

**Type 2033**  
 Pneumatically operated diaphragm valve with CLASSIC actuator



**Tank bottom diaphragm valve with pneumatic plastic actuator (Type CLASSIC)**

- Valve body and diaphragm are available in various materials and variants
- Product wetted surfaces in  $Ra \leq 0.38 \mu\text{m} \dots 1.6 \mu\text{m}$  (optionally electropolished)
- Available in all common connection sizes and variants

Product variants described in the data sheet may differ from the product presentation and description.

**Can be combined with**

	<b>Type 2034</b> Multifunction block and weld solution	▶
	<b>Type 3233</b> 2/2-way diaphragm valve with manually operated actuator	▶
	<b>Type 8690</b> Pneumatic control for decentralised automation of ELEMENT process valves	▶
	<b>Type 8697</b> Pneumatic control for decentralised automation of ELEMENT process valves	▶

**Type description**

The externally controlled diaphragm valve Type 2033 consists of a pneumatically operated piston actuator, a diaphragm and a tank bottom valve body. The proven and robust actuator with a plastic housing ensures use in hygienic or aggressive ambient conditions. The flow-efficient valve bodies with little dead space enable high flow rates and a wide range of possible uses. The valve body and the diaphragm are available in all common materials and variants. The actuator has a compact, autoclavable design (PPS variant). The integration of the automation units 8690/8697 is possible in all configuration levels (can be retrofitted). An explosion-proof ATEX / IECEx device variant is available.

The add-on body is optionally available in plastic or stainless steel. The actuator is equipped with an integrated, optical position indicator as standard, optionally a min./max. stroke limiter can be installed.

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## 1. General technical data

Product properties	
Dimensions	Detailed information can be found in chapter <b>"4. Dimensions"</b> on page 6.
<b>Material</b>	
Block body (VH) <sup>1.)</sup>	Stainless steel 1.4435/316 L
Block body (VI) <sup>1.)</sup>	Stainless steel 1.4435/BN2/ASME BPE; Fe <0.5 %/C ≤0.03 %
Diaphragm	EPDM (AD) <sup>1.)</sup> , PTFE/EPDM (EA) <sup>1.)</sup> , advanced PTFE/EPDM (EU) <sup>1.)</sup> , Gylon®/EPDM laminated (ER) <sup>1.)</sup>
Actuator	PPS, PA
Diaphragm size	8...100
<b>Standard surface quality</b>	
Block body (VH/VI) <sup>1.)</sup>	Internal electrically polished : Ra ≤0.38 µm (NO17) <sup>1.)</sup> (ASME BPE SF4/DIN HE4) (external Ra ≤1.6 µm) Internal mechanically polished : Ra ≤0.5 µm (NO14) <sup>1.)</sup> (ASME BPE SF1) (external Ra ≤1.6 µm)
<b>Performance data</b>	
Pilot pressure (max.)	7 bar (for actuator size 40 <sup>1.)</sup> ...125 <sup>1.)</sup> /PPS) 6 bar (for actuator size 175 <sup>1.)</sup> and 225 <sup>1.)</sup> /PA) See <b>"5.1. Medium pressure"</b> on page 11
Pilot air port	Thread G ¼; thread G ⅜ for actuator size 40 and 50
<b>Medium data</b>	
Process medium	Neutral gases and fluids, highly purified, sterile, aggressive or abrasive medium (see <b>resistance chart</b> ▶)
<b>Medium temperature</b>	
EPDM (AD) <sup>1.)</sup>	-10...+143 °C (steam sterilisation + 150 °C for 60 min)
PTFE/EPDM (EA) <sup>1.)</sup>	-10...+130 °C (steam sterilisation + 140 °C for 60 min)
Advanced PTFE/EPDM (EU) <sup>1.)</sup>	-5...+143 °C (steam sterilisation + 150 °C for 60 min)
GYLON®/EPDM laminated (ER) <sup>1.)</sup>	-5...+130 °C (steam sterilisation + 140 °C for 60 min)
Control medium	Neutral gases, air
<b>Process/Port connection &amp; communication</b>	
Nominal diameter	DN 06...DN 100 (¼" ... 4")
<b>Port connection<sup>2.)</sup></b>	
<b>For stainless steel body<sup>2.)</sup></b>	
Welded connection <sup>2.)</sup>	DIN EN ISO 1127/ISO 4200/DIN 11866 series B DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A ASME BPE/DIN 11866 series C
Clamp connection <sup>2.)</sup>	DIN 32676 series A (DIN pipe) DIN 32676 series B (ISO pipe) ASME BPE
<b>Environment and installation</b>	
Installation position	See <b>operating manual</b> ▶
<b>Ambient temperature</b>	
PPS Actuator size ≤ 80 mm	+5...140 °C
PPS Actuator size 100 mm, 125 mm	+5...90 °C (briefly at +140 °C)
PA Actuator size ≤ 125 mm	-10...+60 °C
PA Actuator size ≥ 175 mm	-10...+50 °C

1.) This information is part of the product key (see **"8.3. Bürkert Product Enquiry Form"** on page 13)

2.) Further versions on request

## 2. Approvals

### Note:

If you need one of these certificates, please contact your Bürkert partner.

Approvals/ Conformity/ Certificate <sup>1.)</sup>	Description
	<b>ATEX/IECEX<sup>2.)</sup></b> EPS 18 ATEX 2 008 X II 2G Ex h IIC T4 Gb/II 2D Ex h IIIC T135 °C Db IECEX EPS 18.0007X Ex h IIC T4 Gb/Ex h IIIC T135 °C Db
<b>TA air</b>	TA air <sup>3.)</sup>
	3-A (3-A Sanitary Standards Symbol Administrative Council) <sup>4.)</sup>
	The diaphragms made of EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) are suitable for use with food and beverages (acc. to EC Regulation 1935/2004/EC).
	Diaphragms made of EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) are acc. to USP Class VI tested.
<b>FDA</b>	Diaphragms made of EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU) and GYLON®/EPDM laminated (ER) comply with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA).

1.) Further approvals/conformity clarification/certificates on request

2.) Only in combination with variable code "PX51" (see "8.3. Bürkert Product Enquiry Form" on page 13)

3.) Only in combination with variable code "PM01" (see "8.3. Bürkert Product Enquiry Form" on page 13)

4.) Only in combination with variable code "PE05" (see "8.3. Bürkert Product Enquiry Form" on page 13)

## 3. Materials

### 3.1. Chemical Resistance Chart – Bürkert resistApp

**Bürkert resistApp – Chemical Resistance Chart**

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

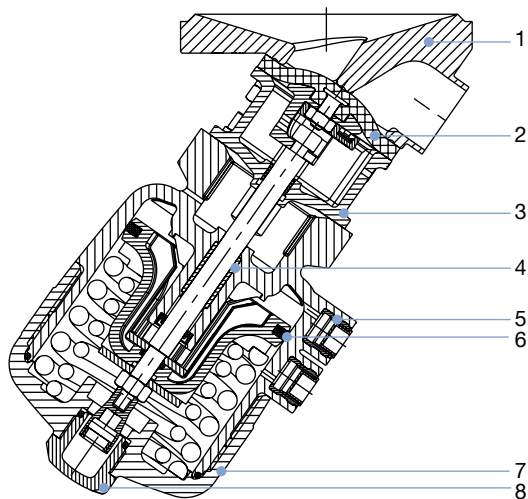
[Start Chemical Resistance Check](#)

### 3.2. Material specifications

**Note:**

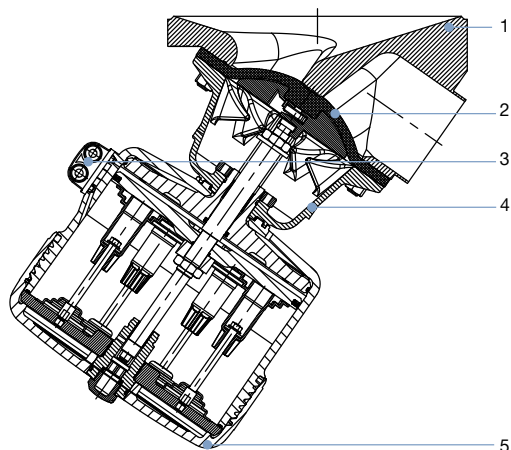
Exemplary representation may differ from the actual product.

**Actuator size 40...125**



No.	Element	Material
1	Valve body	See "1. General technical data" on page 3
2	Diaphragm	EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), Gylon®/EPDM laminated (ER)
3	Interface	Stainless steel 1.4404
4	Socket	Sinter metal
5	Pilot air ports	Stainless steel 1.4305
6	Piston seal	FKM
7	Cover	Polyphenylene sulphide PPS (Standard) Polyamide PA (on request)
8	Transparent cap	Polysulfone PSU

**Actuator size 175 and 225**



No.	Element	Material
1	Valve body	See "1. General technical data" on page 3
2	Diaphragm	EPDM (AD), PTFE/EPDM (EA), advanced PTFE/EPDM (EU), Gylon®/EPDM laminated (ER)
3	Pilot air ports	Stainless steel 1.4305
4	Attachment housing	Stainless steel 1.4308
5	Cover	Polyamide PA

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### 3.3. Example of available membrane materials

The diaphragms have been developed to meet the unique challenges of hygienic and sterile requirements. Bürkert offers diaphragms with precise material composition and high accuracy. Bürkert diaphragms are available in a wide range of materials which have been tested and proven in applications in the food and beverage, biotechnology, pharmaceutical and cosmetics industries. The diaphragms are tested during development and production to ensure reliability under difficult process conditions.



- EPDM (AD)
- PTFE/EPDM (EA)
- advanced PTFE/EPDM (EU)
- Gylon®/EPDM laminated (ER)

For further information please refer to our flyer “Diaphragm competence for hygienic applications” on our [website](#) ▶.

## 4. Dimensions

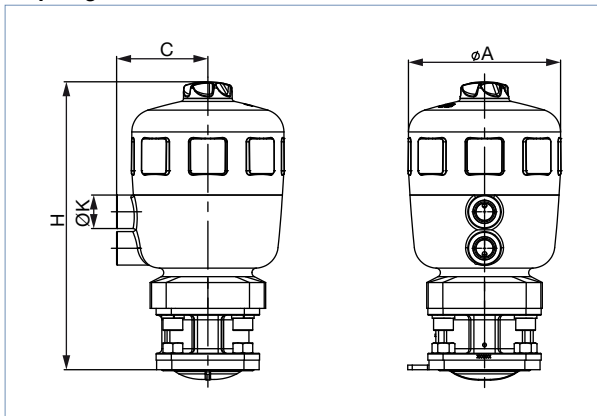
### 4.1. Actuator

**CLASSIC actuator with interface for block mounting (MT85)**

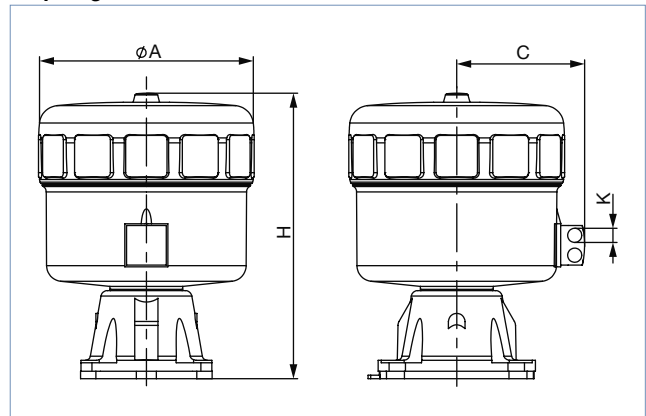
**Note:**

Dimensions in mm, unless otherwise stated

**Diaphragm size 8...50**



**Diaphragm size 65...100**



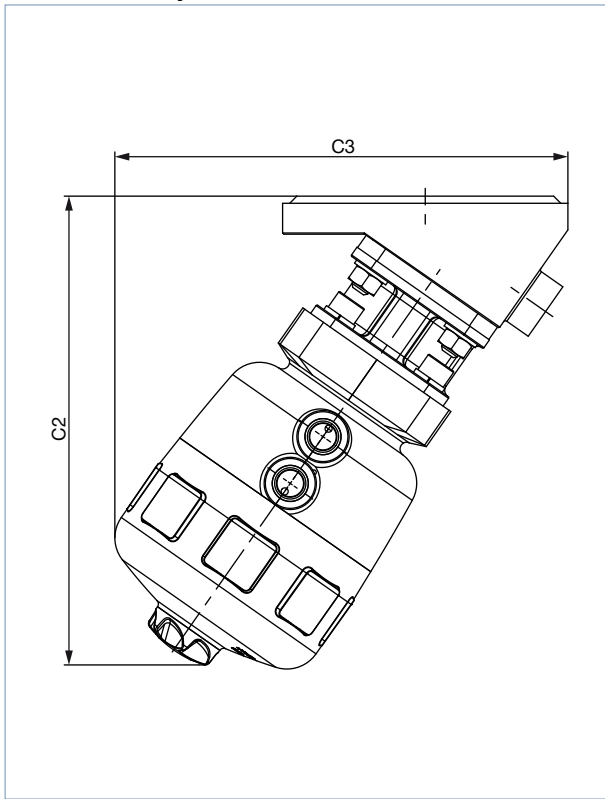
Diaphragm size	Actuator size Ø	ØA	C	K	H
8	40(C)	53	34	G 1/8"	111
15	50(D)	64	39	G 1/8"	137
	63(E)	80	52	G 1/4"	154
20	63(E)	80	52	G 1/4"	165
	80(F)	101	52	G 1/4"	186
25	63(E)	80	52	G 1/4"	170
	80(F)	101	60	G 1/4"	190
40	100(G)	127	73	G 1/4"	246
	125(H)	158	86	G 1/4"	284
50	100(G)	127	73	G 1/4"	254
	125(H)	158	86	G 1/4"	288
65	175(K)	211	130	G 1/4"	350
80	175(K)	211	130	G 1/4"	350
	225(L)	261	155	G 1/4"	345
100	225(L)	261	155	G 1/4"	345

**CLASSIC actuator with tank bottom body**

**Note:**

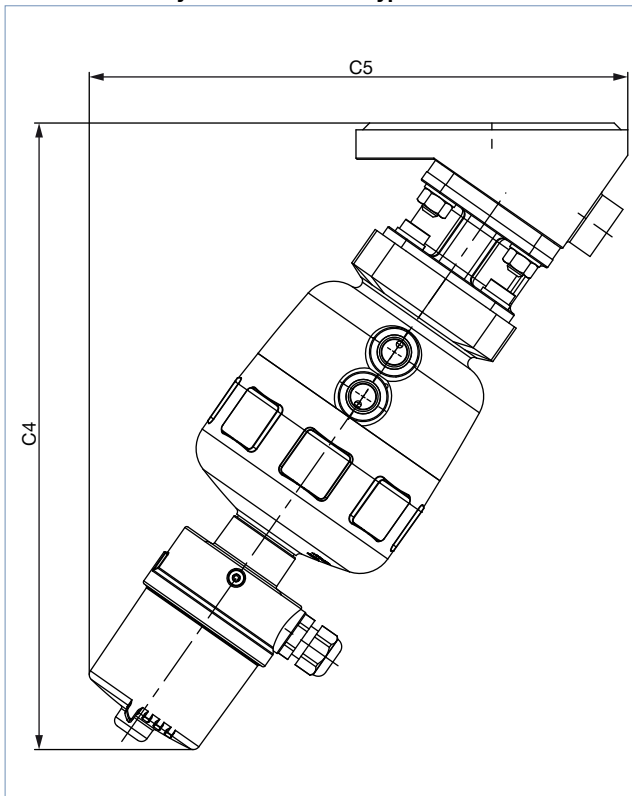
Dimensions in mm, unless otherwise stated

**Tank bottom body without control unit**



Diaphragm size	Actuator size Ø	C2	C3
15	80(F)		
20	80(F)	190	178
25	80(F)	199	191
40	125(H)	296	288
50	125(H)	304	313
65	125(H)	394	383
	175(K)		
80	175(K)	390	420
	225(L)	401	435
100	175(K)	425	442
	225(L)	431	455

Tank bottom body with control unit Type 8697



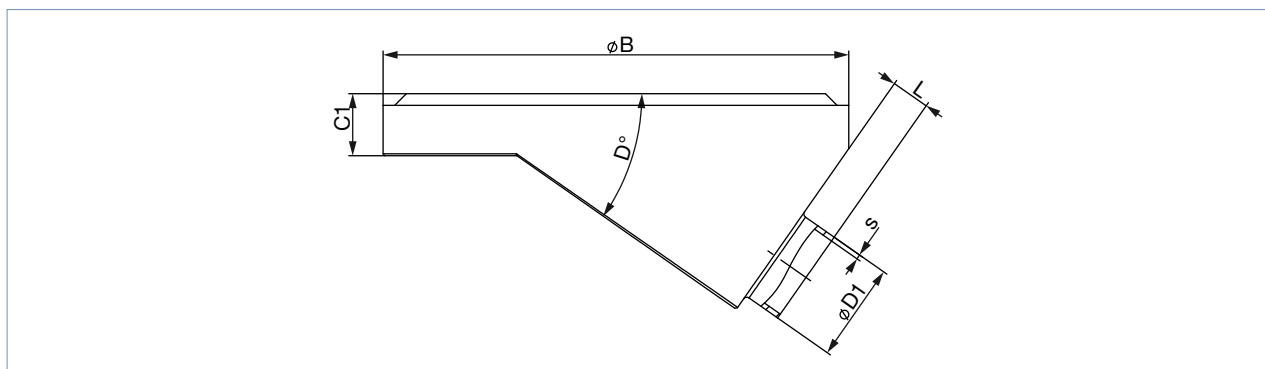
Diaphragm size	Actuator size Ø	C4	C5
15	50(D)	215	206
	63(E)	228	216
20	63(E)	250	213
	80(F)	267	225
25	63(E)	262	228
	80(F)	277	238
40	100(G)	331	299
	125(H)	369	321
50	100(G)	340	330
	125(H)	372	353



## 4.2. Tank bottom body with welded connection

### Note:

Dimensions in mm, unless otherwise stated



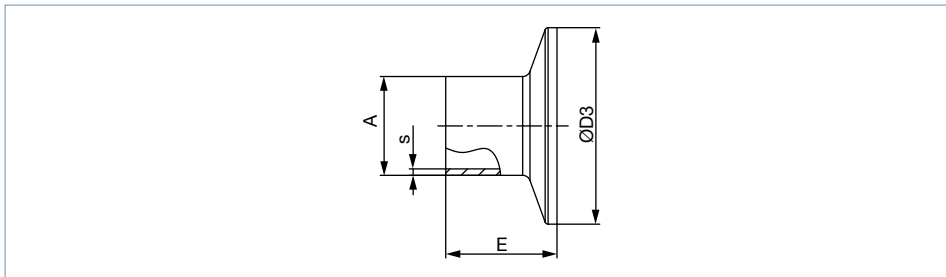
Dia-phragm size	Port connection DN	ØB	C1	D	ØD1	s	L	Product key <sup>1.)</sup>						
<b>DIN EN ISO 1127/ISO 4200/DIN 11866 series B</b>														
8	8	50	8	35°	13.5	1.6	5	SA40						
15	15	65	12	35°	21.3	1.6	4	SA42						
		85					8	SA42						
20	20	85	12	35°	26.9	1.6	5.6	SA43						
25	25	120	16	35°	33.7	2	8	SA44						
40	32	150	18	35°	42.4 (Port 32)	2	20	SA45						
	40				48.3		15	SA46						
50	50	180	22	35°	60.3	2	12	SA47						
80	65	225	20	40°	76.1	2	16	SA48						
	80						10	SA49						
100	100	298	30	40°	114.3	2.3	16.5	SA39						
<b>DIN 11850 series 2/DIN 11866 series A/DIN EN 10357 series A</b>														
8	10	50	8	35°	13	1.5	5	SD40						
15	15	85	12	35°	19	1.5	8	SD42						
20	20	85	12	35°	23	1.5	7	SD43						
25	25	120	16	35°	29	1.5	8	SD44						
40	40	150	18	35°	41	1.5	20	SD46						
50	50	180	22	35°	53	1.5	15	SD47						
80	80	225	20	40°	85	2	16	SD49						
100	100	298	30	40°	104	2	14	SD50						
<b>ASME BPE/DIN 11866 series C</b>														
8	¼"	50	8	35°	6.35	0.89	6	SA90						
15	½"	85	12	35°	12.7	1.65	10	SA92						
20	¾"	85	12	35°	19.05	1.65	8	SA93						
25	1"	120	16	35°	25.4	1.65	12	SODF						
40	1½"	150	18	35°	38.1	1.65	15	SODH						
	50						1½"	180	22	35°	38.1	1.65	25	SODH
							2"	50.8	15	SODI				
80	2½"	225	20	40°	63.5	1.65	11	SODJ						
	2"						63.5	1.65	25	SODJ				
									3"	76.2	16	SODK		
100	4"	298	30	40°	101.6	2.11	14	SODL						
<b>SMS 3008</b>														
25	25	120	16	35°	25	1.2	8	SA60						
40	40	150	18	35°	38	1.2	20	SA62						
50	50	180	22	35°	51	1.2	15	SA63						

1.) This information is part of the product key (see "8.3. Bürkert Product Enquiry Form" on page 13)

### 4.3. Tank bottom body with clamp connection

**Note:**

- Dimensions in mm, unless otherwise stated
- Clamp dimensions must be added to the welded connection dimensions.



Port connection		A	s	D3	E	Product key
[mm]	[inch]					
<b>DIN 32676 series A (DIN pipe)</b>						
10	–	13	1.5	34.0	18	TD41
15	–	19	1.5	34.0	18	TD42
20	–	23	1.5	34.0	18	TD43
25	–	29	1.5	50.5	21.5	TD44
32	–	35	1.5	50.5	21.5	TD45
40	–	41	1.5	50.5	21.5	TD46
50	–	53	1.5	64.0	21.5	TD47
<b>DIN 32676 series B (ISO pipe)</b>						
8	–	13.5	1.6	25.0	28.6	TC40
8	–	13.5	1.6	34.0 <sup>2.)</sup>	28.6	TC51 <sup>2.)</sup>
10	–	17.2	1.6	34.0 <sup>2.)</sup>	28.6	TC41 <sup>2.)</sup>
15	–	21.3	1.6	34.0 <sup>2.)</sup>	28.6	TC42 <sup>2.)</sup>
15	–	21.3	1.6	50.5	28.6	TC52
20	–	26.9	1.6	50.5	28.6	TC43
25	–	33.7	2	50.5	28.6	TC44
32	–	42.4	2	50.5 <sup>2.)</sup>	28.6	TC45 <sup>2.)</sup>
40	–	48.3	2	64.0	28.6	TC46
50	–	60.3	2	77.5	28.6	TC47
<b>ASME BPE</b>						
8	¼"	6.35	0.89	25.0	28.6	TG50
10	⅜"	9.53	0.89	25.0	28.6	TG01
15	½"	12.7	1.65	25.0	28.6	TG02
20	¾"	19.05	1.65	25.0	28.6	TG03
25	1"	25.4	1.65	50.5	28.6	TG04
40	1½"	38.1	1.65	50.5	28.6	TG05
50	2"	50.8	1.65	64.0	28.6	TG06

1.) This information is part of the product key (see "8.3. Bürkert Product Enquiry Form" on page 13)

2.) Deviating from the standard because of different outside clamp diameter

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## 5. Performance specifications

### 5.1. Medium pressure

#### Information for control function A

**Note:**

- For low operating pressures, optional versions with reduced spring force are recommended.
- Pressure data [bar]: Overpressure to atmospheric pressure. Valve closes dynamically against max. operating pressure.
- Information for control function B and I on request.


Diaphragm size	Actuator size Ø	Pilot pressure	Max. operating pressure for seal material	
			EPDM, FKM	PTFE/EPDM, advanced PTFE/EPDM, GYLON®/EPDM laminated
DN	[mm]	[bar]	[bar]	[bar]
8	40(C)	5.0...7	10	10
15	50(D)	5.0...7	8.5	–
	63(E)	5.0...7	10	10
20	63(E)	5.5...7	10	5
	80(F)	5.0...7	10	10
25	80(F)	5.5...7	10	7.5
40	100(G)	5.5...7	6.5	6 <sup>1.)</sup>
	125(H)	5.5...7	10	10
50	125(H)	5.5...7	8	7
65	175(K)	5.0...6	8	5
80	175(K)	5.0...6	5	3 <sup>3.)</sup>
	225(L)	5.0...6	10	7 <sup>2.)</sup>
100	225(L)	5.0...6	8	4

1.) Max. operating pressure for GYLON®/EPDM laminated is 4 bar

2.) Max. operating pressure for GYLON®/EPDM laminated is 8.5 bar

3.) Tightness value only applies to GYLON®/EPDM laminated (ER diaphragm), otherwise 0 bar for PTFE/EPDM and advanced PTFE/EPDM (EA and EU diaphragm).

## 6. Product accessories

Electrical position feedback	
Type 8697 ▶ Actuator size Ø 40...225 mm	Description
	<p>The position feedback Type 8697 is designed for integrated mounting on process valves of the CLASSIC series and especially for the requirements of hygienic process environments. Mechanical or inductive limit switches detect the valve position.</p>
	<p><b>Features</b></p> <ul style="list-style-type: none"> <li>• Compact design</li> <li>• LED position indicator</li> <li>• Mechanical or inductive limit switches for end position registering</li> <li>• Easy to clean chemically resistant housing featuring IP65/IP67, 4X Rating</li> <li>• Optional intrinsically safe version acc. to ATEX/IECEx</li> </ul>
	<p><b>Customer benefits</b></p> <ul style="list-style-type: none"> <li>• Easy and quick installation</li> <li>• High level of signal reliability thanks to self adjusting limit switches</li> <li>• Minimised space requirement in the plant piping for more flexibility in plant design</li> </ul>

## 7. Networking and combination with other Bürkert products

The **On/Off CLASSIC** valve system, **Type 8801-DG**, consists of **diaphragm valve, Type 2033** and **position feedback, Type 8697**.

**Note:**

You order two components and receive a completely assembled and tested valve.



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## 8. Ordering information

### 8.1. Bürkert eShop – Easy ordering and quick delivery



#### Bürkert eShop – Easy ordering and fast delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

[Order online now](#)

### 8.2. Bürkert product filter



#### Bürkert product filter – Get quickly to the right product

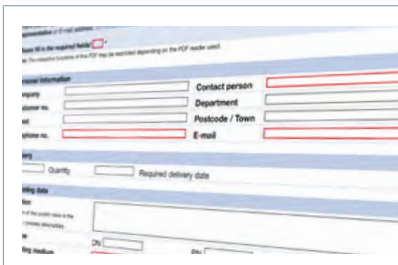
You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

[Try out our product filter](#)

### 8.3. Bürkert Product Enquiry Form

#### Note:

Please see our Product Enquiry Form for a full explanation of our specification key.



#### Bürkert Product Enquiry Form – Your enquiry quickly and compactly

Would you like to make a specific product enquiry based on your technical requirements? Use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

[Fill out the form now](#)

# Bürkert – Close to You

For up-to-date addresses  
please visit us at  
[www.burkert.com](http://www.burkert.com)

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Austria  
Belgium  
Czech Republic  
Denmark  
Finland  
France  
Germany  
Italy  
Netherlands

Norway  
Poland  
Spain  
Sweden  
Switzerland  
Turkey  
United Kingdom

