil		
		Neutral fluids		
		Water		
Max. viscosity	[mm^2/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		

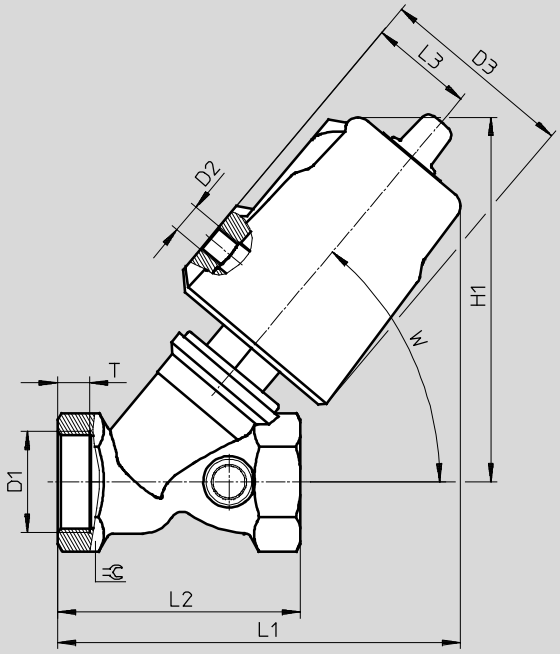
1) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

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

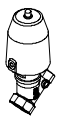
Technical data – Gunmetal (red brass) design

Dimensions Download CAD data ➔ **www.festo.com**



	D1	D2	D3 ∅	H1	L1	L2	L3	T	W	⫧
VZXF-L-...-N12-...-H3B1-50-...	NPT½	G⅛	62	112	123	66	34	8	50°	27
VZXF-L-...-N34-...-H3B1-50-...	NPT¾			117	130	75		9		33
VZXF-L-...-N1-...-H3B1-50-...	NPT1			121	133	80		10.5		41
VZXF-L-...-N114-...-H3B1-50-...	NPT1¼			139	154	97		12.5		50
VZXF-L-...-N112-...-H3B1-50-...	NPT1½			145	161	107		14.5		56
VZXF-L-...-N2-...-H3B1-50-...	NPT2			154	171	124		16.5		68

Ordering data: Angle seat valve VZXF

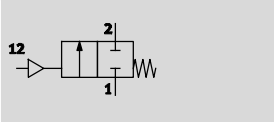
	Process valve connection	Part No.	Type
	NPT½	**1002533**	**VZXF-L-M22C-M-A-N12-120-H3B1-50-16**
		1002534	**VZXF-L-M22C-M-B-N12-120-H3B1-50-16**
	NPT¾	**1002535**	**VZXF-L-M22C-M-A-N34-160-H3B1-50-16**
		1002536	**VZXF-L-M22C-M-B-N34-160-H3B1-50-16**
	NPT1	**1002537**	**VZXF-L-M22C-M-A-N1-230-H3B1-50-16**
		1002538	**VZXF-L-M22C-M-B-N1-230-H3B1-50-10**
	NPT1¼	**1002539**	**VZXF-L-M22C-M-A-N114-290-H3B1-50-10**
		1002540	**VZXF-L-M22C-M-B-N114-290-H3B1-50-7**
	NPT1½	**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

FESTO

Function



- Flow rate Kv
  2.8 ... 47.5 m^3/h

- Connecting thread
  NPT½ ... NPT2

General technical data						
Process valve connection		NPT½	NPT¾	NPT1		NPT1¼
Auxiliary pilot air connection		G⅛				
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		G⅛				
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

Operating and environmental conditions						
Process valve connection		NPT1½	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	[m^3/h]	2.8	6.4	11.2	14.3	17.4
Medium		Filtered compressed air, grade of filtration 200 µm				
		Mineral oil-based hydraulic oil				
		Inert gases				
		Mineral oil				
		Neutral fluids				
		Water				
Max. viscosity	[mm^2/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	[m^3/h]	21.5	22	26.4	33.8	47.5
Medium		Filtered compressed air, grade of filtration 200 µm				
		Mineral oil-based hydraulic oil				
		Inert gases				
		Mineral oil				
		Neutral fluids				
		Water				
Max. viscosity	[mm^2/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				

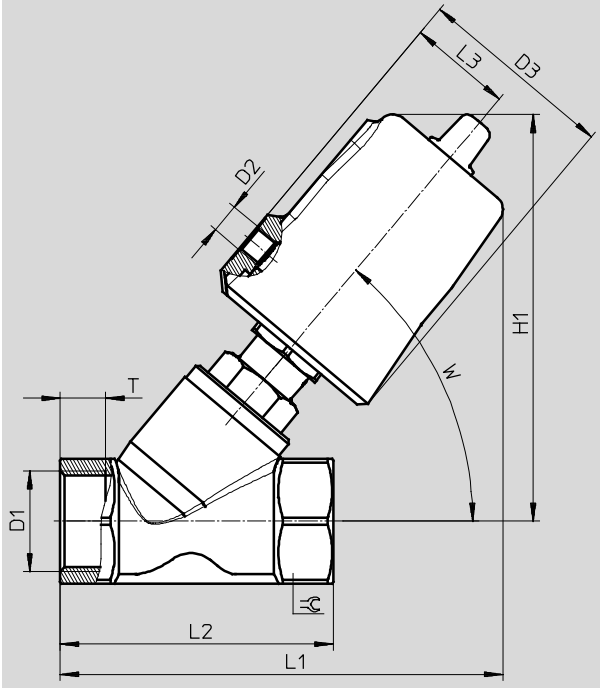
1) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as solvents and cleaning agents.

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

Dimensions Download CAD data ➔ **www.festo.com**

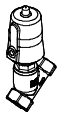


	D1	D2	D3 ∅	H1	L1	L2	L3	T	W	⌭
VZXF-L-...-N12-...-V4V4T-50-...	NPT½	G⅛	62	129	135	65	34	12	50°	27
VZXF-L-...-N34-...-V4V4T-50-...	NPT¾			130	138	75		13		32
VZXF-L-...-N1-...-V4V4T-50-...	NPT1			135	146	90		15		42
VZXF-L-...-N1-...-V4V4T-80-...	NPT1		94	177	184		48			
VZXF-L-...-N114-...-V4V4T-50-...	NPT1¼		62	151	155	110	34	17		50
VZXF-L-...-N114-...-V4V4T-80-...	NPT1¼		94	183	194		48			
VZXF-L-...-N112-...-V4V4T-50-...	NPT1½		62	155	174	120	34	19		55
VZXF-L-...-N112-...-V4V4T-80-...	NPT1½		94	187	202		48			
VZXF-L-...-N2-...-V4V4T-50-...	NPT2		62	167	193	150	34	21		70
VZXF-L-...-N2-...-V4V4T-80-...	NPT2		94	199	222		48			

Angle seat valves VZXF, NPT

Technical data – Stainless steel design

FESTO

Ordering data: Angle seat valve VZXF			
	Process valve connection	Part No.	Type
	NPT1/2	1002545	VZXF-L-M22C-M-A-N12-130-M1-V4V4T-50-25
		1002546	VZXF-L-M22C-M-B-N12-130-M1-V4V4T-50-40
	NPT3/4	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 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 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