



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

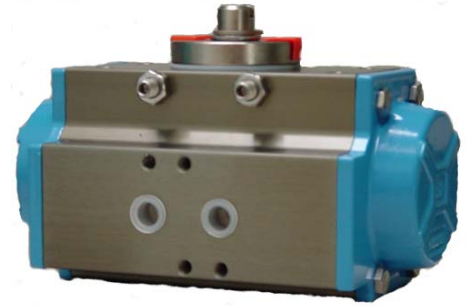
- Open or Closed Positions
- Bi-Directional from Size 52-125, +/- 5°

Maximum Working Pressure and Temperature

- 150 psi for models 32 to 200
- 115 psi for Model 270
- Clean dry filtered air is required
- -20°C to +85°C with NBR Standard Seals
- -20°C to +150°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

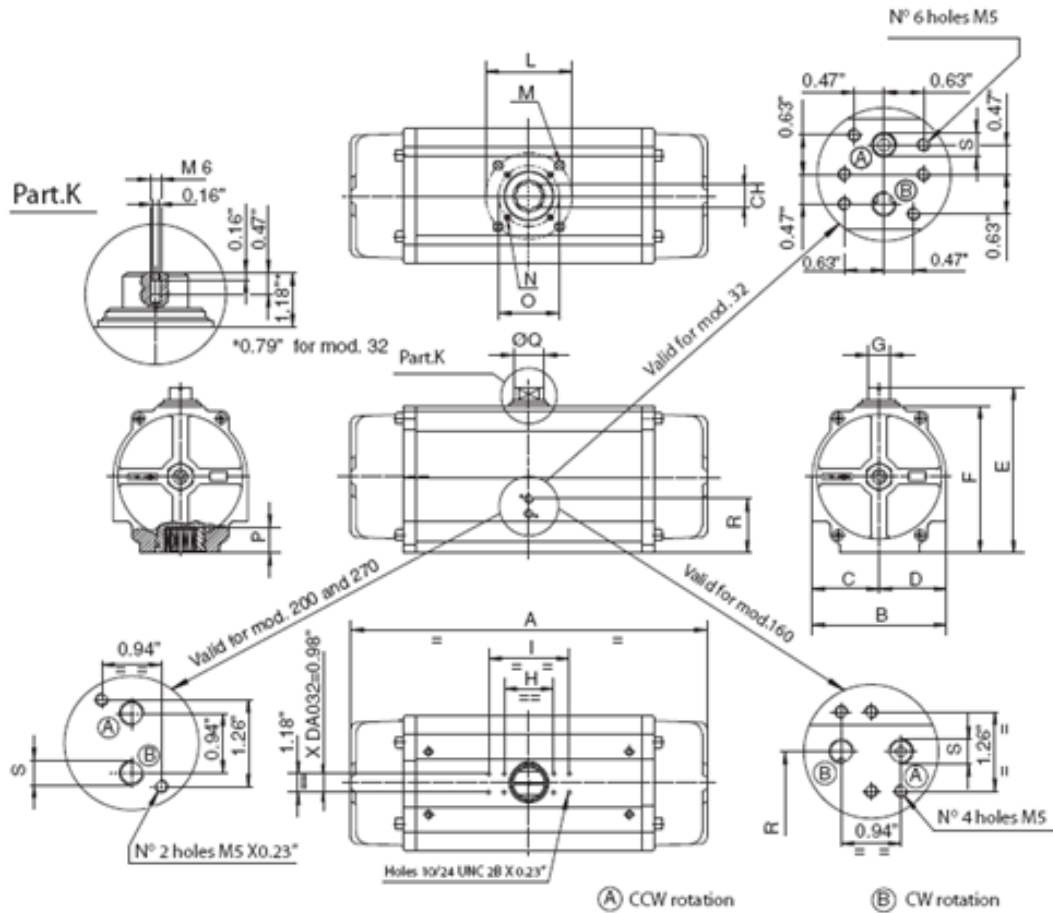




Pneumatic Rotary Actuators

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DIMENSIONS MODEL 32, 160-270



MODEL	ISO 5211	CH	A	B	C	D	E	F	ØG	ØH	ØI	L	M	N	O	P	Q	R	S	T	U	V	W		
																				NPT					
32	F03-F05	0.35	4.33	1.77	0.89	0.89	2.56	1.77	0.39	1.97	-	1.42	10-24 UNC 28 x 0.29	-	-	0.47	0.46	-	1/8 NPT	-	-	-	-		
		9	110	45	23	23	65	45	10	50	36					12	12								
160	F10-F12	1.06	20.55	7.36	3.43	3.94	8.58	7.4	1.18	3.15	5.12	4.92	1/2-13UNC 28 x 0.71	3/8-16UNC	4.02	1.26	1.38	3.21	1/4" NPT	6.3	1.77	2.2	2.5		
		27	522	187	87	100	218	188	30	80	130	125			102	32	35	82		160	45	56	64		
200	F14	1.42	22.64	8.58	4.29	4.29	10.59	9.41	1.42	3.15	5.12	5.51	5/8-11UNC 28 x 0.98	-	-	1.54	1.97	3.46	1/4" NPT	7.48	2.03	2.52	3.11		
		36	575	218	109	109	269	239	36	80	130	140			-	39	50	88		190	52	64	79		
270	F16	1.81	26.46	11.42	5.71	5.71	14.21	13.03	1.42	3.15	5.12	6.50	3/4-10UNC 28 x 1.18	-	-	2.05	1.97	4.76	1/4" NPT	9.06	2.68	3.11	4.37		
		46	672	290	145	145	361	331	36	80	130	165			-	52	50	121		230	68	79	111		

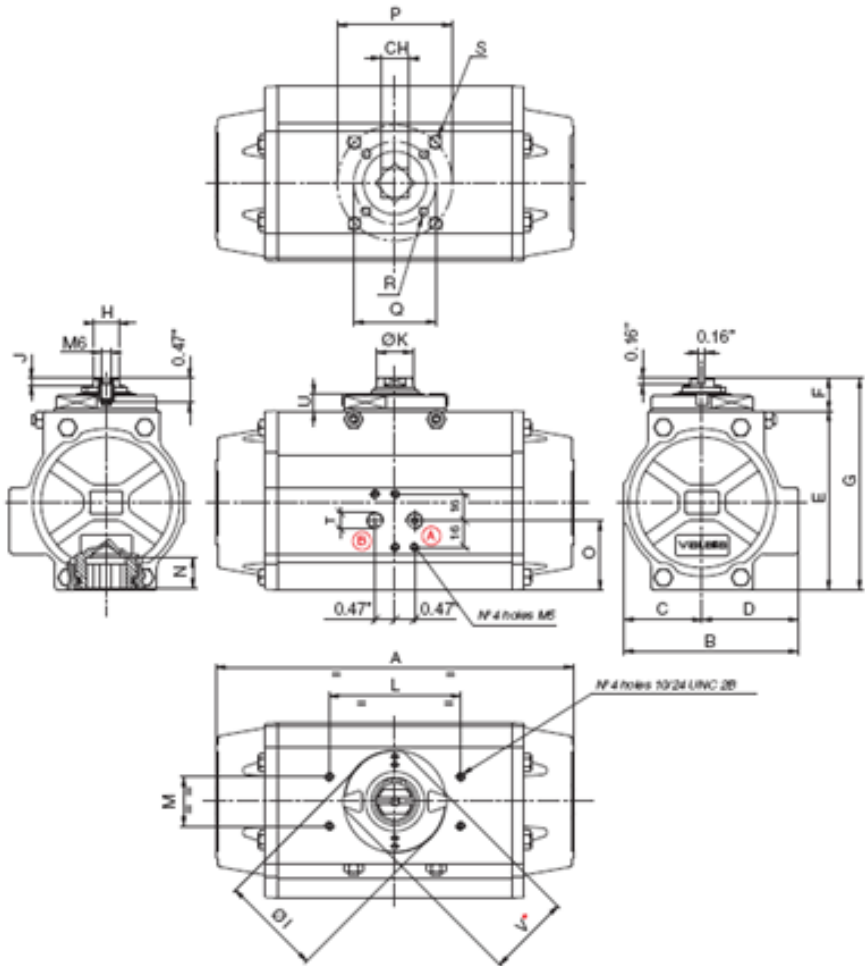
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DIMENSIONS MODEL 52-140



* For mod. from 52 to 100

** Upon request F04

(A) CCW rotation

(B) CW rotation

MODEL	ISO 5211	CH	A	B	C	D	E	F	ØG	ØH	ØI	L	M	N	O	P	Q	R	S	T	U	V
																				NPT		
52	F03-F05	0.43	5.49	2.8	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 28 X 0.29	1/4 -20 UNC 28 X 0.35	1/8"	0.35	1.5
		11	139	71	30	41	70	20	89	12	44	80	30	12	26	36	50			1/8"	9	38
63	F05-F07	0.55	6.38	3.17	1.4	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 28 X 0.31	5/16 -18 UNC 28 X 0.47	1/8"	0.35	1.61
		14	162	81	36	45	81	20	101	15	50	80	30	16	27	50	70			1/8"	9	41
75	F05-F07	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 28 X 0.31	5/16 -18 UNC 28 X 0.47	1/8"	0.41	1.97
		17	207	94	42	53	97	20	117	18	63	80	30	19	35	50	70			1/8"	10	50
85	F05-F07	0.67	9.35	4.17	1.87	2.3	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 28 X 0.31	5/16 -18 UNC 28 X 0.47	1/8"	0.41	1.97
		17	237	106	47	58	108	20	129	20	63	80	30	19	42	50	70			1/8"	10	50
100	F07-F10	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 -20 UNC 28 X 0.31	3/8 -18 UNC 28 X 0.55	1/4"	0.41	1.97
		17	272	123	55	68	121	20	141	20	63	80	30	21	50	70	102			1/4"	10	50
115	F07-F10	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 -20 UNC 28 X 0.47	3/8 -18 UNC 28 X 0.59	1/4"	0.63	-
		22	328	137	64	73	141	30	171	32	86	130	30	24	50	70	102			1/4"	16	-
125	F07-F10	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	2.4	2.76	4.02	5/16 -20 UNC 28 X 0.47	3/8 -18 UNC 28 X 0.59	1/4"	0.63	-
		22	366	148	68	80	153	30	183	32	86	130	30	24	61	70	102			1/4"	16	-
140	F10-F12	1.06	16.85	6.46	3.01	3.44	6.93	1.18	8.11	0.94	3.46	0.28	1.38	5	1.18	1.14	2.8	3/8 -16 UNC 28 X 0.59	1/2 -13 UNC 28 X 0.71	1/4"	0.63	-
		27	428	164	76	87	176	30	206	24	88	7		130	30	29	71			1/4"	16	-

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TORQUE CHART SPRING RETURN

		SPRING RETURN ACTUATOR TORQUE OUTPUT POUNDS/INCH																	
MODEL	SET	SPRING TORQUE POUNDS/INCH		AIR SUPPLY psi															
				40		50		60		70		80		90		100		115	
		MMD	MMC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC	MAD	MAC
SR 52	01	32	44	48	23	72	47	95	70										
	02	42	59			61	31	84	54	108	77								
	03	46	66					80	47	104	70	127	94	150	117				
	04	57	82					70	31	93	55	116	78	140	101	163	125		
	05	72	105							78	32	101	55	125	78	148	102	183	137
SR 63	01	44	85	92	38	134	80	176	122										
	02	58	109			120	56	162	98	204	140								
	03	71	128					149	79	191	121	233	162	275	204				
	04	85	152					136	54	177	96	218	138	261	180	303	222		
	05	111	196							151	53	193	95	235	136	276	178	339	241
SR 75	01	89	172	168	63	244	138	319	214										
	02	118	226			215	85	291	160	366	235								
	03	133	249					275	137	351	212	426	288	502	363				
	04	162	303					247	83	322	158	398	234	473	309	549	385		
	05	205	380							279	81	354	157	430	232	505	308	618	421
SR 85	01	143	242	238	109	349	219	460	330										
	02	176	298			316	163	427	274	537	384								
	03	215	361					387	211	498	322	609	432	720	543				
	04	248	417					354	155	465	265	576	376	687	487	797	633		
	05	321	536							392	146	503	257	614	368	725	478	891	645
SR 100	01	218	395	384	154	556	326	728	499										
	02	288	521			485	199	658	372	830	544								
	03	318	564					628	329	801	502	973	674	1146	847				
	04	389	691					558	203	730	375	903	548	1075	720	1248	893		
	05	489	860							630	206	802	378	975	551	1147	728	1406	982
SR 115	01	363	658	650	270	935	555	1220	840										
	02	449	835			848	378	1133	663	1419	949								
	03	538	957					1044	541	1329	827	1615	1112	1900	1397				
	04	625	1133					958	365	1243	650	1528	935	1813	1220	2098	1505		
	05	800	1432							1067	352	1352	637	1638	922	1923	1207	2350	1635
SR 125	01	470	877	850	328	1224	703	1599	1077										
	02	560	1040			1135	539	1509	914	1883	1288								
	03	718	1313					1351	640	1725	1015	2099	1389	2474	1763				
	04	808	1477					1261	477	1636	851	2010	1226	2384	1600	2784	1974		
	05	1055	1913							1388	415	1762	789	2136	1164	2511	1538	3072	2099
SR 140	01	726	1346	1240	508	1742	1010	2244	1512										
	02	815	1523			1642	821	2144	1323	2646	1825								
	03	1036	1858					1910	856	2412	1358	2914	1861	3408	2355				
	04	1134	2126					1810	668	2312	1170	2814	1672	3308	2166	3810	2668		
	05	1453	2728							1979	515	2481	1017	2975	1611	3477	2013	4233	2769
SR 160	01	885	1345	1921	1390	2644	2140												
	02	1301	1991			2228	1503	2952	2217										
	03	1531	2336			1980	1131	2713	1854	3419	2569								
	04	1770	2841					2447	1350	3162	2074	3896	2779						
	05	2230	3327							2737	1507	3452	2240	4175	2963				
	06	2655	4186								2983	1443	3715	2167	4421	2828	5475	3865	
SR 200	01	1540	2168	3718	2904	5069	4317												
	02	2186	3150			4414	3308	5770	4681										
	03	2637	3752			3936	2591	5301	4035	6639	5400								
	04	3124	4599					4788	3080	6125	4445	7486	5795						
	05	3726	5327							5453	3613	6822	5008	8182	6385				
	06	4664	6867								5893	3539	7288	4925	8591	6175	10562	8137	
SR 270	01	4469	6973	8574	6017	11883	9317	15309	12743										
	02	5363	8372	7619	4548	10928	7857	14353	11283										
	03	6257	9761	6672	3088	9972	6388	13398	9814	16824	13240								
	04	7150	11159	5716	1619	9016	4928	12442	8353	15877	11779	19177	15080						
	05	8044	12549			8069	3459	11495	6884	14921	10310	18221	13619	21530	16920				
	06	8938	13947					10539	5415	13995	8850	17274	12150	20574	15459				
	07	9832	15336					9584	3955	13009	7381	16319	10681	19619	13990	23053	17416		
	08	10735	16735					8637	2486	12063	5912	15363	9221	18672	12521	22098	15947	27115	20965

OPENING ROTATION	CLOSING ROTATION
MAD = Actuator torque with relaxed springs	MMC = Torque with compressed springs
MAC = Actuator torque with compressed springs	MMD = Torque with relaxed springs

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DA/SR

TORQUE CHART DOUBLE ACTING

DOUBLE ACTING ACTUATOR TORQUE OUTPUT POUNDS/INCH												
MODEL	32	52	63	75	85	100	115	125	140	160	200	270
40 PSI	34	86	154	254	408	646	1070	1409	2009	2930	5488	12734
50 PSI	43	110	196	360	518	818	1355	1783	2511	3662	6886	15919
60 PSI	55	133	238	435	629	991	1640	2157	3013	4394	8239	19097
70 PSI	64	156	280	511	740	1163	1925	2532	3515	5127	9612	22284
80 PSI	71	179	321	586	851	1336	2210	2906	4018	5859	10981	25469
90 PSI	82	203	363	661	962	1506	2495	3280	4513	6591	12359	28654
100 PSI	87	226	406	737	1072	1681	27609	3654	5015	7324	13732	31832
115 PSI	101	261	468	850	1238	1939	3208	4216	5772	8422	15792	38611

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 140
SET	EXTERNAL SPRING	INTERNAL SPRING	
01	1	1	
02	2	-	
03	1	2	
04	2	1	
05	2	2	



Pneumatic Rotary Actuators

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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	140	160	200	270
D.A. CCW ROTATION	0.03	0.03	0.06	0.12	0.2	0.3	0.53	0.83	0.98	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	0.93	1.1	1.7	4.5
S.R. CCW ROTATION	-	0.09	0.14	0.22	0.31	0.44	0.83	1.08	1.23	1.75	2.38	4.5
S.R.CW ROTATION	-	0.09	0.14	0.22	0.33	0.46	0.78	0.9	0.97	1.34	2.19	6.2
DETERMINED WITH AN AIR SUPPLY OF 87PSI												

WEIGHT CHART LBS.												
MODEL	32	52	63	75	85	100	115	125	140	160	200	270
D.A. 90°	1.05	2.31	3.3	5.61	7.48	11.1	17.6	22	33.9	42.9	72.2	157.3
S.R. 90°	-	2.64	3.96	7.04	9.46	14.4	23.32	29.48	45.3	53.6	111.1	193.6

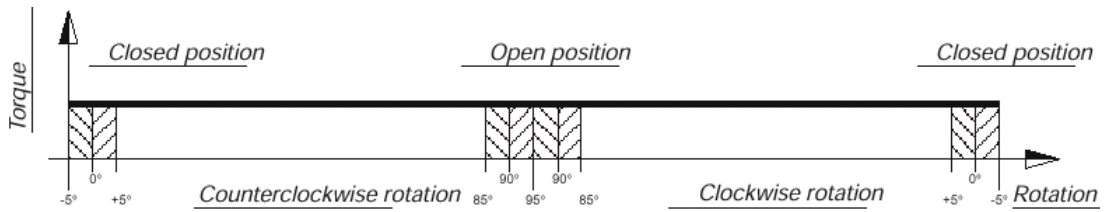
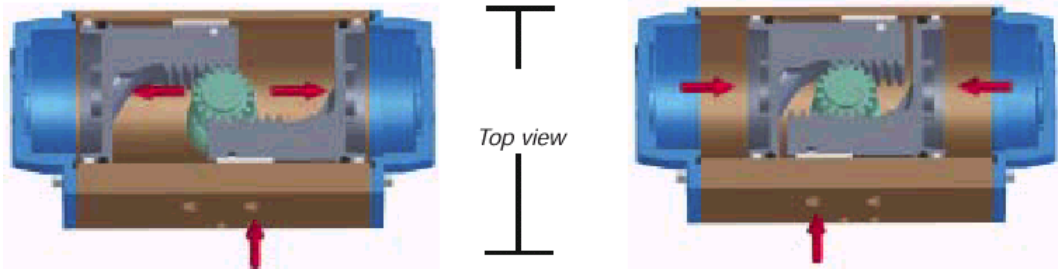
ACTUATOR AIR CONSUMPTION IN CU./IN.												
MODEL	32	52	63	75	85	100	115	125	140	160	200	270
D.A. S.R CCW ROTATION	2.32	6.1	6.7	22	31.1	48.2	78.7	99.5	137.9	220	348.1	915.3
D.A. CW ROTATION	1.7	8.24	14	26.8	39.1	61	104.4	134.9	192.8	290.6	599.7	1086.2
S.R.CW ROTATION	-	7.08	11.6	22	32.3	48.8	83	108.6	146.6	215.1	462.5	945.8



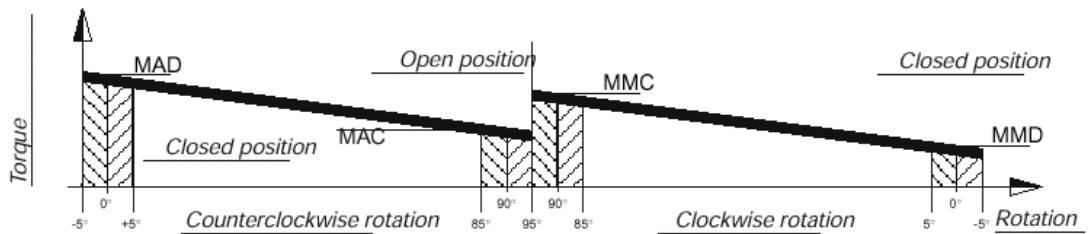
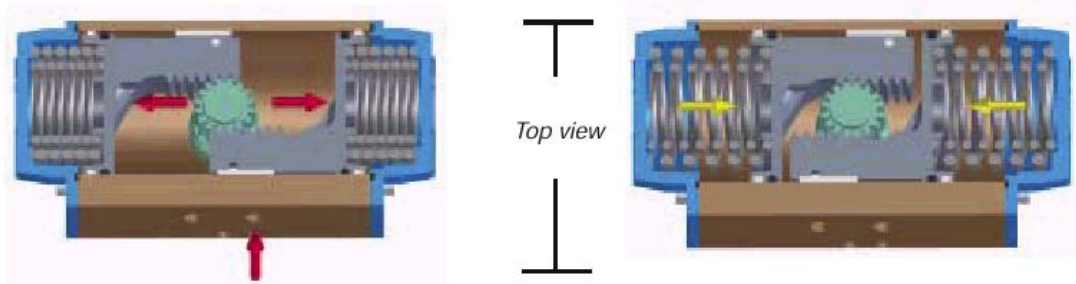
Pneumatic Rotary Actuators

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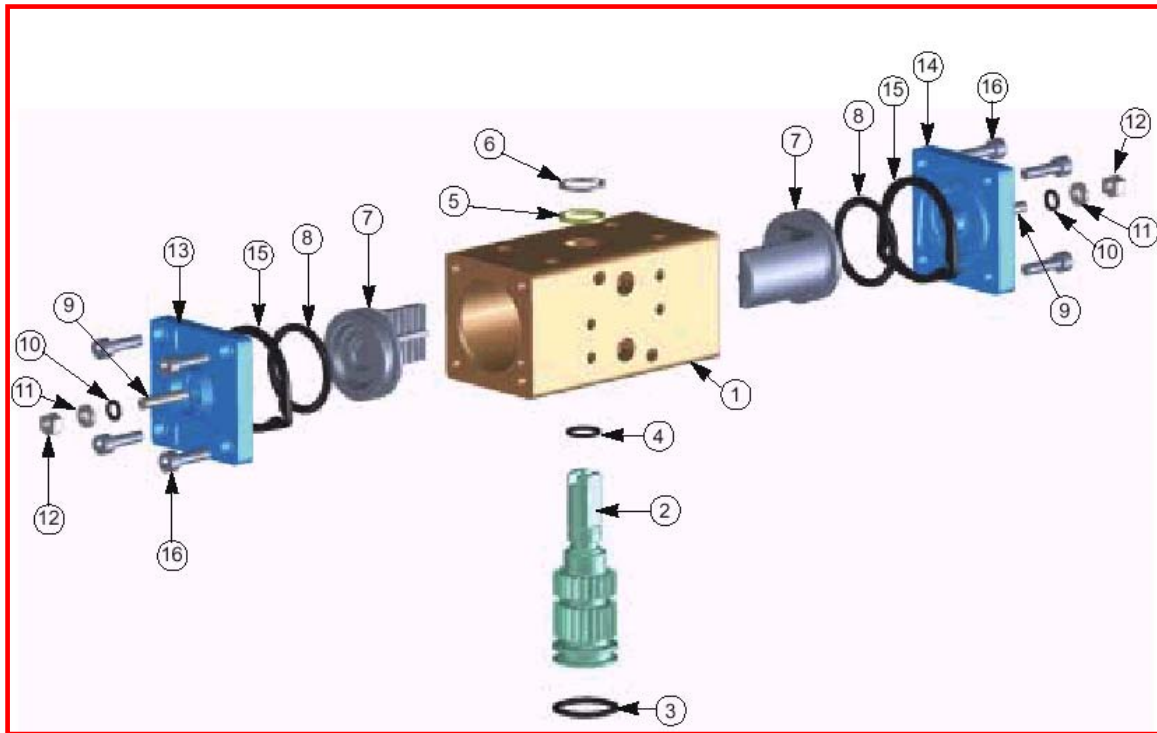
DOUBLE ACTING ACTUATOR



SPRING RETURN ACTUATOR



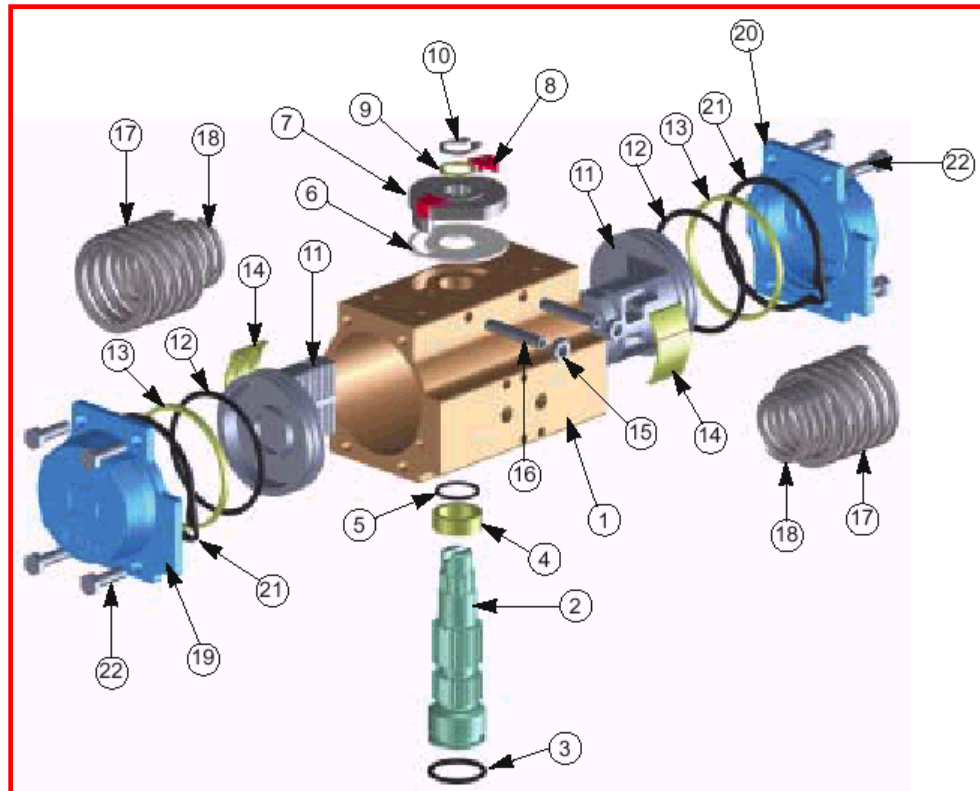
MATERIALS OF CONSTRUCTION MODEL 32



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

MATERIALS OF CONSTRUCTION MODEL 52-140



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	Cam / 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

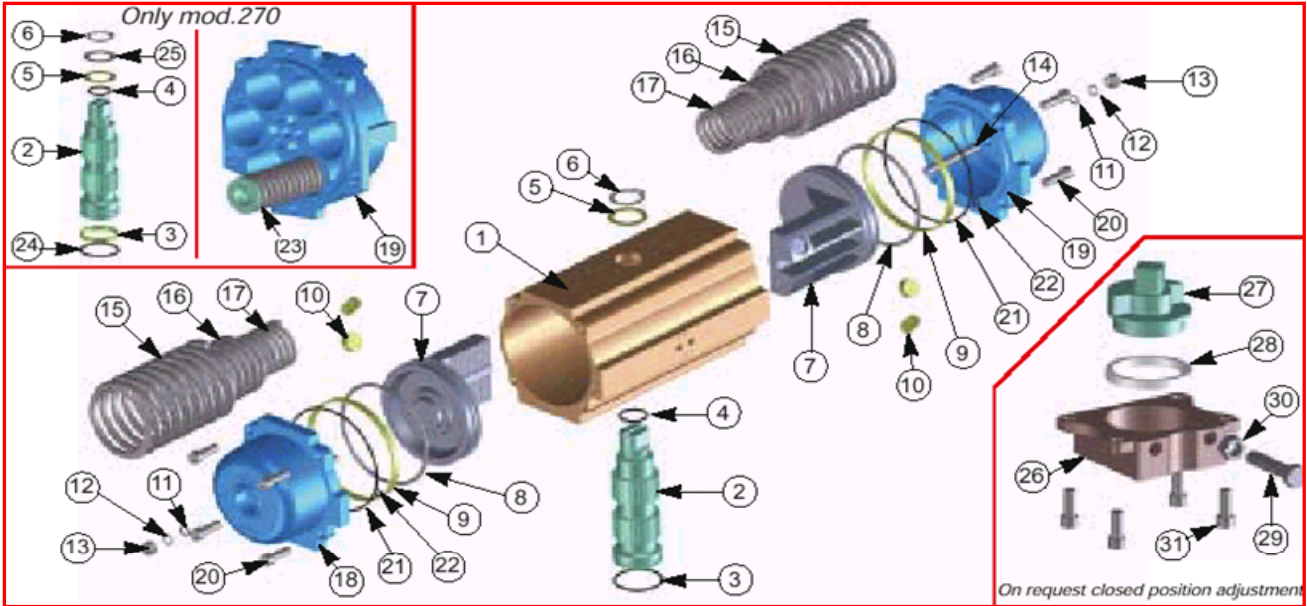
● Parts subject to wear **Reinforced series DIN 471



Pneumatic Rotary Actuators

DA/SR

MATERIALS OF CONSTRUCTION MODEL 160-200- 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
● 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 setting
16	Central spring	Steel	Zinc-phosphate	0	See spring setting
17	Internal spring	Steel	Zinc-phosphate	0	See spring setting
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