



**BR 31a · Quarter-turn actuator**

Version DAP / SRP 220 · 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

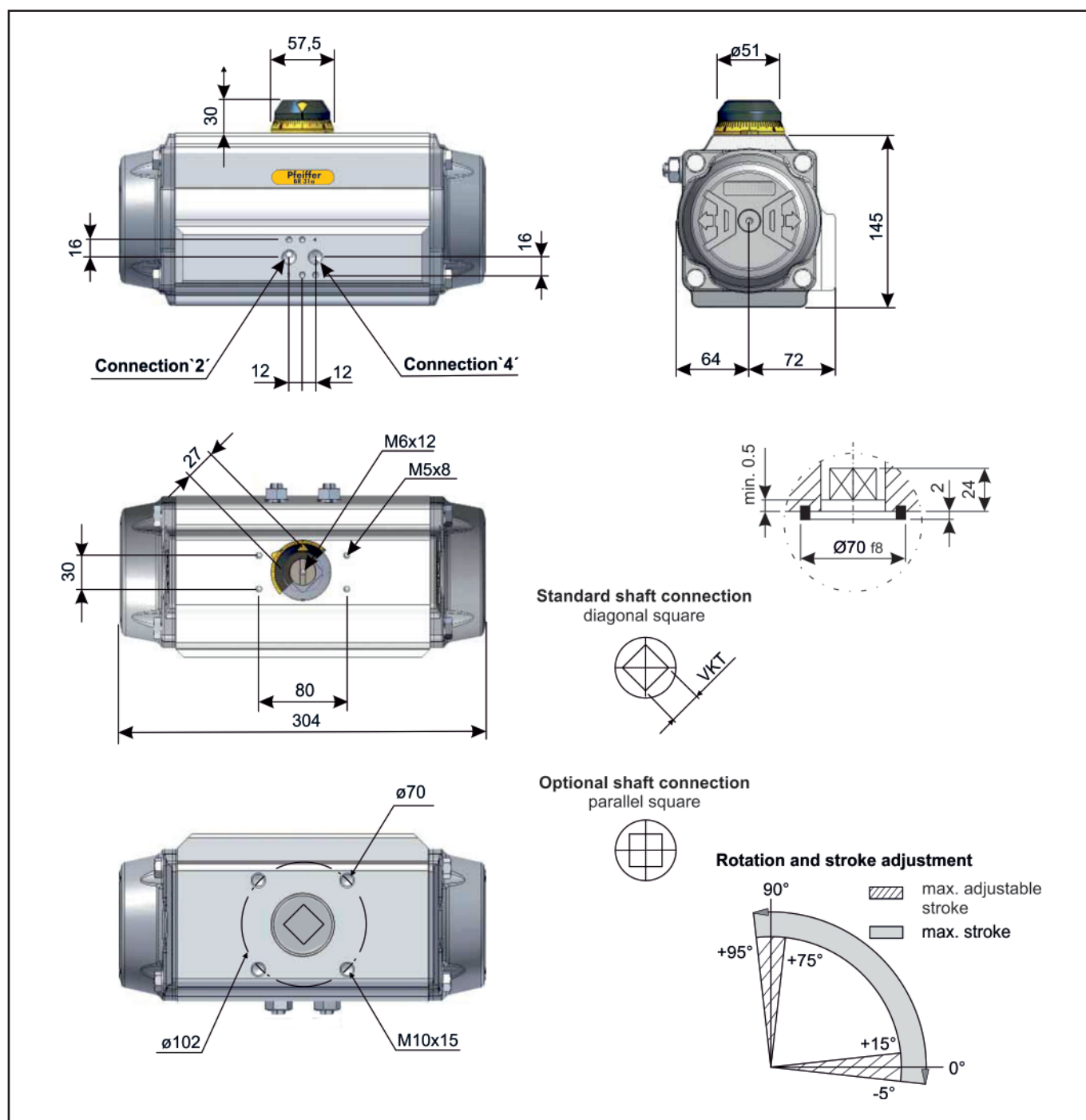


Fig. 2: Dimensional drawing

Table 1: Connection dimensions / Connections

ISO 5211	Flange	F10
	Square (diagonal)	22mm
VDI/VDE 3845	Air connection	24x32mm + 2x G $\frac{1}{4}$ "
	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		
	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°					
DAP	107	129	150	172	181	193	215	236	258	301	344	-	-	8.07											
																						Start	End		
SRP 2,5	66.5	41.9	87.9	63.4	109	84.9	131	106	140	115	152	128	174	149	196	171	217	193	260	236	303	279	65.5	41.0	8.62
SRP 3	58.3	28.8	79.7	50.3	101	71.8	123	93.3	131	102	144	115	166	136	187	158	209	179	252	222	295	265	78.6	49.2	8.73
SRP 3,5	50.1	15.8	71.5	37.2	93.0	58.7	115	80.2	123	88.8	136	102	158	123	179	145	200	166	244	209	287	252	91.7	57.4	8.84
SRP 4	41.9	2.5	63.4	24.0	84.8	45.6	106	67.1	115	75.7	128	88.6	149	110	171	132	192	153	235	196	278	239	105	65.6	8.95
SRP 4,5	33.7		55.2	11.0	76.7	32.5	98.1	54.0	107	62.6	120	75.5	141	97	163	118	184	140	227	183	270	226	118	73.8	9.06
SRP 5	25.5		47.0		68.5	19.5	90.0	41.0	98.6	49.6	111	62.4	133	83.9	154	105	176	127	219	170	262	213	131	82	9.17
SRP 5,5	17.3		38.8		60.3	6.5	81.8	28.0	90.4	36.6	103	49.5	125	70.8	146	92.3	168	114	211	157	254	200	144	90.2	9.28
SRP 6	9.1		30.6		52.1		73.6	15.0	82.2	23.6	95.1	36.5	117	58.0	138	79.2	159	101	203	144	245	187	157	98.4	9.39

**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. <sup>1)</sup>		Operating temperature in °C <sup>2)</sup>		
					Open	Close	Open	Close	STD (Standard)	HT (High temp.)	SLT (Low temp.)
DAP	8	90° -5°/+15°	for 1° 1/5 rotation	115	1.19	1.8	0.70	0.80	-40 bis +80	-15 bis +150	-55 bis +80
SRP							0.90	1.10			

<sup>1)</sup> 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.**

<sup>2)</sup> 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 <sup>3)</sup>									
Pressure	2.5	3	3.5	4	4.5	5	5.5	6	7	8
DAP	10.47	11.96	13.46	14.95	16.45	17.94	19.44	20.93	23.92	26.91
SRP	4.17	4.76	4.76	5.95	6.55	7.14	7.74	8.33	9.52	9.52

<sup>3)</sup> 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 220

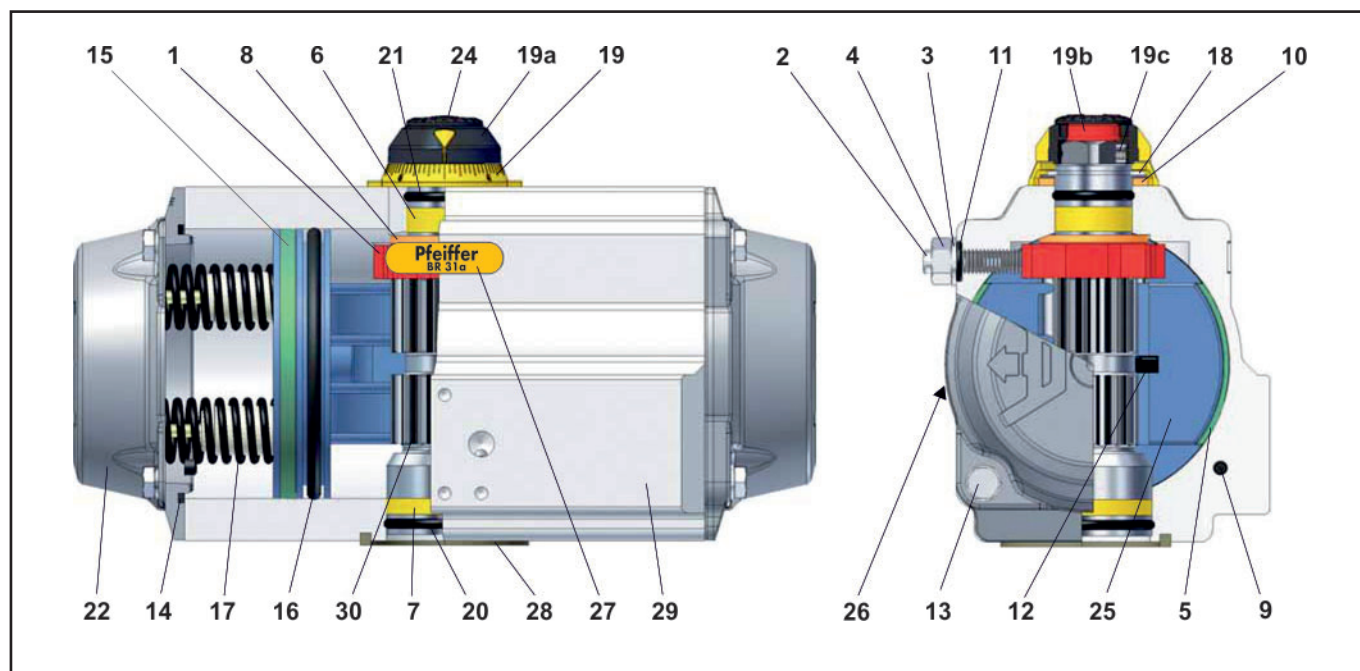


Fig. 3: Quarter-turn actuator BR 31a, Type SRP 220

Table 5: Parts and spare parts list

Item	Qty.	Description	Material	Abrasion package for SRP/DAP 220
1	1	Octi-cam	Carbon steel, zinc coated	STD = 43723v HT = 45438v SLT = 48026v
2	2	Stop cap screw	Stainless steel	
3	2	Washer	Stainless steel	
4	2	Stop screw	Stainless steel	
5 <sup>1)</sup>	2	Piston guide bearing	PA46	
6 <sup>1)</sup>	1	Pinion top bearing	High-grade polymers	
7 <sup>1)</sup>	1	Pinion bottom bearing	High-grade polymers	
8 <sup>1)</sup>	2	Pinion thrust bearing	PA46	
9 <sup>1) 2) 3)</sup>	2	Plug	Silicone	
10	1	Thrust washer	Stainless steel	
11 <sup>1) 2) 3)</sup>	2	O-ring	M-NBR	
12	2	Piston guide	PA66+GF	
13	16	Cap Screw	Stainless steel	
14 <sup>1) 2) 3)</sup>	2	O-ring	M-NBR	
15 <sup>1) 2)</sup>	2	Piston head bearing	POM	
16 <sup>1) 2) 3)</sup>	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 <sup>1) 2) 3)</sup>	1	O-ring	M-NBR	
21 <sup>1) 2) 3)</sup>	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	

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