

Gemini Valve B.V.

Zijperstraat 29, 1823CX Alkmaar, Netherlands
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Trutorq-S



Actuator Type S - Technical Data, Summary Size 3 and 5



Trutorq actuators are pneumatic quarter turn actuators based on double rack and pinion design.

The S-type actuator is generally recommended to "small" Ball valves and Plug valves.

Material, standard (outside)

- Anodized Aluminum, Black

Movement

- 0° to 90°

End Stop Adjustment

Single End Stop Adjustment, Open position, located in the End Cap

Over travel

- Open: 3°
- Closed: 0° to 0.5°
- Note! If the actuator is assembled Fail Open (FO), the over travel will be the opposite, ie.
Open: 0° to 0.5°
Closed: 3°

Sizes

- 3 and 5

Torque

Linear torque, ie a Double Acting (DA) Actuator has the same torque over the entire movement

Torque Output, Double Acting (DA) at 6 bar/80 psi

- 23 to 50 Nm
- 192 to 442.54 in.lbs

Torque Output, Spring Return (SR) at 6 bar/80 psi

- 8 to 18 Nm
- 64 to 159.31 in.lbs

Operating Pressure

- DA: 2-10 bar / 30-145 psi
- SR: 2-10 bar / 30-145 psi. When the Actuators will be used at Operating pressures below 5.5 bar / 79.8 psi, we recommend that you contact your TT distributor.

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Drive Medium

- Standard: Air (Dry or Lubricated) or inert gases (non-dangerous fluids)

Temperature Range, Standard execution (Buna Nitrile, NBR O-seals)

- - 30° to + 80°C
- - 22° to + 175°F

Temperature Range, High temperature (Viton O-seals)

- - 20° to + 140°C
- - 4° to + 284°F

Temperature Range, Low temperature

- -45° to +60°C
- -49° to +140°F

Temperature Range, Arctic temperature

- -50° to +60°C
- -58° to +140°F

Stroke, Double Acting (DA)

Looking at the front of the Actuator, Port A is on the left side and Port B on the right

Port A: Air to Open (Anti-clockwise)

Port B: Air to Close (Clockwise)

Stroke, Spring Return (SR)

Port A: Air to Open (Anti-clockwise, compressing springs)

Port B: Exhaust Port

Setting from the factory: Fail close (FC), clockwise closing. To change to Fail Open (FO): see separate instructions

Max number of springs

A Spring Kit consists of 12 single springs placed in a circle between the Pistons and End Caps. To adjust for different Air Pressure; reduce the number of springs.

Drive shaft

Stardrive shaft tailored to international standard for square-section shafts.

Standard Connections

Solenoid valves – Namur

Fitting accessories – ISO 5211, DIN 3337, Namur

Stardrive shaft – ISO 5211 (90°), DIN 79 (45°), Namur

Lubricants, recommended

Springs and piston rack segments: Statoil Molyway LI 712 or similar

O-rings and plastic parts: Statoil Uniway LIX 42PA or similar

Standards and Certificates

The Actuators are designed to and in compliance with several different standards. They also have different types of certificates, see separate information.

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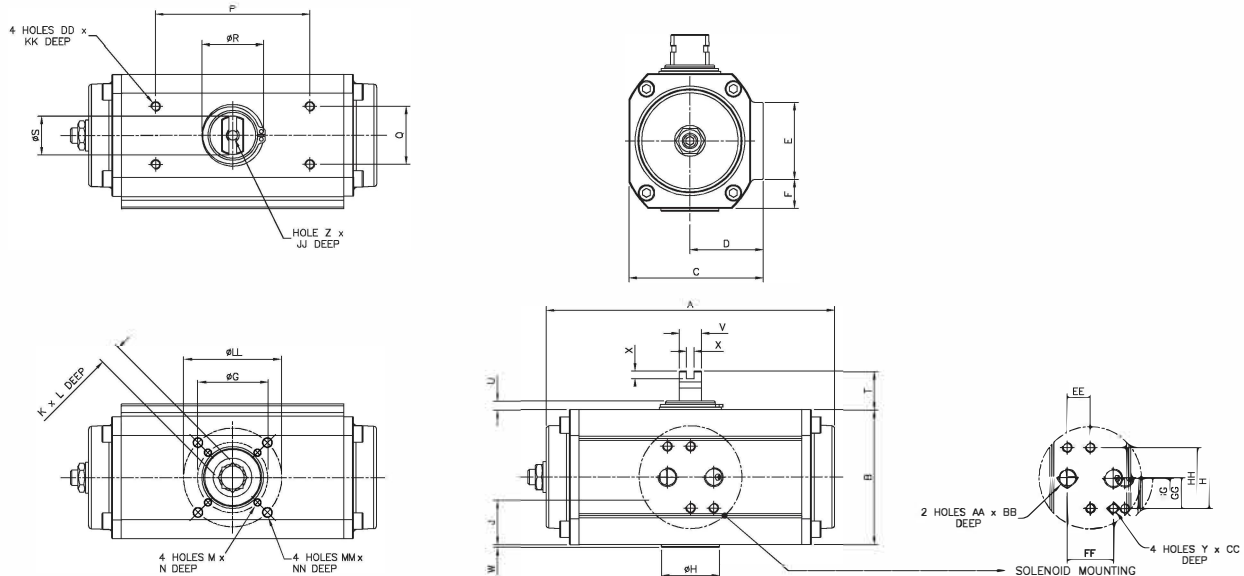
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TruTorq Pneumatic Actuator Type S, Metric Size 3 and 5

- Double acting (DA) and Spring Return (SR)
- Single End Stop Adjustment, open position



DIMENSIONS, METRIC (mm)

Actuator size	ISO	A	B	C	D	E	F	ØG	ØH	J	K	L	M	N	P	Q	ØR	ØS	T	U
TT 3	F04	149.5	70.0	69.5	38.0	49.0	10.5	42.0	30.0	23.0	11.0	11.0	M5	8.0	80.0	30.0	32.0	20.0	20.0	4.5
TT 5	F05/F07	186.5	87.0	90.5	49.0	49.0	22.0	50.0	35.0	34.5	14.0	15.0	M6	10.0	80.0	30.0	32.0	20.0	20.0	4.5

Actuator size	ISO	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	ØLL	MM	NN
TT 3	F04	11.5	1.5	4.0	M5	M6	G1/8	10.0	8.0	M5	12.0	24.0	16.0	32.0	12.0	8.0	—	M6	10.0
TT 5	F05/F07	11.5	3.0	4.0	M5	M6	G1/8	10.0	8.0	M5	12.0	24.0	16.0	32.0	12.0	8.0	70.0	M8	12.0

TORQUE

Actuator size	Air Supply	DA Torque	SR Torque (Nm)				
	BAR	Nm	Air - Start	Air - End	Spring - Start	Spring - End	Spring Qty
TT 3	6	23	15	8	15	8	12
TT 5	6	50	32	18	32	18	12

OPERATING DETAILS

Actuator size	Operating time (sec) *				Air consumption (litre)		Overall weight (kg)	
	DA Open	DA Close	SR Open	SR Close	Open	Close	DA	SR
TT 3	< 1	< 1	< 1	< 1	0.1	0.1	1.3	1.4
TT 5	< 1	< 1	< 1	< 1	0.2	0.3	2.5	2.7

* Note! May be affected by air pipe diameter and type of solenoid valve

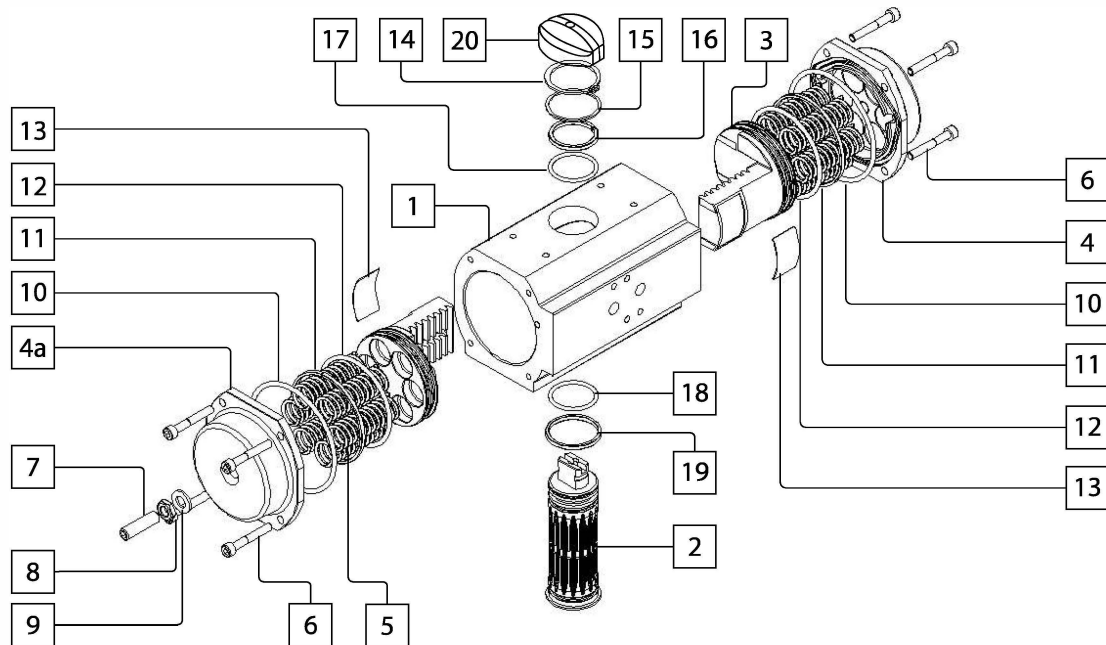
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Part List for Pneumatic Actuator Type S, Size 3 and 5



S-Type Actuator			Material
Ref.no.	Description	Quantity	Standard
1	Body	1	Alum. Anodized
2	Driveshaft	1	Ni Plated Steel + Teflon
3	Piston	2	Alum.
4	End Cap	1	Polyester Coated
4a	End Cap with Stop Adjustment	1	Polyester Coated
5	Spring	max 12	SiCr
6	End Cap Bolt	8	Stainless Steel
7	Stop Adjustment Screw	1	Stainless Steel
8	Stop Adjustment Nut	1	Stainless Steel
9	Stop Adjustment Washer	1	Stainless Steel
10	Stop Adjustment O-ring	1	Buna Nitril
11	End Cap O-ring	2	Buna Nitril
12	Piston Back-up Bearing	2	POM
13	Piston O-ring	2	Buna Nitril
14	Piston Wearpad	2	POM
15	Driveshaft Washer	1	POM
16	Driveshaft Circlip	1	Steel
17	Driveshaft Upper O-ring	1	Buna Nitril
18	Driveshaft Upper Bearing	1	POM
19	Driveshaft Lower O-ring	1	Buna Nitril
20	Driveshaft Lower Bearing	1	POM
21	Centralization Ring	1	POM
22	Position Indicator	1	POM