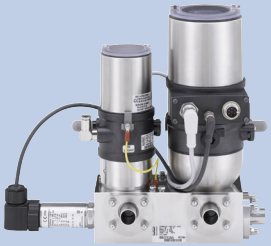
bürkert
FLUID CONTROL SYSTEMS

Type 2380

Bellow Control Valve with Compact or ELEMENT Actuator

Bellow Valve with Digital Electropneumatic Controller



Operating Instructions

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1. OPERATING INSTRUCTIONS

The operating instructions describe the entire life cycle of the device. Keep these instructions in a location which is easily accessible to every user and make these instructions available to every new owner of the device.

The operating instructions contain important safety information!

Failure to observe these instructions may result in hazardous situations.

- The operating instructions must be read and understood.

1.1. Symbols

DANGER!

Warns of an immediate danger!

- Failure to observe the warning will result in a fatal or serious injury.

WARNING!

Warns of a potentially dangerous situation!

- Failure to observe the warning may result in serious injuries or death.

CAUTION!

Warns of a possible danger!

- Failure to observe this warning may result in a moderately severe or minor injury.

NOTE!

Warns of damage to property!

- Failure to observe the warning may result in damage to the device or the equipment.

Indicates important additional information, tips and recommendations.

Refers to information in these operating instructions or in other documentation

- Designates an instruction to prevent risks

→ Designates a procedure which must be carried out

1.2. Definition of term „device“

The term “device” used in these instructions always stands for the Bellow Control Valve Type 2380 with

- compact actuator for orifices of 1.5 to 10 mm (Type 2380-LA) or
- ELEMENT actuator for orifices 15 and 20 mm (Type 2380-LB).

2. AUTHORIZED USE

Non-authorized use of the Bellow Control Valve Type 2380 may be a hazard to people, nearby equipment and the environment.

- The device is designed to control the flow of gases and liquids.
- Do not expose the device to direct sunlight.
- For the use in a potentially explosive area, the components of the device (actuator and controller) need to be Ex-approved and wear separate Ex type labels.
- In **potentially explosive areas,** the device may be used only according to the specification on the separate Ex type labels. At the same time the **additional instructions** for Ex-approved components, which contain safety instructions for potentially explosive areas must be adhered to.
- The admissible data, the operating conditions and conditions of use specified in the contract documents and operating instructions are to be observed during use. The designated application cases are specified in the chapter „7. Technical Data“.
- The device may be used only in conjunction with third-party products and components recommended and authorized by Bürkert.
- Correct transportation, correct storage and installation and careful use and maintenance are essential for reliable and faultless operation.
- Use the device only as intended.

3. BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any

- contingencies and events which may arise during the installation, operation and maintenance of the devices.
- local safety regulations - the operator is responsible for observing these regulations, also with reference to the installation personnel.

DANGER!

Risk of explosion in explosive atmosphere!

Improper application in potentially explosive areas may cause explosions.

- The **additional instructions** for Ex-approved components, which contain safety instructions for potentially explosive areas must be adhered to.

WARNING!

Danger – high pressure!

- Before dismounting the lines and valves, turn off the pressure and vent the lines.

Danger through electric voltage!

- Before reaching into the device or the system, switch off the power supply and secure to prevent reactivation!
- Observe applicable accident prevention and safety regulations for electrical equipment!

WARNING!

Risk of burns / fire hazard due to hot device surface after continuous operation!

- Keep the device away from easily flammable matter and media.
- Do not touch the device with bare hands.

WARNING!

General hazardous situations.

To prevent injury, ensure that:

- the system cannot be activated unintentionally.
- installation and maintenance work may be carried out by authorized technicians only and with appropriate tools.
- after an interruption in the power supply or pneumatic supply, the process is restarted in a defined or controlled manner.
- the device may be operated only when in perfect condition and in consideration of the operating instructions.
- the general rules of technology apply to application planning and operation of the device.
- no unauthorized internal or external modifications are made to the device.

NOTE!

Electrostatic sensitive components / modules!

The device contains electronic components, which react sensitively to electrostatic discharge (ESD). Contact with electrostatically charged persons or objects may be hazardous to these components. In the worst case scenario, they will be destroyed immediately or will fail after start-up.

- Observe the requirements in accordance with DIN EN 61340-5-1 to minimize or avoid the possibility of damage caused by sudden electrostatic discharge!
- Do not touch electronic components while the operating voltage is connected!

4. GENERAL INFORMATION

4.1. Contact addresses

Germany

Bürkert Fluid Control Systems
Sales Center
Christian-Bürkert-Str. 13-17
D-74653 Ingelfingen
Tel. + 49 (0) 7940 - 10 91 111
Fax + 49 (0) 7940 - 10 91 448
E-mail: info@burkert.com

International

Contact addresses can be found on the final pages of the printed operating instructions. And also on the Internet:

www.burkert.com.

4.2. Information on the internet

The operating instructions and the data sheets for Type 2380 can be found on the Internet:

www.burkert.com.

4.3. Warranty

The warranty is only valid if the device is used as authorized in accordance with the specified application conditions.

5. DEVICE DESCRIPTION

5.1. General description

The Bellow Control Valve Type 2380 controls the flow of gases or liquids. It is designed for ultrapure, sterile, dirty, aggressive, abrasive or even highly viscous media.

The device can be sterilized with steam.

The device may only have media flow through it which neither corrode the body nor damage the sealing materials (see chapter „7. Technical Data“).

5.2. Versions of the device

There are 2 main versions of the device:

- **Type 2380-LA with compact actuator**
  for small orifices (1.5 to 10 mm)
- **Type 2380-LB with ELEMENT actuator**
  for larger orifices (15 and 20 mm).

ATEX: Versions of the device with Ex-approved components may be used in a potentially explosive area. The specifications on the separate Ex type labels and additionally included instructions, which contain safety instructions for potentially explosive areas must be adhered to.

Other characteristics can be chosen - see data sheet Type 2380 on our website www.burkert.com.

6. STRUCTURE AND FUNCTION

6.1. Structure

The bellow control valve consists of a controller Type 869x with an appropriate actuator and a valve body.

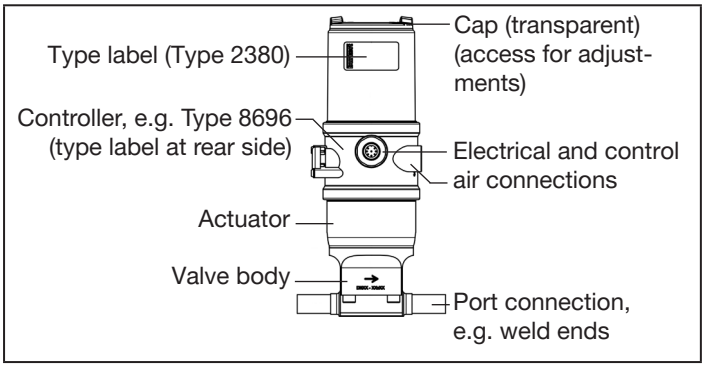


Fig. 1: General structure of Type 2380-LA (compact actuator)

For connections (compare „Fig. 1“ and „Fig. 2“): see also chapter „8. Installation“ at page 11, where all connections are described.

For controller Types 869x:
for more details of Type 869x see also documentations on our website www.burkert.com.

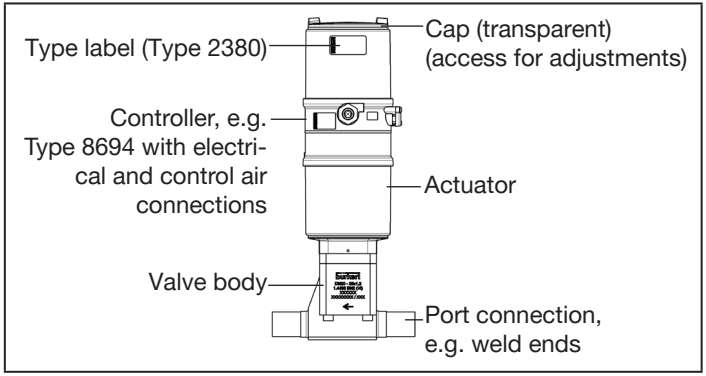
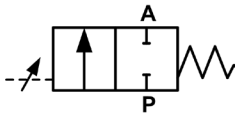
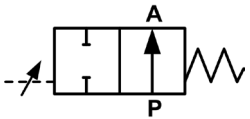


Fig. 2: General structure of Type 2380-LB (ELEMENT actuator)

6.2. Control functions

Type 2380 is available with the control functions A (NC) or B (NO):

 A: Normally closed	 B: Normally open
Pneumatically controlled, closed in resting position by spring force	Pneumatically controlled, opened in resting position by spring force

7. TECHNICAL DATA

7.1. Conformity and standards

In accordance with the EC Declaration of conformity, the device is compliant with the EC Directives.

Several approvals such as FDA, EC Regulation No 1935/2004, USP, ATEX and others can be provided, depending on the characteristics of the ordered device.

7.2. Type label

Type label for Type 2380 (by the cap of the device, see „Fig. 1“ or „Fig. 2“).

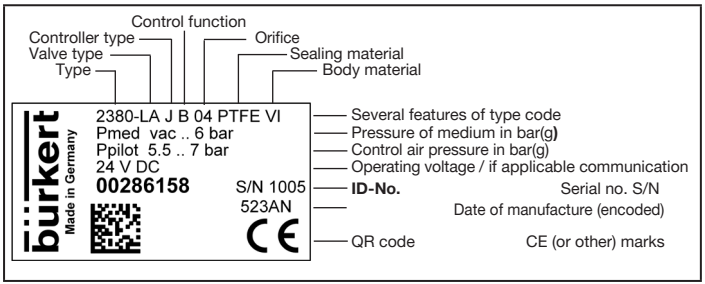


Fig. 3: Type label 2380 - example

7.3. Operating conditions

WARNING!

Risk of injury by ignoring the permitted operating conditions!

Important device-specific technical specifications are indicated on the type label.

- Observe permitted operating conditions printed on the device type label.

Ambient temperatures	-10 ... +55 °C *)
Media	liquids and gases (ultrapure, sterile, dirty, aggressive, abrasive or even highly viscous), steam for sterilization only *)
Media temperatures	0 ... +80 °C (-10 °C ... +150 °C at limited operating conditions *))
Media pressure	vacuum ... 6 bar(g)

*) media pressure max. 4 bar(g),
up to +134 °C: max. 60 min, 2380-LA: ambient temperature max. +40 °C,
up to +150 °C: max. 30 min, 2380-LA: ambient temperature max. +35 °C

7.4. Technical data

Dimensions	see data sheet of the suitable Type 2380
Weight	1.4 ... 2.5 kg (Type 2380-LA) 3.2 ... 3.5 kg (Type 2380-LB)
Materials - media contacting	valve body: stainless steel 316L ASME BPE (1.4435 BN2) bellow: advanced PTFE
Materials - not media contacting	actuator: 304 (1.4301) or CF-8 (1.4308) controller: PPS, stainless steel sealing: EPDM, FKM
Control function	A (NC - normally closed), B (NO - normally open)
Protection class	IP65 / IP67 acc. to EN 60529
Connections	weld ends, clamp connections, others on request

7.5. Pneumatical Data

Control media	air, neutral gas quality classes as per ISO 8573-1: dust content: quality class 7, water content: quality class 3, oil content: quality class X
Control air pressure	5.5 ... 7 bar(g)
Connection	threaded port G1/8

7.6. Electrical Data

Operating voltage	24 V DC (or via bus)
Electrical data / settings	defined by the Type 869x used
Electrical connections	defined by the Type 869x used: multipole circular plug-in connector, cable gland, flat cable terminal
Electrical signals / communication	defined by the Type 869x used: analogue standard signals, bus communication (e.g. AS-i, Profibus DP, EtherNet/IP, Profinet, büS)

8. INSTALLATION

8.1. Safety instructions

DANGER!

Risk of explosion in explosive atmosphere!

- Should the device be used in potentially explosive areas, chapter „3“ and the additional instructions for Ex-approved components must be adhered to.

WARNING!

Risk of injury from high pressure in the system!

- Before dismounting the lines and valves, turn off the pressure and vent the lines.

Risk of injury from electric shock!

- Before reaching into the device or the system, switch off the power supply and secure to prevent reactivation!
- Observe applicable accident prevention and safety regulations for electrical equipment!

Risk of injury from improper installation!

- Installation may be carried out by authorized technicians only and with appropriate tools!

Risk of injury from unintentional activation of the system and an uncontrolled restart!

- Secure system from unintentional activation.
- Following installation, ensure a controlled restart.

8.2. Installation position for Type 2380-LA

The device can be installed in any installation position.
Consider the recommended flow direction (see „Fig. 4“)!

Leakage detection bores

One of the two bores for leakage detection (see „Fig. 4“) should be at the lowest point. The other bore should be closed to protect the device from outside liquid entry.

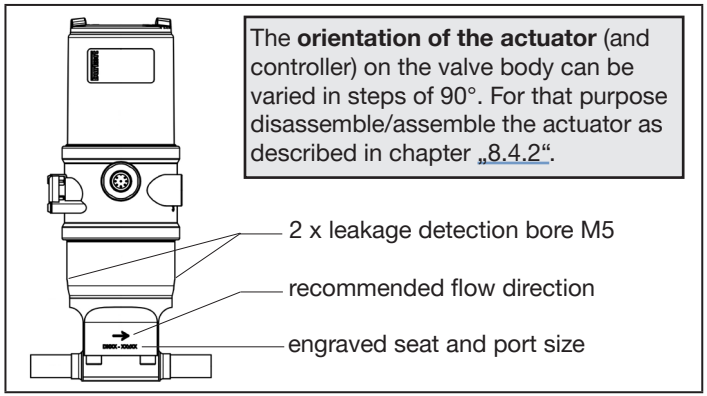


Fig. 4: Leakage detection bores and recommended flow direction

For self-drainage, install the valve body as shown in „Fig. 5“ next page.

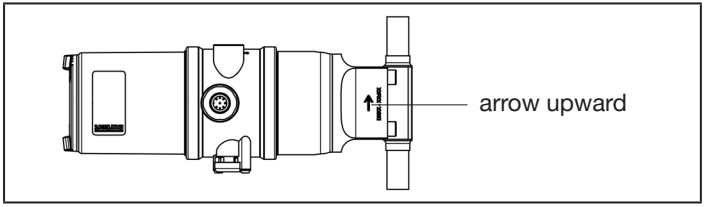


Fig. 5: Installation position for self-draining (Type 2380-LA)

Installation position for self-draining
It is the responsibility of the plant manufacturer and operator to ensure self-drainage of the device or system.

8.3. Installation position for Type 2380-LB

The device can be installed in any installation position.
Consider the recommended flow direction (see „Fig. 6“)!

Leakage detection bores
The two bores for leakage detection (see „Fig. 6“) should be at the lowest point!

For self-drainage, install the valve body as shown in „Fig. 7“.

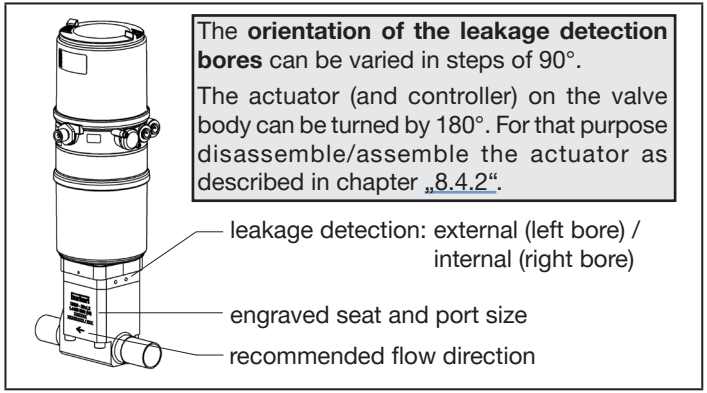


Fig. 6: Leakage detection bores and recommended flow direction

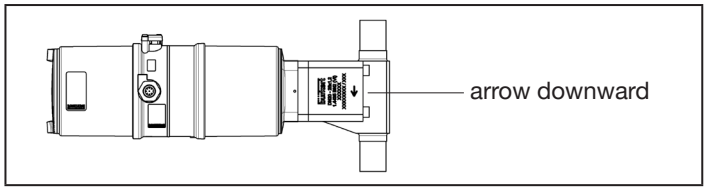


Fig. 7: Installation position for self-draining (Type 2380-LB)

Installation position for self-draining
It is the responsibility of the plant manufacturer and operator to ensure self-drainage of the device or system.

8.4. Installation / connections

8.4.1. Installation in the pipe system

→ Clean pipelines (sealing material, swarf etc.)

→ Before connecting the valve, ensure that the pipelines are flush: support and align the pipelines.

→ Connect the valve body to the pipe system; for welded connections see next chapter „8.4.2“.

Robust installation

It is the responsibility of the plant manufacturer and operator to ensure a robust installation. The relation of size and length of the pipe to weight of the device must be considered.

8.4.2. Devices with welded connection

NOTE!

Risk of damage to the bellow because of heat!

- Before welding in the body, remove the actuator with controller from the valve body.

Risk of mechanical damage to the bellow!

- During disassembly of the actuator with controller from the valve body, ensure that the valve is in open position.

→ Valves with control function A (NC) should be opened before removal: how to open the valve - see description in chapter „12.5. Replacement of the bellow“ at page 21.

→ Remove actuator with bellow by loosening the 4 valve body screws (see - depending on the actuator: „Fig. 10“. or „Fig. 11“) Keep the controller assembled to the actuator.

→ Remove the O-ring 2 (see „Fig. 8“) from the valve body.

→ Weld valve body in pipe system.

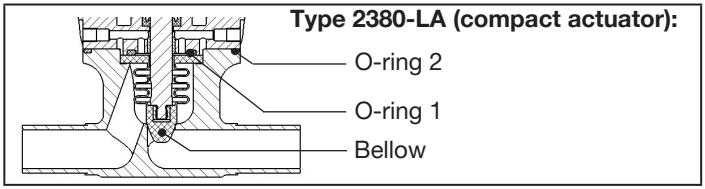


Fig. 8: Detail - valve body - O-rings

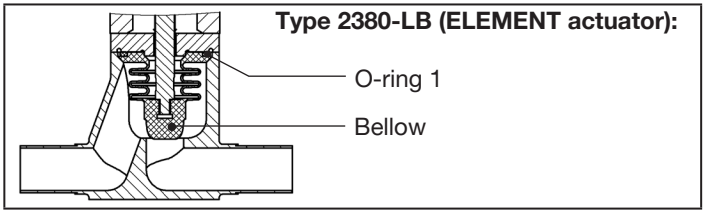


Fig. 9: Detail - valve body - O-ring

→ Assemble the O-ring 2 again.

→ The valve must be open, before assembling actuator with controller to the valve body again!

→ Check the correct position of the bellow and O-rings.

→ Fix the actuator again by tightening the 4 valve body screws with a tightening torque of 3.5 Nm (2380-LA) or 4.5 Nm (2380-LB).

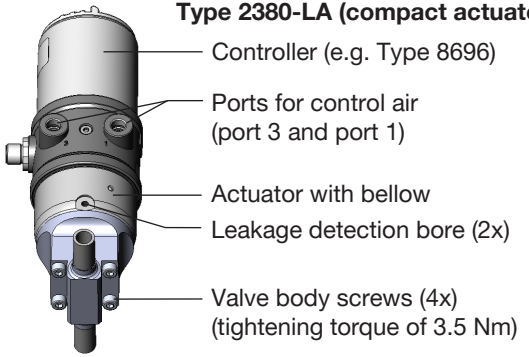


Fig. 10: Installation of welded connections

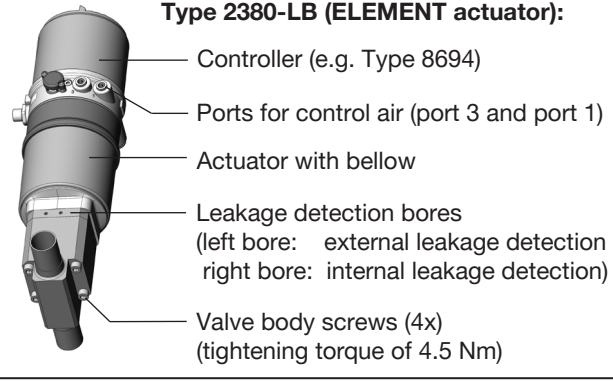


Fig. 11: Installation of welded connections

8.5. Pneumatic installation

WARNING!

Risk of injury from high pressure in the system!

- Before dismounting the lines and valves, turn off the pressure and vent the lines.

WARNING!

Risk of injury from unsuitable connections!

Hoses or pipes which cannot withstand the pressure and temperature range may result in hazardous situations.

- Only use connections which are authorized for the indicated pressure and temperature range.
- Observe the data sheet specifications from the manufacturers.

Observe for a proper functioning of the device:

- The installation must not cause back pressure to build up.
- Connection tubes with a sufficient cross section must be selected.
- The exhaust air line must be designed in such a way that no water or other liquid can get into the device through the exhaust air port (3).
- During operation, keep the fluctuations of the control pressure as low as possible (max. ±10 %). If fluctuations are greater, the control parameters measured with the *X.TUNE* function are not optimal.

Connection of the control air (see „Fig. 12“)

→ Connect the control air to the control air port (1) of the controller Type 869x.

→ Mount an exhaust air line or a silencer to the exhaust air port (3).

If used in an aggressive environment, we recommend conveying all free pneumatic connections into a neutral atmosphere with the aid of a pneumatic hose.

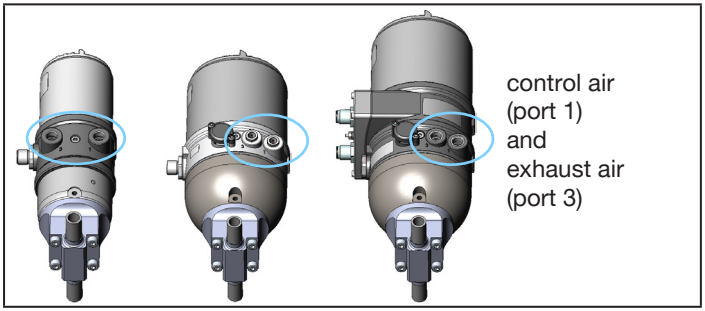


Fig. 12: Pneumatic connections (for Types 8696, 8694, 8692/3)

8.6. Electrical installation

WARNING!

Risk of injury from electric shock!

- Before reaching into the device or the system, switch off the power supply and secure to prevent reactivation!
- Observe applicable accident prevention and safety regulations for electrical equipment!

The electrical connection depends on the controller Type 869x used.

The electrical connection of Type 2380 is described in the respective operating instructions of Type 869x controllers on our website www.burkert.com.

8.7. Communication software

The PC software “Bürkert Communicator” is designed for communication with Bürkert devices.

A detailed description for the installation and operation the software can be found in the associated operating instructions - search for Type 8920 („Bürkert Communicator“).

Download the software and respective operating instructions for Type 8920 from: www.burkert.com.

Follow the descriptions in the respective operating instructions for Type 869x and 8920:

→ First install the „Bürkert Communicator“ software on the PC

→ Connect the Type 869x to a PC - for that purpose you need a special USB adapter set mentioned in chapter „Accessories“ in the respective operating instructions for Type 869x.

9. START-UP

9.1. Safety instructions

WARNING!

Risk of injury from improper operation!

Improper operation may result in injuries as well as damage to the device and the surrounding area.

- Before start-up, ensure that the operating personnel are familiar with and have completely understood the contents of the operating instructions.
- Observe the safety instructions and intended use.
- Only adequately trained personnel may start up the device/ the system.

9.2. Start-up process

Before start-up, pneumatic, fluidic and electrical connections must be established.

→ Switch on pilot pressure and supply voltage, keep the process media switched off!

→ Remove the transparent cap of the controller to gain access to the DIP switches or operating keys. *Observe the special instructions for potentially explosive areas*.

→ Run the function *X.TUNE* for an automatic adjustment of the positioner - see respective operating instructions for the Type 869x used.

→ For Type 8692/93: select the input signal (*INPUT)*.

→ If necessary, specify additional controller settings (via DIP switches/menu/USB adapter) - see respective operating instructions.

NOTE!

CAUTION with using the function *SET.FACTORY* (reset to factory settings)!

This function does not only reset the settings implemented by the user, but also all possibly preconfigured customer-specific settings (*referring to devices with additional label „Customized Settings“*)

→ Switch on process media and activate set point.

→ If necessary, adjust the controller settings.

→ Tighten transparent cap of the controller again.

The device is now ready for operation.

10. CIP / SIP

The device can be cleaned / sterilized in place.

The only media-contacting parts are the valve body and the bellow.

NOTE!

Danger of damage to sealings and electronics by overheating!

The permitted media temperature of 0 ... +80 °C can be exceeded only due to specific operating conditions (see chapter „7.3. Operating conditions“ on page 9).

Good results in rinsing the valve body can be reached with a flow velocity of 2 m/s over 15 min.

Due to limited space between the ribs of the bellow in opened position, the valve should be opened and closed repeatedly while rinsing to reach best cleaning results.

For best cleaning / sterilization results:

The results of CIP/SIP can vary depending on installation, media and application conditions.

It is the responsibility of the plant manufacturer and operator to monitor and optimize the cleaning procedure.

11. MAINTENANCE AND TROUBLESHOOTING

11.1. Safety instructions

WARNING!

Risk of injury from high pressure in the system!

- Before dismounting the lines and valves, turn off the pressure and vent the lines.

Risk of injury from electric shock!

- Before reaching into the device or the system, switch off the power supply and secure to prevent reactivation!
- Observe applicable accident prevention and safety regulations for electrical equipment!

Risk of injury from improper maintenance!

- Maintenance may be carried out by authorized technicians only and with appropriate tools!
- Observe the permissible tightening torques.

Risk of injury from unintentional activation of the system and an uncontrolled restart!

- Secure system from unintentional activation.
- Following maintenance, ensure a controlled restart.

11.2. Maintenance

The device is maintenance-free provided it is used according to these operating instructions.

However, the bellow is subject to natural wear.

Check the bellow for wear after a maximum of 10^6 switching cycles or 1 year of operation.

Muddy and abrasive media or operation under extreme conditions (e.g. high temperatures / pressures) require correspondingly shorter inspection intervals!

The service interval can be extended at constant operating conditions if the bellows show only minor signs of wear and tear.

If leaks occur or the bellow shows signs of wear replace the respective parts (spare part set - see chapter „12“).

For all maintenance activities, ensure that dirt cannot penetrate the system.

11.3. Malfunctions/troubleshooting

If errors occur, first check the electrical connections, fluidic connections and inlet pressure. Furthermore check that the assembly/installation was implemented according to operating instructions.

If the system is still not functioning correctly, please contact the relevant Bürkert Service (chapter „4.1“ at page 7).

Malfunction	Cause / remedial action
Valve does not open/ close (or rather not completely)	Control air port is not connected correctly: → Connect control air to port 1.
	Control pressure too low: → See pressure specifications on the type label.
Valve is not sealed.	Control pressure too low *(NO valves)*: → See pressure specifications on the type label.
	Media pressure too high: → See pressure specifications on the type label.
	Sealing closure function (CUTOFF) not activated: → Activation according to the operating instructions for the Type 869x used
	Bellow worn out: → Replace the bellow as described in chapter „12“
Cleaning of media chamber (valve body + bellow) dissatisfying	Too little space between the ribs of the bellow with valve in opened position → Open and close the valve **while** rinsing
X.TUNE is not successful	→ Check the control air supply: if this is in the required range, see also the „error and warning messages“ in the operating instructions for type 869x

Malfunction	Cause / remedial action
Control quality dissatisfying	E.g. caused by changed pressure conditions, etc. → Adjust the controller via function *X.TUNE* → Check and adjust the dead band (see also operating instructions for Type 869x) → When control air leakage occurs: see respective operating instructions
Bus communi-cation doesn't work correctly	Missing or incorrect data transfer → Check (and correct if necessary) the settings for bus interface at the device and check also the right version of the respective configuration files, e.g. GSD file for Profibus. → See also the respective operating instruc-tions of the controller Type 869x used for correct installation, configuration and start-up
Serial communica-tion with software "Bürkert Communi-cator" doesn't work correctly	Missing or incorrect data transfer → Use the same settings of serial interface at the device and in the „Communicator“ software For best compatibility and device support → Use the current version of the software „Bürkert Communicator“ (Type 8920 - download from the Bürkert website)

Tab. 1: Malfunction / troubleshooting

12. SPARE PARTS

12.1. Safety instructions

WARNING!

Risk of injury when opening the actuator!

The actuator contains a tensioned spring. If the actuator is opened, there is a risk of injury from the spring jumping out!

- The actuator must **not** be opened.

CAUTION!

Risk of injury and/or damage by the use of incorrect parts!

Incorrect accessories and unsuitable spare parts may cause injuries and damage the device and the surrounding area.

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

12.2. Controller Type 869x

If a controller needs to be exchanged, the order no. can be found on the type label of the controller Type 869x.

Devices with additional label **"Customized Settings"** on the controller are delivered with preconfigured customer-specific settings.

- Order these spare controllers (Type 869x) with reference to the device ID number (Type 2380)!
- In case an adjustment of preconfigured customer-specific settings is required for future deliveries, please contact your Bürkert sales office.

12.3. Spare part sets for Type 2380-LA

The bellow and 2 O-rings are available as a spare part set.

Consider the right size of the bellow according to the type label - see the order table below.

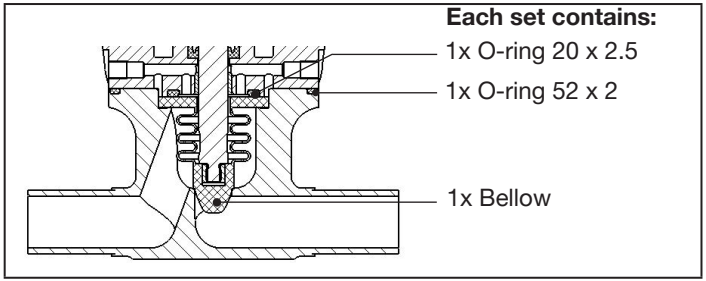


Fig. 13: Spare part set

Orifice (bellow size)	Spare part set: order no.	Corresponding valve body (seat size engraved in body)
DN1.5	00759879	DN4
DN3	00796530	
DN4	00796531	
DN6	00796532	DN6
DN8	00796533	DN10
DN10	00796534	

Tab. 2: Order table

Bellows DN1.5, DN3 and DN4 are all combined with a valve body DN4. So a change of the valve orifice between DN1.5, DN3 and DN4 can simply be executed by changing the bellow. However, the device then is no longer consistent with the type label.

This applies accordingly for bellows DN8/DN10 and the valve body DN10.

NOTE!

Risk of damage to the bellow / malfunction of the device!

- Do not combine bellow and valve body sizes other than shown in „Tab. 2".

If you have any queries, please contact your Bürkert sales office - see chapter „4.1. Contact addresses".

12.4. Spare part sets for Type 2380-LB

The bellow and the O-ring are available as a spare part set. Consider the right size of the bellow according to the type label - see the order table below.

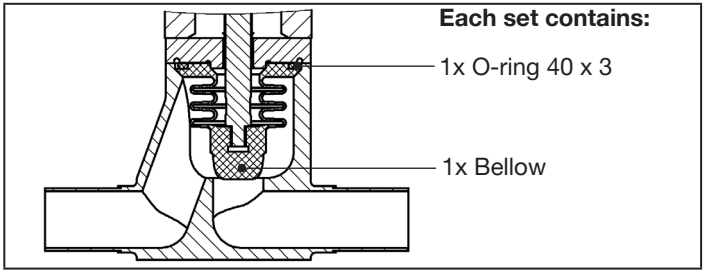


Fig. 14: Spare part set

Orifice (bellow size)	Spare part set: order no.	Corresponding valve body (seat size engraved in body)
DN15	00326232	DN20
DN20	00326234	

Tab. 3: Order table

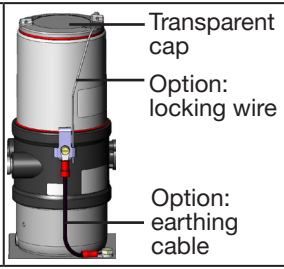
Bellows DN15 and DN20 are both combined with a valve body DN20. So a change of the valve orifice between DN15 and DN20 can simply be executed by changing the bellow.

However, the device then is **no** longer consistent with the type label.

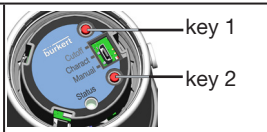
If you have any queries, please contact your Bürkert sales office - see chapter „4.1. Contact addresses“.

12.5. Replacement of the bellow

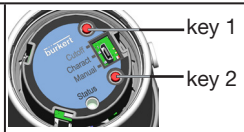
12.5.1. Preparations

Step	Task description	Illustration
1	Ensure that there is no potential explosive atmosphere.	
2	Ensure that **process media pressure** is switched off	
3	The **power supply** and the **control air supply** must be connected in order to trigger the controller.	
4	Twist off the transparent cap (where applicable, loosen locking wire and earthing cable before) (example: Type 8696)	
5	Switch from AUTO to **MANUAL** operation mode: 8696: press key 1 and 2 simultaneously longer than 2 s (< 10 s) 8694: DIP4 to ON-position 8692 / 8693: press key „*MANU*“ to change operation mode	

12.5.2. Opening NC-valve (control function A)

Step	Task description	Illustration
1	**Open the valve:**	
	8696: press key „1“	
	8694: press key „*S1/X.TUNE*“	
	8692 and 8693: press key ▲	
	Alternatively the valve can be opened in **AUTO operation mode** by setting the appropriate set point value.	

12.5.3. Replacement of the bellow

Step	Task description	Illustration
1	Loosen the 4 valve body screws and take off the actuator	
2	**Close the valve:**	
	8696: NC-valve: press key „2“ NO-valve: press key „1“	
	8694: NC-valve: press key „*S2*“ NO-valve: press key „*S1/ X.TUNE*“	
	8692 and 8693: NC-valve: press key ▼ NO-valve: press key ▲	
	Alternatively the valve can be closed in **AUTO operation mode** by setting the appropriate set point value.	
3	Twist off the old bellow	
4	Replace the O-ring(s) and fix the new bellow (see „Fig. 13“ at page 20 **or** „Fig. 14“ at page 21)	
5	**Open the valve again**	
6	Check correct position of bellow and O-ring(s). Fix the actuator again by tightening the 4 valve body screws with a tightening torque of 3.5 Nm or 4.5 Nm - see „Fig. 10“ **or** „Fig. 11“ at page 14.	

12.5.4. Adjustment X.TUNE

Step	Task description
1	Switch back from MANU to **AUTO operation mode.** 8696: press key 1 and 2 simultaneously longer than 2 s (< 10 s) 8694: DIP4 to OFF-position, 8692 / 8693: press key „*AUTO*“ to change operation mode
2	Adjust the controller (function *X.TUNE*) as described in the respective operating instructions for the Type 869x used.
3	Assemble the transparent cap (where applicable, fix locking wire and earthing cable again)

13. DISASSEMBLY

13.1. Safety instructions

WARNING!

Risk of injury from high pressure in the system!

- Before dismounting the lines and valves, turn off the pressure and vent the lines.

Risk of injury from electric shock!

- Before reaching into the device or the system, switch off the power supply and secure to prevent reactivation!
- Observe applicable accident prevention and safety regulations for electrical equipment!

Risk of injury from improper disassembly!

- Disassembly may be carried out by authorized technicians only and with appropriate tools!

Risk of injury from unintentional activation of the system and an uncontrolled restart!

- Secure system from unintentional activation.

13.2. Disassembly of Type 2380

→ Switch off supply voltage and all media supply.
→ Loosen the electric, fluidic and pneumatic connections.
→ Remove the device from the system.

14. TRANSPORT, STORAGE, PACKAGING, DISPOSAL

NOTE!

TRANSPORT damages!

Inadequately protected equipment may be damaged during transport.

- During transportation protect the device against wetness and dirt in shock-resistant packaging.
- Avoid exceeding or dropping below the allowable storage temperature.
- Protect electrical and pneumatic connections from damage using protecting caps.

Incorrect STORAGE may damage the device.

- Store the device in a dry and dust-free location!
- Storage temperature: -20 ... +65 °C

DISPOSAL - damage to the environment caused by device components contaminated with media.

- Dispose of the device and packaging in an environmentally friendly manner!
- Observe applicable disposal regulations and environmental regulations.

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