



BR 31a · Quarter-turn actuator

Version DAP / SRP 300 · Technical data and spare parts



Applications

Single-acting or double-acting piston actuators for butterfly valves, ball valves and other final control elements with rotary closure members. Particularly suitable for high process requirements in chemical plants:

- Opening angle 90°
- Temperatures -40°C to +80°C



Dimensions of quarter-turn actuator

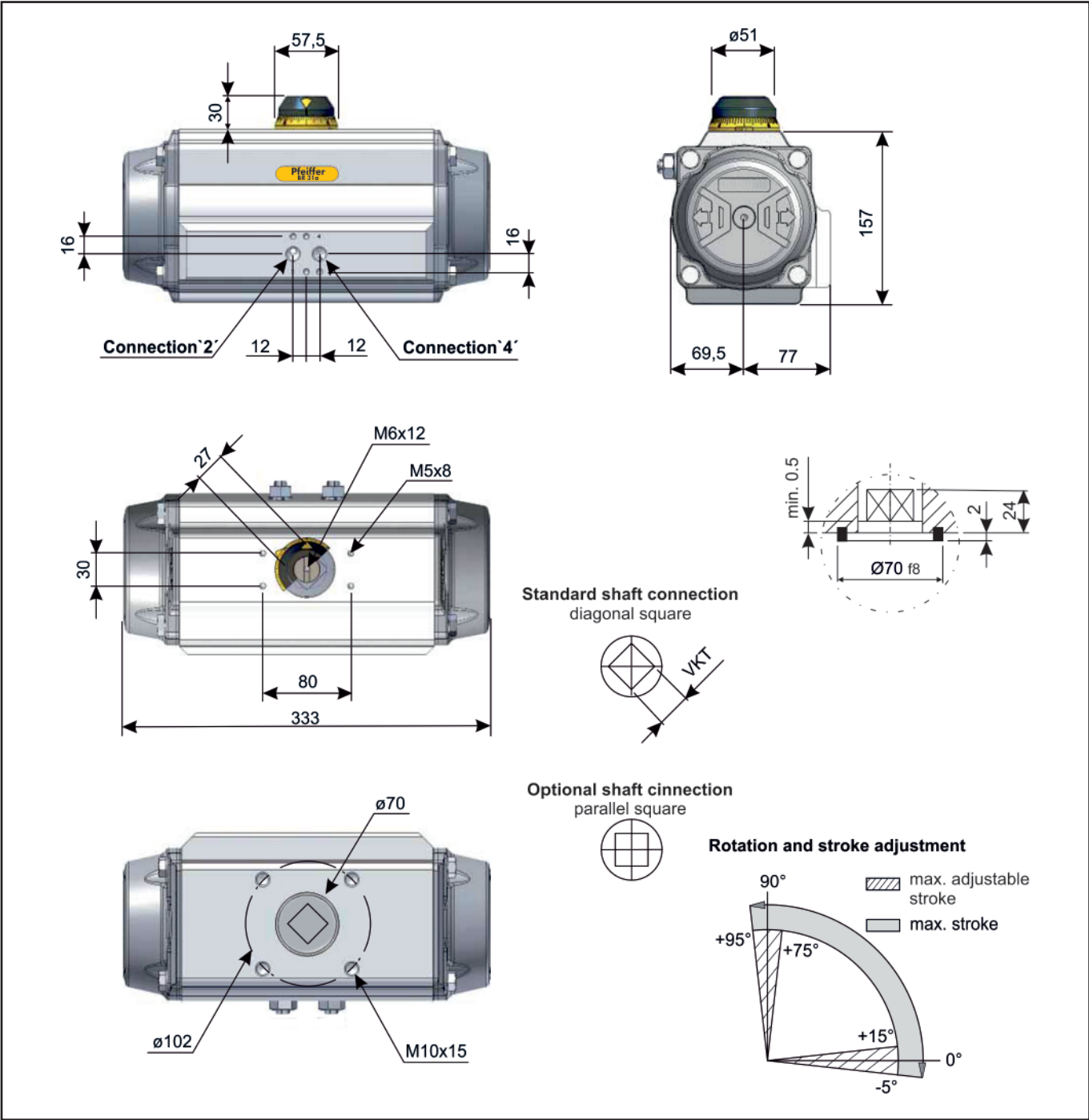


Fig. 2: Dimensional drawing

Table 1: Connection dimensions / Connections

ISO 5211	Flange	F10
	Square (diagonal)	22mm
VDI/VDE 3845	Air connection	24x32mm + 2x G1/4"
	Fixing level 1	AA2 (80x30x30mm)

Technical Data

Table 2: Torques for double and single acting quarter-turn actuators

Type	Torque double and single acting in Nm																						Spring stroke		Weight in kg
Pressure in bar	2.5		3		3.5		4		4.2		4.5		5		5.5		6		7		8		90°	0°	
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°			
DAP	138		166		194		222		233		249		277		305		332		388		443		-		9.97
																							Start	End	
SRP 2,5	86.0	56.1	114	83.8	141	111	169	139	180	150	197	167	224	195	252	222	280	250	335	305	390	360	82.4	52.5	10.97
SRP 3	75.5	39.6	103	67.3	131	95	159	123	170	134	186	150	214	178	242	206	269	233	324	288	380	344	98.9	63.0	11.17
SRP 3,5	64.8	23.3	92.7	50.8	120	78.5	148	106	159	117	176	134	203	162	231	189	259	217	314	272	369	328	115	73.5	11.37
SRP 4	54.3	6.3	82.0	34.0	110	62.0	138	89.7	149	101	165	117	193	145	221	173	248	201	304	256	359	311	132	84.0	11.57
SRP 4,5	43.8		71.5	18.0	99.2	45.7	127	73.3	138	84.3	155	101	182	129	210	156	238	184	293	239	349	295	148	94.5	11.77
SRP 5	33.3		61.0	1.0	88.7	28.7	116	56.3	127	67.4	144	84.5	172	112	200	140	227	168	283	223	338	278	165	105	11.97
SRP 5,5	22.3		50.0		77.7	12.7	105	40.3	116	51.4	133	68.0	161	95.7	189	123	217	151	272	206	328	262	181	116	12.17
SRP 6	12.3		40.0		67.7		95.3	23.3	106	34.4	123	51.0	151	78.7	179	107	206	135	262	190	317	245	198	126	12.37

Table 3: Specially technical data

Type	Pressure max. in bar	Rotation	Screw stroke adjustment	Chamber Ø in mm	Air volume in Litre		Moving time in Sec. ¹⁾		Operating temperature in °C ²⁾		
					Open	Close	Open	Close	STD (Standard)	HT (High temp.)	SLT (Low temp.)
DAP	8	90° -5°/+15°	for 1° 1/4 rotation	125	1.54	2.34	0.90	1.10	-40 bis +80	-15 bis +150	-55 bis +80
SRP							1.20	1.40			

¹⁾ The above indicated moving time of the actuator is obtained under the following test conditions: (1) room temperature, (2) actuator stroke 90°, (3) solenoid valve with Ø4mm and flow capacity Qn 400 L/min., (4) inside pipe Ø8mm, (5) medium clean air, (6) air supply pressure 5,5 bar (79,75 Psi), (7) actuator without external resistance load.

It has to be expected, e.g. for field applications, when one or more of the above parameters are different, the moving time will be different.

²⁾ For HT (high temperature) and SLT (low temperature) applications a special grease is needed. Please contact PFEIFFER.

Table 4: Air consumption

Type	Air consumption in Litre / Switching cycle ³⁾									
Pressure	2.5	3	3.5	4	4.5	5	5.5	6	7	8
DAP	13.58	15.52	17.46	19.40	21.34	23.28	25.22	27.16	31.04	34.92
SRP	5.39	6.16	6.93	7.70	8.47	9.24	10.01	10.78	12.32	13.86

³⁾ A switching cycle is the movement from 0 ° to 90 ° + 90 ° to 0 °

Operating Medium:

The operating medium must be free of dust and oil. The maximum particle size must not exceed 30µ. (ISO 8573 Part1, Class5). In order to prevent water condensation and/or solidification (ice when actuator works below 0°C), the operating medium must have a dew point equal to -20°C or at least 10°C below the ambient temperature (ISO 8573 Part1, Class3).

Parts list for actuator DAP/SRP 300

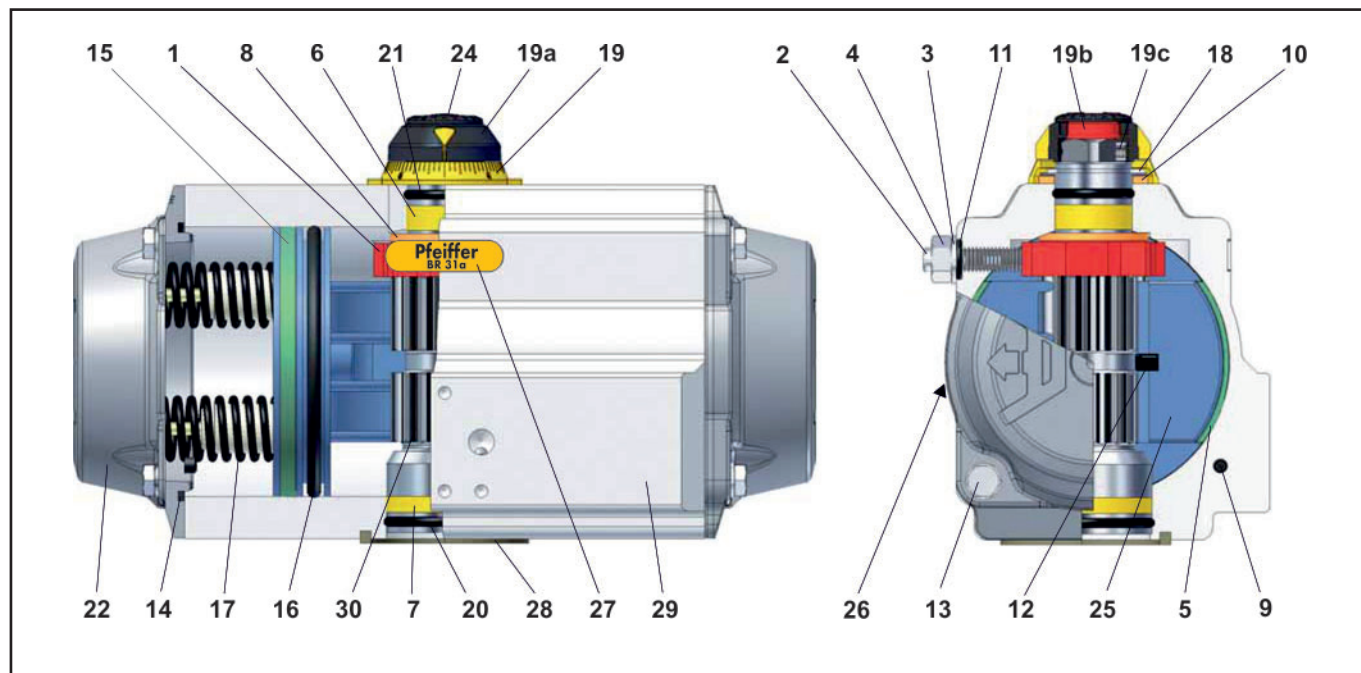


Fig. 3: Quarter-turn actuator BR 31a, Type SRP 300

Table 5: Parts and spare parts list

Item	Qty.	Description	Material	Abrasion package for SRP/DAP 300
1	1	Octi-cam	Carbon steel, zinc coated	STD = 43724v HT = 45181v SLT = 48027v
2	2	Stop cap screw	Stainless steel	
3	2	Washer	Stainless steel	
4	2	Stop screw	Stainless steel	
5 ¹⁾	2	Piston guide bearing	PA46	
6 ¹⁾	1	Pinion top bearing	High-grade polymers	
7 ¹⁾	1	Pinion bottom bearing	High-grade polymers	
8 ¹⁾	2	Pinion thrust bearing	PA46	
9 ^{1) 2) 3)}	2	Plug	Silicone	
10	1	Thrust washer	Stainless steel	
11 ^{1) 2) 3)}	2	O-ring	M-NBR	
12	2	Piston guide	PA66+GF	
13	16	Cap Screw	Stainless steel	
14 ^{1) 2) 3)}	2	O-ring	M-NBR	
15 ^{1) 2)}	2	Piston head bearing	POM	
16 ^{1) 2) 3)}	2	O-ring	M-NBR	
17	5 to 12	Spring pressure cartridge	SiCr Spring alloy Steel epoxy coated	
18	1	Spring clip	Spring steel, ENP	
19	1	Graduated ring	PA66+GF(+CB)	
19a	1	Position indicator	PA66+GF+CB	
19b	1	Top adaptor	Extruded aluminium alloy, anodized	
19c		Hex. socket screw	Stainless steel	
20 ^{1) 2) 3)}	1	O-ring	M-NBR	
21 ^{1) 2) 3)}	1	O-ring	M-NBR	
22	1	End cap	Pressure die cast aluminium alloy, anodized and coated	
24	1	Cap screw	PA66+GF+CB	
25	2	Piston	Pressure die cast aluminium alloy, anodized	
26	1	Identification label	Polyester-Silver	
27	1	Plate	Polyester	
28	1	Spigot	Extruded aluminium alloy, anodized	
29	1	Body	Extruded aluminium alloy, coated	
30	1	Drive shaft	Steel, ENP	

¹⁾ Included in the abrasion package (STD), ²⁾ Included in the high temperature kit (HT), ³⁾ Included in the low temperature set (SLT)