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valve & automation

SCOTCH YOKE PNEUMATIC ACTUATOR



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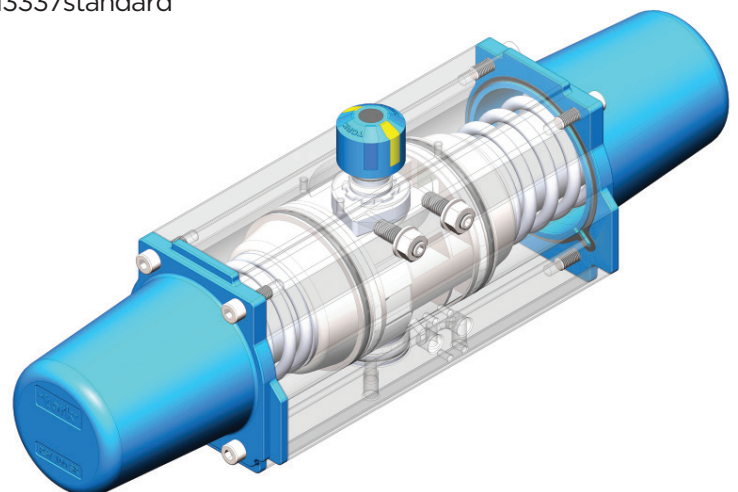
Scotch Yoke Pneumatic Actuator / Features

General Features

- High performance
- Long lasting
- High torque (rotation movement) output
- Position indicator
- Body: Extruded aluminium
- Piston and caps: Extruded 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 in both ways 3 50
- Nickel covered steel or stainless steel shaft
- ISO 5211, DIN 3337 and namur standard
- Limit switchbox, positioner connection is namur standard
- Direction valve montage is namur standard
- Actuator valve montage is ISO 5211 standard

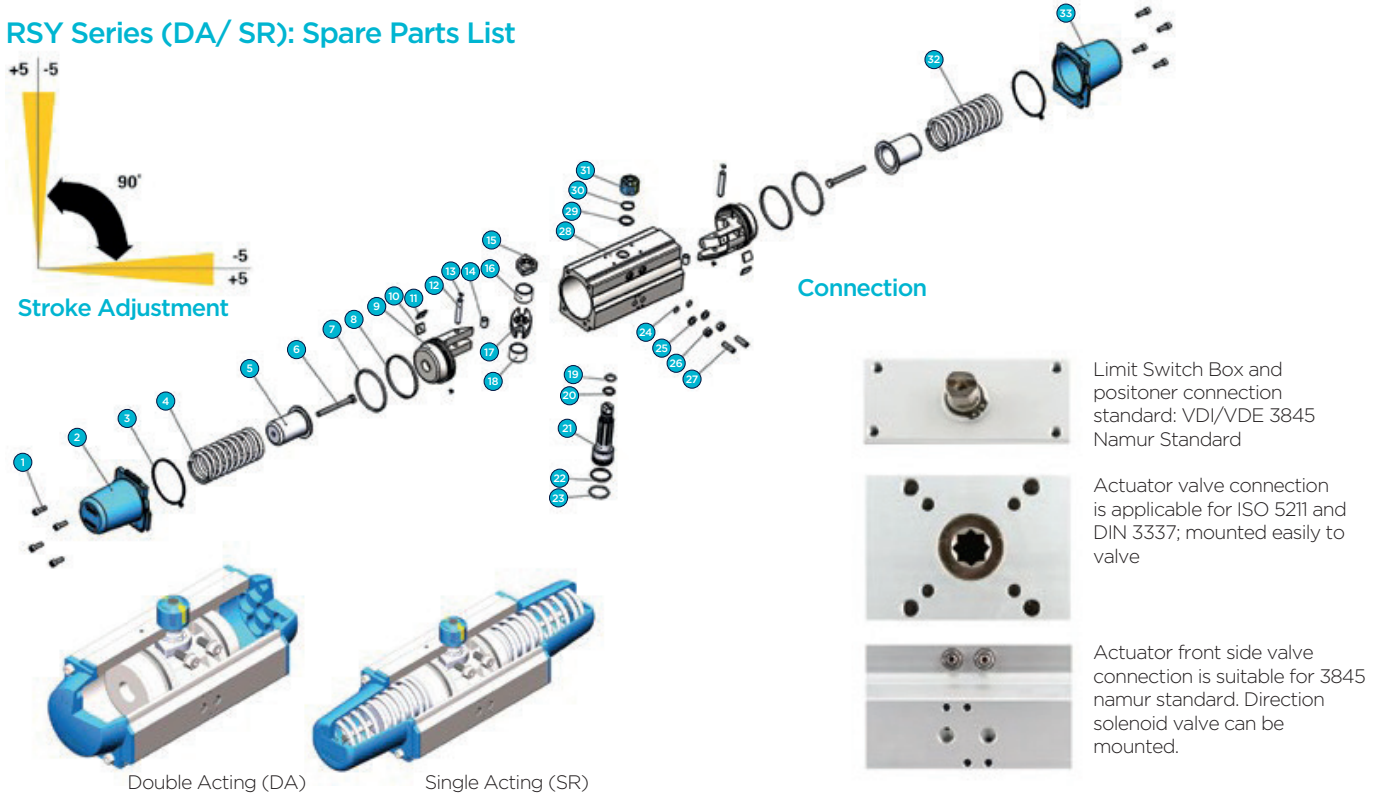
Design Features of TORK RA Series Actuator (Scotch Yoke Actuator)

- 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 $\pm 5\%$ 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
- 10) High torque
- 11) Long lasting
- 12) Reach high torque value at opening and closing



Scotch Yoke Pneumatic Actuator/ Spare Parts

RSY Series (DA/ SR): Spare Parts List

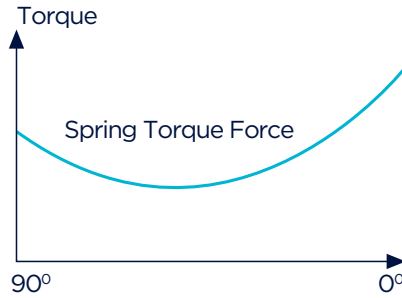
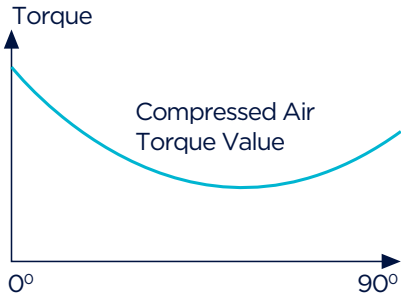


PART NO	UNIT QUANTITY	PART DESCRIPTION	STANDARD MATERIAL
1	8	SCREW DIN 912 M8X25 INOX IMBUS CAP T-RPA 100	AISI 304
2	1	CAP LEFT TORK-RA 100 BOYANMIŞ (BLUE RAL: 5017)	ETIAL 160
3	2	SEAL CAP TORK-RA 100 - SMS 28 (HI-NBR)	HNBR
4	2	O-RING 90X5 PISTON TORK-RA 100	NBR
5	2	DEL38PISHAL100	POM-C
6	2	PISTON T-RSY 100 COATED (SCOTH YORK)	ETIAL 160
7	2	DELIN SCOTH-YORK PISTON BACK RIGHT T-RSY 100	POM-C
8	2	DELIN SCOTH-YORK PISTON BACK LEFT T-RSY 100	POM-C
9	2	PIM FLAT 10X62 PISTON (SCOTCH YOKE)	STEEL
10	4	SEGMAN 6799/5 AY HRA	STAINLESS STEEL
11	2	PUL T-RSY 100 RAW MATERIAL (SCOTH YOKE)	Ç 1040
12	1	STOPPER TORK-RSY 100	STEEL
13	1	DELIN STOPPER UST T-RSY 100	POM-C
14	1	STOPER	
15	1	DELIN STOPPER BOTTOM T-RSY 100	POM-C
16	1	O-RING 19X3 MIL UPPER TORK-RA 100	NBR
17	1	DELIN MIL UPPER TORK-RA 100	POM-C
18	1	SHAFT TORK-RSY 100 22 (SCOTCH YOKE) TREATED	Ç 1040
19	1	DELIN MIL BOTTOM TORK-RA 100	POM-C
20	1	O-RING 39X3 MIL BOTTOM TORK-RA 100	NBR
21	1	BODY TORK-RA 100 COATED	A6063-T6
22	2	O-RING 9X3 CAP TORK-RA 100	NBR
23	2	PUL M10 INOX CAP TORK-RA 100	AISI 304
24	2	SOMUN M10 INOX CAP TORK-RA 100	AISI 304
25	1	SETISKUR 10X35 INOX CAP TORK-RA 100	AISI 304
26	1	DELIN MIL SEGMAN TORK-RA 100	POM-C
27	1	SEGMAN 471/25 MIL TORK-RA 100	8.8
28	1	ACTUATOR POSITION INDICATOR BODY	ABS
29	2	CAP RIGHT TORK-RA 100 (BLUE RAL: 5017)	ETIAL 160

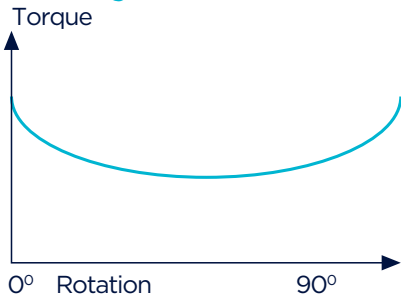
Scotch Yoke Pneumatic Actuator / Operating Principle

Scotch Yoke Actuator

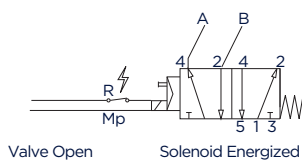
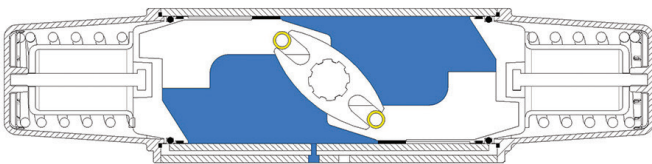
Single Acting Actuator



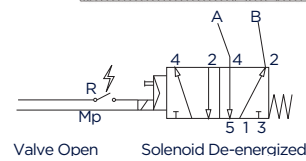
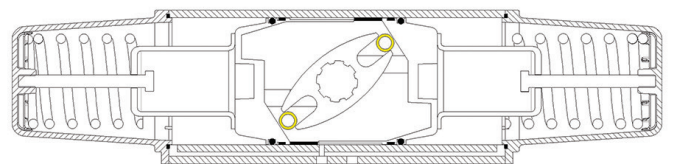
Double Acting Actuator



Scotch Yoke Actuator (Single Acting)

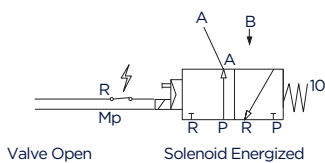
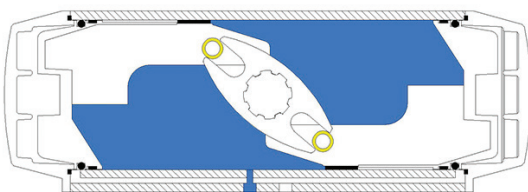


Picture 1 (1/4" - 5/2)

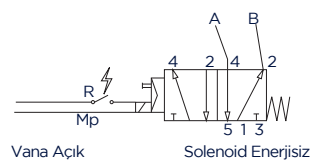
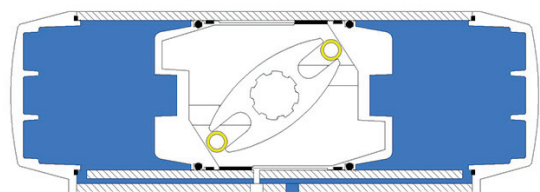


Picture 2 (1/4" - 5/2)

Scotch Yoke Actuator (Double Acting)



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



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

Scotch Yoke Pneumatic Actuator / Torque Values

Double Acting Actuators Torque Values (According to Compressed Air)

MODEL	Angel	3 bar	4 bar	5 bar	6 bar	7 bar	7 bar
RSY 32 DA	0°C	*	5	7	9	11	14
	45°C	*	2.5	3.5	4.5	6	8
	90°C	*	5	7	9	11	11
RSY 40 DA	0°C	*	21	23	25	28	28
	45°C	*	9	10	11	13	13
	90°C	*	21	23	25	28	28
RSY 60 DA	0°C	*	65	109	120	128	135
	45°C	*	35	61	70	80	82
	90°C	*	65	109	120	128	135
RSY 80 DA	0°C	112	165	200	220	235	245
	45°C	72	101	130	150	162	170
	90°C	112	165	200	220	235	245
RSY 100 DA	0°C	210	240	290	365	401	401
	45°C	145	165	190	250	310	310
	90°C	210	240	290	365	401	401
RSY 120 DA	0°C	390	491	613	762	815	815
	45°C	290	360	440	531	570	570
	90°C	390	491	613	762	815	815

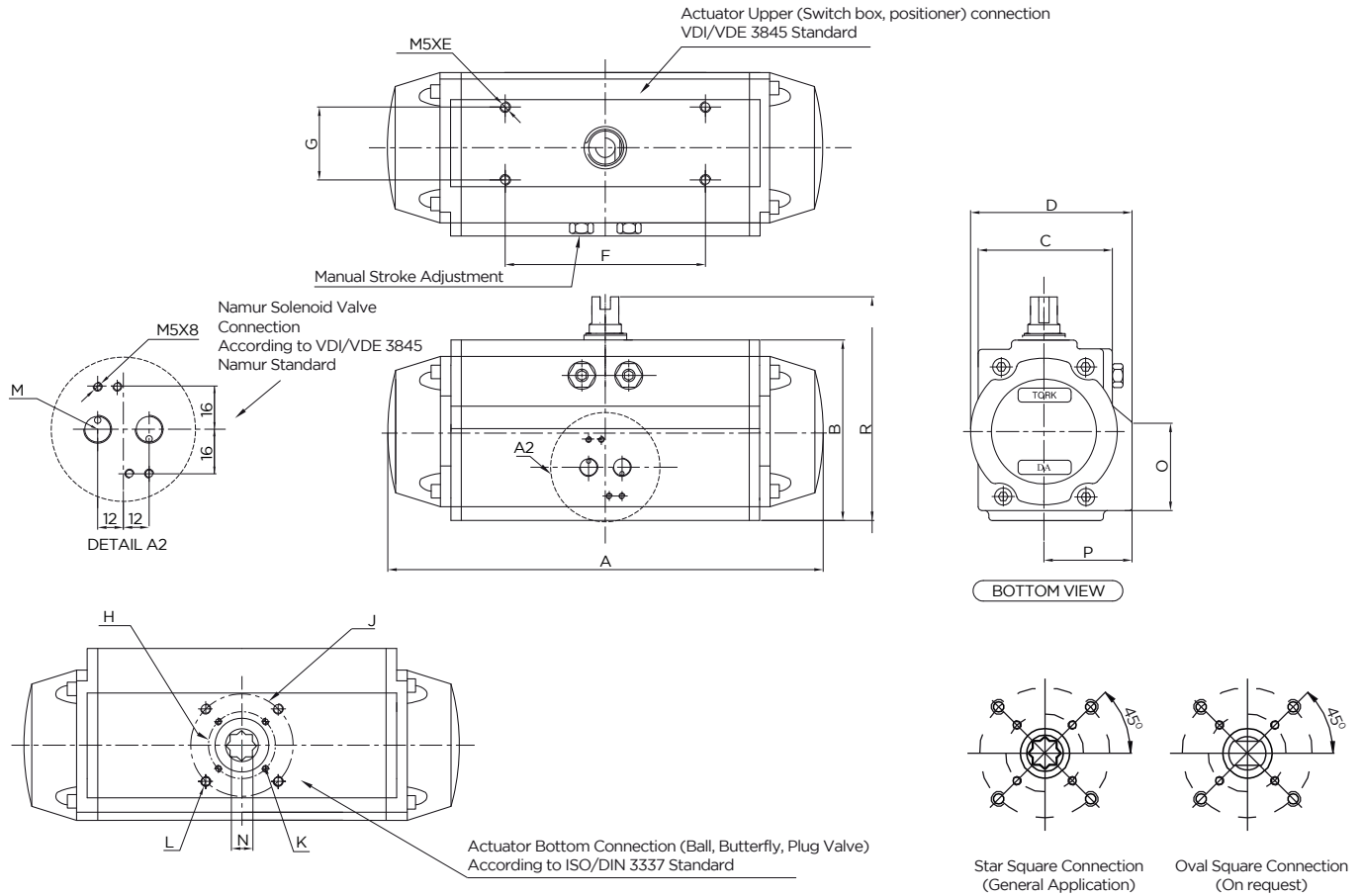
Single Acting Scotch Yoke Actuator Torque Values (Nm)

MODEL	Angel	Spring	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar
RSY 40 SR	0°C	5	*	*	7	8	9	10
	45°C	4	*	*	3	4	5	6
	90°C	8	*	*	4	5	6	8
RSY 60 SR	0°C	70	*	*	40	90	108	123
	45°C	35	*	*	23	35	56	70
	90°C	90	*	*	28	70	81	103
RSY 80 SR	0°C	85	x	65	90	135	168	205
	45°C	75	x	27	52	75	101	125
	90°C	135	x	20	63	85	120	139
RSY 100 SR	0°C	130	80	130	160	240	270	360
	45°C	110	35	55	70	110	150	170
	90°C	240	75	90	110	130	170	195
RSY 120 SR	0°C	300	390	385	415	510	580	645
	45°C	260	100	115	170	260	290	330
	90°C	510	125	155	210	300	365	410

MODEL	Open Air Volume (L)	Close Air Volume (L)	Opening Time (Sn)	Closing Time (Sn)	Approximste Weigh (kg)
RSY 032 DA	0,04	0,03	0,1	0,1	0,4
RSY 040 DA	0,01	0,2	0,25	0,3	0,9
RSY 060 DA	0,2	0,3	0,3	0,35	1,8
RSY 080 DA	0,6	0,9	0,4	0,5	4
RSY 100 DA	0,9	1,3	0,6	0,7	5
RSY 120 DA	1,9	3	1	1,2	10
RSY 040 DA	0,01	0	0,3	0,35	1,1
RSY 060 DA	0,2	0	0,35	0,4	1,9
RSY 080 DA	0,6	0	0,5	0,6	4,5
RSY 100 DA	0,9	0	0,7	1	6,5
RSY 120 DA	1,9	0	1,2	1,5	12

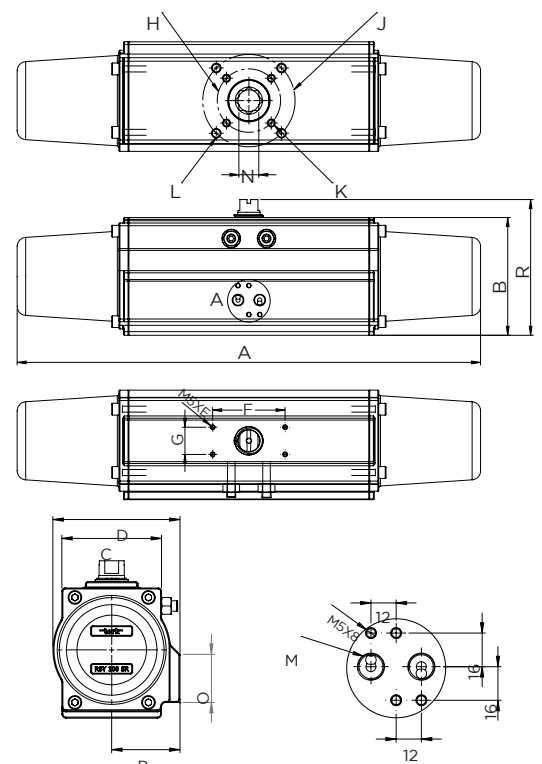
Scotch Yoke Pneumatic Actuators / Sizes

Double Acting Actuators Sizes



Single Acting Actuators Sizes

MODEL	A	B	C	D	F	G	H	J	K	L	M	N	O	ISO
RSY32DA	77	45	45	-	30	30	36	-	M5	-	1/8"	9	-	F03
RSY40DA	108	70	52	70.6	80	30	36	50	M5	M6	1/8"	9	39.7	F03/ F05
RSY40SR		70	52	70.6	80	30	36	50	M5	M6	1/8"	9	39.7	F03/ F05
RSY60DA	235	85	62	82.7	80	30	50	70	M6	M8	1/8"	14	47	F05/ F07
RSY60SR	320	85	62	82.7	80	30	50	70	M6	M8	1/8"	14	47	F05/ F07
RSY80DA	320	117	92	109.2	80	30	70	-	M8	-	1/8"	14/17	54.8	F07
RSY80SR	473	117	92	109.2	80	30	70	-	M8	-	1/8"	14/17	54.8	F07
RSY100DA	352	130	95	121	80	30	70	102	M8	M10	1/4"	17/22	65	F07/ F10
RSY100SR	512	130	95	121	80	30	70	102	M8	M10	1/4"	17/22	65	F07/ F10
RSY120DA	390	160	116	150	80	30	70	102	M8	M10	1/4"	22	87.2	F07/ F10
RSY120SR		160	116	150	80	30	70	102	M8	M10	1/4"	22	87.2	F07/ F10



RASYM... DA, RASYM... SR Series Scotch Yoke Arctic Environment



- Arctic environment (-50°C ... 80°C) actuators are suitable for very cold environment until -50°C with long life time. These actuators are used for automatic control of rotary valves with compressed air.
- Arctic actuators are 2 types; single acting (spring return), double acting (air/air).
- Long lasting and high performance
- These actuators are designed for operating at minimum -50 °C ambient temperature.
- For using these actuators without any problem at -50°C, feeding air must not contain water particles at all, suitable air dryers must be used.
- These actuators can be used in -50°C ambient temperature without any power reduction for a long time.
- Sensitive and high quality bearing and o-ring parts
- Actuator bodies have aluminium extruded against corrosion.
- To operate these actuators, suitable namur valve (-50°C) must be used.

RASYM ... DA Series /RASYM ... SR Series

MODEL NO RASYM 32DA/SR, RASYM 40DA/SR, RASYM 60DA/SR,
RASYM 80DA/SR, RASYM 100DA/SR, RASYM 120DA/SR

Ambient Temperature	: -50°C 80°C
Operating Fluid	: Compressed Air
Operating Pressure (bar)	: 4 ...8
Protection Class (On request):	II 2GD c T4
Sealing Materials	: Special developed NBR
Actuator Body	: Aluminium
Air Quality	: ISO 8573-1: 7-1-4 (Particle - Water - Oil)

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