



**BR 31a · Quarter-turn actuator**

Version DAP / SRP 5000 · 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

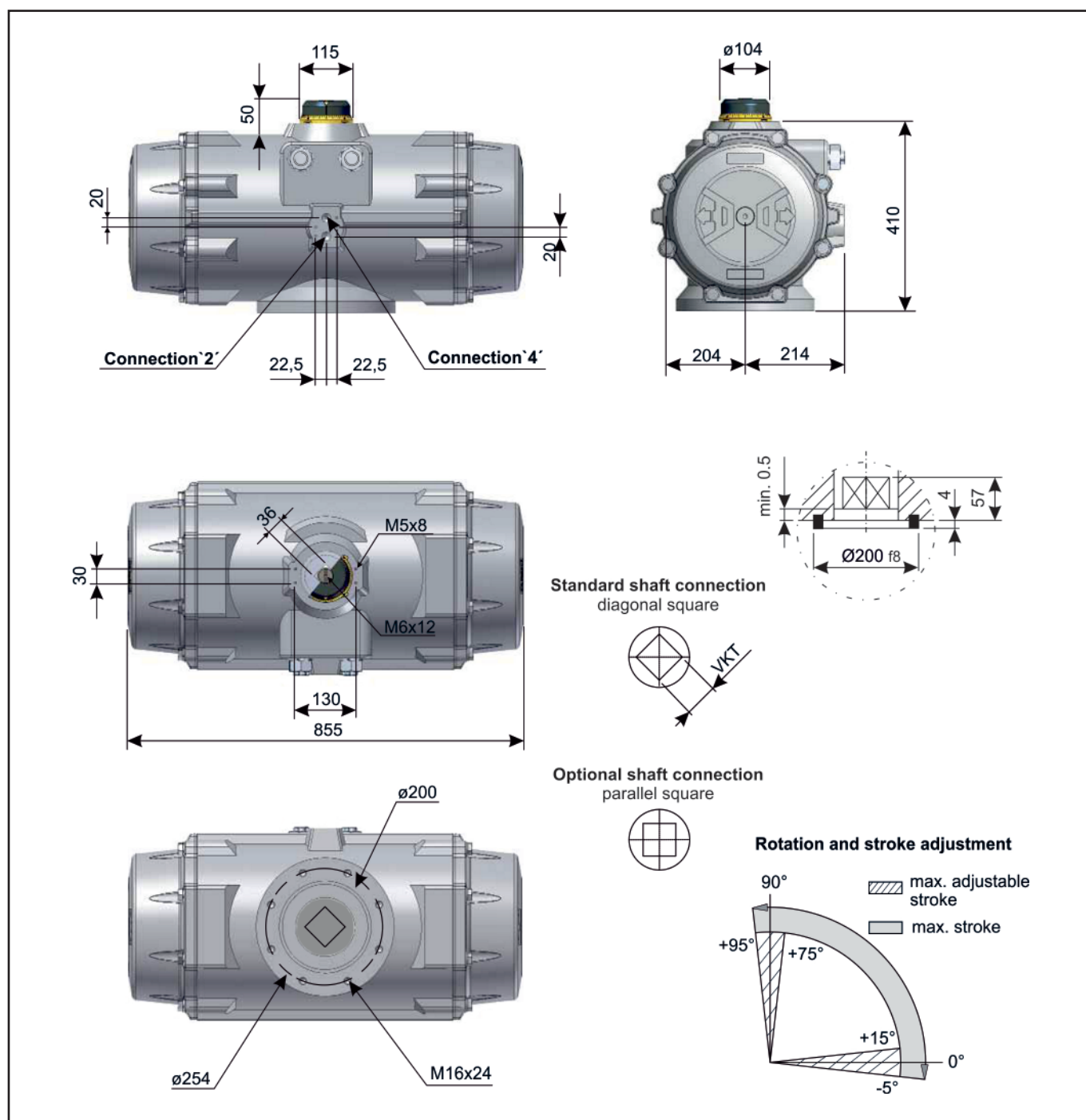


Fig. 2: Dimensional drawing

Table 1: Connection dimensions / Connections

ISO 5211	Flange	F25
	Square (diagonal)	55mm
VDI/VDE 3845	Air connection	40x45mm + 2x G1/2"
	Fixing level 1	AA4 (130x30x50mm)

## 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	2252	2703	3153	3604	3784	4054	4504	4955	5405	6306	7207	-	-	127											
												Start	End												
SRP 2,5	1332	1014	1783	1465	2233	1915	2684	2365	2864	2546	3134	2816	3585	3266	4035	3717	4485	4167	5386	5068	6287	5969	1238	920	144
SRP 3	1149	767	1599	1217	2049	1667	2500	2118	2680	2298	2950	2568	3401	3019	3851	3469	4301	3919	5202	4820	6103	5721	1486	1104	147
SRP 3,5	964	519	1415	969	1865	1420	2316	1870	2496	2050	2766	2321	3217	2771	3667	3222	4118	3672	5018	4573	5919	5474	1733	1288	151
SRP 4	780	271	1231	722	1682	1172	2132	1623	2312	1803	2582	2073	3033	2524	3483	2974	3934	3424	4835	4325	5735	5226	1981	1472	154
SRP 4,5	596	23.1	1047	474	1497	924	1948	1375	2128	1555	2398	1825	2849	2276	3299	2726	3750	3177	4651	4078	5551	4978	2229	1656	158
SRP 5	413		864	227	1314	677	1764	1127	1945	1308	2215	1578	2665	2028	3115	2479	3566	2929	4467	3830	5386	4731	2476	1839	161
SRP 5,5	229		680		1130	429	1580	879	1761	1060	2031	1330	2481	1781	2931	2231	3382	2682	4283	3582	5184	4483	2724	2023	165
SRP 6	45.1		496		946	182	1396	632	1577	813	1847	1083	2297	1533	2748	1983	3198	2434	4099	3335	5000	4236	2971	2207	168

**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° 1/4 rotation	330	25	40	6.00	7.00	-40 bis +80	-15 bis +150	-55 bis +80
SRP							7.50	8.50			

<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 Ø11 mm and flow capacity Qn 6000 L/min., (4) inside pipe Ø11 mm, (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	227.50	260.00	292.50	325.00	357.00	390.00	422.50	455.00	520.00	585.00
SRP	87.50	100.00	112.50	125.00	137.50	150.00	162.50	175.00	200.00	225.00

<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 5000

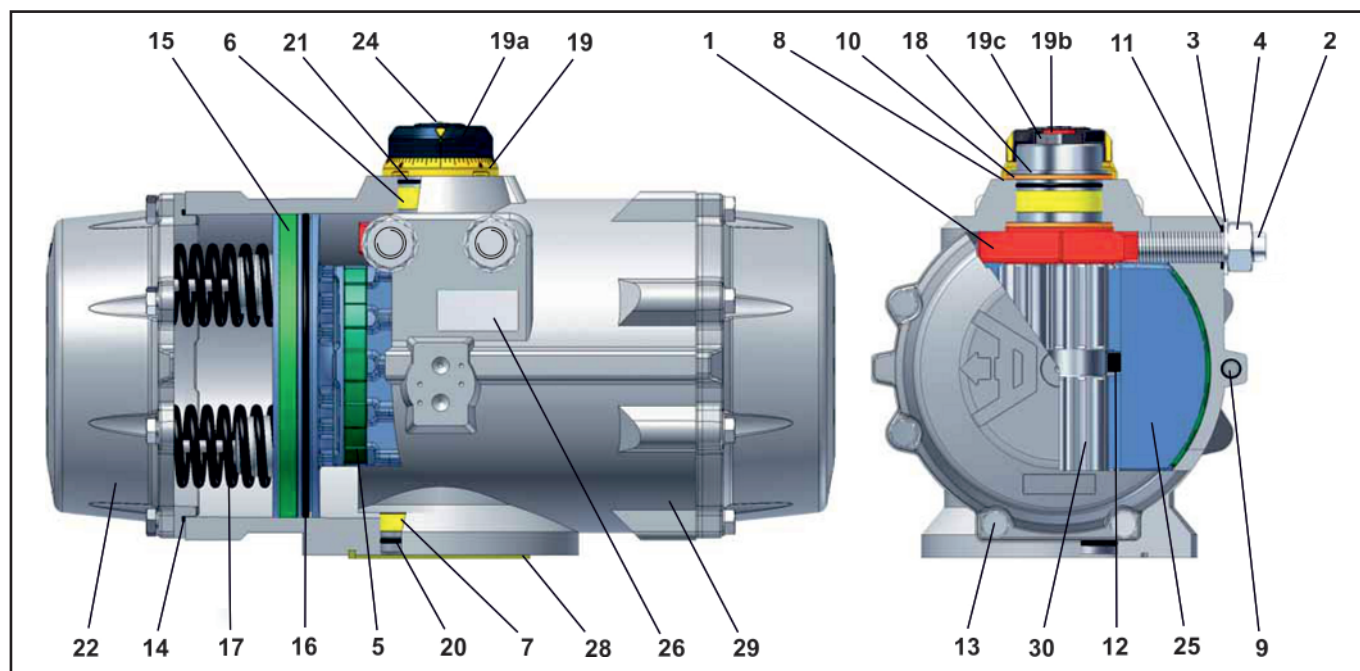


Fig. 3: Quarter-turn actuator BR 31a, Type SRP 5000

Table 5: Parts and spare parts list

Item	Qty.	Description	Material	Abrasion package for SRP/DAP 5000
1	1	Octi-cam	Carbon steel, zinc coated	STD = 43730v HT = 45443v SLT = 48035v
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	M-NBR	
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**)