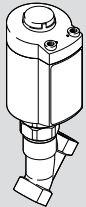


VZXA-...-T...-...-M2/M3-...-K-...-V4

Angle seat valve



FESTO

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8155482

Operating instruction

8155482
2024-04d
[8155484]

Original instructions

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1 About this document

This document describes the use of the above-mentioned product. It contains additional information for the use of the product in safety-related systems (safety manual in accordance with IEC 61508).

1.1 Applicable documents

All available documents for the product → www.festo.com/sp.

1.2 Product version

This document refers to the variants of the product with the following product identification:

- VZXA-...-T...-M2-V13-...-K-...-V4-...
- VZXA-...-T...-M2-V14-...-K-...-V4-...
- VZXA-...-T...-M3-V13-...-K-...-V4-...
- VZXA-...-T...-M3-V14-...-K-...-V4-...

This document does not apply to the variants VZXA-...-M7 and VZXA-...-M9 with extended temperature range.
This document does not refer to the variants with regulating cone VZXA-...-R...

For a complete overview of the reactionless accessories, please refer to the certificate → www.festo.com/sp.

1.3 Specified standards

Version	
IEC 61508:2010 Part 1,2,4 ... 7	IEC 61511:2016

Tab. 1: Standards specified in the document

2 Safety

2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications. The use of accessories from the certificate is permitted → 14.1 Technical data, safety engineering.
- Only use the product if it is in perfect technical condition.
- Use the valve only in the indicated flow direction.
- Take into account the ambient conditions at the location of use.
- Store the product in a cool, dry environment protected from UV and corrosion. Keep storage times short.

Media

- Use only media in accordance with the specifications → 14 Technical data.
- Use only media that will not cause dangerous reactions if mixed.
- Do not operate the product with chemically unstable gases, abrasive media or solid materials.
- If water is used: up to approx. 1000 ppm of chloride content is permitted. Avoid tensile stresses.
- When using saturated water vapour: take vapour pressure into account when designing the valve.
- If aggressive media are used: limit temperature of medium to 65 °C.

Drive

- Do not open the drive, because the drive is under pressure or there is a tensioned spring.
- Avoid mechanical stresses on the valve. Do not use the drive as a lever.

Return to Festo

Hazardous substances can endanger the health and safety of persons and cause damage to the environment. To prevent hazards, the product should only be returned if explicitly requested by Festo.

- Consult your regional Festo contact.
- Complete the declaration of contamination and attach it to the outside of the packaging.
- Comply with all legal requirements for the handling of hazardous substances and the transport of dangerous goods.

2.2 Intended use

The angle seat valve VZXA-...-K is intended to shut-off gaseous or liquid media in piping systems.

- Use only the product variant VZXA-B-... to control liquid media.

2.3 Training of qualified personnel

Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers. The qualified personnel have knowledge and experience in process automation.

3 Information on functional safety

3.1 Operating conditions

- General information on safe operation → 2 Safety.
- Periodic tests (performance test) → 10 Maintenance.
- Ambient conditions and additional technical specifications → 14 Technical data.

3.2 Achievable safety rating

The product is suitable for use as an element in a safety-related system in accordance with IEC 61511.

- In low-demand mode up to SIL 2
- In high-demand mode up to SIL 2.

Taking into account the necessary minimum hardware fault tolerance of HFT = 1, the product can also be used up to SIL 3 with a redundant execution of the entire system.

NOTICE

It is only possible to determine whether the product is suitable for specific applications by also assessing further components of the subsystem.

3.3 Safety function

Single-acting valves

The safety function comprises acceptance of the initial position on request. The request is implemented by removal of the operating pressure.

- Valves with NO control function: the valve opens completely and remains open until operating pressure is applied.
- Valves with NC control function: the valve closes completely and remains closed until operating pressure is applied.

Double-acting valves

The safety function comprises acceptance of the required position on request. This requires an external power supply.

4 Additional information

- Contact the regional Festo contact if you have technical problems → www.festo.com.
- Accessories and spare parts → www.festo.com/catalogue.

5 Product overview

5.1 Structure

5.1.1 Product design

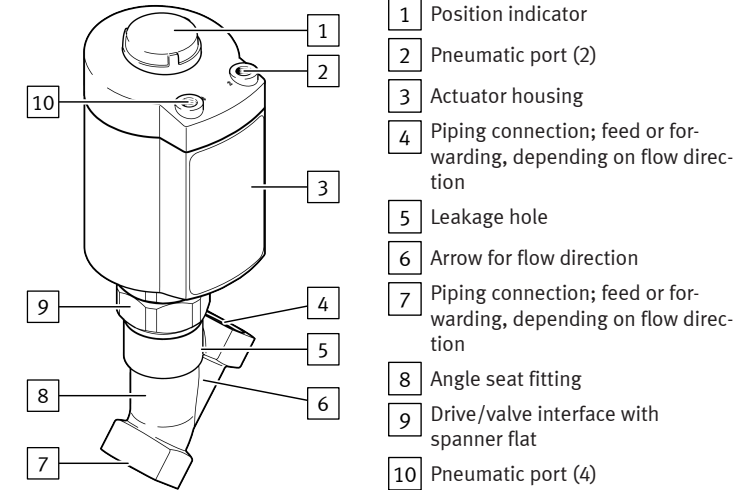
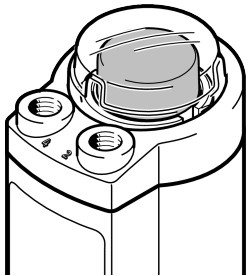
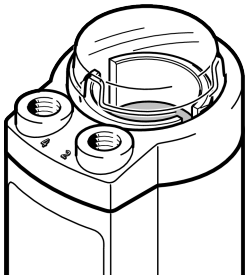


Fig. 1: Product design

5.1.2 Position indicator

The pneumatic position indicator shows the position of the actuator stem.

Indicator cylinder up	Indicator cylinder down
	
Actuator stem retracted, valve opened	Actuator stem extended, valve closed

Tab. 2: Position indicator

5.2 Function

The angle seat valve VZXA-...-K is an externally controlled 2/2-directional control valve with piston drive. The valve seat is tilted approx. 40° to the media flow. To close the valve, the valve drive presses the valve disc with the piston rod into the valve seat in a force fit.

The supply of the operating medium regulates an external valve, which is primarily electrically controlled. The external valve must also be installed in the drive's supply line.

The drive can be rotated 360° around the valve body.

Flow over valve seat

The valve is closed by spring force with the flow of the medium.

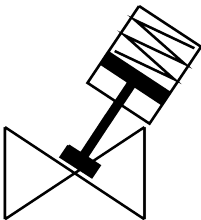
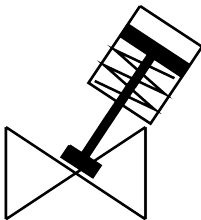
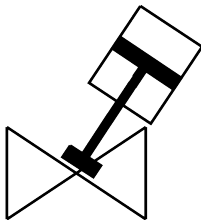
- The pressure of the medium supports the closing of the valve.
- The valve is opened by the operating pressure.
- This flow variant is only suitable for gaseous media, because use of incompressible media causes pressure surges in the piping.

Flow under valve seat

The valve is closed against the media flow by spring force or by operating pressure.

- The pressure of the medium assists the opening of the valve.
- In some designs pressure of medium that is too high or operating pressure that is too low can result in the valve not closing completely.

Control function

Single-acting	Double-acting	
		
Closed by spring force (normally closed – N/C)	Opened by spring force (normally open – N/O)	Opened and closed by alternating exposure to the operating medium

Tab. 3: Control function

6 Transport

For dispatch of used products:

- Comply with all legal requirements for the handling of hazardous substances and the transport of dangerous goods. For returns to Festo → 2 Safety.

7 Mounting

7.1 Requirements



Use fittings G 1/8 with max. SW14 exclusively with angle seat valves VZXA-...-K-46-....

- The piping system is unpressurised and does not contain medium.
- The pipe ends are mounted.
- The connecting lines and fittings are clean.

7.2 Cleaning valve

1. Remove all transport packaging.
2. Traces of residual grease may be evident on the product due to the production process. Clean the valve immediately before mounting.

7.3 Mounting the valve



Risk of injury due to slipping or falling objects.

The valve can weigh up to 5.75 kg, depending on the product version. Body parts can be crushed. This could cause serious head injury in overhead installations.

- Secure the valve from falling or slipping with suitable equipment.

1. Place the valve in its mounting position.
 - Note the flow direction. The permissible flow direction is marked on the angle seat fitting by an arrow
2. Connect the piping to the angle seat fitting.
 - VZXA-...-T-...-K: tightening torque → Tab. 4 Pipe connection tightening torque.
3. Connect the operating medium connecting line.
 - Pneumatic port (2): operating medium
 - Pneumatic port (4): exhaust port for single-acting drives or operating medium for double-acting drives
4. For single-acting drives: mount the silencer in the exhaust port or use a tubing connection for guided exhaust air.

Port size	["]	1/2	3/4	1	1 1/4	1 1/2	2
Max. tightening torque for pipe connection	[Nm]	105	200	350	450	540	620

Tab. 4: Pipe connection tightening torque

8 Commissioning

8.1 Requirements



Risk of injury from manipulation in the operating area of the angle seat valve.

Limbs can be cut or severed.

- Operate the angle seat valve only if it is fully mounted.

- The valve is fully mounted and connected.

Checking operating conditions

1. Check the operating conditions and critical limits → 14 Technical data.
2. Check that the connection points are tight.
3. Check that the devices in the system are compatible with the maximum pressure, including potential pressure peaks. If necessary, adjust the application parameters.

8.2 Commissioning valve with a single-acting drive

1. Feed in the medium.
2. Slowly pressurise the valve to the operating pressure. The operating pressure required for reliable switching of the valve depends on the pressure of the medium → 14.3 Technical data, pneumatic.
3. Check the function and the direction of the individual pneumatic actuators.

8.3 Commissioning valve with double-acting drive

1. Slowly pressurise the valve to the operating pressure. The operating pressure required for reliable switching of the valve depends on the pressure of the medium → 14.3 Technical data, pneumatic.
2. Feed in the medium.
3. Check the function and the direction of the individual pneumatic actuators.

9 Operating



Risk of injury from touching hot surfaces.

Angle seat fitting and actuator can become hot if the temperature of medium is high. Severe burns are possible.

- Do not touch the angle seat valve during operation or immediately afterward.

- Comply with the operating conditions.
 - Comply with the maintenance conditions → 10 Maintenance.
- After longer idle times:
- Actuate the valve several times and check for correct function.

10 Maintenance



Risk of injury from touching hot surfaces.

Angle seat fitting and actuator can become hot if the temperature of medium is high. Severe burns are possible.

- Allow the angle seat valve to cool off before working on it.

- Inspect the outside of the product regularly for leakage.
- Test the function of the product regularly.
- Clean the product regularly with a standard commercial cleaning agent.

10.1 Proof test (Proof Test)

The proof test (Proof Test) consists of shutting the operating pressure off and on.

- Run the proof test once a year.



During the proof test, the safety of the application must be ensured.

1. Shut off operating pressure.
2. Check valve position.
 - ↳ The test is successful if the safe state was reached within the specified time. For assessment of the safe state → 3.3 Safety function.
3. Slowly apply operating pressure to the valve.
 - ↳ The test is successful if the valve returns to its original position.
4. Check the valve externally (visual inspection).
 - ↳ The test is successful if no defect or leakage is detected.
5. Document test results.

11 Fault clearance

Malfunction	Cause	Remedy
Valve does not close or closes too slowly.	VZX-A-B: pressure of medium is too high or operating pressure too low.	Set required differential pressure or adjust operating pressure → 14 Technical data.
	Medium contains too many or too large contaminants.	Comply with operating conditions.
Valve does not open or opens too slowly.	VZX-A: operating pressure is too low or pressure of medium too low.	Adjust operating pressure or medium pressure.
	VZX-A-B: operating pressure is too low.	Adjust operating pressure.
Medium leaks out of leakage hole.	Seal cartridge is faulty.	Replace the seal cartridge → Spare parts documentation.
Medium cannot be shut off.	Seat seal is defective.	Replace seat seal → Spare parts documentation.

Tab. 5: Fault clearance

12 Modification

12.1 Safety

 **DANGER**

Risk of injury from flying objects.
Unsecured parts under pressure can fly around and injure people.

- Before replacing wearing parts, depressurise the valve and piping.

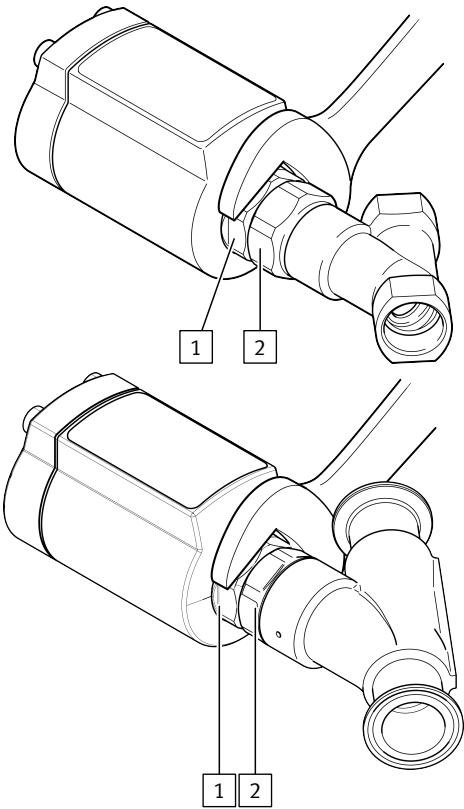


Fig. 2: Demounting drive

- 1 Interface screw SW46
- 2 Cover with spanner flat for counter holding

12.2 Demounting drive from the angle seat fitting - in the installed state

The drive can be removed from the angle seat fitting without removing the valve from the piping system.

1. Depressurise the piping and allow the valve to cool to room temperature.
2. Secure the drive with suitable equipment to prevent it from falling or slipping.
3. Extend the actuator stem.
 - Double-acting valves: pressurise port (4) (0.3 MPa; 3 bar; 43.5 psi).
 - With valves with N/O control function: pressurise port (2) (0.3 MPa; 3 bar; 43.5 psi).
 - For valves with N/C control function: exhaust drive.
4. Loosen the interface screw [1]. Prevent the cover [2] on the angle seat fitting from loosening by counter holding it.

5. Remove the drive from the angle seat fitting.
6. Shut off the operating pressure.

12.3 Demounting drive from the angle seat fitting - in the demounted state

1. Extend the actuator stem.
 - Double-acting valves: pressurise port (4) (0.3 MPa; 3 bar; 43.5 psi).
 - With valves with N/O control function: pressurise port (2) (0.3 MPa; 3 bar; 43.5 psi).
 - For valves with N/C control function: exhaust drive.
2. Loosen the interface screw [1]. Prevent the cover [2] on the angle seat fitting from loosening by counter holding it.
3. Remove the drive from the angle seat fitting.
4. Shut off the operating pressure.

12.4 Mounting drive on the angle seat fitting

1. Extend the actuator stem.
 - Double-acting valves: slowly pressurise port (4) (0.3 MPa; 3 bar; 43.5 psi).
 - With valves with N/O control function: pressurise port (2) (0.3 MPa; 3 bar; 43.5 psi).
 - For valves with N/C control function: exhaust drive.
2. Push the spindle of the angle seat fitting completely into the angle seat fitting.
3. Place the drive on the angle seat fitting.
4. Tighten the interface screw [1].
 - Tightening torque: 50 Nm ± 10%
5. Shut off the operating pressure.

12.5 Rotating drive

1. Loosen the interface screw [1], maximum ½ revolution. Prevent the cover [2] on the angle seat fitting from loosening by counter holding it.
2. Rotate the drive to the desired position.
3. Tighten the interface screw [1].
 - Tightening torque: 50 Nm ± 10%

13 Removal

 **DANGER**

Risk of injury due to movement of pressurised parts.
The valve can switch if there is a drop in pressure. Limbs can be cut or severed.

- Before removal, move the valve to the closed position.
- Before removal, depressurise the valve and the piping.

 **WARNING**

Risk of injury from touching hot surfaces.
Angle seat fitting and actuator can become hot if the temperature of medium is high. Severe burns are possible.

- Allow the angle seat valve to cool off before working on it.

 **WARNING**

Risk of injury due to slipping or falling objects.
The angle seat valve can weigh up to 5.75 kg, depending on the product version. Body parts can be crushed.

- Secure angle seat valve against falling or slipping using appropriate means of securing.

1. De-pressurise the piping and the operating medium connecting line. Allow the valve and piping to cool.
2. Drain the piping and valve completely.
 - Make sure no one is located in front of the outlet opening.
 - Catch discharging media in a suitable container.
3. Disconnect the operating medium connection line from the valve.
4. Disconnect the piping connections and remove the valve.

14 Technical data

14.1 Technical data, safety engineering

Approval information, safety engineering	
Certificate issuing authority	TÜV Rheinland Industrie Service GmbH
Certificate no.	968/V 1039.01/20

Tab. 6: Approval information, safety engineering

Safety characteristic in accordance with IEC 61508		Value
Results of Assessment		
Route of Assessment		2 _H /1 _s
Type of Subsystem		Type A
Mode of Operation		Low Demand Mode / High Demand Mode
Hardware Fault Tolerance	HFT	0
Lambda Dangerous Assumptions: Confidence Level of the calculation 1-α = 95%	λ _D	1.36 * 10 ⁻⁷ /h 136 FIT
Lambda Dangerous Undetected Assumptions: Diagnostic Coverage DC = 0%	λ _{DU}	1.36 * 10 ⁻⁷ /h 136 FIT

Safety characteristic in accordance with IEC 61508		Value
Mean time to failure, dangerous	MTTF _D	7.37 * 10 ⁶ h 841 a
Low Demand Mode		
Assumed Demands per Year	n _{op}	1/a 1.14 * 10 ⁻⁴ /h
Average Probability of Failure on Demand	PFD _{avg}	5.95 * 10 ⁻⁴
High Demand Mode		
Assumed Demands per Year	n _{op}	8760/a 1/h
Average Frequency of a Dangerous Failure per Hour	PFH	1.36 * 10 ⁻⁷ /h

Tab. 7: Safety characteristics

14.2 Technical data, general

VZXA-....-T....-V13/V14-....-K-....-V4	
Certificates, declaration of conformity	➔ www.festo.com/sp
Design	Poppet valve with piston drive
Actuation type	pneumatic
Sealing principle	soft
Mounting position	any
Type of mounting	In-line installation
Valve function	2/2
Flow direction	non-reversible
Product weight	➔ www.festo.com/catalogue
Medium	
Medium VZXA-A-...	Compressed air grade of filtration 200 µm, inert gases, vapour ¹⁾
Medium VZXA-B-...	Compressed air grade of filtration 200 µm, inert gases, water, neutral liquid media, petroleum, petroleum-based hydraulic fluid, vapour
Pressure of medium	[MPa] [bar] [psi] –0.09 ... 3, as specified on product labelling –0.9 ... 30, as specified on product labelling –13.05 ... 435, as specified on product labelling
Viscosity	[mm²/s] ≤ 600
Operating medium	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Pressure of medium	[MPa] [bar] [psi] max. 1 ➔ 14.3 Technical data, pneumatic max. 10 ➔ 14.3 Technical data, pneumatic max. 145 ➔ 14.3 Technical data, pneumatic
Ambient conditions	
Temperature of medium (modified PTFE material seat seal)	[°C] –30 ... +200
Temperature of medium (PTFE material seat seal)	[°C] –10 ... +180
Ambient temperature	[°C] 0 ... +60
Drive degree of protection	IP65, IP67, IP67K (with guided exhaust air)
Connection for angle seat fitting	
VZXA-....-TS6	Threaded collar in accordance with DIN ISO 228
VZXA-....-TS7	Threaded collar in accordance with ANSI/ASME B 1.20.1
VZXA-....-TS13	Threaded collar in accordance with DIN ISO 10226
Operating medium port	G 1/8
Information on materials	
Valve housing VZXA-....-V13	Stainless steel casting (1.4409)
Valve housing VZXA-....-V14	Stainless steel casting (ASTM A351-CF3M)
Seat seal VZXA-....-TP	PTFE modified
Seat seal VZXA-....-T	PTFE
Actuator housing	Stainless steel casting (1.4408)
Piston drive seals	FPM
Actuator stem	High-alloy stainless steel
Drive cover	Stainless steel casting (1.4408)

1) Other media on request

Tab. 8: Technical Data

14.3 Technical data, pneumatic

Nominal pressure, burst pressure and flow rate of angle seat fitting							
VZXA-...		-13	-20	-25	-32	-40	-50
Nominal width DN		13	20	25	32	40	50
Port size	["]	½	¾	1	1¼	1½	2
Nominal pressure PN angle seat fitting, up to max. temperature of medium	[MPa]	4				2.5	
	[bar]	40				25	
	[psi]	580				362.5	
Burst pressure angle seat fitting, up to max. temperature of medium	[MPa]	20				12.5	
	[bar]	200				125	
	[psi]	2900				1812.5	
Flow rate K _v ¹⁾							
VZXA-B-...-K-46	[m³/h]	6.0	13.3	20.3	27.9	–	
VZXA-A-...-K-46	[m³/h]	6.6	13.3	20.0	29.8	–	
VZXA-B-...-K-75	[m³/h]	5.9	13.5	22.6	30.3	41.4	50.1
VZXA-A-...-K-75	[m³/h]	6.6	14.5	21.5	33.0	44.9	54.6

1) Water, at +20 °C, pressure of medium 1 bar at the valve inlet, free outlet

Tab. 9: Nominal pressure, burst pressure and flow rate of angle seat fitting

Pressure of medium and operating pressure VZXA-B-....-K-46-....-S (media flow under valve seat, N/O)			
VZXA-B-...		-13	-20 -25
Nominal width DN		13	20 25
Pressure of medium	[MPa]	0 ... 1.6	0 ... 1.35 0 ... 0.83
	[bar]	0 ... 16	0 ... 13.5 0 ... 8.3
	[psi]	0 ... 232	0 ... 195.8 0 ... 120.4
Min. operating pressure	[MPa]	0.34	0.5
	[bar]	3.4	5
	[psi]	49.3	72.5

Tab. 10: Pressure of medium and operating pressure VZXA-B-....-K-46-....-S, N/O

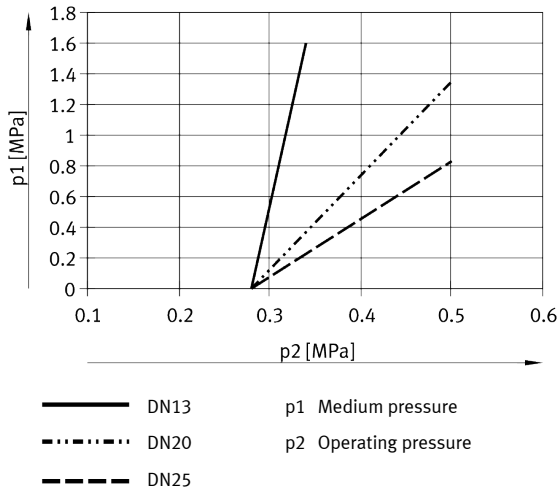


Fig. 3: Pressure of medium and operating pressure VZXA-B-....-K-46-....-S, N/O

Pressure of medium and operating pressure VZXA-B-...-K-75-...-S, (media flow under valve seat, N/O)

VZXA-B-...		-20	-25	-32	-40	-50
Nominal width DN		20	25	32	40	50
Pressure of medium	[MPa]	0 ... 1.6			0 ... 1	0 ... 0.62
	[bar]	0 ... 16			0 ... 10	0 ... 6.2
	[psi]	0 ... 232			0 ... 145	0 ... 89.9
Min. operating pressure	[MPa]	0.34	0.4	0.5		
	[bar]	3.4	4	5		
	[psi]	49.3	58	72.5		

Tab. 11: Pressure of medium and operating pressure VZXA-B-...-K-75-...-S, N/O

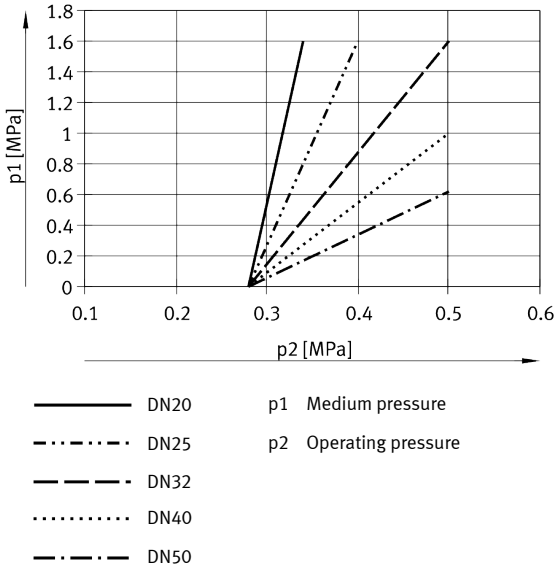


Fig. 4: Pressure of medium and operating pressure VZXA-B-...-K-75-...-S

Pressure of medium and operating pressure VZXA-B-...-K-46-...-D (media flow under valve seat, double-acting)

VZXA-B-...		-13	-20	-25	32
Nominal width DN		13	20	25	32
Pressure of medium	[MPa]	0 ... 1.6			0 ... 0.6
	[bar]	0 ... 16			0 ... 6
	[psi]	0 ... 232			0 ... 87
Min. operating pressure	[MPa]	0.28	0.31	0.48	0.5
	[bar]	2.8	3.1	4.8	5
	[psi]	40.6	45	69.6	72.5

Tab. 12: Pressure of medium and operating pressure VZXA-B-...-K-46-...-D

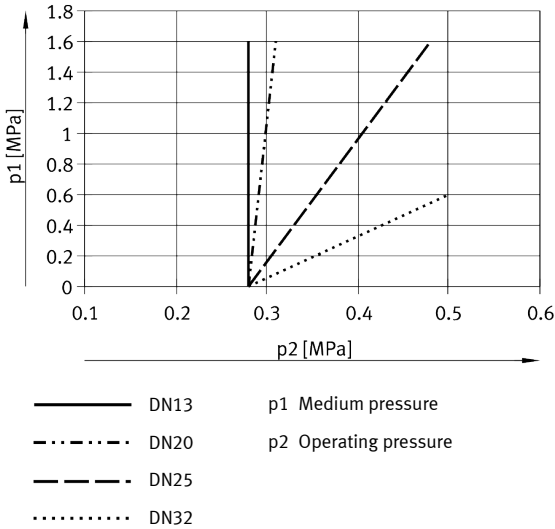


Fig. 5: Pressure of medium and operating pressure VZXA-B-...-K-46-...-D

Pressure of medium and operating pressure VZXA-B-...-K-75-...-D (media flow under valve seat, double-acting)

VZXA-B-...		-20	-25	-32	-40	-50
Nominal width DN		20	25	32	40	50
Pressure of medium	[MPa]	0 ... 1.6				0 ... 1
	[bar]	0 ... 16				0 ... 10
	[psi]	0 ... 232				0 ... 145
Min. operating pressure	[MPa]	0.28			0.38	0.5
	[bar]	2.8			3.8	5
	[psi]	40.6			55.1	72.5

Tab. 13: Pressure of medium and operating pressure VZXA-B-...-K-75-...-D

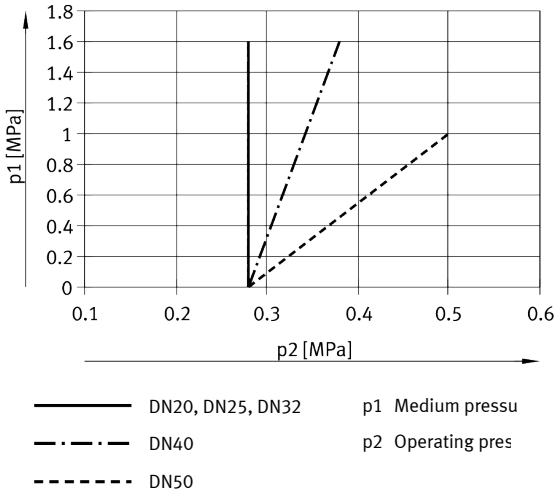


Fig. 6: Pressure of medium and operating pressure VZXA-B-...-K-75-...-D

Pressure of medium and operating pressure VZXA-B-...-K-46 (media flow under valve seat, NC)

VZXA-B-...		-13	-20	-25	-32
Nominal width DN		13	20	25	32
Pressure of medium for VZKA-...-M2-...-K-...	[MPa]	-0.09 ... 3	-0.09 ... 1.28	-0.09 ... 0.83	-0.09 ... 0.44
	[bar]	-0.9 ... 30	-0.9 ... 12.8	-0.9 ... 8.3	-0.9 ... 4.4
	[psi]	-13.05 ... 435	-13.05 ... 185.6	-13.05 ... 120.4	-13.05 ... 63.8
Pressure of medium for VZKA-...-M3-...-K-...	[MPa]	0 ... 3	0 ... 1.28	0 ... 0.83	0 ... 0.44
	[bar]	0 ... 30	0 ... 12.8	0 ... 8.3	0 ... 4.4
	[psi]	0 ... 435	0 ... 185.6	0 ... 120.4	0 ... 63.8
Min. operating pressure	[MPa]	0.48			
	[bar]	4.8			
	[psi]	69.6			

Tab. 14: Pressure of medium and operating pressure VZXA-B-...-K-46

Pressure of medium and operating pressure VZXA-B-...-K-75 (media flow under valve seat, NC)

VZXA-B-...		-20	-25	-32	-40	-50
Nominal width DN		20	25	32	40	50
Pressure of medium for VZKA-...-M2-...-K-...	[MPa]	-0.09 ... 3	-0.09 ... 2.3	-0.09 ... 1.35	-0.09 ... 0.93	-0.09 ... 0.56
	[bar]	-0.9 ... 30	-0.9 ... 23	-0.9 ... 13.5	-0.9 ... 9.3	-0.9 ... 5.6
	[psi]	-13.05 ... 435	-13.05 ... 333.5	-13.05 ... 195.8	-13.05 ... 134.9	-13.05 ... 81.2
Pressure of medium for VZKA-...-M3-...-K-...	[MPa]	0 ... 3	0 ... 2.3	0 ... 1.35	0 ... 0.93	0 ... 0.56
	[bar]	0 ... 30	0 ... 23	0 ... 13.5	0 ... 9.3	0 ... 5.6
	[psi]	0 ... 435	0 ... 333.5	0 ... 195.8	0 ... 134.9	0 ... 81.2
Min. operating pressure	[MPa]	0.46				
	[bar]	4.6				
	[psi]	66.7				

Tab. 15: Pressure of medium and operating pressure VZXA-B-...-K-75

Pressure of medium and operating pressure VZXA-B-...-K-46-...-PR (media flow under valve seat, NC with reduced spring force)

VZXA-B-...	-13	-20
Nominal width DN	13	20
Pressure of medium	[MPa] 0 ... 1.15	0 ... 0.6
	[bar] 0 ... 11.5	0 ... 6
	[psi] 0 ... 166.8	0 ... 87
Min. operating pressure	[MPa] 0.26	
	[bar] 2.6	
	[psi] 37.7	

Tab. 16: Pressure of medium and operating pressure VZXA-B-...-K-46-...-PR

Pressure of medium and operating pressure VZXA-B-...-K-75-...-PR (media flow under valve seat, NC with reduced spring force)

VZXA-B-...	-20	-25	-32	-40
Nominal width DN	20	25	32	40
Pressure of medium	[MPa] 0 ... 1.6	0 ... 0.93	0 ... 0.48	0 ... 0.4
	[bar] 0 ... 16	0 ... 9.3	0 ... 4.8	0 ... 4
	[psi] 0 ... 232	0 ... 134.9	0 ... 69.6	0 ... 58
Min. operating pressure	[MPa] 0.22			
	[bar] 2.2			
	[psi] 31.9			

Tab. 17: Pressure of medium and operating pressure VZXA-B-...-K-75-...-PR

Pressure of medium and operating pressure VZXA-A-...-K-46-...-PR (media flow under valve seat, NC with reduced spring force)

VZXA-A-...	-13	-20	-25	-32
Nominal width DN	13	20	25	32
Pressure of medium	[MPa] 0 ... 1.6		0 ... 1	0 ... 0.68
	[bar] 0 ... 16		0 ... 10	0 ... 6.8
	[psi] 0 ... 232		0 ... 145	0 ... 98.6
Min. operating pressure	[MPa] 0.26	0.41	0.5	
	[bar] 2.6	4.1	5	
	[psi] 37.7	59.5	72.5	

Tab. 18: Pressure of medium and operating pressure VZXA-A-...-K-46-...-PR

Pressure of medium and operating pressure VZXA-A-...-K-75-...-PR (media flow under valve seat, NC with reduced spring force)

VZXA-A-...	-20	-25	-32	-40	-50
Nominal width DN	20	25	32	40	50
Pressure of medium	[MPa] 0 ... 1.6			0 ... 1.55	0 ... 0.8
	[bar] 0 ... 16			0 ... 15.5	0 ... 8
	[psi] 0 ... 232			0 ... 224.8	0 ... 116
Min. operating pressure	[MPa] 0.24	0.31	0.42	0.5	
	[bar] 2.4	3.1	4.2	5	
	[psi] 34.8	45	60.9	72.5	

Tab. 19: Pressure of medium and operating pressure VZXA-A-...-K-75-...-PR

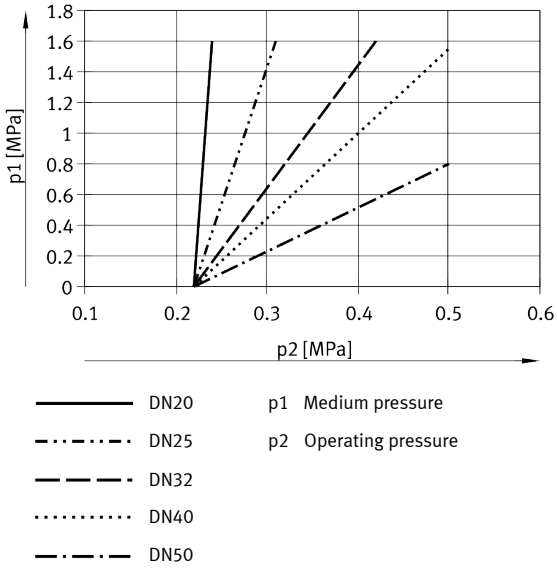


Fig. 8: Pressure of medium and operating pressure VZXA-A-...-K-75-...-PR

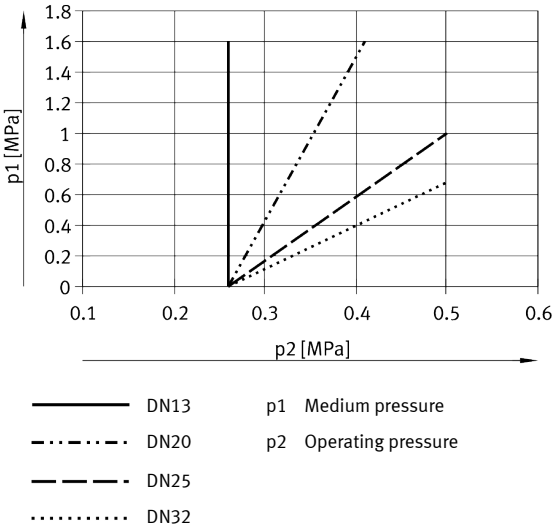


Fig. 7: Pressure of medium and operating pressure VZXA-A-...-K-46-...-PR