



**BR 31a · Quarter-turn actuator**

Version DAP / SRP 4000 · 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

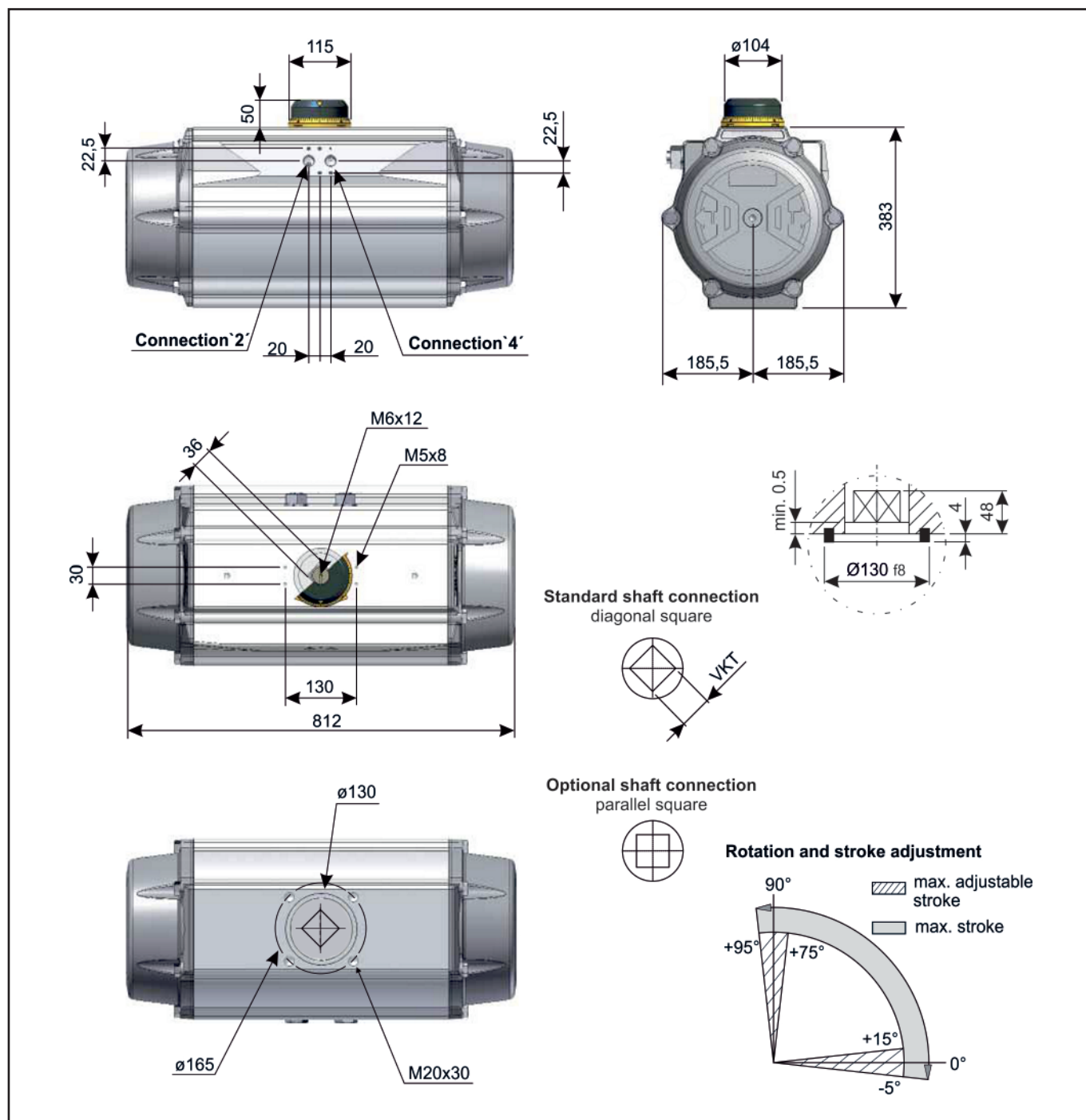


Fig. 2: Dimensional drawing

Table 1: Connection dimensions / Connections

ISO 5211	Flange	F16
	Square (diagonal)	46mm
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		
Pressure in bar	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	
DAP	1795		2154		2513		2872		3015		3231		3590		3949		4308		5026		5744	-		118	
																						Start	End		
SRP 2,5	1064	703	1423	1062	1782	1421	2141	1780	2284	1924	2500	2139	2859	2498	3218	2857	3577	3216	4295	3934	5013	4652	1092	731	131
SRP 3	918	485	1277	844	1636	1203	1995	1562	2138	1706	2354	1921	2713	2280	3072	2639	3431	2998	4149	3716	4867	4434	1310	877	134
SRP 3,5	772	267	1131	626	1489	985	1848	1344	1992	1487	2207	1703	2566	2062	2925	2421	3284	2780	4003	3498	4721	4216	1528	1023	137
SRP 4	625	49.0	984	408	1343	766	1702	1125	1846	1269	2061	1484	2420	1843	2779	2202	3138	2561	3856	3279	4574	3998	1746	1170	139
SRP 4,5	479		838	189	1197	548	1556	907	1700	1051	1915	1266	2274	1625	2633	1984	2992	2343	3710	3061	4428	3779	1965	1316	142
SRP 5	333		692		1051	330	1410	689	1554	833	1769	1048	2128	1407	2487	1766	2846	2125	3564	2843	4282	3560	2183	1462	145
SRP 5,5	187		546		905	112	1264	471	1408	615	1623	830	1982	1188	2341	1547	2700	1906	3418	2624	4135	3342	2401	1608	147
SRP 6	41.0		400		759		1118	252	1262	396	1477	611	1836	970	2194	1329	2553	1688	3271	2406	3989	3124	2620	1754	150

**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	300	20	33	5.00	6.00	-40 bis +80	-15 bis +150	-55 bis +80
SRP							6.00	7.00			

<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	185.50	212.00	238.50	265.00	291.50	318.00	344.50	371.00	424.00	477.00
SRP	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	160.00	180.00

<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 4000

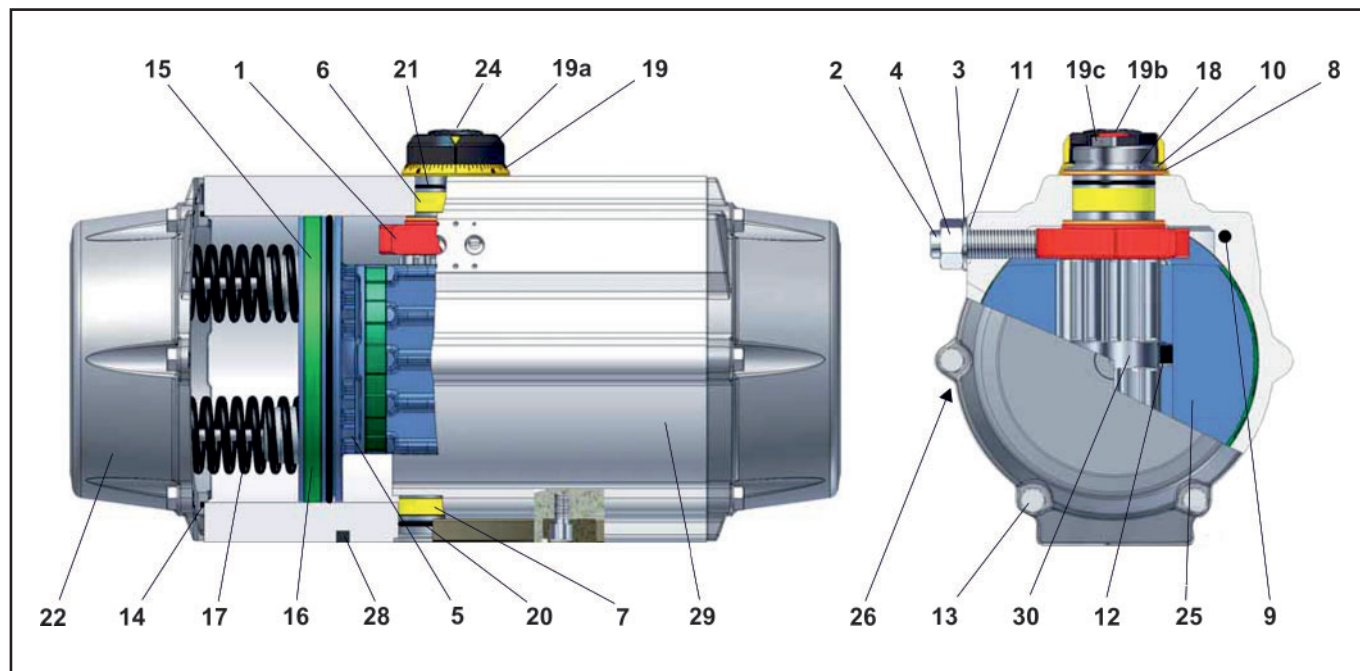


Fig. 3: Quarter-turn actuator BR 31a, Type SRP 4000

Table 5: Parts and spare parts list

Item	Qty.	Description	Material	Abrasion package for SRP/DAP 4000
1	1	Octi-cam	Carbon steel, zinc coated	STD = 48020v HT = 49462v SLT = 48034v
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)