

Pneumatic double piston rotary actuator for butterfly valves and ball valves with 90° movement

Article DR 10 = double acting
Article SC 10 = single acting



The latest generation of pneumatic actuators offers a high quality standard and innovative solutions for example such as the light outer rotation angle setting of 75° up to 95°, single-acting actuators with safety springs and same dimensions.

High-tech elastomer O-rings allow a standard temperature-range from -40° C to +80° C. The most varied outer surface protection systems enable them to be used even under extreme conditions.

Valve connection ISO 5211 F04 (F03 optional)
octagonal shaft connection according to DIN 3337 11,0 mm

Plug inserts allow the reduction to 9.0 mm

Standard with puck on the top at the housing for the visionary position indicator.

	Pressure Equipment Directive 2014/68 / EU (PED)
	Environment -40°C ... +80°C
	SIL 3 according to IEC 61508
	ATEX 94/9/EC II2 GD EEx D IIB T6

Technical data standard design

construction type Pneumatic double piston rotary actuator, same dimension double- or single-acting. safety springs in the end cap provide the safety position optionally OPEN or CLOSE

Mounting position random

Interface actuator / signaling device according to VDI / VDE 3845 (NAMUR)

Norms **Interface actuator / solenoid valve** according to NAMUR or VDI/VDE 3845

Interface actuator / valve Four- or octagonal plug insert with ISO 5211 mounting hole pattern in the actuator body

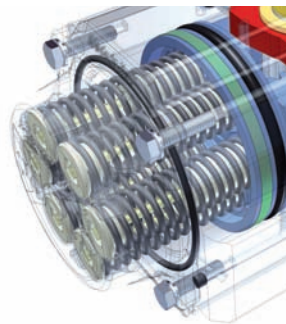
ambient temperature -40° C up to + 80° C NBR-seal kit (standard)
 -15° C up to +150° C Viton-seal kit
 -55° C up to + 80° C Super-low temperature

torque 3 Nm up to 13.000 Nm

control pressure 2,0 bar up to 8,0 bar (Ü)

control medium filtered air, with respect to residual oil content, dust and water, minimum according to DIN 8573-1

air pressure quality class 4, particle size < 30 µm
 Tp < 20° C, Tp minimum +10° C

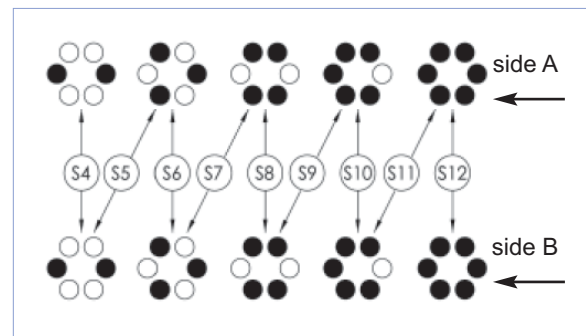


spring package

- service-friendly safety springs
- number of springs variable according to control pressure
- protected against corrosion

spring arrangement:

S 4 = 4 springs S 5 = 5 springs S 6 = 6 springs
 S 7 = 7 springs S 8 = 8 springs S 9 = 9 springs
 S10 = 10 springs S11 = 11 springs S12 = 12 springs



Pneumatic double piston rotary actuator for butterfly valves and ball valves with 90° movement

Article DR 10 = double acting

Article SC 10 = single acting



Possible mounting options for pneumatic actuators

positioner

limit switch box for direct mounting

Limit switch box mounting with bracked

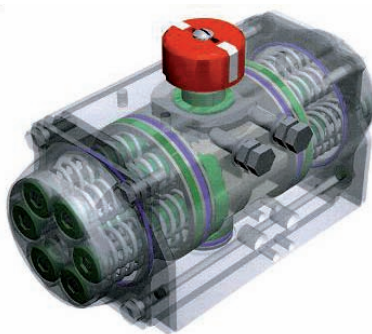
NAMUR solenoid valve
5/2-way design = actuator double acting
3/2-way design = actuator single acting

throttle plate regulation of closing-/ opening speed

couplable emergency gearbox for valve actuation in case of compressed air failure

valve top flange acc. ISO 5211

Depending on the installation location and the atmospheric load, the following may be selected coating systems

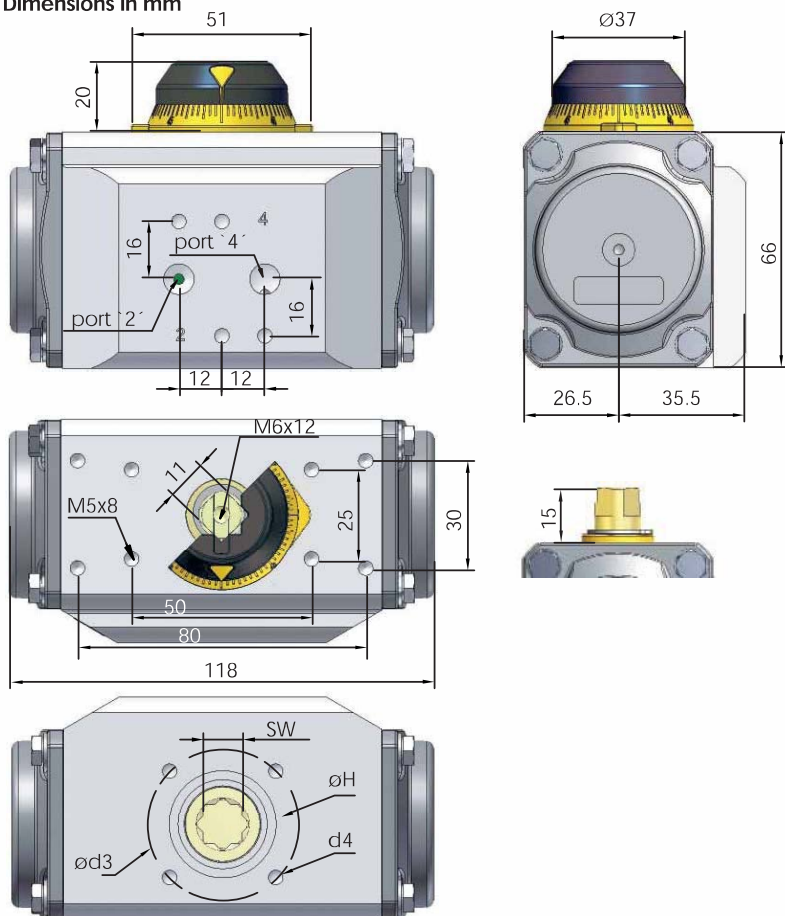


description	design	parts and coating				installation site
		housing	cap	stem	piston	
	Code "A" standard	ALODUR 30 - 35 µm silver grey	anodized + polyester 80 - 90 µm light gray	chemically nickel plated ENP 25 - 30 µm	anodized 15 - 20 µm black	process industry solvent resistant
	Code "B"	anodized + PTFE coated 50 - 55 µm	anodized + polyester coated 95 - 110 µm	chemically nickel plated ENP 25 - 30 µm	anodized 15 - 20 µm black	general industry light to medium loaded atmosphere
	Code "E"	anodized + PTFE coated 50 - 55 µm	anodized + PTFE coated 50 - 55 µm	stainless steel (1.4401)	anodized 15 - 20 µm black	strong environmental influences, strong acidity and basic atmosphere
	Code "EC"	anodized + + 1 primer + 2 Epoxy coating 85-120 µm	anodized + + 1 primer + 2 Epoxy coating 70 - 105 µm	stainless steel (1.4401)	anodized 15 - 20 µm black	direct lake vicinity On- / Offshore applications

pneum._actuator_DR-SC-10_ENG_2017_Rev.0

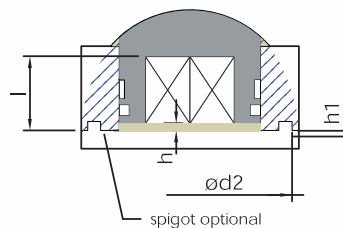
pneumatic actuator, DR/SC 10

Dimensions in mm



ISO 5211 - available flanges

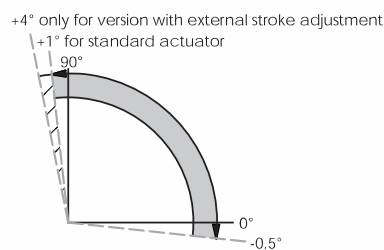
	Standard	optional
ISO 5211	F04	F03
Ø d2	30	25
Ø d3	42	36
d4	M5 x 8	M5 x 8
Ø H	30	25
SW x l min.	D	-
	DS	11 x 12
h min.	0,5	0,5
h1	1,5	2



Connection / Attachment

Pressure connection port 2 and 4	G1/8"
Ancillaries attachment	AA0/1

Rotation and stroke adjustment



Pressure	Output torque for double acting in Nm												approx. weight in kg										
	2,5 bar		3 bar		3,5 bar		4 bar		4,2 bar		4,5 bar			5 bar		5,5 bar		6 bar		7 bar		8 bar	
DR	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0,75
	6,0		7,2		8,4		9,6		10,1		10,8		12,0		13,2		14,4		16,8		19,1		

Pressure	Output torque for single acting in Nm												Spring torque	approx. weight in kg											
	2,5 bar		3 bar		3,5 bar		4 bar		4,2 bar		4,5 bar				5 bar		5,5 bar		6 bar		7 bar		8 bar		
Spring Set	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	
S 1-1	4,3	2,9																					3,1	1,7	0,86
S 1-2			4,7	2,4																			4,8	2,6	0,87
S 2-2					4,9	2,0	6,1	3,2	6,6	3,7	7,3	4,4											6,4	3,5	0,88
S 2-3											6,6	2,8	7,8	4,0	9,0	5,2	10,2	6,4					8,0	4,2	0,89
S 3-3															8,2	3,6	9,4	4,8	11,8	7,2	14,1	9,5	9,6	5,0	0,90

Pressure max.	Rotation (STD) (C)	Screw stroke adjustment	Chamber Ø (mm)	Air volume (l)		Moving time (sec.) (A)	
				OPEN	CLOSE	OPEN	CLOSE
8 bar	0° - 90°	s. note (C)	45	0,06	0,1	D 0,15	D 0,20
						S 0,20	S 0,25

Operating temperature (°C) (B)		
ST (Standard)	HT (High temperature)	LLT (Extreme low temperature)
- 40 to + 80	- 15 to + 150	- 55 to + 80

(A) 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 Ø 4 mm and flow capacity Qn 400 L/min. (4) inside pipe Ø 8 mm, (5) medium clean air (6) air supply pressure 5,5 bar (79,75 Psi), (7) actuator without external resistance load. **Caution:** 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.

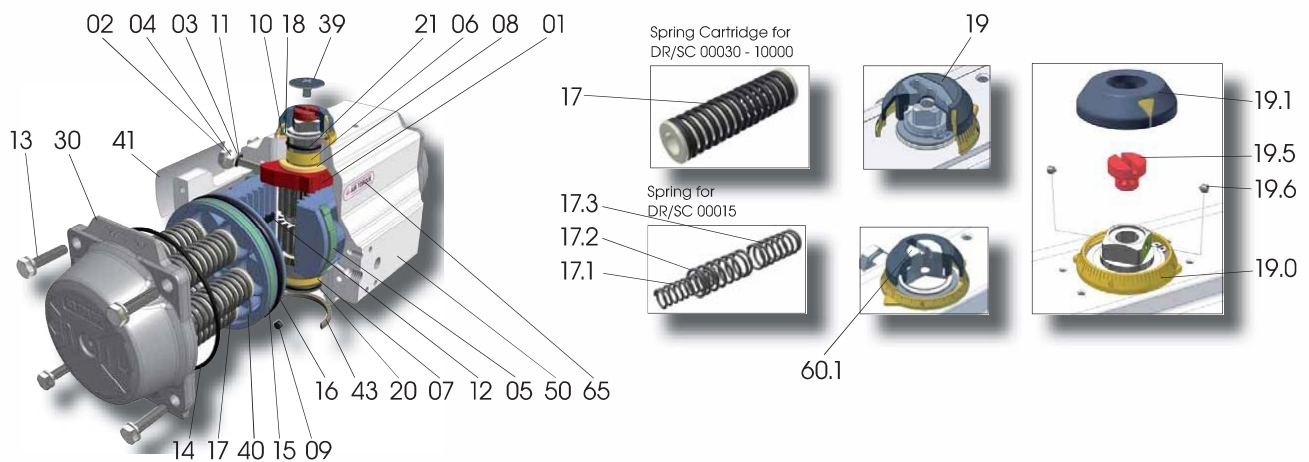
Operating Medium:

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, Class 3).

(B) Every temperature range option requires proper components and lubricant. Please contact BSA Armaturen.

(C) Rotation for standard actuator: 91,5° + 1° in open position and -0,5° in closed position. Rotation for actuator with external stroke adjustment 94,5° 90° + 4° adjustable in open position and -0,5° in closed position.

pneumatic actuator, DR/SC 10



Pos.	Quantity / Note	Description	Material
01	1	Octi-Cam (Stop arrangement)	Stainless Steel (for DR/SC00015U - DR/SC00150U) Carbon Steel / Nodular Cast Iron, zinc coated
02	2	Stop Cap Screw	Stainless Steel
03	2	Washer	Stainless Steel
04	2	Nut (Stop screw)	Stainless Steel
05	2 4 for DR/SC 10000U	Bearing (Piston top)	hochwertiger Kunststoff
06	1	Bearing (Pinion top)	high-grade plastic
07	1	Bearing (Pinion bottom)	high-grade plastic
08	2	Thrust bearing	high-grade plastic
09	2	Plug	Silicone
09.1	2 for DR/SC 05000U-10000U	O-Ring plug	M-NBR
10	1	Thrust Washer	Stainless Steel
11	2	O-Ring (Stop screw)	M-NBR
12	2	Piston Guide	high-grade plastic
13	8 for DR/SC 00015U-02000U 12 for DR/SC 03000U-04000U 16 for DR/SC 05000U-10000U	Cap Screw	Stainless Steel
13.1	16 for DR/SC 10000U	Washer (Cap screw end cap)	Stainless Steel
14	2	O-Ring (End cap)	M-NBR
15	2	Bearing (Piston head)	high-grade plastic
16	2	O-Ring (Piston)	M-NBR
17	max.12 for DR/SC 00030U-10000U	Spring Cartridge	
17.1		Spring	SiCr Spring Steel
17.2	max. 2 for DR/SC 00015U	Spring	
17.3		Spring	
18	1	Spring Clip	SiCr Spring Steel, ENP
19	1 for DR/SC 00015U-00030U	Position Indicator	high-grade plastic / Stainless Steel
19.0	1	Graduated Ring	high-grade plastic
19.1	1 for DR/SC 00015U-00030U	Position Indicator	high-grade plastic
19.5	1 for DR/SC 00015U-00030U	Top Adaptor	Extruded Aluminium alloy, anodized
19.6	2 for DR/SC 00015U-00030U	Hex. Socket Screw (Top adaptor)	Stainless Steel
20	1	O-Ring (Pinion bottom)	M-NBR
21	1	O-Ring (Pinion top)	M-NBR
30	2	End Cap	Pressure Die Cast Aluminium alloy, coated Cast Aluminium alloy, coated (DR/SC.10000)
39	1	Cap Screw (Indicator)	high-grade plastic
40	2	Piston	Pressure Die Cast Aluminium alloy, coated Cast Aluminium alloy, coated (DR/SC.10000)
41	1	Label	Polyester Aluminium
43	1	Spigot (on request*)	Extruded Aluminium alloy, anodized
50	1	Body	Extruded Aluminium alloy, coated Cast Aluminium alloy, coated (DR/SC 05000+10000)
60	1	Drive Shaft	Extruded Aluminium alloy, anodized (DR/SC.10000) Carbon Steel, ENP
60.1	1 not for all types	Integral Drive Shaft	Stainless Steel, ENP
65	1	Plastic Insert	high-grade plastic

○ enclosed in spare part kit ◻ enclosed in O-Ring kit *on request

pneum._actuator_DR-SC-10_ENG_2017_Rev.0