

Rack & Pinion Pneumatic Actuator / Features

General Features

- High performance
- Long lasting
- High torque (rotation movement) output
- Position indicator
- Body: Extruded aluminium, (on request; anodized)
- Optionally; epoxy painted body or PTFE coated body
- Piston and caps: Die cast aluminium
- Double acting actuators can turn into single acting easily
- Single acting actuator's springs, preloaded and durable
- Sensitive and high quality working of bearing system and o-ring
- Stroke adjustment:

RA032-120 actuators apply in both ways $\pm 5^\circ$

RA143-350DA actuators can be made in only the closed position 35°

RA143-350SR actuators have to stroke adjustment

- Nickel covered steel or stainless steel shaft
- ISO 5211, DIN 3337 and namur standard
- Limit switchbox, positioner connection is namur standard

Design Features of TORK RA Series Actuator (Rack & Pinion Actuator)

- 1) **Actuator Body:** Corrosion protected aluminium extruded body.
- 2) **Indicator:** It is standard on all actuators.
- 3) **Caps:** Aluminium extruded caps provide maximum resistance against corrosion, caps are suitable for single and double acting actuators
- 4) **Stroke Adjustment:** Permit adjustment of 3 %5 in both directions.
- 5) **Springs:** Cartridge design and corrosion resistant springs.
- 6) **Piston Bearing O-rings:** Long lasting
- 7) **Nuts and Bolts:** Stainless steel and high resistance for corrosion.
- 8) **Actuator Pistons:** Aluminium injections. High quality o-rings and against corrosion.
- 9) **Connections:**

- Solenoid Valve, Limit Switch Box,

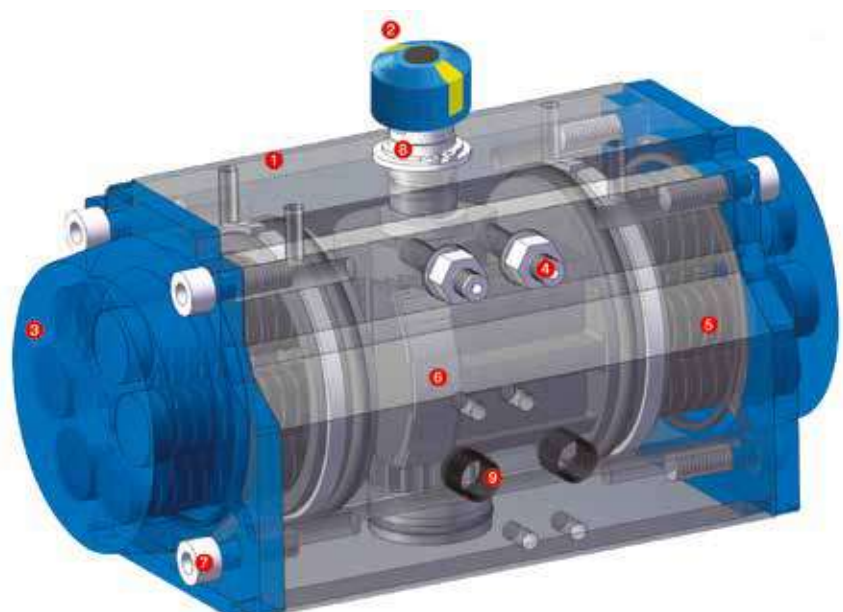
Positioner: Namur VDINDE3845

- Ball, Butterfly and Plug Valve Montage:

ISO5211, DIN3337standard

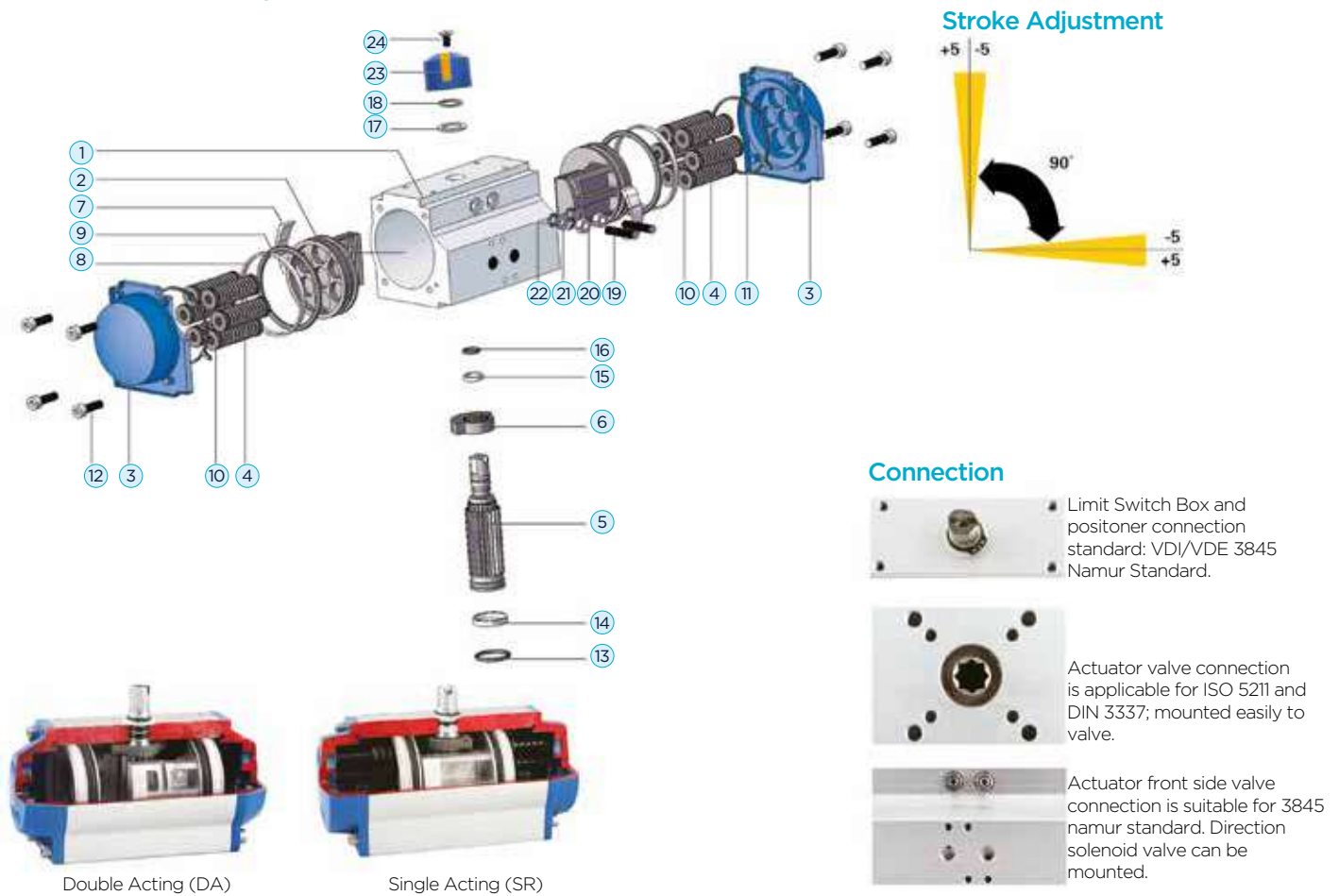
Air Quality:

ISO 8573-1 : 7-4-4 (Particle - Water - Oil)



Rack & Pinion Pneumatic Actuator / Spare Parts

RA Series (DA/ SR): Spare Part List



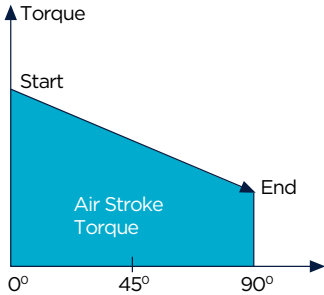
PART NO	UNIT QUANTITY	PART DESCRIPTION	STANDARD MATERIAL
1	1	Body	Extruded Aluminium Alloy
2	2	Piston	Die Cast Aluminium
3	2	Cap	Die Cast Aluminium
4	min.5/max.12	Spring	High Alloy Spring Steel
5	1	Pinion	Steel Alloy
6	1	Cam (Stop Arrangement)	Stainless Steel
7	2	Bearing (Piston Back)	Polyphthalamide
8	2	Bearing (Piston Sliding)	Polyphthalamide
9	2	Piston "O" Ring	Nitrile (NBR70)
10	min.5/max.12	Spring Holder	Polypropylene + Gf
11	2	Cap "O" Ring	Nitrile (NBR70)
12	8	Cap Bolt	Stainless Steel
13	1	Pinion Bottom "O" Ring	Nitrile (NBR70)
14	1	Bearing (Pinion Bottom)	Polyphthalamide
15	1	Bearing (Pinion Top)	Polyphthalamide
16	1	Pinion Top" O" Ring	Nitrile (NBR70)
17	1	Thrust Bearing	Polyphthalamide
18	1	Spring Clip	Steel Alloy
19	2	Stop Set Screw	Stainless Steel
20	2	Stop Nut	Stainless Steel
21	2	Strop Set Screw Washer	Stainless Steel
22	2	Strop Set Screw "O" Ring	Nitrile (NBR70)
23	1	Indicator	Polypropylene + Gf
24	1	Indicator Screw	Stainless Steel

Note: All sealing and bearing elements are included in the repair kit.

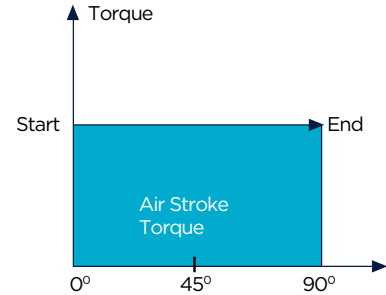
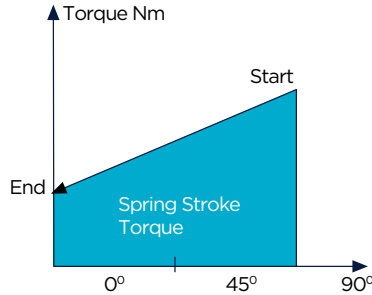
Part No: 7, 8, 9, 11, 13, 14, 15, 16, 22

Rack & Pinion Pneumatic Actuator/ Operation

TORK Actuator, Tork Output Diagrams Rack & Pinion Actuator

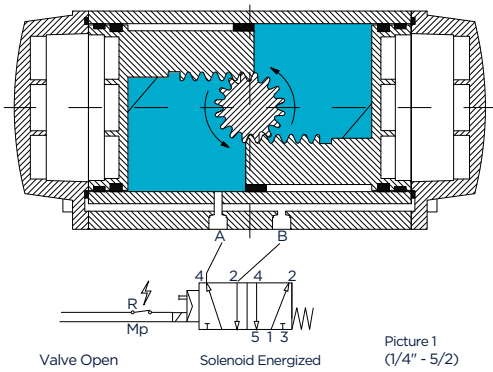


TORK RA ... SR Series (Single Acting) Actuator Output Diagram

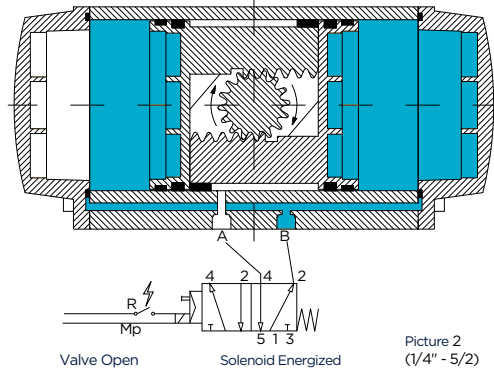


TORK RA ... DA Series (Double Acting) Actuator Output Diagram

TORK RA/RX/RAM/RXM....DA Series Actuator Operation (Double Acting) Rack & Pinion Actuator

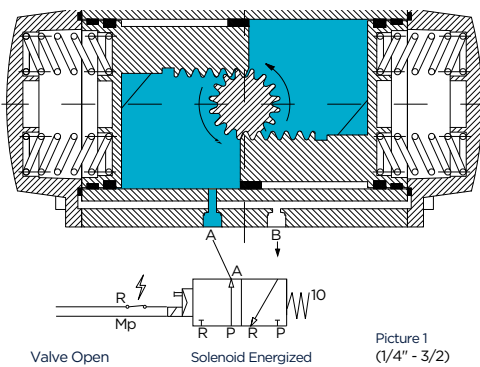


Picture 1
(1/4" - 5/2)

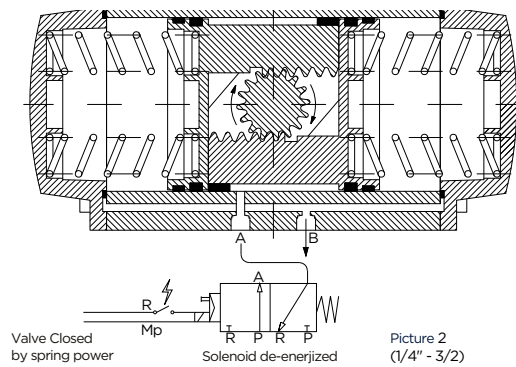


Picture 2
(1/4" - 5/2)

TORK RA/RX/RAM/RXM....SR Series Actuator Operation (Single Acting) Rack & Pinion Actuator

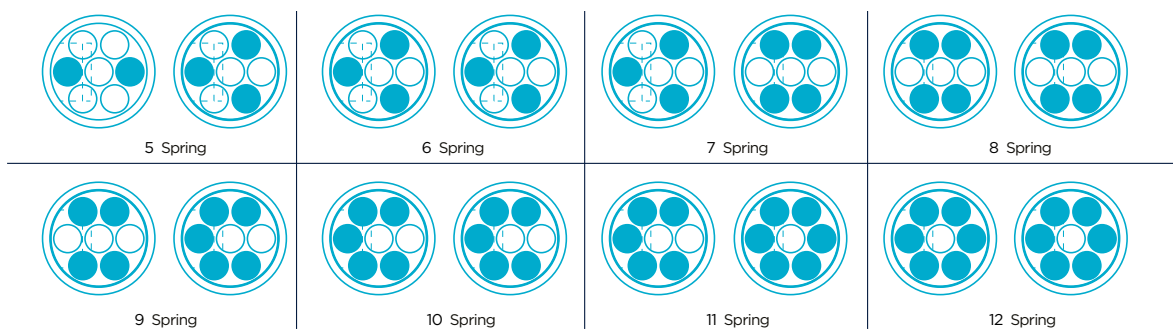


Picture 1
(1/4" - 3/2)



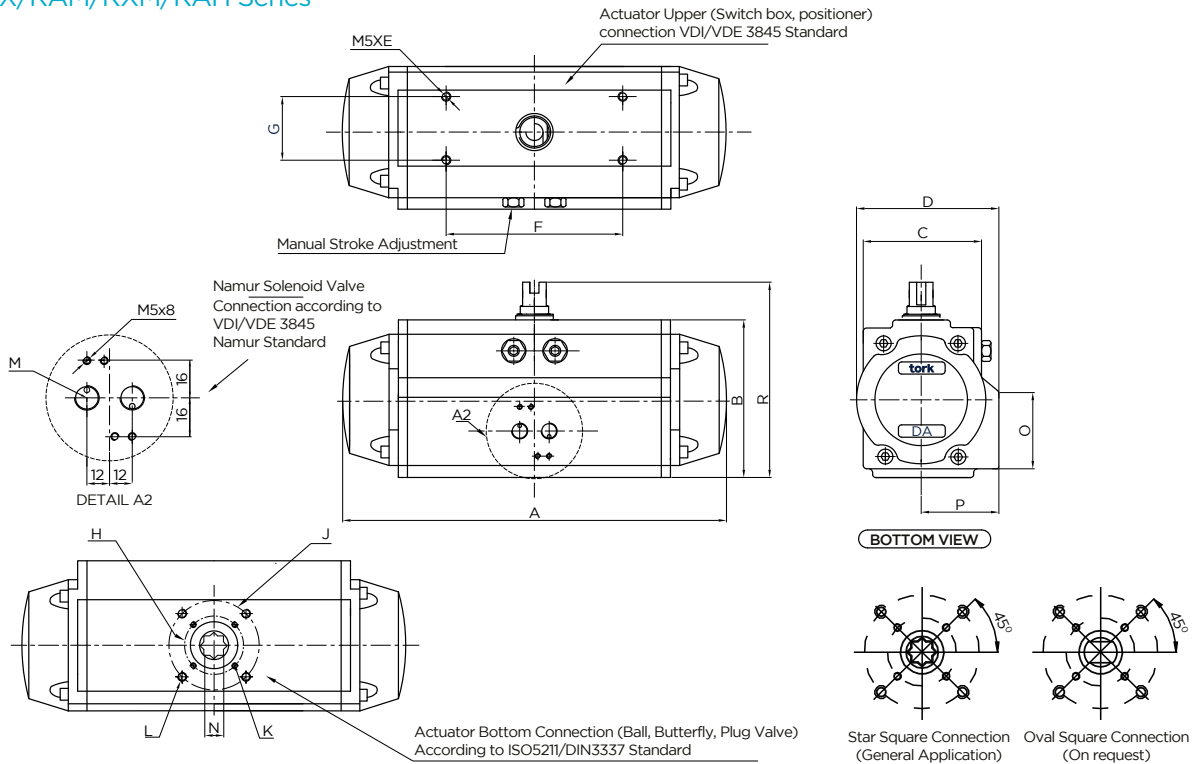
Picture 2
(1/4" - 3/2)

TORK RA ... SR Series (Single Acting) Actuator Spring Arrangement



Rack & Pinion Pneumatic Actuator 2 Position 90° Turn / Sizes

RA/RAX/RAM/RXM/RAH Series



DIMENSION (mm)

ACTUATOR MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	ISO FLANGE FOR H	ISO FLANGE FOR J
RA/RX/RAM/RXM 32 DA	98	47	45	-	8.0	50	25	36	-	M5	-	1/8"	9	-	-	67	F03	-
RA/RX/RAM/RXM 40 DA/SR	137.2	70	52.0	70.6	8.0	80.0	30.0	36/42/50	-	M5	M6	1/8"	9/11/14	45.0	39.7	90	F03/F04	F05
RA/RX/RAM/RXM 52 DA/SR	172.6	85	62.0	82.7	8.0	80.0	30.0	42/50	70.0	M5/M6	M8	1/8"	9/11/14	47.0	47.0	105	F04/F05	F07
RA/RX/RAM/RXM 60 DA/SR	172.6	85	62.0	82.7	8.0	80.0	30.0	42/50	70.0	M5/M6	M8	1/8"	9/11/14	47.0	47.0	105	F04/F05	F07
RA/RX/RAM/RXM 75 DA/SR	242.0	117	91.8	109.2	8.0	80.0	30.0	50	70.0	M6	M8	1/8"	11/14/17	54.8	58.3	137	F05	F07
RA/RX/RAM/RXM 80 DA/SR	242.0	117	91.8	109.2	8.0	80.0	30.0	50	70.0	M6	M8	1/8"	11/14/17	54.8	58.3	137	F05	F07
RA/RX/RAM/RXM 100 DA/SR	282.0	130	95.0	121.0	8.0	80.0	30.0	70	102.0	M8	M10	1/4"	14/17/22	61.0	65.0	150	F07	F10
RA/RX/RAM/RXM 120 DA/SR	360.0	158	116.2	150.0	8.0	80.0	30.0	70	102.0	M8	M10	1/4"	17/22	82.0	87.2	178	F07	F10
RA/RX/RAM/RXM 143 DA	342	188	182	182	8.0	80.0	30.0	102	140	M10	M16	1/4"	22/27	91	91	208	F10	F14
RA/RX/RAM/RXM 160 DA	374	215	202	202	8.0	80.0	30.0	102	140	M10	M16	1/4"	22/27	101	101	235	F10	F14
RA/RX/RAM/RXM 200 DA	458	270	242	242	8.0	80.0	30.0	-	140/165	-	M20	1/4"	36	121	121	290	-	F14/F16
RA/RX/RAM/RXM 270 DA	540	354	-	330	8	130	30	-	165	-	M20	1/4"	46/55	-	-	384	-	F16
RA/RX/RAM/RXM 350 DA	586.3	440	-	440	8	130	30	-	165	-	M20	1/4"	46	-	-	470	-	F16
RA/RX/RAM/RXM 143 SR	514	188	182	182	8.0	80.0	30.0	102	140	M10	M16	1/4"	22/27	91	91	208	F10	F14
RA/RX/RAM/RXM 160 SR	558	215	202	202	8.0	80.0	30.0	102	140	M10	M16	1/4"	22/27	101	101	235	F10	F14
RA/RX/RAM/RXM 200 SR	680	270	242	242	8.0	80.0	30.0	-	140/165	M16	M20	1/4"	36	121	121	290	-	F14/F16
RA/RX/RAM/RXM 270 SR	775.5	354	-	330	8	130	30	-	165	-	M20	1/4"	46/55	-	-	384	-	F16
RA/RX/RAM/RXM 350 SR	866.5	440	-	440	8	130	30	-	165	-	M20	1/4"	46	-	-	470	-	F16

ACTUATOR MODEL	OPEN VOLUME OPENING (L)	AIR VOLUME CLOSING (L)	OPENING TIME (sec)	CLOSING TIME (sec)	APPROXIMATE WEIGHT (kg)
RA/RX/RAM/RXM 32 DA	DA	0.03	0.02	0.1	0.4
RA/RX/RAM/RXM 40 DA/SR	DA	0.09	0.16	0.22	0.85
	SR			0.26	1.02
RA/RX/RAM/RXM 52 DA/SR	DA	0.17	0.28	0.27	1.70
	SR			0.33	1.80
RA/RX/RAM/RXM 60 DA/SR	DA	0.17	0.28	0.27	1.70
	SR			0.33	1.80
RA/RX/RAM/RXM 75 DA/SR	DA	0.50	0.79	0.39	3.80
	SR			0.48	4.40
RA/RX/RAM/RXM 80 DA/SR	DA	0.50	0.79	0.39	3.80
	SR			0.48	4.40
RA/RX/RAM/RXM 100 DA/SR	DA	0.73	1.15	0.52	4.90
	SR			0.63	6.10
RA/RX/RAM/RXM 120 DA/SR	DA	1.61	2.45	0.95	9.60
	SR			1.15	11.40
RA/RX/RAM/RXM 143 DA	DA	2.85	1.95	2.40	13.00
RA/RX/RAM/RXM 160 DA	DA	3.25	2.56	2.60	19.10
RA/RX/RAM/RXM 200 DA	DA	6.41	5.50	3.40	33.40
RA/RX/RAM/RXM 270 DA	DA	13.75	10.45	4.3	65
RA/RX/RAM/RXM 350 DA	DA	25	19.40	5.20	125.00
RA/RX/RAM/RXM 143 SR	SR	2.85	0	3.20	17.60
RA/RX/RAM/RXM 160 SR	SR	3.25	0	3.80	26.80
RA/RX/RAM/RXM 200 SR	SR	6.41	0	4.80	45.90
RA/RX/RAM/RXM 270 SR	SR	13.75	0	5.3	68
RA/RX/RAM/RXM 350 SR	SR	25	0	6.20	155