

## 2/2-way Diaphragm Valve, cast valve body, weld end and Tri-Clamp® connection, DN 4-50



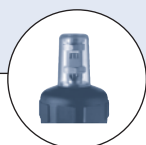
Type 2031 with weld end connection

Type 2031 with Tri-Clamp® connection

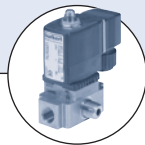
Type 2031 can be combined with...



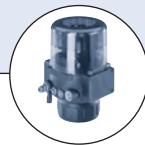
**Accessory 1062**  
Electrical position feedback



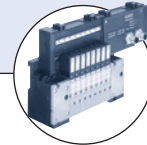
**Accessory**  
Stroke limitation



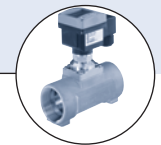
**Type 6012/6014P**  
Pilot valve



**Type 8631**  
TopControl ON/OFF



**Type 8640/8644**  
Valve block





**Type 8311**  
Pressure Sensor/Switch

The externally piloted diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm and a 2-way valve housing made of investment cast stainless steel.

The standard material of the actuator is PPS. With its favourable flow characteristics and zero dead volume, the valve housing enables high flow capacities and a variety of applications to be realized.

### Applications

- Water treatment
- Biotechnology
- Food industry

- Hermetical separation of fluids from the operating mechanism by diaphragm
- Zero dead volume
- Various surface finishes
- Quality certifications  

Technical data	
<b>Orifice</b>	DN 4 - 50
<b>Body material</b>	Cast stainless steel 316 L/1.4435
<b>Actuator material</b>	PPS (PA polyamide on request)
<b>Pilot air ports</b>	Stainless steel 1.4305
<b>Seal materials</b>	EPDM, PTFE/EPDM (FKM on request)
<b>Media</b>	Neutral gases and liquids, high purity, sterile, aggressive or abrasive fluids
<b>Viscosity</b>	up to viscous
<b>Surface finish</b>	(average surface finish) internal mechanical polished Ra ≤ 1.6 µm internal mechanical polished Ra ≤ 0.8 µm internal electro polished Ra ≤ 0.6 µm (others, see ordering chart)
<b>Media temperature</b>	EPDM -10 to +130°C Briefly up to +150°C for steam sterilisation PTFE/EPDM -10 to +130°C
<b>Ambient temperature</b>	Actuator size < 100 +5 to +140°C Actuator size ≥ 100 +5 to +90°C Briefly up to +140°C
<b>Control medium</b>	neutral gases; air
<b>Pilot pressure max.</b>	max. 7 bar, see table p. 2
<b>Port connections</b>	Weld end acc. •EN ISO 1127/ISO 4200 •DIN 11850 Series 0 to Series 3 •SMS 3008 Tri-Clamp® acc. •ISO 2852/SMS 3017 •DIN 32676 •BS 4825 Sterile threaded ends on request
<b>Installation</b>	As required, preferably with actuator in upright position

\*Tri-Clamp® is a registered Trademark of Alfa Laval Inc.

## Technical data

### Kv-values

Port connection		Kv-value water [m <sup>3</sup> /h]	Actuator size Ø [mm]	Pilot pressure (bar)		Max. operating pressure for seal material [bar]		Weight [kg]
[mm]	[inch]			min.	max.	EPDM	PTFE/EPDM	
4/6	–	0.8	40	5.0	7	10	10	0.4
8	1/4	1.0	40	5.0	7	10	10	0.4
10	3/8"	1.0	40	5.0	7	10	10	0.4
15	1/2"	4.0	50	5.0	7	8.5	–	0.7
		4.5	63	5.0	7	–	10	0.9
20	3/4"	7.0	63	5.5	7	10	–	1.3
		7.5	80	5.0	7	–	10	2.0
25	1"	12.0	80	5.0	7	10	–	2.2
		12.0	80	5.5	7	–	7.5	2.2
32	1 1/4"	30.0	100	5.5	7	6.5	–	4.2
		30.5	125	5.5	7	–	10	5.7
40	1 1/2"	30.0	100	5.5	7	6.5	–	4.2
		30.5	125	5.5	7	–	10	5.7
50	2"	51.5	125	5.5	7	8	–	7.6
		51.5	125	5.5	7	–	7	7.6

#### Remark:

For low operating pressures we recommend reduced spring versions.

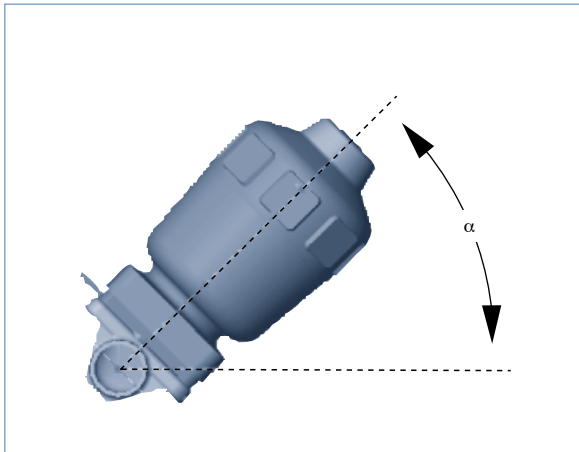
#### Flow rate: Kv-value water (m<sup>3</sup>/h)

Measured at +20°C, 1 bar pressure at valve inlet and free outlet.

#### Pressure values (bar)

Gauge pressures with respect to the prevailing atmospheric pressure.

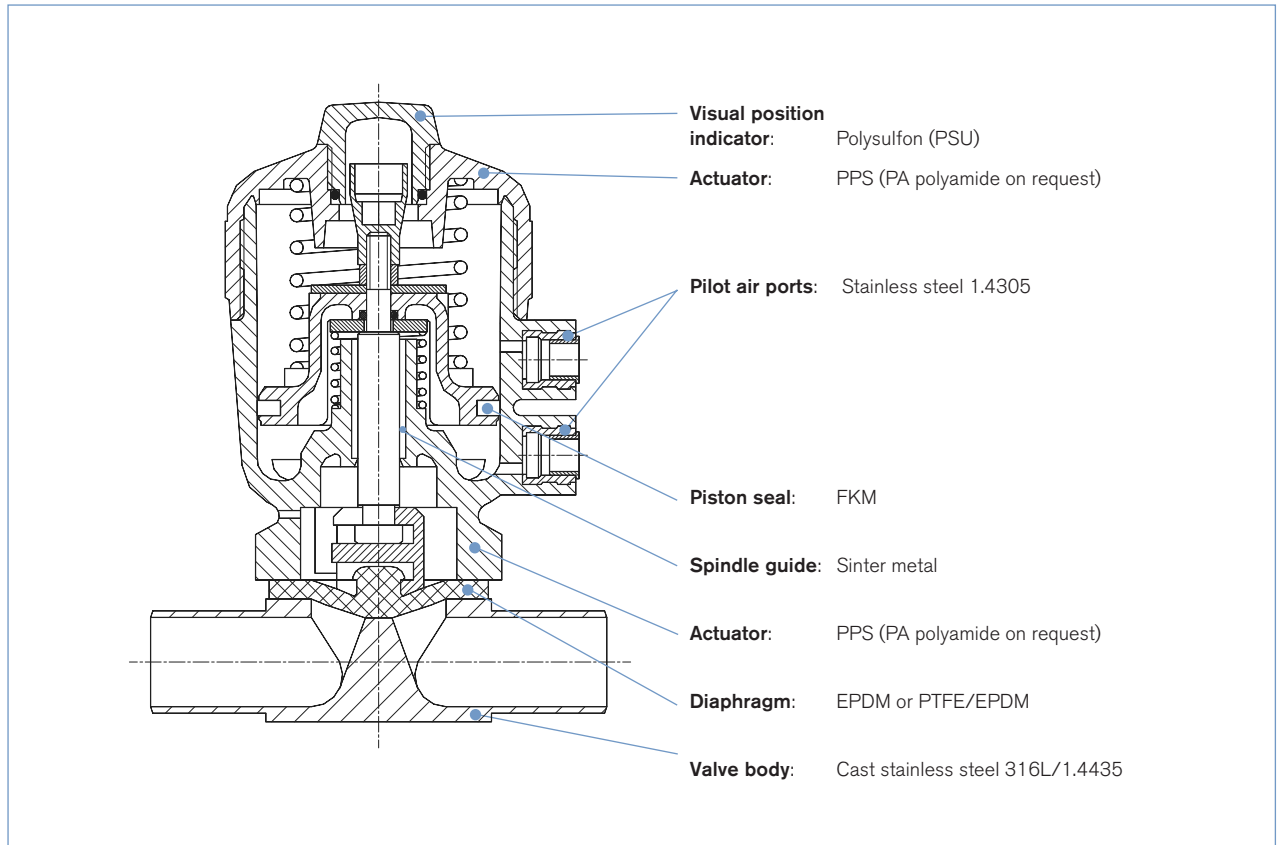
### Installation for self-draining operation



$\alpha = 15$  up to  $35^\circ$  plus  $3^\circ$  to  $5^\circ$  inclination to the pipe axis.

For detailed installation angle values, please contact your local Bürkert representative.

## Materials



## Approvals

### Suitable for foodstuffs / sterile applications



- The composition of the EPDM and PTFE/EPDM diaphragms corresponds to the *Code of Federal Regulations*, published by the *FDA* (Food and Drug Administration, USA).


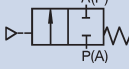
- The EPDM diaphragms correspond to the *KTW-Recommendation* (Plastics in the Drinking Water Sector). A Manufacturer's Declaration will be supplied on request.



- The diaphragm valves are 3-A approved (3-A Sanitary Standards Symbol Administrative Council)

## Ordering chart for valves (other versions on request)

## Body with weld end

	Port connection		External Ø [mm]	Kv-value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Item no.: internal/external surface		
	[mm]	[inch]						Mech. polished, Ra ≤ 1.6/6.3 µm	Mech. polished, Ra ≤ 0.8/6.3 µm	Electro polished, Ra ≤ 0.6/3.2 µm
<b>Control function A</b>  2/2-way, NC by spring return	<b>Acc. EN ISO 1127/ ISO 4200</b>									
	Diaphragm material EPDM									
	8	1/4"	13.5	1.0	40	5.0-7	10	439 538	441 215	441 216
	10	3/8"	17.2	1.0	40	5.0-7	10	441 238	441 239	441 240
	15	1/2"	21.3	4.0	50	5.0-7	8.5	441 281	441 282	441 283
	20	3/4"	26.9	7.0	63	5.5-7	10	441 320	441 321	441 322
	25	1"	33.7	12.0	80	5.5-7	10	441 363	441 364	441 365
	32	1 1/4"	42.4	30.0	100	5.5-7	6.5	–	551 966	553 353
	40	1 1/2"	48.3	30.0	100	5.5-7	6.5	441 421	441 422	441 423
	50	2"	60.3	51.5	125	5.5-7	8	441 476	441 477	441 478
	Diaphragm material PTFE/EPDM									
	8	1/4"	13.5	1.0	40	5.0-7	10	441 951	441 952	441 953
	10	3/8"	17.2	1.0	40	5.0-7	10	441 962	441 963	441 964
	15	1/2"	21.3	4.5	63	5.0-7	10	441 966	441 967	441 968
	20	3/4"	26.9	7.5	80	5.0-7	10	441 970	441 971	441 972
	25	1"	33.7	12.0	80	5.5-7	7.5	441 974	441 975	441 976
	32	1 1/4"	42.4	30.5	125	5.5-7	10	–	550 766	554 965
	40	1 1/2"	48.3	30.5	125	5.5-7	10	441 978	441 979	441 980
	50	2"	60.3	51.5	125	5.5-7	7	441 982	441 983	441 984
	<b>Acc. SMS 3008</b>									
	Diaphragm material EPDM									
	25	1"	25.0	12.0	80	5.5-7	10	441 367	441 368	441 369
	40	1 1/2"	38.0	30.0	100	5.5-7	6.5	441 425	441 426	441 427
	50	2"	51.0	51.5	125	5.5-7	8	441 480	441 481	441 482
	Diaphragm material PTFE/EPDM									
	25	1"	25.0	12.0	80	5.5-7	7.5	442 060	442 061	442 062
	40	1 1/2"	38.0	30.5	125	5.5-7	10	442 064	442 065	442 066
	50	2"	51.0	51.5	125	5.5-7	7	442 068	442 069	442 070


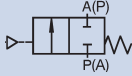
Port connection size equals the orifice diaphragm size except for port connection 32 mm. At port connection 32 mm the orifice diaphragm size equals 40 mm.

**i Further versions on request**

> **Additional**  
Versions with reduced spring force

Ordering chart for valves (other versions on request)

Body with weld end, cont.


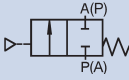
	Port connection		External Ø [mm]	Kv-value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Item no.: internal/external surface			
	[mm]	[inch]						Mech. polished, Ra ≤ 1.6/6.3 µm	Mech. polished, Ra ≤ 0.8/6.3 µm	Electro polished, Ra ≤ 0.6/3.2 µm	
<b>Control function A</b>  2/2-way, NC by spring return	<b>Acc. DIN 11850</b>										
	Diaphragm material EPDM										
	Series 0										
	4	-	6.0	0.8	40	5.0-7	10	443 768	443 769	443 770	
	6	-	8.0	0.8	40	5.0-7	10	443 772	443 773	443 774	
	Series 2										
	10	3/8"	13.0	1.0	40	5.0-7	10	441 230	441 231	441 232	
	15	1/2"	19.0	4.0	50	5.0-7	8.5	441 273	441 274	441 275	
	20	3/4"	23.0	7.0	63	5.5-7	10	441 312	441 313	441 314	
	25	1"	29.0	12.0	80	5.5-7	10	441 355	441 356	441 357	
	40	1 1/2"	41.0	30.0	100	5.5-7	6.5	441 413	441 414	441 415	
	50	2"	53.0	51.5	125	5.5-7	8	441 472	441 469	441 470	
	Diaphragm material PTFE/EPDM										
	Series 0										
	4	-	6.0	0.8	40	5.0-7	10	443 776	443 777	443 778	
	6	-	8.0	0.8	40	5.0-7	10	443 780	443 781	443 782	
	Series 2										
	10	3/8"	13.0	1.0	40	5.0-7	10	441 777	441 778	441 779	
	15	1/2"	19.0	4.5	63	5.0-7	10	441 793	441 794	441 795	
	20	3/4"	23.0	7.5	80	5.0-7	10	441 865	441 866	441 867	
25	1"	29.0	12.0	80	5.5-7	7.5	441 884	441 885	441 886		
40	1 1/2"	41.0	30.5	125	5.5-7	10	441 900	441 901	441 902		
50	2"	53.0	51.5	125	5.5-7	7	441 955	441 956	441 957		

**i Further versions on request**

**> Additional**  
 Versions with reduced spring force

Ordering chart for valves (other versions on request)

Body with Tri-Clamp® connection

	Port connection		External Ø [mm]	Kv-value water [m³/h]	Actuator size Ø [mm]	Pilot pressure [bar]	Max. operating pressure [bar]	Item no.: internal/external surface		
	[mm]	[inch]						Mech. polished, Ra ≤ 1.6/6.3 µm	Mech. polished, Ra ≤ 0.8/6.3 µm	Electro polished, Ra ≤ 0.6/3.2 µm
<p><b>Control function A</b></p>  <p>2/2-way, NC by spring return</p>	<b>Acc. ISO 2852 – SMS 3017</b>									
	Diaphragm material EPDM									
	25	1"	50.5	12.0	80	5.5-7	10	441 383	441 384	441 385
	40	1 1/2"	50.5	30.0	100	5.5-7	6.5	441 441	441 442	441 443
	50	2"	64.0	51.5	125	5.5-7	8	441 496	441 497	441 498
	Diaphragm material PTFE/EPDM									
	25	1"	50.5	12.0	80	5.5-7	7.5	442 075	442 076	442 077
	40	1 1/2"	50.5	30.5	125	5.5-7	10	442 079	442 080	442 081
	50	2"	64.0	51.5	125	5.5-7	7	442 083	442 084	442 085
	<b>Acc. DIN 32676</b>									
	Diaphragm material EPDM									
	15	1/2"	34.0	4.0	50	5.0-7	8.5	441 293	441 294	441 295
	20	3/4"	34.0	7.0	63	5.5-7	10	441 332	441 333	441 334
	25	1"	50.5	12.0	80	5.5-7	10	441 379	441 380	441 381
	40	1 1/2"	50.5	30.0	100	5.5-7	6.5	441 437	441 438	441 439
	50	2"	64.0	51.5	125	5.5-7	8	441 492	441 493	441 494
	Diaphragm material PTFE/EPDM									
	15	1/2"	34.0	4.5	63	5.0-7	10	442 040	442 041	442 042
	20	3/4"	34.0	7.5	80	5.0-7	10	442 044	442 045	442 046
	25	1"	50.5	12.0	80	5.5-7	7.5	442 048	442 049	442 050
	40	1 1/2"	50.5	30.5	125	5.5-7	10	442 052	442 053	442 054
	50	2"	64.0	51.5	125	5.5-7	7	442 056	442 057	442 058
	<b>Acc. BS 4825</b>									
	Diaphragm material EPDM									
	8	1/4"	25.0	1.0	40	5.0-7	10	441 246	441 247	441 248
	10	3/8"	25.0	1.0	40	5.0-7	10	441 254	441 255	441 256
	15	1/2"	25.0	4.0	50	5.0-7	8.5	441 336	441 337	441 338
	25	1"	50.5	12.0	80	5.5-7	10	441 387	441 388	441 389
	40	1 1/2"	50.5	30.0	100	5.5-7	6.5	441 445	441 446	441 447
	50	2"	64.0	51.5	125	5.5-7	8.0	441 500	441 501	441 502
Diaphragm material PTFE/EPDM										
8	3/8"	25.0	1.0	40	5.0-7	10	441 986	441 987	441 988	
10	1/2"	25.0	1.0	40	5.0-7	10	441 990	441 991	441 992	
15	3/4"	25.0	4.5	63	5.0-7	10	441 994	441 995	441 996	
25	1"	50.5	12.0	80	5.5-7	7.5	441 998	441 999	442 000	
40	1 1/2"	50.5	30.5	125	5.5-7	10	442 002	442 003	442 004	
50	2"	64.0	51.5	125	5.5-7	7.0	442 006	442 007	442 008	

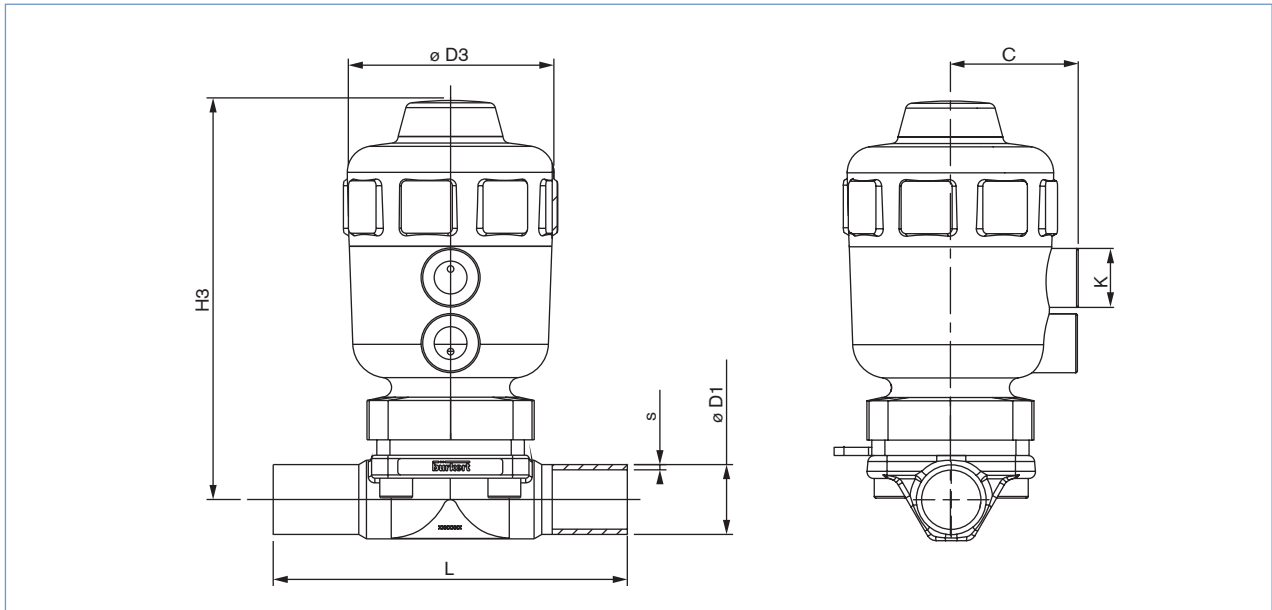
DTS 1000010978 EN Version: L Status: RL (released | freigegeben | validé) printed: 19.08.2008

**i Further versions on request**

**> Additional**  
Versions with reduced spring force

Dimensions [mm]

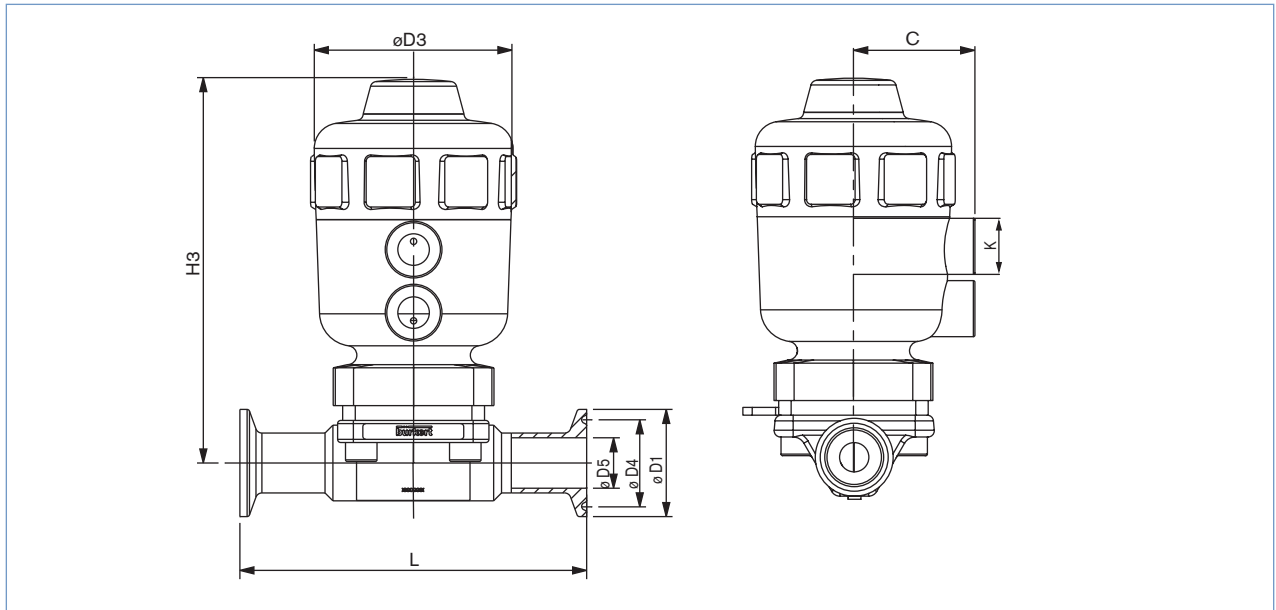
Body with weld end



Port connection		Actuator size		C	K	L	H3	ØD3	EN ISO 1127/ISO 4200		SMS 3008	
[mm]	[inch]	Ø	Ø						ØD1	s	ØD1	s
<b>Acc. EN ISO 1127/ISO 4200 and SMS 3008</b>									<b>EN ISO 1127/ISO 4200</b>		<b>SMS 3008</b>	
8	1/4"	40	34	G 1/8	90.0	85.0	53.0	13.5	1.6	-	-	
10	3/8"	40	34	G 1/8	90.0	85.0	53.0	17.2	1.6	-	-	
15	1/2"	50	39	G 1/8	110.0	121.0	64.0	21.3	1.6	-	-	
		63	52	G 1/4	110.0	138.0	80.0	21.3	1.6	-	-	
20	3/4"	63	52	G 1/4	119.0	148.0	80.0	26.9	1.6	-	-	
		80	60	G 1/4	119.0	174.0	101.0	26.9	1.6	-	-	
25	1"	63	52	G 1/4	129.0	157.0	80.0	33.7	2.0	25.0	1.2	
		80	60	G 1/4	129.0	177.0	101.0	33.7	2.0	25.0	1.2	
32	1 1/4"	100	73	G 1/4	161.0	233.0	127.0	42.4	2.0	-	-	
		125	86	G 1/4	161.0	272.0	153.0	42.4	2.0	-	-	
40	1 1/2"	100	73	G 1/4	161.0	233.0	127.0	48.3	2.0	38.0	1.2	
		125	86	G 1/4	161.0	272.0	153.0	48.3	2.0	38.0	1.2	
50	2"	100	73	G 1/4	192.0	244.0	127.0	60.3	2.0	51.0	1.2	
		125	86	G 1/4	192.0	278.0	153.0	60.3	2.0	51.0	1.2	
<b>Acc. to DIN 11850</b>									<b>DIN 11850</b>			
Series 0												
4	-	40	34	G 1/8	90.0	85.0	53.0	6.0	1.0			
6	-	40	34	G 1/8	90.0	85.0	53.0	8.0	1.0			
Series 2												
10	3/8"	40	34	G 1/8	90.0	85.0	53.0	13.0	1.5			
15	1/2"	50	39	G 1/8	110.0	121.0	64.0	19.0	1.5			
		63	52	G 1/4	110.0	138.0	80.0	19.0	1.5			
20	3/4"	63	52	G 1/4	119.0	148.0	80.0	23.0	1.5			
		80	60	G 1/4	119.0	174.0	101.0	23.0	1.5			
25	1"	63	52	G 1/4	129.0	157.0	80.0	29.0	1.5			
		80	60	G 1/4	129.0	177.0	101.0	29.0	1.5			
40	1 1/2"	100	73	G 1/4	161.0	233.0	127.0	41.0	1.5			
		125	86	G 1/4	161.0	272.0	153.0	41.0	1.5			
50	2"	100	73	G 1/4	192.0	244.0	127.0	53.0	1.5			
		125	86	G 1/4	192.0	278.0	153.0	53.0	1.5			

Dimensions [mm]

Body with Tri-Clamp® connection



Port connection		Actuator size Ø	C	K	L	H3	ØD3	ØD1	ØD4	ØD5	ØD5
[mm]	[inch]										
<b>Acc. ISO 2852/SMS 3017 and SMS 3008</b>										<b>ISO 2852</b>	<b>DIN 32676</b>
15	1/2"	50	39	G 1/8	110.0	121.0	64.0	34.0	27.5	-	16.0
		63	52	G 1/4	110.0	138.0	80.0	34.0	27.5	-	16.0
20	3/4"	63	52	G 1/4	119.0	148.0	80.0	34.0	27.5	-	20.0
		80	60	G 1/4	119.0	174.0	101.0	34.0	27.5	-	20.0
25	1"	63	52	G 1/4	129.0	157.0	80.0	50.5	43.5	22.6	26.0
		80	60	G 1/4	129.0	177.0	101.0	50.5	43.5	22.6	26.0
40	1 1/2"	100	73	G 1/4	161.0	233.0	127.0	50.5	43.5	35.6	38.0
		125	86	G 1/4	161.0	272.0	153.0	50.5	43.5	35.6	38.0
50	2"	100	73	G 1/4	192.0	244.0	127.0	64.0	56.5	48.6	50.0
		125	86	G 1/4	192.0	278.0	153.0	64.0	56.5	48.6	50.0
<b>Acc. BS 4825</b>										<b>BS 4825</b>	
8	3/8"	40	34	G 1/8	89.0	85.0	53.0	25.0	20.22	7.1	
10	1/2"	40	34	G 1/8	89.0	85.0	53.0	25.0	20.22	10.3	
15	3/4"	50	39	G 1/8	102.0	121.0	64.0	25.0	20.22	16.7	
		63	52	G 1/4	102.0	138.0	80.0	25.0	20.22	16.7	
25	1"	63	52	G 1/4	114.0	157.0	80.0	50.5	43.5	22.2	
		80	60	G 1/4	114.0	177.0	101.0	50.5	43.5	22.2	
40	1 1/2"	100	73	G 1/4	140.0	233.0	127.0	50.5	43.5	34.9	
		125	86	G 1/4	140.0	272.0	153.0	50.5	43.5	34.9	
50	2"	100	73	G 1/4	159.0	244.0	127.0	64.0	56.5	47.6	
		125	86	G 1/4	159.0	278.0	153.0	64.0	56.5	47.6	

To find your nearest Bürkert facility, click on the orange box → [www.burkert.com](http://www.burkert.com)

In case of special application conditions, please consult for advice.

We reserve the right to make technical changes without notice.

0707/9\_EU-en\_00891675