bürkert
FLUID CONTROL SYSTEMS

Type 3232, 3233, 3233 K, 3234, 3235, 3239

Manually operated diaphragm valves, Diameter DN8 - DN100
Handbetätigte Membranventile, Nennweiten DN8 - DN100
Vannes à membrane, commandé manuelle, Piston section nominale DN8 - DN100



Operating Instructions

Bedienungsanleitung
Manuel d'utilisation

MAN 1000152255 ML Version: H Status: RL (released | freigegeben) printed: 19.06.2017

We reserve the right to make technical changes without notice.
Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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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.

Important safety information.

Failure to observe these instructions may result in hazardous situations.

- The operating instructions must be read and understood.

1.1 Definition of the term “device”

In these instructions, the term “device” always refers to the Type 3232, 3233, 3233 K, 3234, 3235 and 3239.

1.2 Symbols

DANGER!

Warns of an immediate danger.

- Failure to observe the warning may 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 medium or minor injury.

NOTE!

Warns of damage to property.

Indicates important additional information, tips and recommendations.

Refers to information in these operating instructions or in other documentation.

- designates instructions for risk prevention.

→ designates a procedure which you must carry out.

2 AUTHORIZED USE

Non-authorized use of the devices may be dangerous to people, nearby equipment and the environment.

- The diaphragm valves of Types 3232, 3233, 3233 K, 3234, 3235 and 3239 are designed for the control of contaminated, ultra-pure or sterile media, as well as for abrasive or aggressive media (also with higher viscosity).
- In the potentially explosion-risk area the device may be used only according to the specification on the separate Ex type label. For use observe the additional information enclosed with the device together with safety instructions for the explosion-risk area.
- Devices without a separate Ex type label may not be used in a potentially explosive area.
- During use observe the authorized data, the operating conditions and conditions of use specified in the contract documents and operating instructions.
- The device may be used only in conjunction with third-party devices 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 – high pressure.

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

Risk of electric shock.

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

Danger of bursting from overpressure.

- Observe the specifications on the type label for maximum control and medium pressure.
- Observe permitted medium temperature.

Risk of burns or risk of fire if used continuously through hot device surface.

- Keep the device away from highly flammable substances and media and do not touch with bare hands.

General hazardous situations.

To prevent injury, ensure that:

- The system cannot be activated unintentionally.
- When closing the valve, tighten it hand-tight only. Overtightening may prematurely damage the diaphragm.
- Installation and repair work may be carried out by authorized technicians only and with the appropriate tools.
- After an interruption in the power supply or pneumatic supply, ensure that 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.

To prevent damage to property of the device, ensure:

- The devices may be used only for media which do not attack the body and seal materials (see type label). Information on the resistance of materials to the media is available on the Internet at: www.burkert.com
- Do not put any loads on the body.
- Do not make any external modifications to the device body. Do not paint the body parts or screws.

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 at: www.burkert.com

4.2 Warranty

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

4.3 Information on the Internet

The operating instructions and data sheets for Types 3232, 3233, 3233 K, 3234, 3235, 3239 can be found on the Internet at: www.burkert.com

5 SYSTEM DESCRIPTION

5.1 General description

Type 3232, 3233, 3233 K, 3234, 3235 and 3239 is a manually controlled diaphragm valve with diaphragm seal. The valve is self-draining in appropriate installation position.

5.2 Intended application area

The diaphragm valve of Type 3232 is designed for the control of contaminated and aggressive media. The valves of Type 3233, 3233 K, 3234, 3235 and 3239 can be used even for ultra-pure or sterile media with a higher viscosity.

The valves may only control media which do not attack the body and seal materials (see type label). Information on the resistance of materials to the media is available from your Bürkert sales office.

6 TECHNICAL DATA

6.1 Conformity

Type 3232, 3233, 3233 K, 3234, 3235, 3239 conforms with the EU Directives according to the EU Declaration of Conformity.

6.2 Standards

The applied standards, which verify conformity with the EU Directives, can be found on the EU-Type Examination Certificate and / or the EU Declaration of Conformity.

6.3 Operating conditions

WARNING!

Danger of bursting from overpressure.

If the device ruptures, the medium may cause injuries, chemical burns or scalds.

- Do not exceed the maximum medium pressure. Observe specifications on the type label!
- Observe permitted ambient and media temperature.

6.3.1 Allowable temperatures

Ambient temperature for actuators:

Material	Temperature
PPS	Up to 130 °C (briefly up to 150 °C)
Stainless steel	Up to 130 °C (briefly up to 150 °C)
Gray cast iron	Up to 130 °C (briefly up to 150 °C)

Tab. 1: Ambient temperature for actuators

Medium temperature for body:

Body material	Temperature
Stainless steel	-10...+140 °C
PVC (see PT-Graph)	-10...+60 °C
PVDF (see PT-Graph)	-10...+120 °C
PP (see PT-Graph)	-10...+80 °C

Tab. 2: Medium temperature for body

Medium temperature for diaphragms:

Material	Temperature	Remarks
EPDM (AB)	-10...+130 °C	Steam sterilisation up to +140 °C / 60 min
EPDM (AD)	-5...+143 °C	Steam sterilisation up to +150 °C / 60 min
FKM (FF)	0...+130 °C	No steam / dry heat up to +150 °C / 60 min
PTFE (EA)	-10...+130 °C	Steam sterilisation up to +140 °C / 60 min
Advanced PTFE (EU)	-5...+143 °C	Steam sterilisation up to +150 °C / 60 min
Advanced PTFE (ET)	-10...+90 °C	-
Gylon (ER)	-5...+130 °C	Steam sterilisation up to +140 °C / 60 min

Tab. 3: Medium temperature for diaphragms

6.3.2 Maximum permitted medium pressure

Permitted medium pressure depending on the medium temperature:

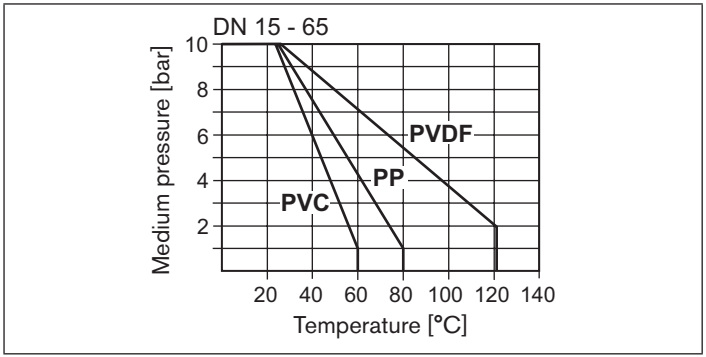


Fig. 1: Graph of medium pressure / Medium temperature

Maximum permitted medium pressure

The values apply to body made of:

- plastic,
- stainless steel: block material, forged, casted and tube valve body.

Orifice (Diaphragm size) DN [mm]	Max. switchable medium pressure [bar]			
	Handwheel and bonnet PPS		Handwheel PPS / Bonnet stainless steel	
	EPDM/FKM	PTFE/ advanced PTFE/ laminated advanced PTFE	EPDM/FKM	PTFE/ advanced PTFE/ laminated advanced PTFE
8	10	10	10	10
15	10	10	10	10
20	10	10	10	10
25	10	10	10	10
32	10	10	10	10
40	10	10	10	10
50	7	7	10	10

Tab. 4: Maximum permitted medium pressure

Maximum permitted medium pressure

Orifice (Diaphragm size) DN [mm]	Max. switchable medium pressure [bar]	
	Handwheel and bonnet stainless steel	
	EPDM/FKM	PTFE/advanced PTFE/ laminated advanced PTFE
65	10	10
80	10	10
100	6	6

Tab. 5: Maximum permitted medium pressure

6.4 Description of the type label

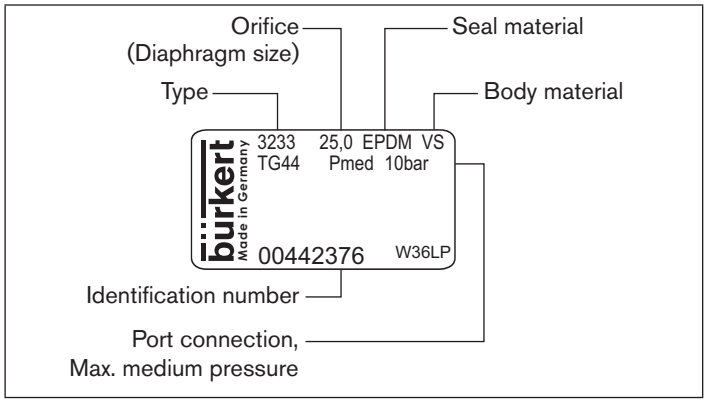


Fig. 2: Description of the type label (example)

6.5 Labeling of the forged body

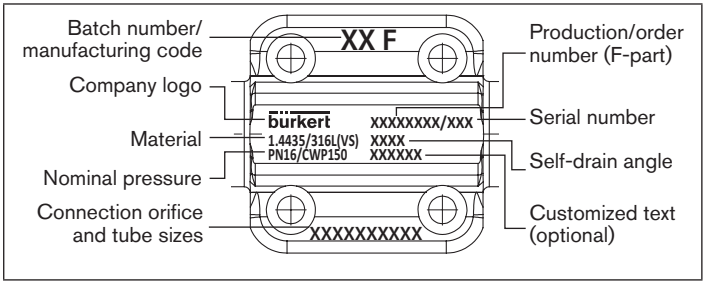


Fig. 3: Labeling of the forged body

6.6 Labeling of the tube valve body (VP)

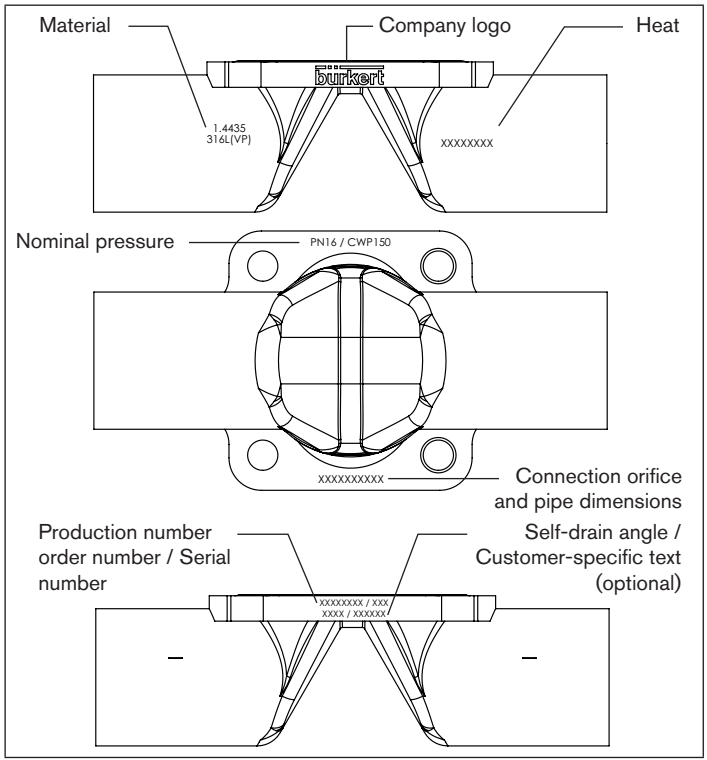


Fig. 4: Labeling of the tube valve body (VP)

6.7 General technical data

Materials

Body	Tube valve body (VA, VP), Precision casting (VG), Forged steel (VS), PP, PVC, PVDF
Actuator	Handwheel and bonnet PPS Handwheel PPS and bonnet stainless steel Handwheel and bonnet stainless steel DN65 to DN100
Diaphragm	EPDM, PTFE, FKM

Connections

Medium connection	Welded connection according to DIN EN 1127 (ISO 4200), DIN 11850 series 2, DIN 11866 (ASME-BPE 2005) other connections on request

Media

Flow media	Type 3232; contaminated, aggressive, ultrapure, sterile media and media with higher viscosity

Installation position

In any position, floor drain valve type 3235; actuator face down

6.8 Flow values

6.8.1 Flow values for forged bodies

Kvs values [m³/h] for forged bodies								
Diaph-ragm size	Orifice connec-tion (DN)	Actua-tor size	Seal mate-rial	DIN	ISO	ASME	BS	SMS
8	6	C/40	EPDM	1.1				
			PTFE	1.1				
	8 / 1/4"	C/40	EPDM	1.7	1.5	0.7	0.5	
			PTFE	1.9	2.0	0.7	0.5	
	10 / 3/8"	C/40	EPDM	1.5	1.5	1.6	1.4	
			PTFE	1.9	2.0	1.8	1.6	
	15 / 1/2"	C/40	EPDM			1.5		
			PTFE			1.9		
15	10 / 3/8"	E/63	EPDM	3.5	5.5			
			PTFE	3.4	5.2			
	15 / 1/2"	E/63	EPDM	6.5	6.5	3.1	3.7	
			PTFE	6.0	6.0	3.1	3.6	
	20 / 3/4"	E/63	EPDM			6.5		
			PTFE			6.0		
20	20 / 3/4"	F/80	EPDM	12.4	12.5	8.4	8.9	
			PTFE	12.0	12.0	8.5	8.8	

25	25 / 1"	F/80	EPDM	20.0	18.0	15.5		16.0
			PTFE	17.0	16.0	14.5		14.8
40	32	H/125	EPDM	34.0				
			PTFE	34.0				
	40 / 1 1/2"	H/125	EPDM	40.0	41.0	37.0		38.0
			PTFE	40.0	40.0	37.5		38.0
50	50 / 2"	H/125	EPDM	66.0	66.0	66.0		66.0
			PTFE	66.0	67.0	66.0		66.0
	2 1/2"	H/125	EPDM			66.0		
			PTFE			66.0		

Tab. 6: Kvs values for forged bodies

6.8.2 Flow values for cast bodies and plastic bodies

Kvs value [m^3/h] for cast bodies VG and plastic bodies PD. PP. PV				
Diaphragm size	**Orifice connection (DN)**	**Seal material**	**Cast body VG (all standards)**	**Plastic body (all materials)***
8	8	EPDM	0.95	-
		PTFE	1.5	-
15	15	EPDM	5.6	3
		PTFE	5.3	3
20	20	EPDM	10.7	7
		PTFE	10.5	6.7
25	25	EPDM	14.6	11.4
		PTFE	13.6	10
32	32	EPDM	-	17.5
		PTFE	-	17.1
40	40	EPDM	35.0	24.5
		PTFE	35.0	24.0
50	50	EPDM	47.0	41.5
		PTFE	48.0	41.5

Tab. 7: Kvs values for cast bodies and plastic bodies

** Plastic bodies: measured with bodies ASV*

6.8.3 Flow values for tube valve body

Kvs values [m³/h] for tube valve body VP (IHU2) TVB3G						
Diaphragm size	Orifice connection (DN)	Actuator size	Seal material	DIN	ISO	ASME
8	8 / 1/4"	C/40	EPDM		1.9	
			PTFE		2.4	
	10 / 3/8"	C/40	EPDM	1.9		
			PTFE	2.4		
	15 / 1/2"	C/40	EPDM			
			PTFE			2.2
15	15 / 1/2"	E/63	EPDM	7.2	7	
			PTFE	6.7	6.6	
	20 / 3/4"	E/63	EPDM	6.9		
			PTFE	5.5		6.5
20	20 / 3/4"	F/80	EPDM		13.5	
			PTFE		12.1	
	25 / 1"	F/80	EPDM	14.9		
			PTFE	13.7		12.7
25	25 / 1"	E/63	EPDM		17.3	
			PTFE		14.1	
	32	E/63	EPDM	18.6		
			PTFE	14.2		
	25 / 1"	F/80	EPDM		19.1	
			PTFE		15.6	
	32	F/80	EPDM	20.0		
			PTFE	15.8		
32	32	G/100	EPDM		36.0	
			PTFE		36.0	
	40 / 1 1/2"	G/100	EPDM	35.0		
			PTFE	34.5		32.0
40	40 / 1 1/2"	H/125	EPDM		48.0	
			PTFE		47.0	
	50 / 2"	H/125	EPDM	46.0		
			PTFE	43.5		45.0
50	50 / 2"	H/125	EPDM		70.0	
			PTFE		70.0	

Tab. 8: Kvs values for tube valve body VP

7 STRUCTURE AND FUNCTION

7.1 Structure

The manually actuated diaphragm valve consists of a manual actuator and a 2/2-way valve body.

7.2 Type description

The types differ in the body.

7.2.1 Type 3232, 3233 and 3233 K

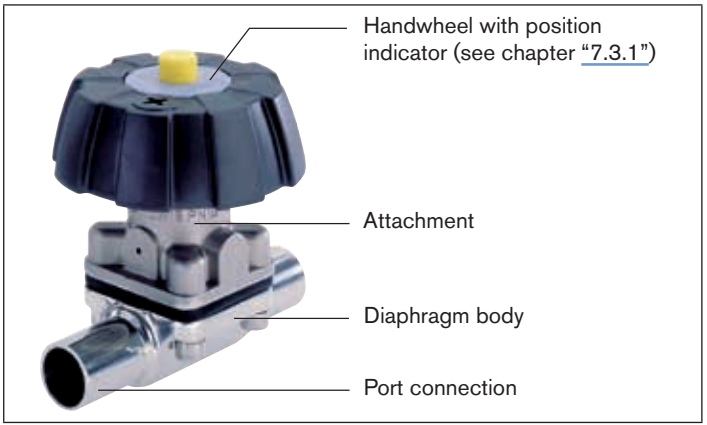


Fig. 5: Example of the 2/2-way valve type 3232, 3233 and 3233 K

7.2.2 Types 3234, 3235 and 3239

Type	Body	Structure
T-Valve Type 3234	T-Valve body	
Tank bottom valve Type 3235	Tank bottom valve with welding flange	
Y-Valve Type 3239	Y-Valve body	

Tab. 9: Structure. Types 3234, 3235 and 3239

7.3 Function

The manual actuation of the handwheel transfers the force via a spindle and opens and closes the valve.

7.3.1 Position indicator

Actuator size DN4, DN6, DN8 and DN10

When the valve is opened, a yellow mark is visible between the bonnet and the handwheel.

Actuator size DN15 to DN50

From DN15 a yellow cylinder provides information on the valve position:

- Yellow cylinder completely retracted in the handwheel: **Valve closed** (CLOSED position)
- Yellow cylinder projects all the way out of the handwheel: **Valve opened** (OPEN position)

Actuator size DN65, DN80 and DN100

From DN65 an spindle extension indicates the valve position:

- Spindle extension completely retracted in the handwheel: **Valve closed** (CLOSED position)
- Spindle extension projects all the way out of the handwheel: **Valve opened** (OPEN position)

8 INSTALLATION

DANGER!

Risk of injury from high pressure in the equipment.

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

Risk of injury due to electrical shock.

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

WARNING!

Risk of injury from improper installation.

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

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

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

8.1 Before installation

- Before connecting the valve, ensure the pipelines are flush.
- The flow direction is optional.

8.1.1 Installation position general

Installation for self-drainage of the body

It is the responsibility of the installer and operator to ensure self-drainage.

Installation for leakage detection

One of the bores in the diaphragm socket for monitoring leakage must be at the lowest point.

8.1.2 Installation position 2/2-way valve

- The manually actuated diaphragm valve can be installed in any position.

To ensure self-drainage:

→ Install body inclined by angle α = 10° to 40° to the horizontal (see "Fig. 6"). Forged and cast body feature a mark which must face upwards (12 o'clock position, see "Fig. 7").

→ Observe an inclination angle of 1° – 5°.

→ One of the bores in the diaphragm socket for monitoring leakage must be at the lowest point.

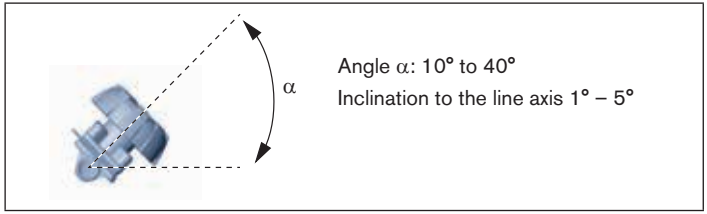


Fig. 6: Installation position for self-drainage of the body

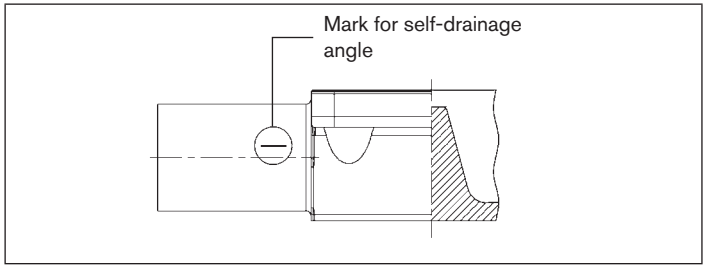


Fig. 7: Mark for the correct installation position

8.1.3 Installation position T-valve Type 3234

For the installation of the T-valves into circular pipelines, we recommend the following installation positions:

When media is supplied: When media is removed:



Fig. 8: Installation position type 3234

8.1.4 Installation position Y-valve Type 3239

For the installation of the Y-valves into systems, we recommend the following installation positions:

When media is supplied: When media is removed:



Fig. 9: Installation position type 3239

8.1.5 Installation of the tank bottom valve Type 3235

For further information on containers and welding instructions, please refer to the standard ASME VIII Division I.

It is recommended to weld the valve prior to the container installation. However, it is possible to weld the valves to ready-assembled containers.

Prior to welding, please check to ensure that:

- The tank bottom valve does not collide with other equipment components and assembly/disassembly of the actuator is always possible.
- A minimal distance between two welding joints three times the thickness of the container wall is adhered to.

It is recommended to weld the valve in the center of the drain to ensure optimum draining of the container.

The diameter of the hole in the container and the flange must be equal. The valve has two welding edges to make welding and positioning of the valve easier. The length of the welding edges is approximately 3 mm. In case the thickness of the container wall exceeds 3 mm, the valve must be positioned as shown in “Fig. 10”.

→ Prior to welding the valve, grind the outlet wall.



Fig. 10: Grinding point on tank

Prior to commencing the welding process, check the charge number indicated on the supplied manufacturer's certificate 3.1.

→ Position the flange into the hole so that the flange surface is tangent to the drain surface.

→ Tack 4 welding points and check the position of the valve.

→ Weld the valve evenly to the inside and outside of the container, with gas being supplied and using welding material compatible with the valve's stainless steel 316 L (DIN 1.4435).

→ Allow the welds to cool down before burnishing and cleaning them according to the applicable specifications.

These instructions assist in the installation of the tank bottom valves and allow the prevention of deformation and softening within the containers.

Please observe the applicable laws and regulations of the respective country with regard to the qualification of welders and the execution of welding work.

8.1.6 Preparatory work

→ Clean pipelines (sealing material, swarf, etc.).

→ Support and align pipelines.

Devices with welded or glued body:

Before welding or gluing the body, the actuator and the diaphragm must be removed.

8.2 Installation

WARNING!

Risk of injury from improper installation!

Non-observance of the tightening torque is dangerous as the device may be damaged.

▸ Observe tightening torque during installation (see "8.2.2 Tightening torques for diaphragms").

8.2.1 Devices with welded or glued body

NOTE!

To prevent damage.

Before welding or gluing the body, the actuator and the diaphragm must be removed.

→ Cross-loosen fastening screws and remove actuator with diaphragm from the body.

→ Weld or glue body in the pipeline.

→ After welding or gluing in the body, smooth the body surface (if required) by grinding.

→ Clean the body carefully.

→ Place actuator on the body.

→ Lightly cross-tighten the fastening screws until the diaphragm is between the body and actuator.
Do not tighten screws yet.

→ Activate the diaphragm valve twice to position the diaphragm correctly.

→ Tighten the fastening screws up to the permitted tightening torque (see tables in chapter “8.2.2 Tightening torques for diaphragms”).

8.2.2 Tightening torques for diaphragms

Orifice (Diaphragm size) DN [mm]	Actuator PPS or stainless steel	
	Diaphragm EPDM / FKM	Diaphragm PTFE/advanced PTFE/laminated advanced PTFE
8	2	2,5
15	3,5	4
20	4	4,5
25	5	6
32	6	8
40	8	10
50	12	15

Tab. 10: Tightening torques for diaphragms. Actuator PPS or stainless steel

Orifice (Diaphragm size) DN [mm]	Actuator stainless steel	
	Diaphragm EPDM / FKM	Diaphragm PTFE/advanced PTFE/laminated advanced PTFE
65	20	30
80	30	40
100	40	50

Tab. 11: Tightening torques for diaphragms. Actuator stainless steel

9 MAINTENANCE, CLEANING

DANGER!

Risk of injury due to electrical shock.

- Before reaching into 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 injury from improper maintenance.

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

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

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

9.1 Maintenance work

The following maintenance work is required for the diaphragm valve:

→ After the first steam sterilization or when required retighten body screws crosswise.

9.1.1 Wearing parts of the diaphragm valve

Parts which are subject to natural wear:

- Seals
- Diaphragm

→ If leaks occur, replace the particular wearing parts with an appropriate spare part (see chapter “11”).

A bulging PTFE diaphragm may reduce the flow-rate.

9.1.2 Service life of the diaphragm

The service life of the diaphragm depends on the following factors:

- Diaphragm material,
- Medium,
- Medium pressure,
- Medium temperature.

9.1.3 Actuator

The actuator of the diaphragm valve is maintenance-free provided it is used according to these operating instructions.

9.1.4 Cleaning

Commercially available cleaning agents can be used to clean the outside.

NOTE!

Avoid causing damage with cleaning agents.

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

10 REPAIRS

DANGER!

Risk of injury from high pressure in the equipment.

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

Risk of injury due to electrical shock.

- Before reaching into 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 injury from improper maintenance.

- Repairs may be carried out by authorized technicians only and with the appropriate tools.
- Observe the tightening torques.
- On completion of the work check valve for leaks and function.

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

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

10.1 Replacing the diaphragm

DANGER!

Risk of injury from discharge of medium (acid, alkali, hot media).

It is dangerous to remove the device under pressure due to the sudden release of pressure or discharge of medium.

- Before removing a device, switch off the pressure and vent the lines.
- Completely drain the lines.

Fastening types

Orifice (Diaphragm size) DN [mm]	Fastening types for diaphragm	
	PTFE	EPDM / FKM
8	Diaphragm buttoned	Diaphragm buttoned
15	Diaphragm with bayonet catch	Diaphragm with bayonet catch
20		
25	Diaphragm with bayonet catch	Diaphragm screwed in
40		
50		
65		
80	Diaphragm with bayonet catch	Diaphragm screwed in
100		

Tab. 12: Fastening types for diaphragm

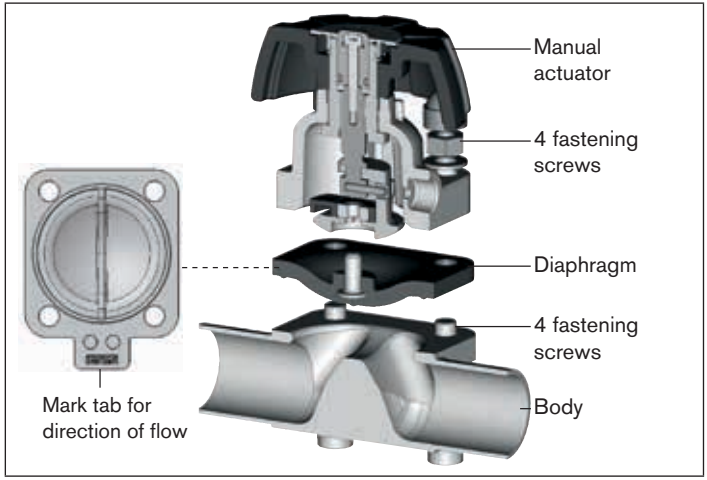


Fig. 11: Replacing the diaphragm

→ Clamp valve body in a holding device (applies only to valves not yet installed).

→ Cross-loosen fastening screws and remove actuator with diaphragm from the body.

→ Detach or unscrew old diaphragm. If bonnet is with a bayonet catch, loosen the diaphragm by turning it 90°. For orifice DN25-DN50 observe chapter "10.1.1".

→ Turn handwheel all the way clockwise (CLOSED position).

→ Install new diaphragm in the actuator (see "Tab. 12").

→ Turn handwheel all the way counter-clockwise (OPEN position).

→ Align diaphragm.
Note marker for direction of flow!

→ Place actuator back on the body.

→ Lightly cross-tighten the fastening screws until the diaphragm is between the body and actuator.
Do not tighten screws yet.

→ Activate the diaphragm valve once to position the diaphragm correctly.

→ Tighten the fastening screws with the valve in the open position up to the permitted tightening torque (see tables in chapter "10.1.2 Tightening torques for diaphragms").

→ Check the tightening torque of the screws again.

10.1.1 Switch between PTFE and EPDM diaphragms

Orifice DN8:

→ Detach PTFE diaphragm and attach new EPDM diaphragm.

Orifice DN15 and DN20:

→ Loosen PTFE diaphragm bayonet and attach new EPDM diaphragm.

Orifice DN25 up to DN50:

→ Loosen PTFE diaphragm bayonet.

→ Place the insert in the pressure piece.

→ Insert and screw in EPDM diaphragm.

10.1.2 Tightening torques for diaphragms

Orifice (Diaphragm size) DN [mm]	Actuator PPS or stainless steel	
	Diaphragm EPDM / FKM	Diaphragm PTFE/advanced PTFE/laminated advanced PTFE
8	2	2,5
15	3.5	4
20	4	4.5
25	5	6
32	6	8
40	8	10
50	12	15

Tab. 13: Tightening torques for diaphragms, actuator PPS or stainless steel

Orifice (Diaphragm size) DN [mm]	Actuator stainless steel	
	Diaphragm EPDM / FKM	Diaphragm PTFE/advanced PTFE/laminated advanced PTFE
65	20	30
80	30	40
100	40	50

Tab. 14: Tightening torques for diaphragms, actuator stainless steel

11 SPARE PARTS, ACCESSORIES

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.

The following spare parts are available for the manually actuated diaphragm valves type 3232, 3233, 3233 K, 3234, 3235 and 3239:

- Manual actuator complete,
- Diaphragm.

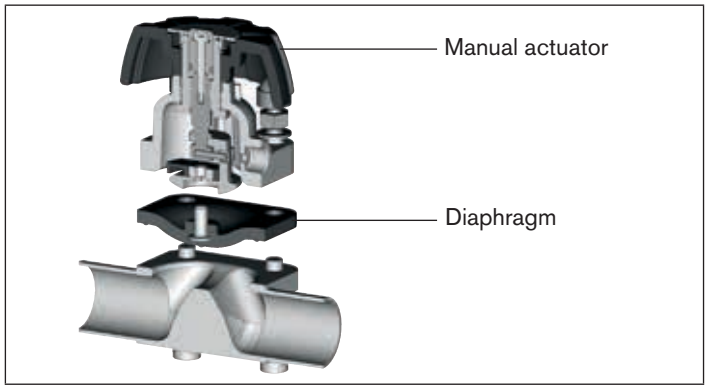


Fig. 12: Spare parts

11.1 Order table

11.1.1 Order tables for manual actuators (types 3232, 3233 and 3233K)

Orifice (Diaphragm size) [mm]	Handwheel and bonnet PPS		Handwheel PPS, bonnet stainless steel	
	Diaphragm EPDM, FKM	Diaphragm PTFE/ advanced PTFE/ laminated advanced PTFE	Diaphragm EPDM, FKM	Diaphragm PTFE/ advanced PTFE/ laminated advanced PTFE
8	194 809	194 809	271 974	271 974
15	432 978[1)]	432 978	432 980[1)]	432 980
20	432 985[1)]	432 985	432 987[1)]	432 987
25	432 991	432 992	432 993	432 994
32	432 998	432 999	433 000	433 001
40	433 005	433 006	433 007	433 008
50	433 012	433 013	433 014	433 015

Tab. 15: Order table for manual actuator

[1)] *Use diaphragm with bayonet connection (BC) (see "Tab. 17").*

Manual actuators for orifice DN65, DN80 and DN100 on request.

Orifice (Diaphragm size) [mm]	Handwheel and bonnet stainless steel		Handwheel and bonnet stainless steel (for T or tank bottom valve)	
	Diaphragm EPDM, FKM	Diaphragm PTFE/ advanced PTFE/ laminated advanced PTFE	Diaphragm EPDM, FKM	Diaphragm PTFE/ advanced PTFE/ laminated advanced PTFE
8	271 975	271 975	271 977	271 977
15	432 981[1)]	432 981	441 270[1)]	441 270
20	432 988[1)]	432 988	449 128[1)]	449 128
25	427 755	432 995	441 267	441 271
32	427 756	433 002	-	-
40	427 757	433 009	441 268	441 276
50	427 758	433 016	441 269	441 277

Tab. 16: Order table for manual actuators

[1)] *Use diaphragm with bayonet connection (BC) (see "Tab. 17").*

11.1.2 Order table for diaphragms

Orifice (Diaphragm size) DN [mm]	Order numbers for diaphragms											
	EPDM (AB*)		EPDM (AD*)		FKM (FF*)		PTFE (EA*)		Advanced PTFE (EU*)		Laminated advanced PTFE (ET*)	
8	677 663	E02**	688 421	E03**	677 684	F01**	677 674	L04**	679 540	L05**	677 694	L02**
15 BC**	693 162	E02**	693 163	E03**	693 164	F01**	-		-		-	
15	677 664	E02**	688 422	E03**	677 685	F01**	677 675	E02-PTFE**	679 541	E02-PTFE+Hole**	677 695	L02**
20 BC**	693 165	E02**	693 166	E03**	693 167	F01**	-		-		-	
20	677 665	E02**	688 423	E03**	677 686	F01**	677 676	E02-PTFE**	679 542	E02-PTFE+Hole**	677 696	L02**
25	677 667	E01**	688 424	E03**	677 687	F01**	677 677	E02-PTFE**	679 543	E02-PTFE+Hole**	677 697	L01**
32	677 668	E01**	688 425	E03**	677 688	F01**	677 678	E02-PTFE**	679 544	E02-PTFE+Hole**	-	
40	677 669	E01**	688 426	E03**	677 689	F01**	677 679	E02-PTFE**	679 545	E02-PTFE+Hole**	677 698	L01**
50	677 670	E01**	688 427	E03**	677 690	F01**	677 680	E02-PTFE**	679 546	E02-PTFE+Hole**	677 699	L01**
65	677 671	E01**	688 428	E03**	677 691	F01**	677 681	E02-PTFE**	679 743	E02-PTFE+Hole**	-	
80	677 672	E01**	688 429	E03**	677 692	F01**	677 682	E02-PTFE**	679 744	E02-PTFE+Hole**	-	
100	677 673	E01**	688 430	E03**	677 693	F01**	677 683	E02-PTFE**	679 745	E02-PTFE+Hole**	-	

Tab. 17: Order table for diaphragms

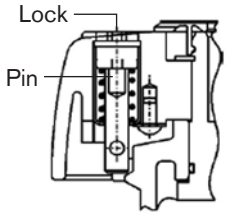
* *SAP-Code*

** *Identification on the diaphragm*

Further information on spare parts can be found on the data sheets for the piston-controlled diaphragm valves type 3232, 3233, 3233 K, 3234 and 3235. The data sheets can be found on the Internet at: www.burkert.com.

11.2 Handwheel locking device option

The handwheel locking device option (from actuator size DN15 to DN50) prevents unintentional or unauthorized operation of the valve. Handwheel can be locked in 12 detent positions per revolution (30° each).



→ Using a key, press the pin into the lock and turn all the way to the left.

→ Remove key.
Valve is locked.

Fig. 13: Handwheel with lock

12 TRANSPORT, STORAGE, DISPOSAL

NOTE!

Transport damages.

Inadequately protected equipment may be damaged during transport.

- During transportation protect the device against wet and dirt in shock-resistant packaging.
- Avoid exceeding or dropping below the allowable storage temperature.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location.
- Storage temperature: -40…+55 °C.

Damage to the environment caused by device components contaminated with media.

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

Note:
Observe national waste disposal regulations.

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