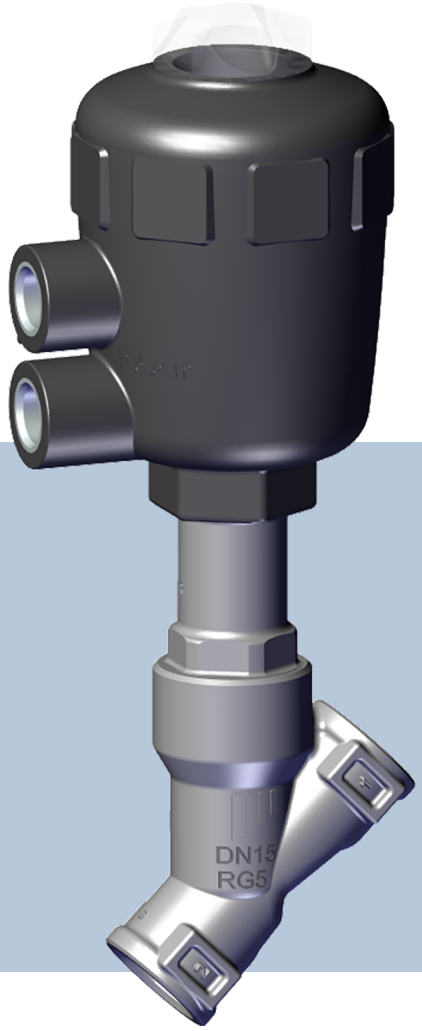
bürkert
FLUID CONTROL SYSTEMS

MAN 1000010227 EN Version: M Status: RL (released | freigegeben) printed: 19.05.2026

Type 2000

CLASSIC

2/2-way angle seat valve



Operating Instructions for all variants

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Technical documentation 2505/22_GBen_00893086_512293259_9007199767041803 / Original DE

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1 About this document

The document is an important part of the product and guides the user to safe installation and operation. The information and instructions in this document are binding for the use of the product.

- Before using the product for the first time, read and observe the whole safety chapter.
- Before starting any work on the product, read and observe the respective sections of the document.
- Keep the document available for reference and give it to the next user.
- Contact the Bürkert sales office for any questions.

Further information concerning the product at Products.

- Enter the article number from the type label in the search bar.

The illustrations in these instructions may vary depending on the product variant.

1.1 Symbols

DANGER!

Warns of a danger that leads to death or serious injuries.

WARNING!

Warns of a danger that can lead to death or serious injuries.

CAUTION!

Warns of a danger that can lead to minor injuries.

NOTICE!

Warns of property damage on the product or the installation.

Indicates important additional information, tips and recommendations.

Refers to information in this document or in other documents.

- Indicates a step to be carried out.

✓ Indicates a result.

Menu Indicates a software user-interface text.

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1.2 Terms and abbreviations

The terms and abbreviations are used in this document to refer to following definitions.

Device	2/2-way angle seat valve Type 2000
Ex area	Potentially explosive atmosphere
Ex approval	Approval for potentially explosive atmosphere
bar	Unit for relative pressure

1.3 Manufacturer

Bürkert Fluid Control Systems
Christian-Bürkert-Str. 13–17
74653 Ingelfingen
GERMANY

The contact addresses are available at Contact.

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2 Safety

2.1 Intended use

The device is designed to control the flow of media. The permissible media are listed in chapter Technical data [▶ 15]

Prerequisites for safe and trouble-free operation are proper transport, storage, installation, commissioning, operation and maintenance.

The instructions are part of the device. The device is intended exclusively for use within the scope of these instructions. Uses of the device that are not described in these instructions, the contractual documents or the type label can lead to severe personal injury or death, damage to the device or property and dangers for the surrounding area or the environment.

- Only trained and qualified personnel may install, operate and maintain the device. See qualification of persons in Safety instructions [▶ 7]
- Use the device only when it is in perfect condition.
- Use the device only in conjunction with third-party devices and components recommended and authorized by Bürkert.
- Only use devices that are approved for this type of potentially explosive atmosphere. These devices are labelled with the ATEX label on the type label. When using, always observe the details on the type label and the instructions for the potentially explosive atmosphere included in the scope of delivery for the device.
- Protect the device from environmental influences (e.g. radiation, humidity, vapours).
- Do not use the device for liquid media if the flow direction is above the seat.

2.2 Safety instructions

Qualification of personnel working with the device

Improper use of the device can lead to serious personal injury or death. To avoid accidents when working with the device, the following minimum requirements must be met:

- Carry out work on the device within the scope of these instructions in a safety-compliant manner.
- Detect and avoid dangers when working on the device.
- Understand the instructions and implement the information contained therein accordingly.

Responsibility of the operator

The operator is responsible for observing the location-specific safety regulations, also in relation to personnel.

- Observe the general rules of technology.
- Install the device according to the regulations applicable in the respective country.
- The operator must make hazards arising from the location of the device avoidable by providing appropriate operating instructions.

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Changes and other modifications, spare parts and accessories

Changes to the device, incorrect installation or use of non-approved devices or components create hazards that can lead to accidents and injuries.

- Do not make any changes to the device.
- Do not mechanically load the device.
- Observe the operating instructions of the device or component used.
- Only use the devices in conjunction with devices and components recommended or approved by Bürkert.

Spare parts and accessories that do not meet Bürkert's requirements may impair the operational safety of the device and cause accidents.

- To ensure operational safety, only use original parts from Bürkert.

Operation only after proper transport, storage, installation, start-up or maintenance.

Improper transport, storage, installation, start-up or maintenance endanger the operational safety of the device and can cause accidents. This can lead to serious personal injury or death.

- Only carry out works which are described in these instructions.
- Only carry out works using suitable tools.
- Have all other works carried out by Bürkert only.

Heavy device

During transportation or installation works, heavy devices may fall and cause injuries.

- Secure heavy device to keep it from tipping or falling over.
- If necessary, only transport, install and uninstall heavy device with the help of a second person.
- Use suitable tools.

Technical limit values and media

Non-compliance with technical limit values or unsuitable media can damage the device and lead to leaks. This can cause accidents and seriously injure or kill people.

- Comply with limit values. See Technical data [▶ 15] and information on the type label.
- Only feed media into the media ports that are listed in the chapter Technical data [▶ 15].
- Observe the safety data sheet for the media used.

Only use authorised devices in potentially explosive atmospheres

Devices that may be used in potentially explosive atmospheres are labelled with an Ex marking. Additional instructions with Ex labelling are included with these devices.

- Only use devices that are approved for use in a potentially explosive atmosphere.
- For use in potentially explosive atmospheres, observe the information on the device.
- For use in potentially explosive atmospheres, observe the additional instructions with Ex labelling.
- Do not use devices that do not have this Ex labelling and additional instructions in potentially explosive atmospheres under any circumstances.

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Medium under pressure

Medium under pressure can seriously injure people. In the event of overpressure or pressure surges, the device or lines can burst. Pneumatic lines that are defective or not securely fastened can come loose and swing around.

- Before working on the device or system, switch off the pressure. Vent or empty the lines.
- Adhere to the permitted pressure ranges of the medium.
- Comply with the permitted temperature ranges of the medium.

Contaminated pilot air

The control exhaust air of the device can be contaminated with lubricants and damage the health of people and the environment.

- Dissipate control exhaust air appropriately.
- Wear appropriate personal protective equipment when working near the device.

If exhaust air from other processes is used to generate compressed air for the device, seals may be destroyed by the media contained in the exhaust air and cause medium to escape.

- Only use fresh air for generating compressed air for the device.

Hot surfaces and fire hazard

The surface of the device can become hot with fast-switching actuators or with hot media.

- Wear suitable protective gloves.
- Keep highly flammable substances and media away from the device.

Electric shock due to electrical components

Touching live parts can result in severe electric shock. This can lead to serious personal injury or death.

- Before working on the device or system, switch off the power supply. Secure it against reactivation.
- Observe any applicable accident prevention and safety regulations for electrical devices.

Hearing damage due to high noise level

Depending on the operating conditions, the device may generate loud noises.

- If the noise level exceeds 75 dB(A), wear hearing protection when near the device.

Working on the device

Working on the device that has not been powered down, unauthorised switching on or uncontrolled start-up of the system can cause accidents. This can lead to serious personal injury or death.

- Only work on the device when it is not in use.
- Ensure that the device or system cannot be switched on unintentionally.
- Only start the process in a controlled manner following disruptions. Observe sequence:
  1. Apply supply voltage or pneumatic supply.
  2. Charge the device with medium.

Mechanical moving parts

- Do not reach into openings.

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The actuator contains a pre-tensioned spring. If the actuator is opened, there is a risk of injury if the spring pops out.

- Do not open the actuator. Unless an instruction explicitly describes how to open it.

Danger from wear and tear on device

If there is wear and tear, medium can leak out of the relief bore and people may be seriously injured.

- Relief bore must be regularly inspected for any medium leakages.
- If media are hazardous, safeguard the environment around the relief bore.

The device can become leak at the valve seat if there is wear and tear.

- Check device regularly and change the wearing parts if necessary.

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3 Product description

The device is specially optimised for decentralised process automation and meets all the relevant requirements, even under difficult usage conditions.

Its design enables the easy integration of automation modules in all extension stages, whether they are electrical/optical position feedback, pneumatic control units, or even an integrated fieldbus interface. Long service life and high tightness are achieved by the tried and tested self-adjusting packing gland. The system, consisting of valve and automation module is distinguished by a compact and sleek design, integrated pilot air ducts, a high chemical resistance, the degrees of protection IP65 or IP67 as well as the NEMA protection class 4X.

The device uses neutral gases or air to control the flow rate of liquid or gaseous media, such as water, alcohol, oil, fuel, saline solution, hydraulic fluid, lye, organic solvent or vapour.

3.1 Product overview

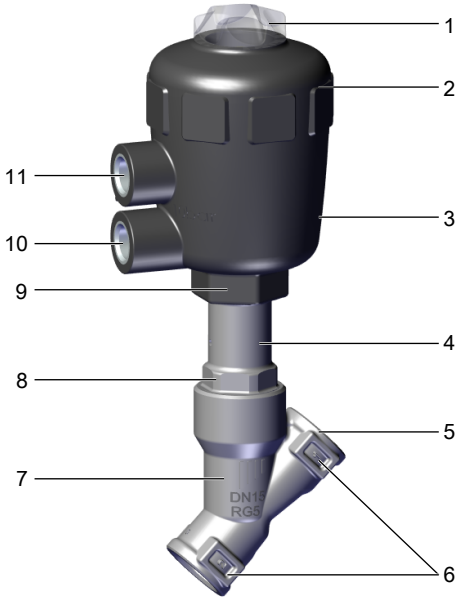

Fig. 1: Product overview (valve body: example)

1	Transparent cap with position	2	Actuator cover
3	Actuator housing	4	Relief bore
5	Port connection	6	Flow direction marking
7	Valve body	8	Body connection
9	Actuator connection	10	Lower pilot air port
11	Upper pilot air port		

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3.2 Product identification

3.2.1 Type label

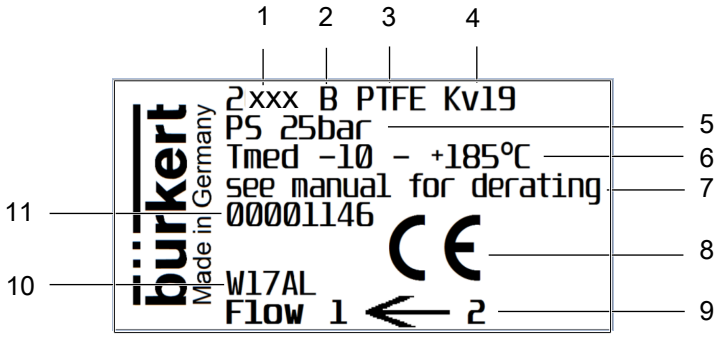
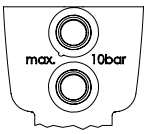


Fig. 2: Type label (example)

1	Type	2	Control function
3	Sealing material	4	Flow coefficient
5	Operating pressure	6	Medium temperature
7	Derating see operating instructions	8	CE marking
9	Flow direction	10	Manufacture code
11	Article number		

3.2.2 Icons and labelling on the device

	Specification of the maximum pilot pressure
	1: Labelling of ports 2: (depending on variant): Labelling of thread 3: (both sides, depending on variant): Company logo, DN, nominal pressure, ASME pressure level, material

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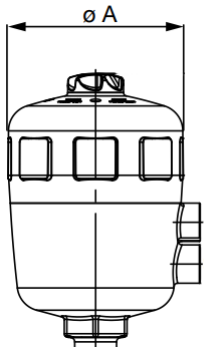
3.2.3 Determination of actuator size

Scale drawing	Ø A [mm]	Actuator size
	53	40 (C)
	64	50 (D)
	80	63 (E)
	101	80 (F)
	127	100 (G)
	157	125 (H)

Tab. 1: Determination of actuator size

3.3 Principle of operation

The closing force is transferred by a spindle connected to the actuator piston.

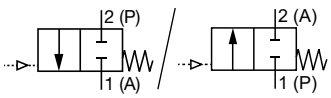
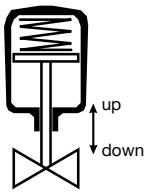
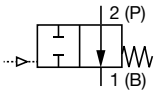
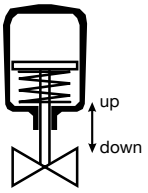
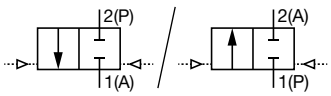
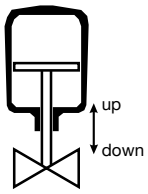
Control function A (CFA)

The spring force generates the closing force on the swivel plate.

Control function B and I (CFB and CFI)

The pilot pressure generates the closing force on the swivel plate.

3.3.1 Control function

Symbol	Description	
	Control function A (CFA), NC Pneumatically actuated on/off valve, 2/2-way Closed by spring force in rest position Flow direction below the seat/Flow direction above the seat	
	Control function B (CFB), NO Pneumatically actuated on/off valve, 2/2-way Opened by spring force in rest position Flow direction below the seat	
	Control function I (CFI), DA Pneumatically actuated on/off valve on both sides, 2/2-way Rest position not defined (unpressurised) Flow direction below the seat/Flow direction above the seat	

Tab. 2: Control function

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3.3.2 Flow direction below the seat

Only use flow direction below the seat for:

- Liquid media
- Gases and vapours

As the medium is present under the swivel plate, the operating pressure contributes to the opening of the valve.

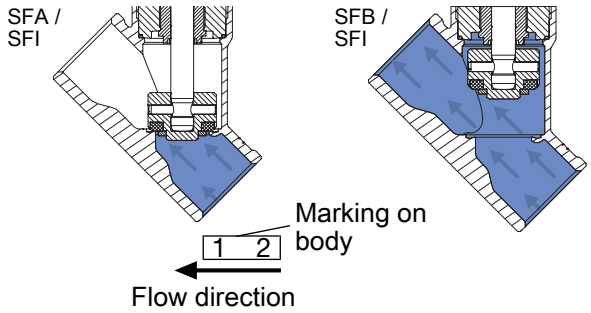

Fig. 3: Flow direction below seat, valve closes against medium flow

3.3.3 Flow direction above the seat

Only use flow direction above the seat for:

- Gases and vapours
- Valves control function A (closed by spring force in rest position)[1)]

As the medium is present above the swivel plate, the operating pressure contributes to the closing of the valve. The operating pressure also supports the sealing of the valve seat.

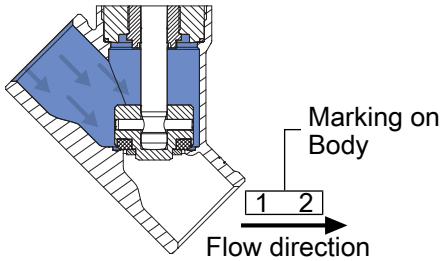

Fig. 4: Flow direction above the seat, valve closes with medium flow

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[1)] Not for seat size 80

4 Technical data

4.1 Standards and directives

The device complies with the valid EU harmonisation legislation.

The harmonised standards that have been applied for the conformity assessment procedure are listed in the current version of the EU Declaration of Conformity.

4.2 Operating conditions

Ambient temperature	See Medium data [▶ 16]
Storage temperature	–20...+65 °C
Degree of protection (EN 60529/ IEC 60529)	IP67
Altitude	Up to 2000 m above sea level
Medium temperature	See Medium data [▶ 16]
Medium	Water, alcohols, oils, fuels, hydraulic fluids, saline solutions, lyes, organic solvents, vapour, neutral gases
Operating pressure	See Medium data [▶ 16], pressure ranges
Control medium	Neutral gases, air
Pilot pressure	See Pressure ranges [▶ 19]
Sound pressure level	< 70 dB(A) The sound pressure level may be higher depending on the usage conditions.

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4.3 Medium data

4.3.1 Application limits for ambient temperature and medium temperature

Actuator material: PA

Actuator size	Medium temperature for PTFE and PEEK seal [°C][2)]	Ambient temperature [°C][3)]
40 (C)...63 (E)	–10...see figure below	–10...see figure below
80 (F)...125 (H)	–10...+185	–10...+60

Tab. 3: Temperature ranges

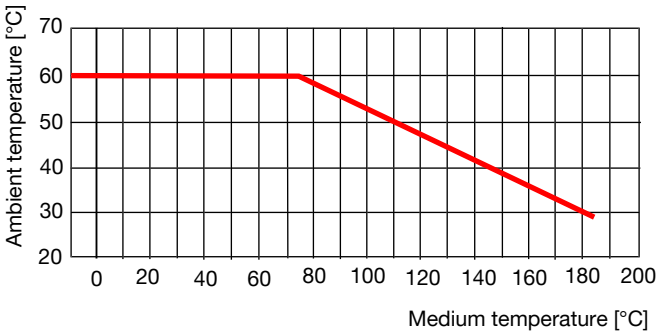

Fig. 5: Temperature range, PA actuator, actuator size 40 (C)

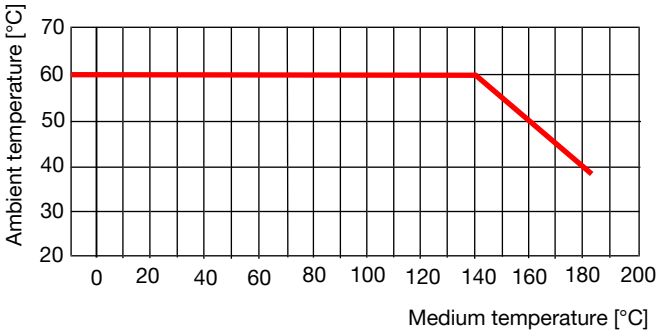

Fig. 6: Temperature range, PA actuator, actuator size 50 (D)

2) A PEEK seal is recommended during use with Tmax > 130 °C.

3) Max. ambient temperature when using a pilot valve is +55 °C.

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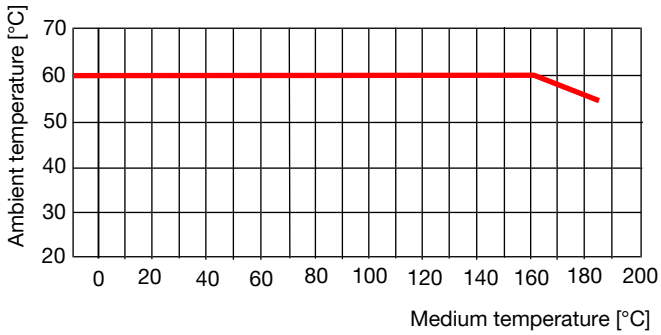

Fig. 7: Temperature range, PA actuator, actuator size 63 (E)

Actuator material: PPS

Actuator size	Medium temperature for PTFE and PEEK seal [°C][2)]	Ambient temperature [°C][3)]
40 (C)...80 (F)	–10...see figure below	+5...+140
100 (G)...125 (H)	–10...see figure below	+5...+90 Short-term to max. 140 °C

Tab. 4: Temperature ranges

Service life is reduced if the valves are used at a maximum ambient temperature of +140 °C.

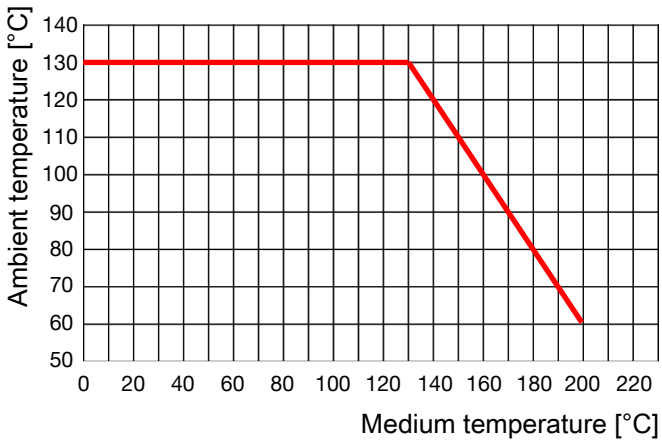

Fig. 8: Derating, PPS actuator, actuator size 40 (C)

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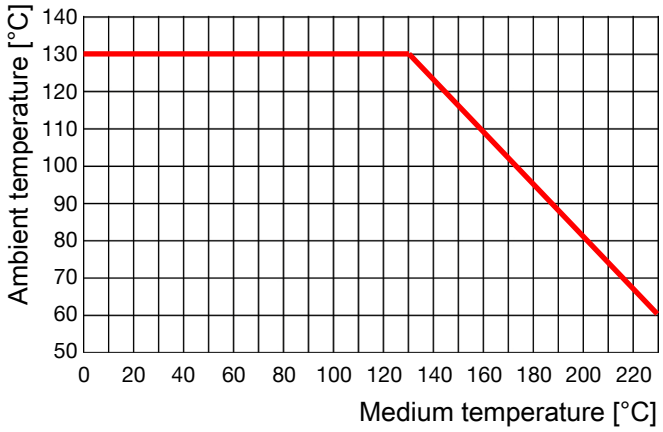


Fig. 9: Derating, PPS actuator. Actuator size 50 (D), 63 (E), 80 (F)

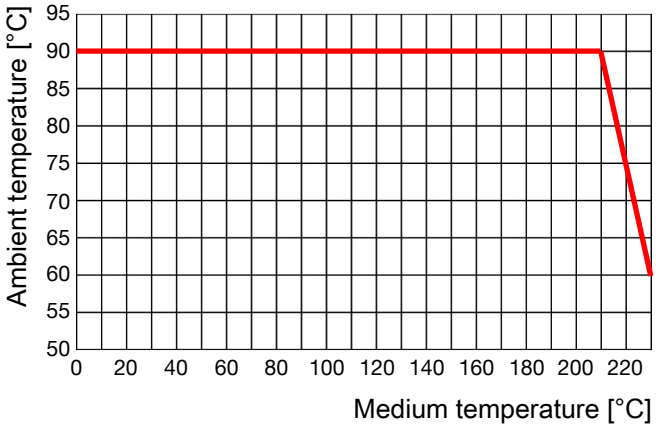


Fig. 10: Derating, PPS actuator, actuator size 100 (G), 125 (H)

4.3.2 Application limits for medium temperature and operating pressure

Derating the operating pressure as per DIN EN 12516-1/PN25

Temperature [°C]	Pressure (bar)
–10...+50	25.0
100	24.5
150	22.4
200	20.3
230	19.0

Derating the operating pressure as per ASME B16.5/ASME B16.34 Cl.150

Temperature [°C]	Pressure (bar)
–29...+38	19.0
50	18.4
100	16.2
150	14.8
200	13.7
230	12.7

Derating the operating pressure as per JIS B 2220 10K

Temperature [°C]	Pressure (bar)
–10...+50	14.0
100	14.0
150	13.4
200	12.4
230	11.7

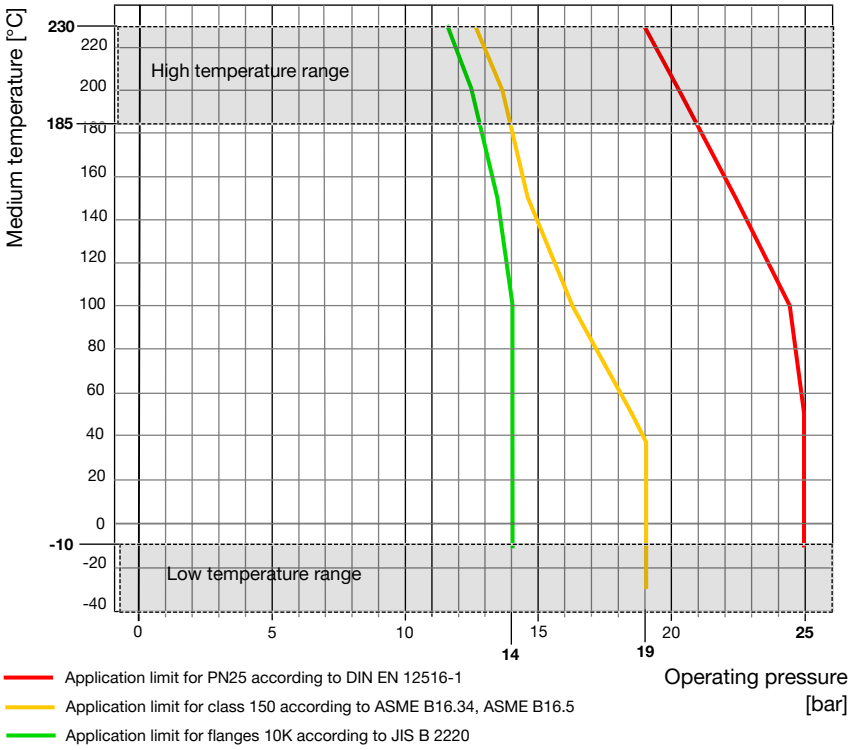
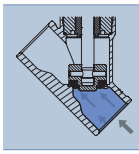


Fig. 11: Medium

4.3.3 Pressure ranges

"Technical features" for other seal materials and variants not listed: enter the article number in the search bar at country.burkert.com and select the product.

Pressure ranges with flow direction below the seat



Actuator size 40 (C), flow direction below the seat		
Pilot pressure	max. 10 bar	
Control function A (CFA)		
Minimum control pressure	4 bar	
Operating pressure		
Nominal diameter	PTFE	PEEK
DN15	Max. 15 bar	–
DN20	Max. 6.5 bar	–
Control function B (CFB), control function I (CFI)		
Minimum control pressure	Depending on the operating pressure, see figure below	
Operating pressure	Max. 16 bar	

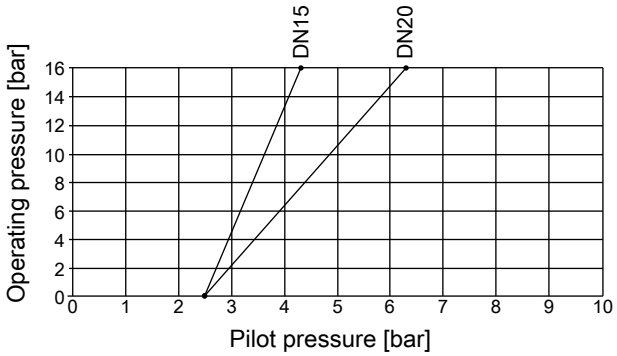
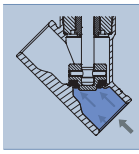


Fig. 12: Minimum control pressure, actuator size 40 (C), control function B and I



Actuator size 50 (D), flow direction below the seat		
Pilot pressure	max. 10 bar	
Control function A (CFA)		
Minimum control pressure	4.1 bar	
Operating pressure		
Nominal diameter	PTFE	PEEK
DN15	Max. 16 bar	–
DN20	Max. 11 bar	–
DN25	Max. 5.2 bar	–

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Control function B (CFB), control function I (CFI)	
Minimum control pressure	Depending on the operating pressure, see figure below
Operating pressure	Max. 16 bar

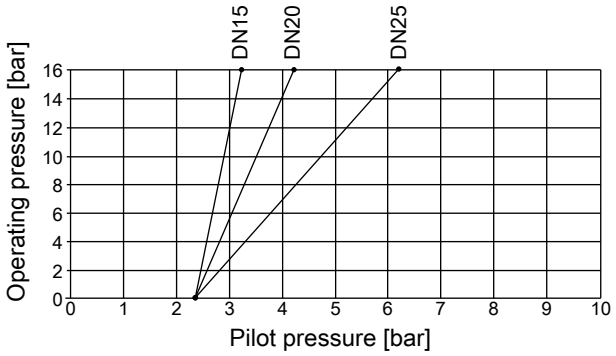
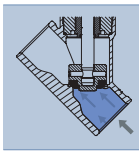


Fig. 13: Minimum control pressure, actuator size 50 (D), control function B and I



Actuator size 63 (E), flow direction below the seat	
Pilot pressure	max. 10 bar

Control function A (CFA)		
Minimum control pressure	4.5 bar	
Operating pressure		
Nominal diameter	PTFE	PEEK
DN15	Max. 25 bar[4)]	Max. 25 bar[4)]
DN20	Max. 20 bar[4)]	Max. 17.5 bar[4)]
DN25	Max. 11 bar	–
DN32	Max. 6 bar	–
DN40	Max. 4 bar	–
DN50	Max. 2.5 bar	–

4) Variant with red bronze valve body: limited to 16 bar

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Control function B (CFB), control function I (CFI)	
Minimum control pressure	Depending on the operating pressure, see figure below
Operating pressure	
Nominal diameter	PTFE
DN15...DN32	Max. 25 bar[4)]
DN40	Max. 24 bar[4)]
DN50	Max. 13 bar

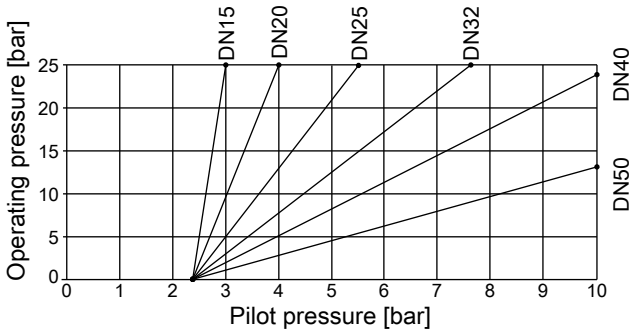
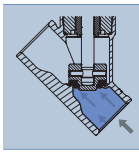


Fig. 14: Minimum control pressure, actuator size 63 (E), control function B and I



Actuator size 80 (F), flow direction below the seat

Pilot pressure	max. 10 bar

Control function A (CFA)		
Minimum control pressure	5 bar	
Operating pressure		
Nominal diameter	PTFE	PEEK
DN20	Max. 25 bar[4)]	Max. 25 bar[4)]
DN25	Max. 25 bar[4)]	Max. 21 bar[4)]
DN32	Max. 14 bar	Max. 11.5 bar
DN40	Max. 9 bar	–
DN50	Max. 6 bar	–
DN65	Max. 3.5 bar	–

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Control function B (CFB), control function I (CFI)	
Minimum control pressure	Depending on the operating pressure, see figure below
Operating pressure	
Nominal diameter	PTFE
DN25...DN40	Max. 25 bar[4)]
DN50	Max. 25 bar[4)] Max. 20 bar[5)]
DN65	Max. 15 bar

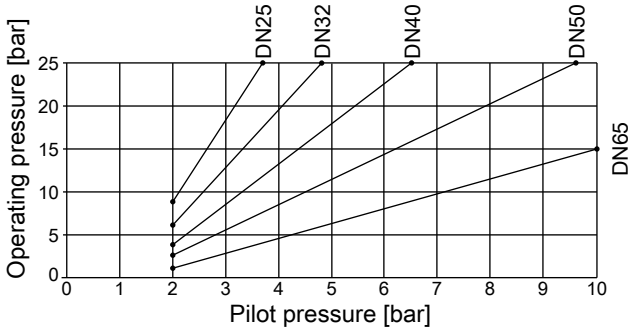
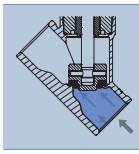


Fig. 15: Minimum control pressure, actuator size 80 (F), control function B and I



Actuator size 100 (G), flow direction below the seat		
Pilot pressure	Max. 7 bar	
Control function A (CFA)		
Minimum control pressure	4.4 bar	
Operating pressure		
Nominal diameter	PTFE	PEEK
DN32	Max. 16 bar	-
DN40	Max. 12.5 bar	-
DN50	Max. 7.2 bar	-
DN65	Max. 4.6 bar	-

5) According to the Pressure Equipment Directive 2014/68/EU for compressible fluids of Group 1 (dangerous gases and vapours according to Article 4, paragraph (1), c), i), first indent)

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Control function B (CFB), control function I (CFI)	
Minimum control pressure	Depending on the operating pressure, see figure below
Maximum operating pressure [bar]	
Nominal diameter	PTFE
DN32...DN40	Max. 25 bar[4)]
DN50	Max. 25 bar[4)] Max. 20 bar[5)]
DN65	Max. 15 bar

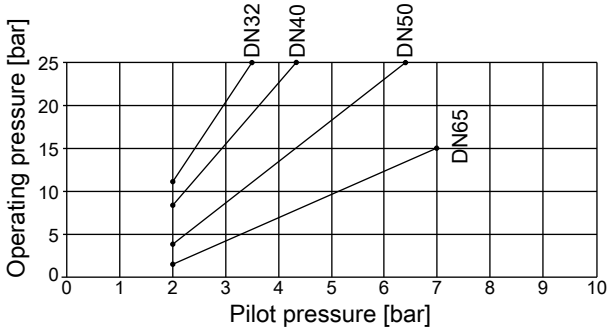
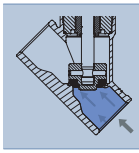


Fig. 16: Minimum control pressure, actuator size 100 (G), control function B and I



Actuator size 125 (H), flow direction below the seat

Pilot pressure	Max. 7 bar

Control function A (CFA)		
Minimum control pressure		
Nominal diameter		
DN32	4.1 bar	
DN40	3.2 bar[6)]	
DN50	3.2 bar[7)]	
DN65	3.2 bar[7)]	
DN80	5.7 bar	
Operating pressure		
Nominal diameter	PTFE	PEEK
DN32	Max. 25 bar[4)]	Max. 25 bar[4)]

6) Variant with V code EC15: 4.1 bar

7) Variant with V code KS66: 5.7 bar

DN40	Max. 25 bar[4)8)]	Max. 25 bar[4)]
DN50	Max. 24 bar[4)8)] Max. 20 bar[5)]	Max. 19 bar[4)]
DN65	Max. 12 bar	Max. 10 bar[8)]
DN80	Max. 7.5 bar	-

Control function B (CFB), control function I (CFI)	
Minimum control pressure	Depending on the operating pressure, see figure below
Maximum operating pressure [bar]	
Nominal diameter	PTFE
DN40	Max. 25 bar[4)]
DN50	Max. 25 bar[4)] Max. 20 bar[5)]
DN65	Max. 23 bar[4)] Max. 15 bar[5)]
DN80	Max. 14 bar[4)] Max. 12.5 bar[5)]

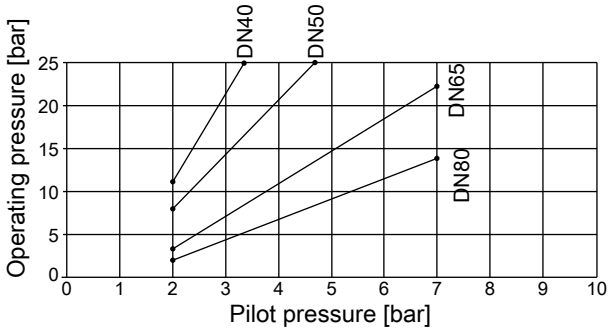
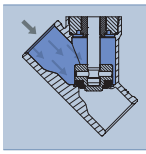


Fig. 17: Minimum control pressure, actuator size 125 (H), control function B and I

Pressure ranges with flow direction above the seat



Actuator size 40 (C)...63 (E), flow direction above the seat

Pilot pressure	max. 10 bar
Control function A (CFA)	
Minimum control pressure	Depending on the operating pressure, see figure below
Operating pressure	Max. 16 bar

8) Specified pressures for variants with V code EC15 and KS66 achievable.

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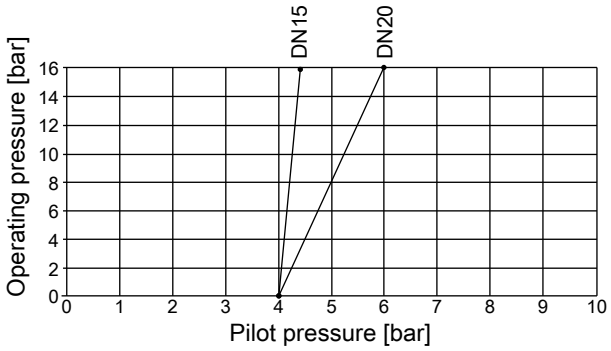


Fig. 18: Minimum control pressure, actuator size 40 (C), control function A

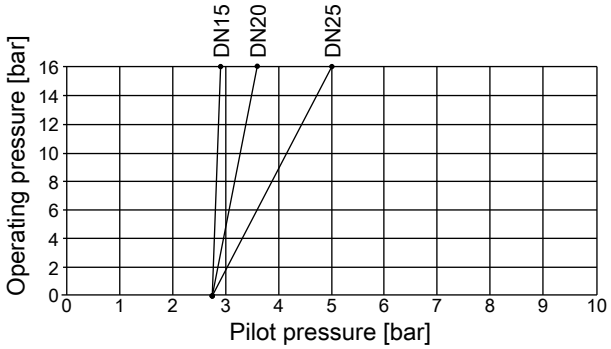


Fig. 19: Minimum control pressure, actuator size 50 (D), control function A

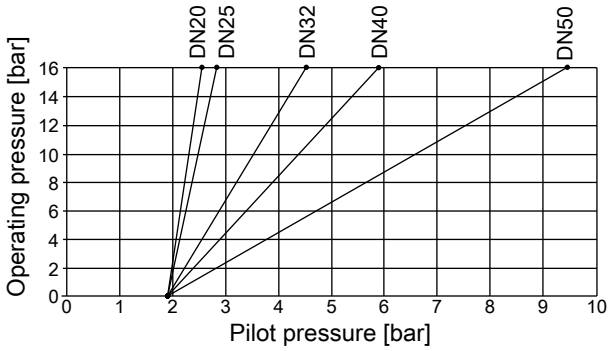
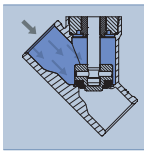


Fig. 20: Minimum control pressure, actuator size 63 (E), control function A



Actuator size 80 (F), flow direction above the seat

Pilot pressure	max. 10 bar
Control function A (CFA)	
Minimum control pressure	Depending on the operating pressure, see figure below
Operating pressure	
Nominal diameter	PTFE
DN25...DN50	Max. 16 bar
DN65	Max. 14 bar

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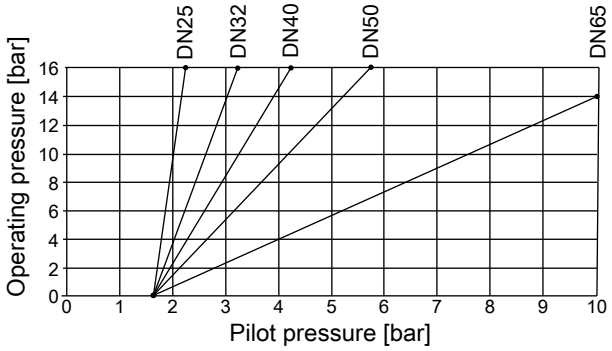
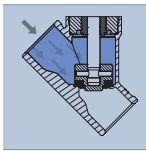


Fig. 21: Minimum control pressure, actuator size 80 (F), control function A



Actuator size 100 (G), flow direction above the seat	
Pilot pressure	Max. 7 bar
Control function A (CFA)	
Minimum control pressure	Depending on the operating pressure, see figure below
Operating pressure	
Nominal diameter	PTFE
DN32...DN50	Max. 16 bar
DN65	Max. 15 bar[5)]

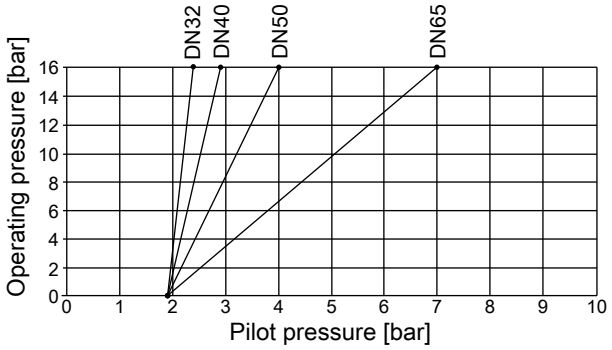


Fig. 22: Minimum control pressure, actuator size 100 (G), control function A

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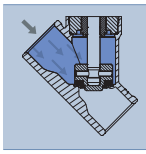 Actuator size 125 (H), flow direction above the seat	
Pilot pressure	Max. 7 bar
Control function A (CFA)	
Minimum control pressure	Depending on the operating pressure, see figure below
Operating pressure	
Nominal diameter	PTFE
DN40...DN50	Max. 16 bar
DN65	Max. 16 bar[5)]

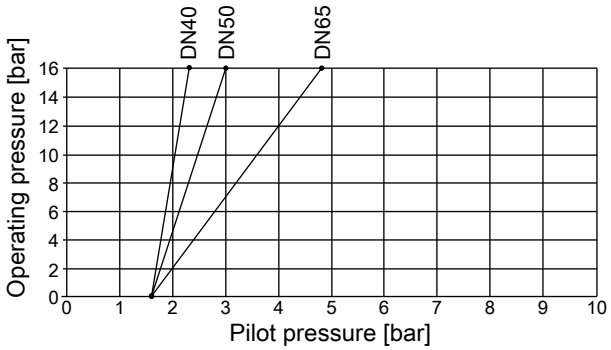

Fig. 23: Minimum control pressure, actuator size 125 (H), control function A

4.4 Mechanical data

Actuator size	See Determination of actuator size [▶ 13]
Installation position	Any, preferably actuator face up

Materials

Housing with threaded connection	Gunmetal or stainless steel CF3M
Body with welded connection or clamp connection	Stainless steel CF3M
Actuator	PA or PPS
Valve seat seal	PTFE or PEEK (NBR, FKM, EPDM on request)

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Connections

Threaded connection	G, NPT or RC
Welded connection	DIN 11866 Series B, EN ISO 1127, ISO 4200 DIN 11866 Series A, DIN 11850-2 DIN 11866 Series C, ASME BPE SMS 3008
Clamp connection	DIN32676, Series B, ISO 4200 DIN32676, Series A, DIN 11850-2 ASME BPE, ISO 2852, BS 4825
Pilot air port	Actuator size 40 (C): Threaded connection G1/8 Actuator size 50 (D)...125 (H): Threaded connection G1/4

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5 Installation

Risk of injury or material damage when working on the device or system.

- Read and observe the chapter Safety [▶ 7] before working on the device or system.

5.1 Connect the device to pipeline

- Installation position, any, preferably actuator facing up.
- Note the flow direction.
- Make sure that pipelines are in alignment.
- Remove the soiling from pipelines.

Devices with approval according to DIN EN 161 “Automatic shut-off valves for gas burners and gas appliances”

- Attach dirt trap upstream of the valve. The strainer must prevent the penetration of a 1 mm mandrel.

Devices with welded connection

- **NOTICE! Before welding in the valve body:** Remove the actuator from the valve body.
- Weld the valve body into the pipeline.
- Install the actuator back on the valve body.

Devices with threaded connection, clamp connection or flange connection

- Connect the valve body to pipeline.

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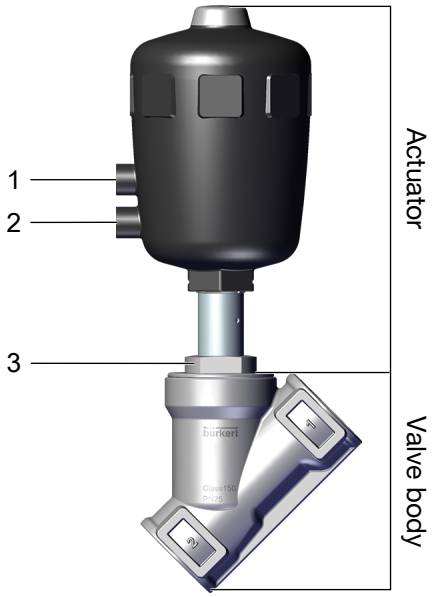
5.2 Remove the actuator from the valve body

To prevent damage, the valve must be in the open position when the actuator is dismantled.

Valves with control function B are opened by spring force in the rest position.
Valves with control function A or I must be pneumatically actuated to open.



1 Upper pilot air port	2 Lower pilot air port
3 Body connection	

- Clamp the valve body into a holding device.
- **NOTICE! For valves with control function A or I:** Open the valve.
  To do this, pressurise lower pilot air port with compressed air (5 bar).
- Place a suitable open-end wrench on the wrench flat of the body connection.
- Unscrew the actuator from the valve body.

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5.3 Install the actuator on the valve body

DANGER!

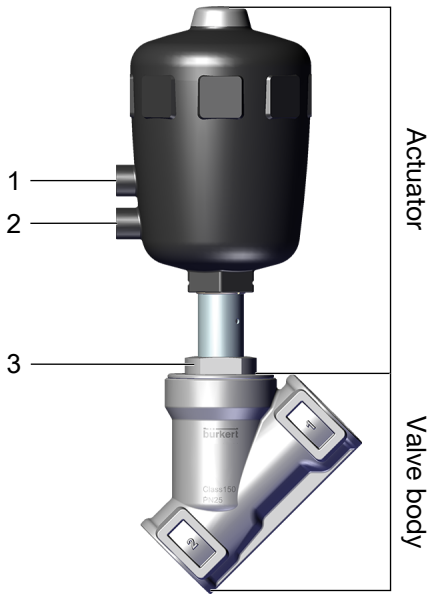
Danger due to lubricant

Lubricant may contaminate the medium. There is a risk of explosion in oxygen applications.

- Only use lubricant that is permitted for the medium.

To prevent damage, the valve must be in the open position when the actuator is installed.

Valves with control function B are opened by spring force in the rest position.
Valves with control function A or I must be pneumatically actuated to open.



1	Upper pilot air port	2	Lower pilot air port
3	Body connection		

- Ensure correct position and integrity of the seal in the body connection.
- Grease the thread of the body connection (e.g. with Klüber paste UH1 96-402 from Klüber).
- **NOTICE! For valves with control function A or I:** Open the valve.
  To do this, pressurise lower pilot air port with compressed air (5 bar).
- Screw the actuator into the valve body. Observe the tightening torques for the body connection (Tightening torques for body connection [▶ 33]).

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Nominal diameter DN	Actuator size	Tightening torque [Nm]	Tolerance [Nm]
15	40 (C), 50 (D), 63 (E)	45	+10/–5
20	40 (C), 50 (D), 63 (E), 80 (F)	50	+10/–5
25	50 (D), 63 (E), 80 (F)	60	+10/–5
32	63 (E), 80 (F), 100 (G)	65	+10/–5
40	63 (E), 80 (F), 100 (G), 125 (H)	65	+10/–5
50	63 (E), 70 (M), 80 (F), 90 (N), 100 (G), 125 (H)	70	+10/–5
65	80 (F), 100 (G), 125 (H)	70	+10/–5
65	175 (K), 225 (L)	100	+10/–5
80	125 (H), 130 (P)	120	+10/–5
100	125 (H), 175 (K), 225 (L)	150	+10/–5

Tab. 5: Tightening torques for body connection

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5.4 Turn the actuator

The position of the pilot air ports can be seamlessly changed by turning the actuator 360°.

To prevent damage, the valve must be in the open position when the actuator is turned.

Valves with control function B are opened by spring force in the rest position.
Valves with control function A or I must be pneumatically actuated to open.

CAUTION!

Risk of injury due to escaping medium

If the actuator is turned in the wrong direction, the body connection may come loose. This allows medium to escape.

- Only turn the actuator in the direction shown in the figure.

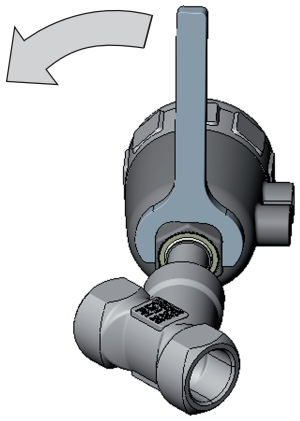

Fig. 24: Turn the actuator

- Clamp the valve body into a holding device.
- **NOTICE! For valves with control function A or I:** Open the valve.
  To do this, pressurise lower pilot air port with compressed air (5 bar).
- To turn the actuator, use an open-end wrench on the hexagon nut of the actuator connection. Hold the hexagon nut of the body connection with an open-end wrench.
- **CAUTION! Observe the direction of rotation!**
  Turn the actuator on the hexagon nut of the drive connection in the direction shown in the figure until the desired position is reached.

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6 Pneumatic connection

Risk of injury or material damage when working on the device or system.

- Read and observe the chapter Safety [▶ 7] before working on the device or system.

6.1 Connect the device pneumatically

WARNING!

Risk of injury from connection of unsuitable hoses

Inappropriate hoses can come loose and swing around.

- Use only hoses which are authorised for the indicated pressure and medium temperature range.
- Observe the data sheet specifications from the hose manufacturers.

WARNING!

For control function I: Risk of injury in the event of pilot pressure failure

The valve stays in an undefined position in the event of a pilot pressure failure.

- Switch off the pressure before working on the device or system. Vent or drain the lines.
- To ensure a controlled restart, first pressurise the device with pilot pressure, then switch on the medium.

The position of the pilot air ports can be seamlessly changed by turning the actuator 360°. The procedure is described in chapter Turn the actuator [▶ 34].

For use in aggressive environments

- Drain the free pneumatic connections into a neutral atmosphere using a pneumatic hose.

Control function A:

- Connect the control medium to bottom of the pilot air port of the actuator.

Control function B:

- Connect the control medium to top of the pilot air port of the actuator.

Control function I:

- Connect the control medium to top and bottom of the pilot air port of the actuator.
  Pressure at upper port: Valve closes.
  Pressure at lower port: Valve opens.

Pneumatic hoses

Pneumatic hoses of sizes G1/4 or G1/8 (for actuator size 40 (C)) can be used.

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7 Commissioning

Risk of injury or material damage when working on the device or system.

- Read and observe the chapter Safety [▶ 7] before working on the device or system.

7.1 Commission the device

WARNING!

For control function I: Risk of injury in the event of pilot pressure failure

The valve stays in an undefined position in the event of a pilot pressure failure.

- Switch off the pressure before working on the device or system. Vent or drain the lines.
- To ensure a controlled restart, first pressurise the device with pilot pressure, then switch on the medium.

WARNING!

Risk of injury from high pressure or hot medium

Excessively high pressure or temperatures may damage the device and cause leaks.

- Observe values for pressure and medium temperature indicated on the type label.

In the case of devices with control unit, observe start-up in the operating instructions for the corresponding control unit.

- Adjust the pilot pressure in accordance with the information on the type label and in technical data.
- Commission the device.

7.1.1 Flow direction below the seat

WARNING!

Leaking valve seat with flow direction below seat.

If pilot pressure for control function B and control function I is too low or operating pressure is too high, this can cause the valve seat to leak.

- Comply with the minimum control pressure and the maximum operating pressure values.

7.1.2 Flow direction above the seat

DANGER!

Bursting lines and bursting device with flow direction above the seat.

In the case of liquid media, a pressure surge can lead to the bursting of lines and device.

- Do not use valves with flow direction above the seat for liquid media.

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8 Maintenance

Risk of injury or material damage when working on the device or system.

- Read and observe the chapter Safety [▶ 7] before working on the device or system.

8.1 Control

- Check the following parts for leaks

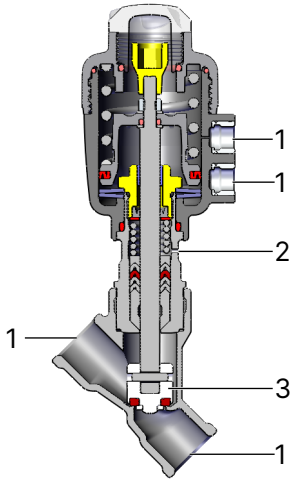

Fig. 25: Leakage control

Check	Action
Media connectors (1)	▸ Repair media connectors
Relief bore (2)	▸ Change the seal set or replace the actuator
Swivel plate (3)	▸ Replace the valve set
Seals	▸ Change seal set

Tab. 6: Visual inspection

8.2 Cleaning

NOTICE!

Avoid causing damage with cleaning agents.

- Before cleaning, check that the cleaning agents are compatible with device materials and seals.

- Only use commercially available cleaning agents for external cleaning.

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9 Troubleshooting

9.1 Actuator does not switch

Cause	Solution
Pilot air port interchanged.	▸ Connect the pilot air correctly: CFA: Lower pilot air port.
	▸ Connect the pilot air correctly: CFB: Upper pilot air port.
	▸ Connect the pilot air correctly: CFI: Lower pilot air port: Open, Connect the upper pilot air port: Close.
Pilot pressure too low.	▸ Observe pressure data on the type label.
Operating pressure too high.	▸ Observe pressure data on the type label.
Flow direction switched.	▸ Observe the direction of the arrow on the type label.

9.2 Valve is not tight

Cause	Solution
Pilot pressure too low.	▸ Observe pressure data on the type label.
Operating pressure too high.	▸ Observe pressure data on the type label.
Flow direction switched.	▸ Observe the direction of the arrow on the type label.
Dirt between seal and valve seat.	▸ Install the dirt trap.
Valve seat seal worn.	▸ Install the new swivel plate.

9.3 Valve is leaking on the relief bore

Cause	Solution
Packing gland worn.	▸ Replace the packing gland or actuator.

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10 Uninstallation

Risk of injury or material damage when working on the device or system.

- Read and observe the chapter Safety [▶ 7] before working on the device or system.

10.1 Disassemble the device

- Loosen the pneumatic connection.
- Disassemble the device.

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11 Spare parts and accessories

Risk of injury and/or damage due to incorrect parts.

- Use only original accessories and original spare parts from Bürkert.

Order the parts directly on our eShop.

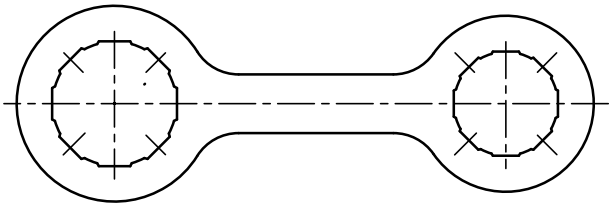
11.1 Spare parts

The following spare parts are available for the device:

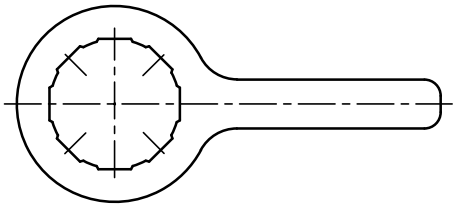
- Process valve packing set
  consisting of seals and wearing parts of the actuator
- Set of process valve swivel plates
  Consisting of swivel plate with seal and pin

11.2 Accessories

11.2.1 Installation wrench for actuator cover



Actuator size	Ø [mm]	Article number
40 (C)	40	639175
50 (D)	50	639175



Actuator size	Ø [mm]	Article number
63 (E)	63	639170

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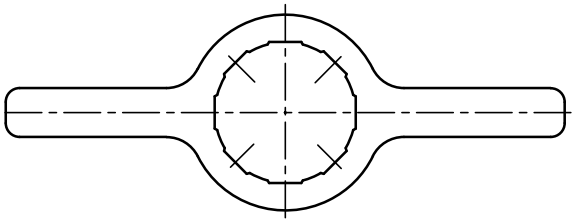

Actuator size	Ø [mm]	Article number
80 (F)	80	639171
100 (G)	100	639172
125 (H)	125	639173

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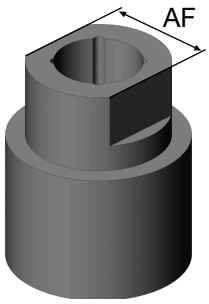
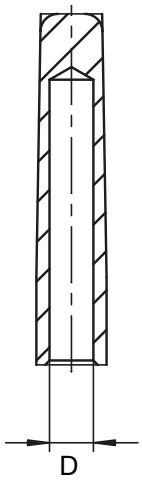
11.2.2 Installation tool for packing gland

Socket wrench



Ø Spindle [mm]	Nominal diameter DN	Width across flats [mm]	Article number
14	32...80	21	683223

Assembly sleeve



Ø Spindle [mm]	Actuator size	Dimension D [mm]	Article number
8	40 (C)	5	639165
	50 (D)	6	639166
10	63 (E)	6	639167
	80 (F)	8	639168
16	100 (G) and 125 (H)	10	639169

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11.3 Conversion kits

11.3.1 Conversion kit for control function A to control function B

Actuator size	Article number
40 (C)	229900
50 (D)	012090
63 (E)	011946
80 (F)	011955
100 (G)	276318
125 (H)	276319

11.3.2 Conversion from flow direction above the seat to flow direction below the seat

Actuator size	Article number
50 (D)	012016
63 (E)	012023
80 (F)	012029
100 (G)	012071
125 (H)	012086

11.3.3 Conversion from flow direction below the seat to flow direction above the seat

Actuator size	Article number
50 (D)	011985
63 (E)	012124
80 (F)	012005

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12 Logistics

12.1 Transport and storage

- Protect the device against moisture and dirt in the original packaging during transportation and storage.
- Avoid UV radiation and direct sunlight.
- Protect connections from damage with protective caps.
- Observe permitted storage temperature.

12.2 Return

No work or tests will be carried out on the device until a valid Contamination Declaration has been received.

- To return a used device to Bürkert, contact the Bürkert sales office. A return number is required.

12.3 Disposal

Environmentally friendly disposal

- Follow national regulations regarding disposal and the environment.
- Collect electrical and electronic devices separately and dispose of them as special waste.

Further information at country.burkert.com

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