Pneumatic Rotary Actuators

DA/SR

VALBIA ISO 9001 CERTIFIED

FEATURES



Twin Rack and Pinion Design

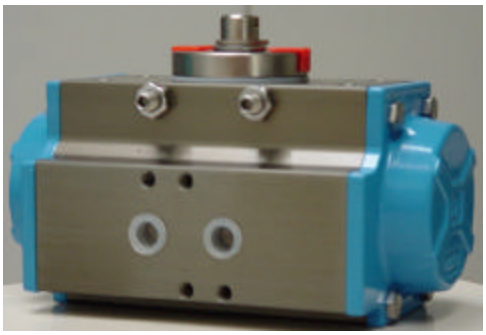
- Constant Torque Output
- Compact Design
- Balanced Internal Forces
- Robust Design For Long Life

Extruded Aluminum Body

- Hard Coat Anodized
- Smooth Surface Finish for Minimum Friction
- Optional Epoxy Coated or Nickel Plated
- End Caps are Die Cast Aluminum Polyester Coated

Nickel Plated Pinion

- Blowout Proof
- Optional in Stainless Steel



Die Cast Aluminum Pistons

- Constant Torque Output
- Optional Nickel Plating

Piston Guides in PTFE / Graphite

- Large Contact Area
- Self-Lubricating, Long Life

Spring Return Model SR

- Zinc Phosphate Steel Springs
- High Resistance and Reliable
- Long S.S. Bolts for safe End cap Removal



External Travel Stops

- Open or Closed Positions

Maximum Working Pressure and Temperature

- 150 psi for models 32 to 200
- 115 psi for Model 270
- Clean dry filtered air is required
- -20^{o}C to +85^{o}C with NBR Standard Seals
- -20^{o}C to +150^{o}C with Optional Viton Seals

Interfaces to ISO 5211, DIN 3337, and Namur Specifications

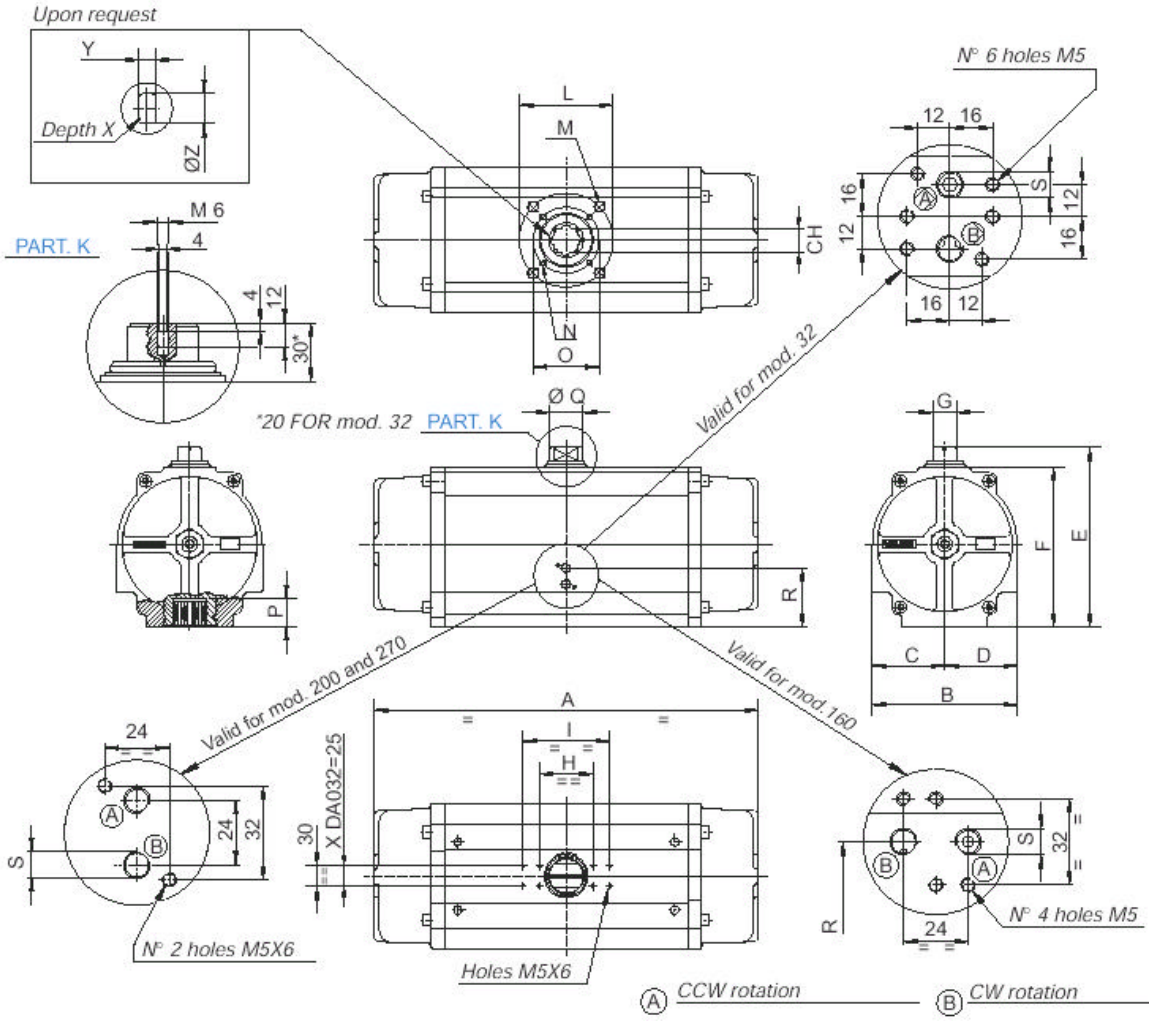
- Direct Mount to Ball or Butterfly Valves
- Namur Drilling for Solenoid and Positioner Mounting

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Pneumatic Rotary Actuators

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DIMENSIONS MODEL 32, 160-270



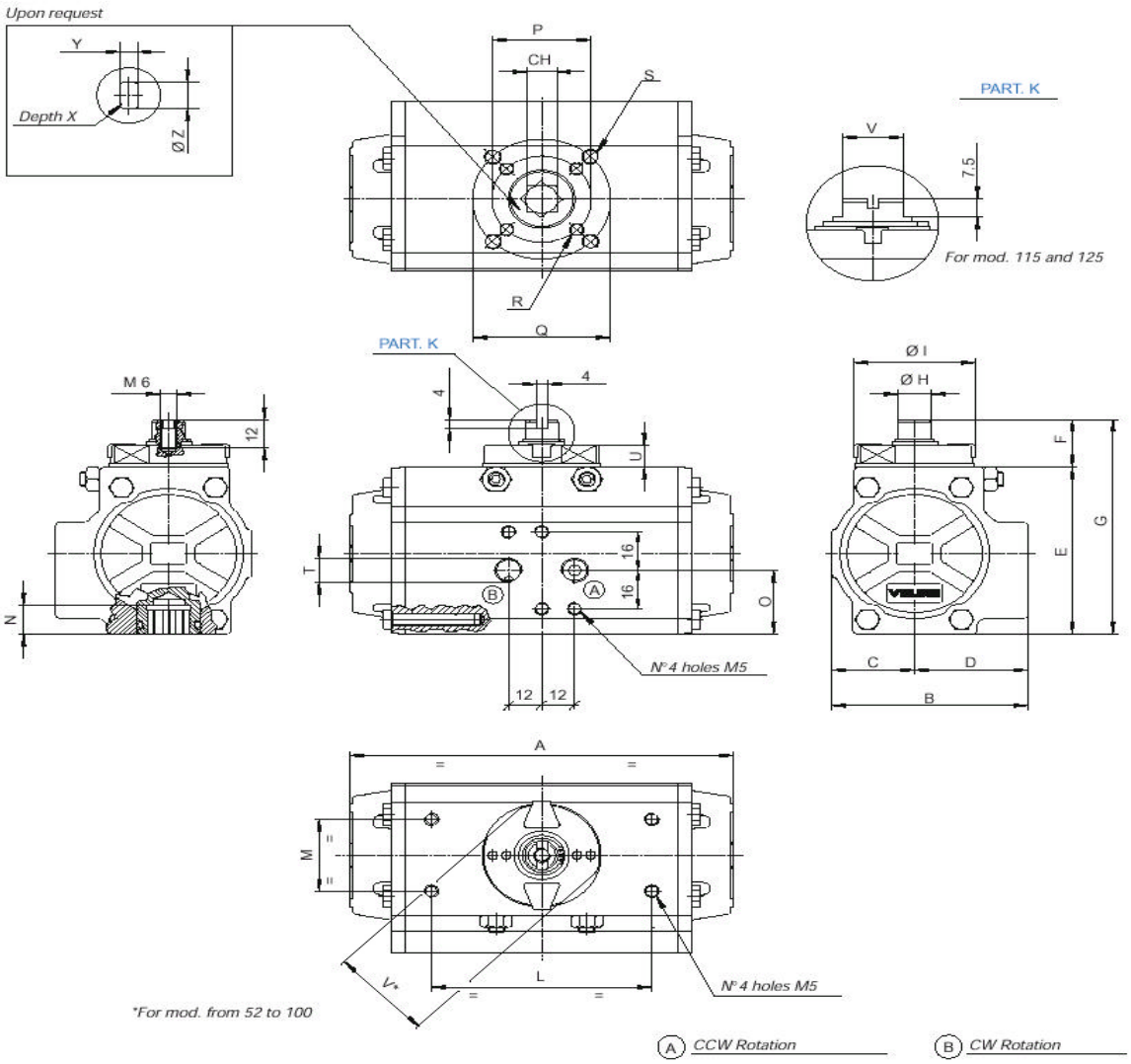
MOD	ISO 5211		CH	A	B	C	D	E	F	G	H	I	L	M	N	O	P	ØQ	R	S ISO 7/1	T	U	V	W	ØZ	Y
32	F03	IN	0.35	4.33	1.77	0.89	0.89	2.56	1.77	0.39	1.97	-	1.42	10-24 UNC 2B x 0.29	-	-	0.47	0.46	-	1/8"	-	-	-	-	0.48	0.35
		MM	9	110	45	22.5	22.5	65	45	10	50	-	36	M5X7.5	-	-	12	11.8	-	1/8"	-	-	-	-	12.1	9
160	F10 - F12	IN	1.06	20.55	7.36	3.43	3.94	8.58	7.40	1.18	3.15	5.12	4.92	1/2-13 UNC 2B x 0.71	3/8-16 UNC 2B x 0.59	4.02	1.26	1.38	3.21	1/4"	6.30	1.77	2.20	2.50	1.43	1.06
		MM	27	522	187	87	100	218	188	30	80	130	125	M12X1.8	M10X1.5	102	32	35	81.5	1/4"	160	45	56	63.5	36.2	27
200	F14	IN	1.42	22.64	8.58	4.29	4.29	10.59	9.41	1.42	3.15	5.12	5.51	5/8-11 UNC 2B x 0.98	-	-	1.54	1.97	3.46	1/4"	7.48	2.03	2.52	3.11	1.90	1.42
		MM	36	575	218	109	109	269	239	36	80	130	140	M16X2.5	-	-	39	50	88	1/4"	190	51.5	64	79	48.2	36
270	F16	IN	1.81	26.46	11.42	5.71	5.71	14.21	13.03	1.42	3.15	5.12	6.50	3/4-10 UNC 2B x 1.18	-	-	2.05	1.97	4.76	1/4"	9.06	2.68	3.11	4.37	2.37	1.81
		MM	46	672	290	145	145	361	331	36	80	130	165	M20X3.0	-	-	52	50	121	1/4"	230	68	79	111	60.2	46

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Pneumatic Rotary Actuators

DA/SR

DIMENSIONS MODEL 52-125



MOD	ISO 5211		CH	A	B	C	D	E	F	G	OH	OI	L	M	N	O	P	Q	R	S	T ISO 7/1	U	V	OZ	Y	X
52	F03** - F05	IN	0.43	5.49	2.80	1.18	1.61	2.74	0.79	3.52	0.47	1.73	3.15	1.18	0.47	1.04	1.42	1.97	10-24 UNC 28x0.29	1/4-20 UNC 28x0.35	1/8"	0.31	1.50	0.56	0.43	0.47
		MM	11	139.5	71	30	41	69.5	20	89.5	12	44	80	30	12	26.5	36	50	M5X7.5	M6X9	1/8"	8	38	14.1	11	12
63	F05 - F07	IN	0.55	6.38	3.17	1.40	1.77	3.17	0.79	3.96	0.58	1.97	3.15	1.18	0.63	1.08	1.97	2.76	1/4-20 UNC 28x0.31	5/16-18 UNC 28x0.47	1/8"	0.31	1.61	0.71	0.55	0.63
		MM	14	162	80.5	35.5	45	80.5	20	100.5	14.8	50	80	30	16	27.5	50	70	M6X8	M8X12	1/8"	8	41	18.1	14	16
75	F05 - F07	IN	0.67	8.15	3.72	1.65	2.07	3.82	0.79	4.61	0.71	2.48	3.15	1.18	0.75	1.38	1.97	2.76	1/4-20 UNC 28x0.31	5/16-18 UNC 28x0.47	1/8"	0.35	1.97	0.87	0.67	0.75
		MM	17	207	94.5	42	52.5	97	20	117	18	63	80	30	19	35	50	70	M6X8	M8X12	1/8"	9	50	22.2	17	19
85	F05 - F07	IN	0.67	9.35	4.17	1.87	2.30	4.27	0.79	5.06	0.79	2.48	3.15	1.18	0.75	1.65	1.97	2.76	1/4-20 UNC 28x0.31	5/16-18 UNC 28x0.47	1/8"	0.35	1.97	0.87	0.67	1.18
		MM	17	237.5	106	47.5	58.5	108.5	20	128.5	20	63	80	30	19	42	50	70	M6X8	M8X12	1/8"	9	50	22.2	17	30
100	F07 - F10	IN	0.67	10.69	4.84	2.17	2.68	4.78	0.79	5.57	0.79	2.48	3.15	1.18	0.81	1.97	2.76	4.02	5/16-18 UNC 28x0.31	3/8-18 UNC 28x0.55	1/4"	0.35	1.97	0.87	0.67	1.18
		MM	17	271.5	123	55	68	121.5	20	141.5	20	63	80	30	20.5	50	70	102	M8X8	M10X14	1/4"	9	50	22.2	17	30
115	F07 - F10	IN	0.87	12.91	5.39	2.52	2.87	5.57	1.18	6.75	1.26	3.39	5.12	1.18	0.94	1.97	2.76	4.02	5/16-18 UNC 28x0.47	3/8-18 UNC 28x0.59	1/4"	0.57	0.87	1.11	0.87	1.54
		MM	22	328	137	64	73	141.5	30	171.5	32	86	130	30	24	50	70	102	M8X12	M10X15	1/4"	14.5	22	28.2	22	39
125	F07 - F10	IN	0.87	14.41	5.83	2.68	3.15	6.04	1.18	7.22	1.26	3.39	5.12	1.18	0.94	2.40	2.76	4.02	5/16-18 UNC 28x0.47	3/8-18 UNC 28x0.59	1/4"	0.57	0.87	1.11	0.87	1.54
		MM	22	366	148	68	80	153.5	30	183.5	32	86	130	30	24	61	70	102	M8X12	M10X15	1/4"	14.5	22	28.2	22	39

** Upon request F04

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Pneumatic Rotary Actuators

DA/SR

TORQUE CHART SPRING RETURN

MODEL	SET	SPRING TORQUE POUNDS/INCH		AIR SUPPLY psi. 40		50		60		70		80		90		100		115	
		TORQUE OUTPUT SPRING RETURN ACTUATORS POUNDS / INCH																	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
		MMD	MMC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC
SR52	1	38	64	51	23	73	45	101	75										
	2	48	81			61	23	90	56	115	84								
	3	51	87					87	51	113	79	135	100	157	121				
	4	62	104					76	33	103	62	124	83	146	103	172	131		
	5	75	127							90	41	111	60	132	80	159	109	194	144
SR63	1	66	116	95	40	134	77	182	131										
	2	78	136			122	57	171	113	218	163								
	3	94	164					156	81	203	134	241	169	279	205				
	4	105	184					145	63	193	117	230	151	268	187	315	237		
	5	132	232							167	71	203	103	241	137	289	190	349	250
SR75	1	116	212	174	66	243	131	330	230										
	2	135	249			222	90	311	192	394	283								
	3	164	300					283	139	367	233	436	297	505	362				
	4	183	337					264	103	349	199	417	261	486	325	568	415		
	5	232	425							304	115	370	174	438	235	522	330	633	439
SR85	1	177	304	247	108	346	201	472	342										
	2	203	342			321	165	450	309	569	437								
	3	252	436					399	209	521	343	620	435	709	519				
	4	278	475					377	176	501	313	598	403	688	486	817	625		
	5	354	607							431	188	526	273	613	352	746	498	905	654
SR100	1	271	481	397	165	555	313	753	535										
	2	312	562			502	218	705	449	895	656								
	3	386	680					645	339	840	554	995	698	1133	827				
	4	427	761					598	253	795	473	949	614	1086	741	1294	965		
	5	542	960							696	291	845	424	979	545	1192	779	1443	1027
SR115	1	450	808	656	273	915	517	1244	885										
	2	497	932			841	363	1177	747	1489	1088								
	3	651	1150					1061	558	1381	912	1638	1150	1856	1353				
	4	699	1274					994	420	1318	783	1573	1016	1789	1215	2144	1597		
	5	900	1617							1148	478	1396	700	1606	888	1970	1286	2383	1695
SR125	1	592	1036	842	353	1179	669	1602	1143										
	2	677	1196			1084	494	1517	986	1922	1426								
	3	845	1474					1362	711	1777	1170	2109	1478	2399	1749				
	4	930	1635					1277	553	1698	1022	2027	1324	2314	1590	2765	2075		
	5	1183	2073							1474	619	1794	905	2074	1158	2536	1664	3071	2192
SR160	1	885	1345	1953	1445	2645	2116												
	2	1301	1991			2167	1373	3049	2334										
	3	1531	2336			1902	977	2810	1977	3648	2871								
	4	1770	2841					2563	1456	3418	2384	4084	3009						
	5	2230	3327							2973	1914	3622	2521	4284	3149	5127	4046		
	6	2655	4186									3196	1660	3845	2261	4708	3200	5790	4273
SR200	1	1540	2168	3789	3096	5096	4374												
	2	2186	3150			4354	3245	5978	4980										
	3	2637	3752			3835	2553	5511	4358	7066	5990								
	4	3124	4699					5008	3378	6596	5075	7848	6267						
	5	3726	5327							6015	4469	7244	5637	8505	6848	10061	8483		
	6	4664	6867									6303	4092	7534	5255	9137	6966	11168	8984
SR270	1	4469	6973	7802	5039	10782	7904	14474	11883										
	2	5363	8372	6816	3496	9755	6296	13549	10436										
	3	6257	9761	5830	1963	8727	4699	12624	8999	16243	12859								
	4	7150	11159	4843	420	7700	3092	11700	7553	15380	11509	18296	14275						
	5	8044	12549			6673	1495	10775	6115	14517	10168	17400	12881	20333	15673				
	6	8938	13947					9850	4669	13654	8818	16503	11478	19408	14226				
	7	9832	15336					8926	3232	12791	7476	15606	10085	18483	12789	22146	16723		
	8	10735	16735					7992	1785	11919	6126	14701	8682	17550	11343	21256	15345	25969	20021

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TORQUE CHART DOUBLE ACTING

DOUBLE ACTING ACTUATOR TORQUE OUTPUT POUNDS / INCH								
PSI	40	50	60	70	80	90	100	115
MODEL	TORQUE OUTPUT POUNDS / INCH							
32	34	43	55	64	71	82	87	101
52	93	117	140	162	186	210	233	268
63	165	206	247	289	330	371	412	474
75	297	371	446	519	594	668	742	854
85	423	528	635	740	846	952	1.057	1.217
100	667	834	1000	1167	1334	1501	1668	1918
115	1099	1373	1648	1923	2197	2472	2746	3158
125	1424	1780	2136	2491	2848	3204	3560	4093
160	2930	3662	4394	5127	5859	6591	7324	8422
200	5488	6966	8239	9612	10981	12359	13732	15792
270	12734	15919	19097	22284	25469	28654	31832	36611

TECHNICAL DETAILS

SPRING CHART				VALID FOR MOD. 160 AND 200
SET	EXTERNAL SPRING	CENTRAL SPRING	INTERNAL SPRING	
01	-	2	-	
02	2	-	-	
03	1	2	-	
04	2	-	2	
05	2	2	-	
06	2	2	2	

SPRING CHART			VALID FROM MOD. 52 TO 125
SET	EXTERNAL SPRING	INTERNAL SPRING	
01	1	1	
02	2	-	
03	1	2	
04	2	1	
05	2	2	

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TECHNICAL DETAILS CONTINUED

PRETENSIONED CHART		VALID FOR MODEL 270
SET	NO. OF SPRINGS PER SIDE	
01	2/3	
02	3/3	
03	3/4	
04	4/4	
05	4/5	
06	5/5	
07	5/6	
08	6/6	

TIME IN SECONDS											
MODEL	32	52	63	75	85	100	115	125	160	200	270
D.A. CCW ROTATION	0.03	0.03	0.06	0.12	0.2	0.3	0.53	0.83	1.15	1.74	4.5
D.A. CW ROTATION	0.03	0.04	0.08	0.12	0.19	0.27	0.47	0.66	1.1	1.7	4.5
S.R. CCW ROTATION	-	0.09	0.14	0.22	0.31	0.44	0.83	1.08	1.75	2.38	4.5
S.R.CW ROTATION	-	0.09	0.14	0.22	0.33	0.46	0.78	0.9	1.34	2.19	6.2
DETERMINED WITH AN AIR SUPPLY OF 90PSI											

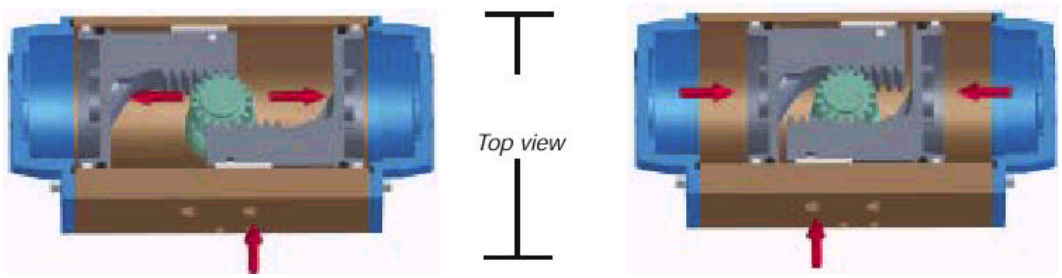
WEIGHT CHART LBS.											
MODEL	32	52	63	75	85	100	115	125	160	200	270
D.A. 90^{o}	1.05	2.31	3.3	5.61	7.48	11.1	17.6	22	42.9	72.2	157.3
S.R. 90^{o}	-	2.64	3.96	7.04	9.46	14.4	23.32	29.48	53.6	111.1	193.6

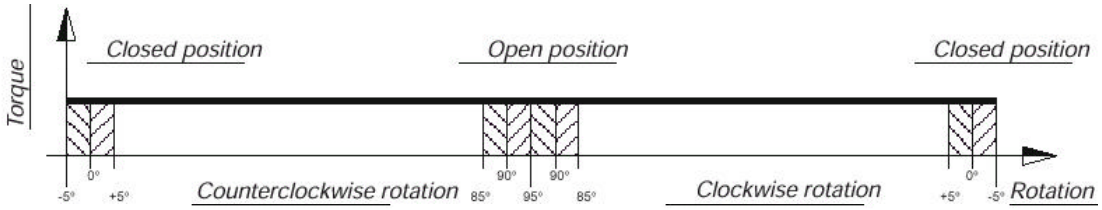
ACTUATOR AIR CONSUMPTION IN CU./IN.											
MODEL	32	52	63	75	85	100	115	125	160	200	270
D.A. S.R CCW ROTATION	2.32	6.1	6.7	22	31.1	48.2	78.7	99.5	220	348.1	915.3
D.A. CW ROTATION	1.7	8.24	14	26.8	39.1	61	104.4	134.9	290.6	599.7	1086.2
S.R.CW ROTATION	-	7.08	11.6	22	32.3	48.8	83	108.6	215.1	462.5	945.8

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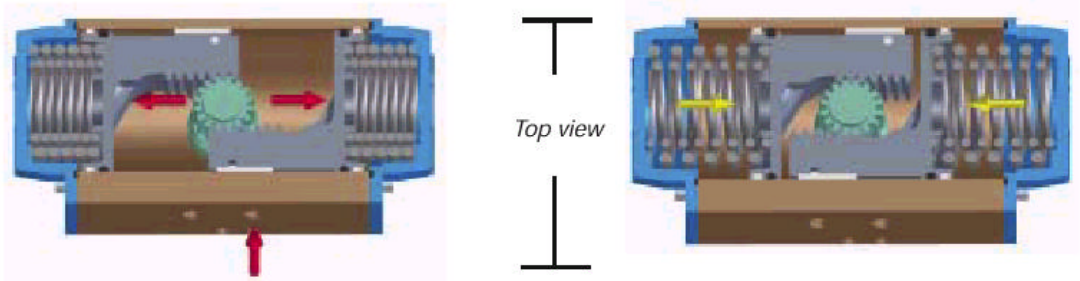
PMP	Pneumatic Rotary Actuators	DA/SR

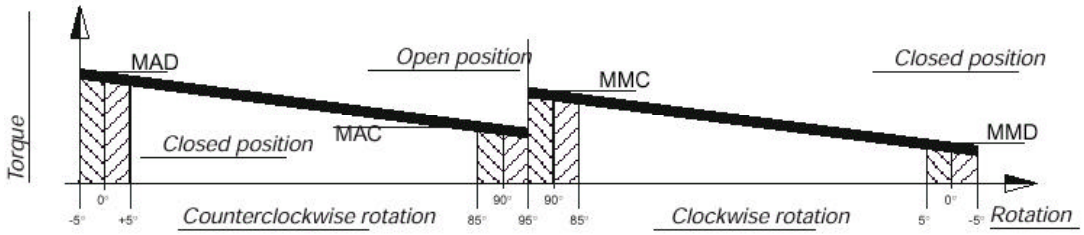
DOUBLE ACTING ACTUATOR





SPRING RETURN ACTUATOR



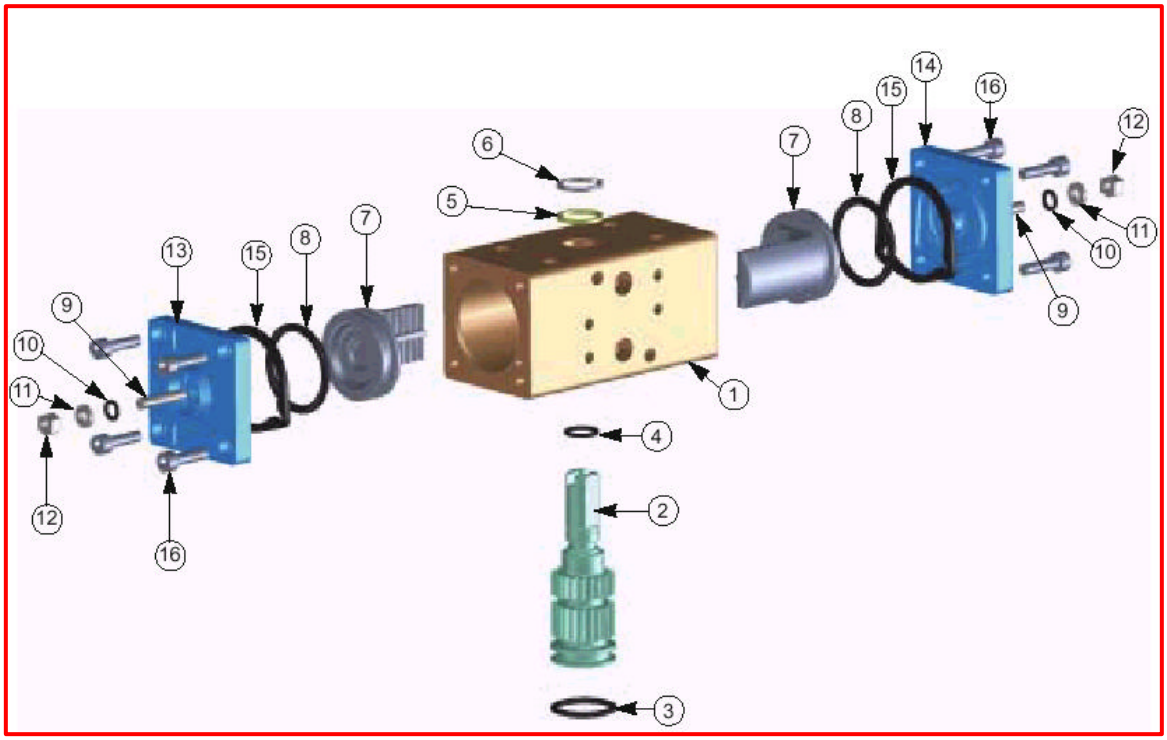


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MATERIALS OF CONSTRUCTION MODEL 32



Item	Description	Material	Treatment	QT'YDA
1	Body	Extruded aluminum	Hard anodized	1
2	Anti-blowout pinion	Steel	Nickel plated	1
● 3	Lower pinion O-Ring	NBR	NBR	1
● 4	Top pinion O-Ring	NBR	NBR	1
● 5	Spacer ring	POM		1
6	Pinion snap ring	Steel	Nickel plated	1
7	Piston	Die cast Aluminum		2
● 8	Piston O-Ring	NBR		2
9	Stop bolt	Stainless steel		2
● 10	Stop bolt o-ring	NBR		2
11	Washer	Stainless steel		2
12	Stop bolt retaining nut	Stainless steel		2
13	Left end cap	Die cast Aluminum	Painted	1
14	Right end cap	Die cast Aluminum	Painted	1
15	End cap seats	NBR		2
16	End cap fixing screw	Stainless steel		8

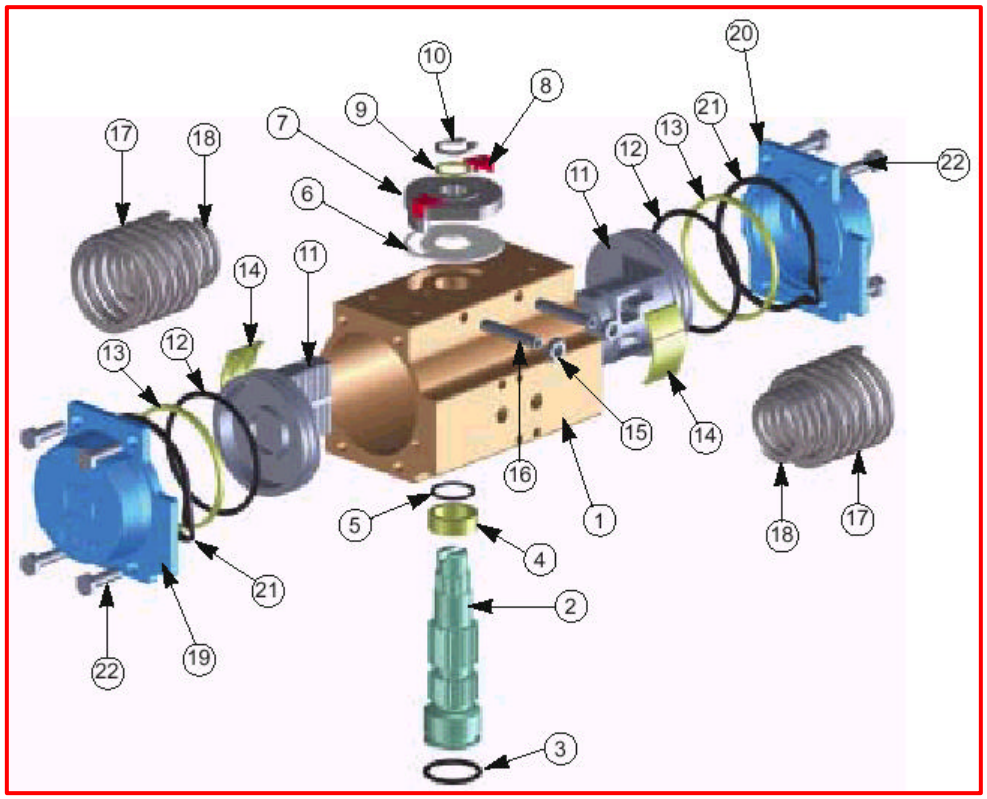
● Parts subject to wear

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DA/SR

MATERIALS OF CONSTRUCTION MODEL 52-125



Item	Description	Material	Treatment	QT'Y DA	QT'Y SR
1	Body	Extruded alluminium	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
● 3	Lower pinion O-ring	NBR		1	1
● 4	Pinion spacer ring	POM		1	1
● 5	Top pinion O-ring	NBR		1	1
● 6	Cam spacer ring	POM		1	1
7	Camma / Cam	Stainless steel		1	1
8	Position indicator	Nylon		2	2
9	Pinion washer	Stainless steel		1	1
**10	Pinion snap ring	Steel	Nickel plated	1	1
11	Piston	Die cast alluminium		2	2
● 12	Piston o-ring	NBR		2	2
● 13	Antifriction ring	POM		2	2
● 14	Piston thrust block	POM		2	2
15	Stop bolt retaining nut	Stainless steel		2	2
16	Stop bolt	Stainless steel		2	2
17	External spring	Steel	Zinc-phosphate	0	See spring setting
18	Internal spring	Steel	Zinc-phosphate	0	
19	Left end	Die cast alluminium	Zinc-phosphate	1	1
20	Right end cap	Die cast alluminium	Zinc-phosphate	1	1
21	End cap seats	NBR		2	2
22	End cap fixing screw	Stainless steel		8	8

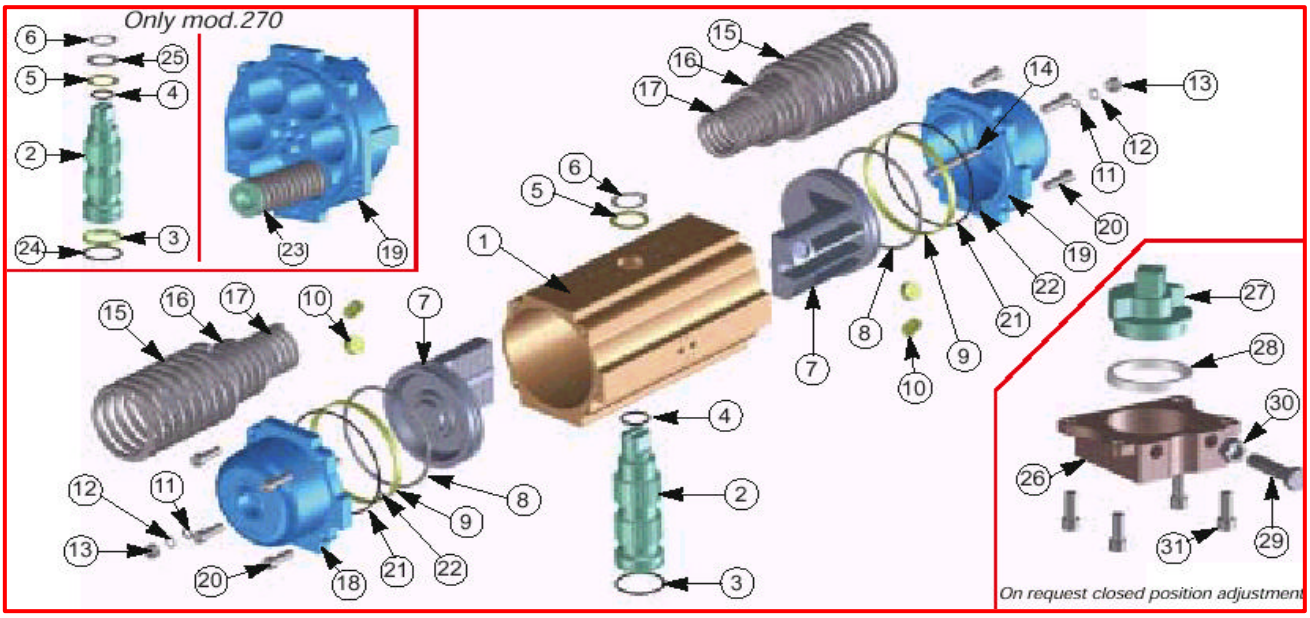
● **Parts subject to wear** ****Reinforced series DIN 471**

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Pneumatic Rotary Actuators

DA/SR

MATERIALS OF CONSTRUCTION MODEL 160 - 270



Item	Description	Material	Treatment	QT'Y/ DA	QT'Y/SR
1	Body	Extruded aluminum	Hard anodized	1	1
2	Anti-blowout pinion	Steel	Nickel plated	1	1
• 3	Lower pinion O-ring	NBR		1	1
• 4	Top pinion O-ring	NBR		1	1
• 5	Pinion spacer ring	POM		1	1
6	Pinion snap ring	Steel	Nickel plated	1	1
7	Piston	Die cast aluminum		2	2
• 8	Piston o-ring	NBR		2	2
• 9	Antifriction ring	PTFE 15% graphite		2	2
• 10	/ Piston thrust block	POM		4 [6]	4 [6]
• 11	/ Stop bolt o-ring	NBR		2	2
12	Washer	Stainless steel		2	2
13	Stop bolt retaining nut	Stainless steel		2	2
14	Stop bolt	Stainless steel		2	2
15	External spring	Steel	Zinc-phosphate	0	See spring
16	Central spring	Steel	Zinc-phosphate	0	setting
17	Internal spring	Steel	Zinc-phosphate	0	
18	Left end cap	Die cast aluminum	Painted	1	1
19	Right end cap	Die cast aluminum	Painted	1	1
20	End cap fixing screw	Stainless steel		8 (12)	8 (12)
21	End cap o-ring	NBR		2	2
22	End cap fixing screw	NBR		2	2
23	Compressed spring ***	Steel	Zinc-phosphate	0	See spring setting
• 24	Antifriction ring	PTFE 15% graphite		1	1
25	Pinion washer ***	Stainless steel		1	1
Upon request closed position adjustment					
26	Plate	GGG40	Painted	1	1
27	Coupling	Steel	Nickel plated	1	1
• 28	Antifriction ring	PTFE 15% graphite		1	1
29	Stop screw	Steel	Zinc plated	1	1
30	Stop bolt retaining nut	Stainless steel		1	1
31	Fixing screws	Stainless steel		4	4

• Parts subject to wear [6] (12)*** Valid for mod. 270 only

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