



## C Series Dual Rack-n-Pinion Pneumatic Valve Actuators



The Assured Automation C Series pneumatic actuators offer a simple and cost effective solution for your valve automation needs. For use on quarter turn (90°) ball valves, plug valves, dampers, and butterfly valves. The dual, opposed rack pistons have low friction bearings and guides that provide high-performance, long cycle-life, and fast response. These pistons can be inverted to reverse the rotation for fail open applications.

### FEATURES

- High duty cycle life, up to 1,000,000 cycles
- Double acting and spring return models
- Direct mounting to valve:  
DIN/ISO 5211, DIN 3337 (F03 to F16)
- NAMUR solenoid and limit switch mounting
- Diamond & square output drive on all units
- Dual stroke adjustment
- Corrosion resistant coating
- Visual position indicator (Open/Closed)

### SIZES & TORQUE OUTPUT

#### Spring Return

16 sizes

F03 to F16

Torque: up to 37,164 lbf./in (with 120psi air)

#### Double Acting

17 sizes

F03 to F16

Torque: 115 to 115,254 lbf./in (with 120psi air)

### TYPICAL APPLICATIONS

- Ball Valves
- Butterfly Valves
- Plug Valves

### SPECIAL OPTIONS

- Stainless steel bodies
- Low and high temperature seals
- 180° and 3-position models
- [see page 11 for details](#)

### ACCESSORIES [\(see page 12 for details\)](#)

- NAMUR solenoid valves
- Limit Switches
- Positioners
- Automatic Thermal Shutoff Devices

**Visual Position Indicator**  
fits into NAMUR slot of pinion

**NAMUR Accessory Mounting Pattern**  
for ease of switch or positioner mounting

**High Precision Nickel Alloy Steel Pinion**  
is blow-out proof and conforms to  
ISO 5211 and NAMUR standards

**Stainless Steel 304 Fasteners**  
standard on all models

**Die Cast Aluminum End Caps**  
with polyester powder coating

**High Performance Pre-Loaded Spring Cartridges**  
provide greater safety and longer spring life

**Independent Travel Stop Adjustment Bolts**  
provide +/- 5° at each end of travel (see page 2)

**NAMUR Solenoid Valve Mounting Pad**

**Extruded Aluminum Body** with hard anodized  
finish and polished internal surfaces



## C Series

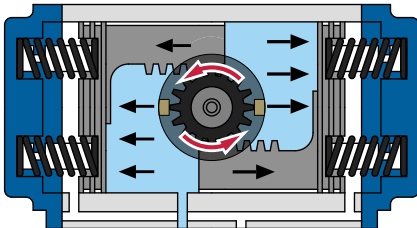


## Dual Rack-n-Pinion Pneumatic Valve Actuators

### OPERATION:

#### Spring Return

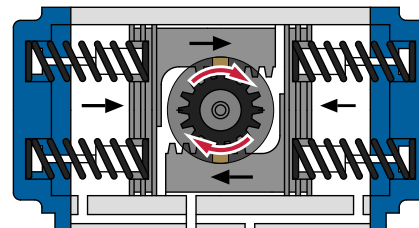
Counter Clockwise (Air Stroke)



A ↑ ↓ B

Compressed air enters through port "A" and the pistons are forced outward. The racks attached to the pistons cause the pinion to rotate in a counter-clockwise direction. Port "B" must be allowed to vent air from the outer chambers.

Clockwise (Spring Stroke)

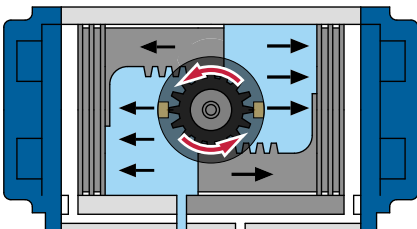


A ↓ ↑ B

When pressure is removed from port "A" and air is allowed to vent through the port, the springs drive the pistons inward, thus causing the pinion to rotate clockwise. Port "B" must allow air to be drawn in to the outer chambers.

#### Double Acting

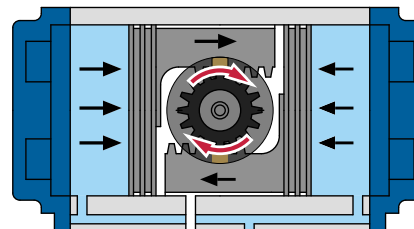
Counter Clockwise



A ↑ ↓ B

Compressed air enters through port "A" and the pistons are forced outward. The racks attached to the pistons cause the pinion to rotate in a counter-clockwise direction. Port "B" must be allowed to vent air from the outer chambers.

Clockwise

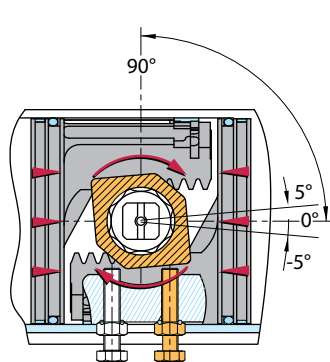


A ↓ ↑ B

Compressed air enters through port "B" and the pistons are forced inward. The racks attached to the pistons cause the pinion to rotate in a clockwise direction. Port "A" must be allowed to vent air from the outer chambers.

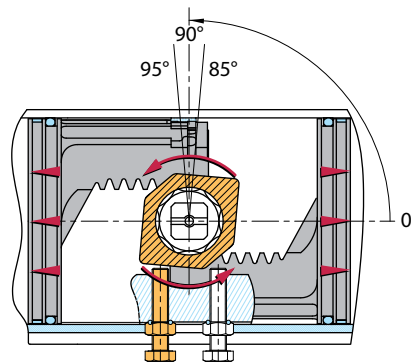
### DUAL STROKE ADJUSTMENT BOLTS:

End of Clockwise Stroke (0°)

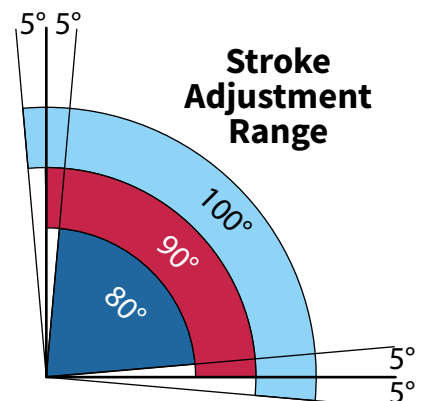


(adjustable from -5° to 5°)

End of Counter Clockwise Stroke (90°)



(adjustable from -85° to 95°)



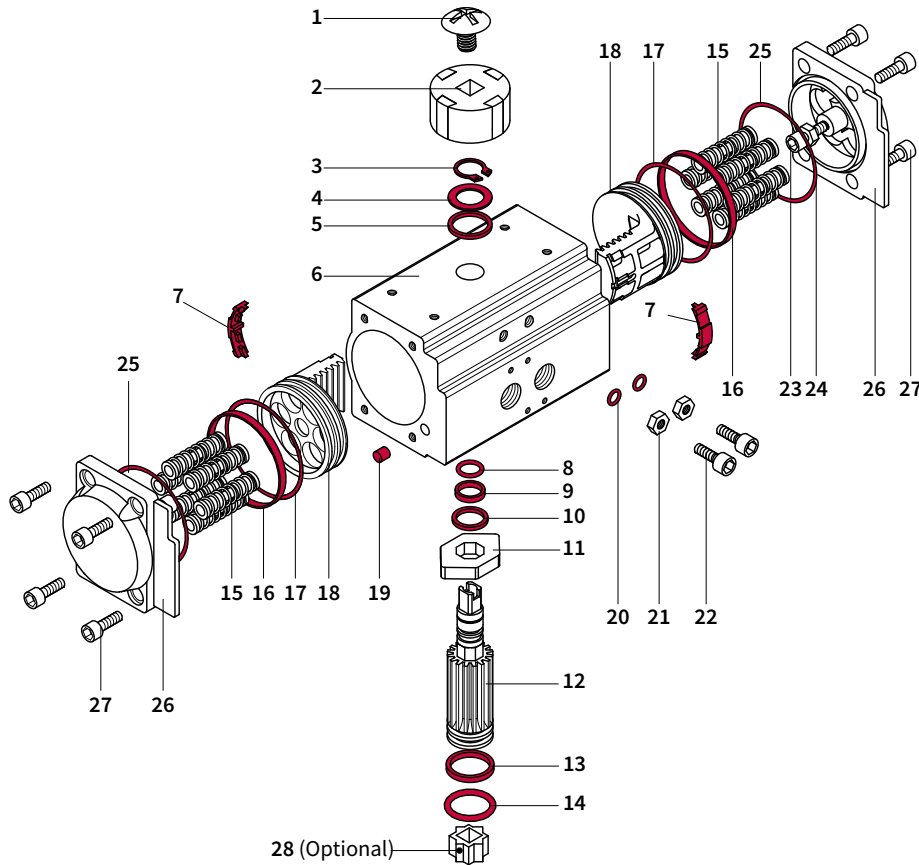


## C Series

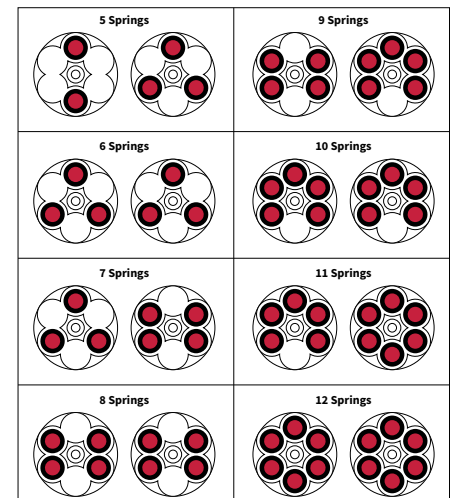


## Dual Rack-n-Pinion Pneumatic Valve Actuators

**CONSTRUCTION:** Spring Return Actuators (double acting models simply have no springs) [sizes 40 to 270]\*



### Spring Sets



No.	Part	Qty	Material
1	Indicator Cap Screw	1	Plastic (SS optional)
2	Position Indicator	1	Plastic (ABS)
3	Pinion Snap Ring	1	SS 300 Series
4	Thrust Washer	1	SS 300 Series
5	Thrust Bearing	1	Polyoxymethylene (Delrin)
6	Body	1	Extruded Aluminum Alloy
7	Piston Guide	2	Polyoxymethylene (Delrin)
8	O-ring (pinion top)	1	NBR**
9	Bearing (pinion top)	1	Polyoxymethylene (Delrin)
10	Inside Washer	1	Polyoxymethylene (Delrin)
11	Cam	1	Alloy Steel (SS optional)
12	Pinion (drive shaft)	1	SS 300 Series (Ni plated opt.)
13	Bearing (pinion bottom)	1	Polyoxymethylene (Delrin)
14	O-ring (pinion bottom)	1	NBR**

No.	Part	Qty	Material
15	Spring Cartridge	0-12	High Alloy Spring Steel
16	Piston Bearing	2	Polyoxymethylene (Delrin)
17	Piston O-ring	2	NBR**
18	Piston	2	Die-cast Aluminum
19	Plug	2	NBR**
20	Adjustment Screw O-ring	2	NBR**
21	Adjustment Screw Stop Nut	2	SS 300 Series
22	Adjustment Screw	2	SS 300 Series
23	Stop Screw	2	SS 300 Series
24	Stop Screw Nut	2	SS 300 Series
25	End Cap O-ring	2	NBR**
26	End Cap	2	Die-cast Aluminum
27	End Cap Screw	8	SS 300 Series
28	Shaft Adapter	1	Sintered Metal

\*Larger sizes are available - see next page

\*\*NBR is standard. Special soft seals can be ordered for high and low temperature applications - Call **1-800-899-0553**.

Red parts are included in seal repair kits.

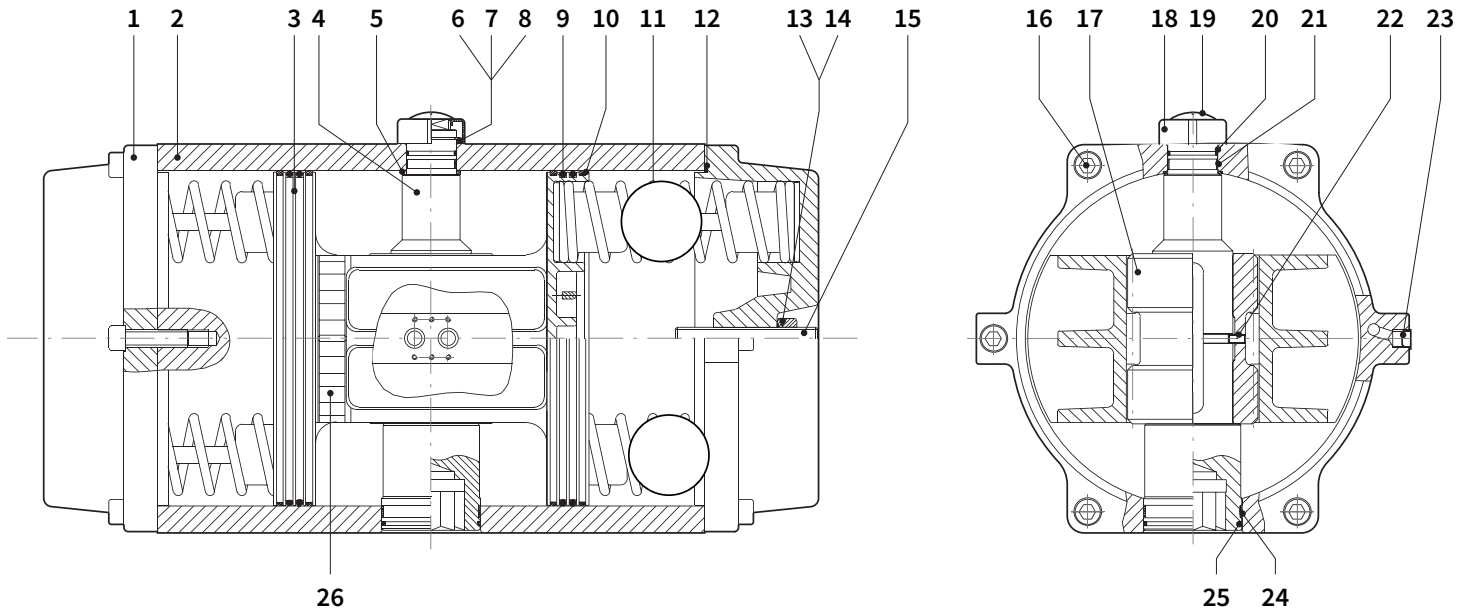


## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

**CONSTRUCTION:** Spring Return Actuators (double acting models simply have no springs) [sizes 300 to 400]



No.	Part	Qty	Material
1	End Cap	2	Aluminum Alloy
2	Body	1	Aluminum Alloy
3	Piston	2	Steel
4	Shaft	1	Steel
5	Inside Washer	1	Polyoxymethylene (Delrin)
6	Outside Washer	1	Polyoxymethylene (Delrin)
7	Thrust Washer	1	SS304
8	C-clip	1	SS304
9	Piston O-ring	4	NBR*
10	Piston Bearing	4	Polyoxymethylene (Delrin)
11	Spring	16	High Alloy Spring Steel
12	End Cap O-ring	2	NBR*
13	Adjustment Screw O-ring	2	NBR*

No.	Part	Qty	Material
14	Adjustment Screw Nut	2	SS304
15	End Cap Screw	2	SS304
16	Adjustment Screw	1	SS304
17	Gear Bushing	1	Steel
18	Indicator	1	Plastic
19	Indicator Cap Screw	1	SS304
20	Shaft Top O-ring	1	NBR*
21	Shaft Top Bearing	1	Polyoxymethylene (Delrin)
22	Screw	2	SS304
23	Plug	2	NBR*
24	Shaft Bottom Bearing	1	Polyoxymethylene (Delrin)
25	Shaft Bottom O-ring	1	NBR*
26	Guide Rod	2	Polyoxymethylene (Delrin)

Red parts are included in seal repair kits.

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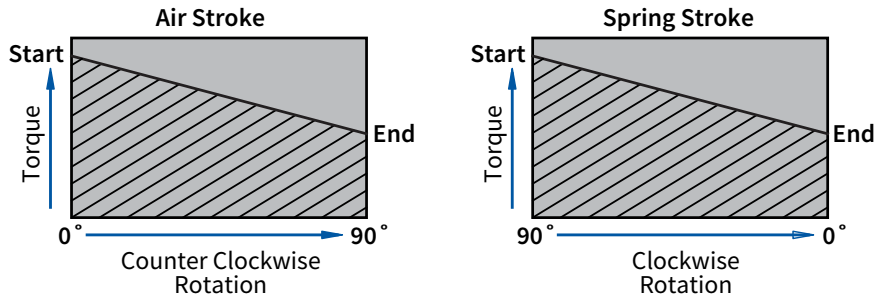
## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

### TORQUE VALUES: Spring Return Actuators (lbf/in) [sizes 52 to 105]\*

Rack-n-Pinion mechanics provide a constant conversion factor of linear force to rotational force throughout the entire travel of the stroke, however, due to the nature of spring force, both the air and spring strokes start with a higher torque which decreases in a linear fashion to a lower torque at the end of the stroke.



Model	# of Springs	Supply Air Pressure																			
		30		40		50		60		70		80		90		100		Spring			
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°		
CSR052	4	40	27	58	44	80	62	-	-	-	-	-	-	-	-	-	-	-	44	30	
	5	-	-	55	37	77	58	-	-	-	-	-	-	-	-	-	-	-	55	38	
	6	-	-	48	24	70	46	94	78	-	-	-	-	-	-	-	-	-	66	45	
	7	-	-	39	13	61	34	90	67	120	89	-	-	-	-	-	-	-	77	52	
	8	-	-	-	-	53	20	84	55	113	78	140	114	-	-	-	-	-	87	60	
	9	-	-	-	-	44	8	76	44	105	67	133	104	160	132	-	-	-	98	67	
	10	-	-	-	-	-	-	68	33	98	57	126	94	153	122	-	-	-	109	75	
	11	-	-	-	-	-	-	60	21	91	46	119	84	146	113	172	140	-	120	82	
	12	-	-	-	-	-	-	-	-	83	36	112	74	139	95	166	130	-	131	90	
	CSR063	4	81	55	114	87	165	121	211	185	-	-	-	-	-	-	-	-	-	71	48
		5	-	-	111	75	153	116	204	137	-	-	-	-	-	-	-	-	-	92	61
		6	-	-	98	55	138	95	191	152	242	205	-	-	-	-	-	-	-	111	72
7		-	-	84	35	127	73	179	133	229	187	-	-	-	-	-	-	-	129	85	
8		-	-	-	-	111	52	167	114	218	169	267	315	269	-	-	-	-	148	97	
9		-	-	-	-	-	-	154	95	206	151	255	203	304	253	-	-	-	166	109	
10		-	-	-	-	-	-	132	75	195	133	244	186	293	236	341	286	-	185	121	
11		-	-	-	-	-	-	-	-	184	115	234	169	283	220	330	270	203	203	133	
12		-	-	-	-	-	-	-	-	171	97	222	152	271	204	320	254	222	222	145	
CSR075		4	103	75	148	120	203	171	281	252	-	-	-	-	-	-	-	-	-	102	74
		5	-	-	141	103	197	158	270	235	-	-	-	-	-	-	-	-	-	128	93
		6	-	-	121	74	176	128	251	208	321	280	-	-	-	-	-	-	-	154	112
	7	-	-	101	47	155	99	232	182	303	256	-	-	-	-	-	-	-	179	131	
	8	-	-	-	-	133	69	211	155	284	231	352	301	418	369	-	-	-	205	149	
	9	-	-	-	-	-	-	192	129	266	206	335	278	402	347	-	-	-	231	168	
	10	-	-	-	-	-	-	174	102	246	181	318	254	386	324	451	391	256	187	187	
	11	-	-	-	-	-	-	-	-	231	157	301	231	369	301	435	369	282	205	205	
	12	-	-	-	-	-	-	-	-	213	132	284	207	353	278	419	346	308	224	224	
	CSR083	4	165	115	234	184	338	265	442	392	-	-	-	-	-	-	-	-	-	163	112
		5	-	-	227	157	317	244	428	364	-	-	-	-	-	-	-	-	-	204	140
		6	-	-	196	112	285	196	400	321	508	434	-	-	-	-	-	-	-	244	168
7		-	-	166	67	252	151	371	279	481	395	-	-	-	-	-	-	-	285	196	
8		-	-	-	-	221	103	342	237	454	355	560	466	663	572	-	-	-	326	224	
9		-	-	-	-	-	-	313	192	426	316	534	429	638	536	-	-	-	367	252	
10		-	-	-	-	-	-	284	152	400	276	508	391	613	500	715	605	407	280	280	
11		-	-	-	-	-	-	-	-	373	237	483	353	588	464	691	570	448	308	308	
12		-	-	-	-	-	-	-	-	345	198	456	316	563	428	667	536	489	336	336	
CSR092		4	234	157	330	258	463	374	633	556	-	-	-	-	-	-	-	-	-	243	166
		5	-	-	322	214	450	338	612	511	-	-	-	-	-	-	-	-	-	304	207
		6	-	-	277	148	403	269	569	449	725	612	-	-	-	-	-	-	-	365	248
	7	-	-	231	80	355	197	526	385	685	553	-	-	-	-	-	-	-	426	289	
	8	-	-	-	-	319	128	484	323	646	495	799	655	947	808	-	-	-	487	331	
	9	-	-	-	-	-	-	441	260	606	436	761	599	911	755	-	-	-	548	372	
	10	-	-	-	-	-	-	399	197	566	377	723	543	874	700	1022	853	608	413	413	
	11	-	-	-	-	-	-	-	-	525	318	685	487	837	647	986	801	669	454	454	
	12	-	-	-	-	-	-	-	-	486	260	647	432	800	593	950	749	730	496	496	
	CSR105	4	361	236	508	384	702	529	946	821	-	-	-	-	-	-	-	-	-	348	279
		5	-	-	497	325	687	508	921	760	-	-	-	-	-	-	-	-	-	436	280
		6	-	-	435	229	622	407	862	670	1088	908	-	-	-	-	-	-	-	523	336
7		-	-	374	133	559	308	805	580	1035	824	-	-	-	-	-	-	-	610	392	
8		-	-	-	-	494	208	747	490	980	740	1203	974	1419	1198	-	-	-	697	448	
9		-	-	-	-	-	-	689	400	927	656	1152	894	1370	1122	-	-	-	784	504	
10		-	-	-	-	-	-	631	306	872	569	1100	811	1320	1041	1535	1264	871	560	560	
11		-	-	-	-	-	-	-	-	818	487	1048	733	1270	966	1486	1191	958	616	616	
12		-	-	-	-	-	-	-	-	764	406	997	656	1221	892	1439	1119	1045	672	672	

\*Larger sizes are available - see next page





## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

**TORQUE VALUES:** Spring Return Actuators (lbf/in) [sizes 125 to 270]\*

Model	# of Springs	Supply Air Pressure																		
		30		40		50		60		70		80		90		100		Spring		
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	
CSR125	4	519	328	742	550	1069	773	1427	1216	-	-	-	-	-	-	-	-	559	368	
	5	-	-	712	453	1000	729	1358	1115	-	-	-	-	-	-	-	-	698	462	
	6	-	-	610	305	893	574	1263	976	1608	1340	-	-	-	-	-	-	832	555	
	7	-	-	509	148	787	410	1167	829	1519	1202	-	-	-	-	-	-	971	647	
	8	-	-	-	-	681	255	1071	689	1429	1072	1770	1429	2100	1772	-	-	1110	740	
	9	-	-	-	-	-	-	976	541	1340	934	1685	1298	2018	1645	-	-	1249	832	
	10	-	-	-	-	-	-	880	402	1251	804	1600	1174	1936	1526	2264	1865	1387	925	
	11	-	-	-	-	-	-	-	-	-	666	1514	1043	1854	1399	2184	1742	1530	1017	
	12	-	-	-	-	-	-	-	-	-	536	1429	919	1772	1280	2105	1626	1665	1110	
	CSR140	4	904	601	1283	979	1827	1465	2418	2113	-	-	-	-	-	-	-	-	913	608
		5	-	-	1246	823	1737	1296	2346	1948	-	-	-	-	-	-	-	-	1143	759
		6	-	-	1082	573	1566	1035	2192	1713	2778	2331	-	-	-	-	-	-	1070	908
7		-	-	916	324	1392	773	2035	1478	2631	2112	-	-	-	-	-	-	1598	1059	
8		-	-	-	-	1218	512	1878	1244	2485	1892	3063	2498	3624	3080	-	-	1826	1211	
9		-	-	-	-	-	-	1713	1009	2331	1673	2916	2290	3483	2879	-	-	2054	1370	
10		-	-	-	-	-	-	1557	765	2185	1446	2777	2073	3348	2670	3906	3247	2283	1522	
11		-	-	-	-	-	-	-	-	2039	1226	2638	1864	3214	2468	3776	3051	2510	1673	
12		-	-	-	-	-	-	-	-	1892	1207	2498	1655	3080	2267	3645	2855	2741	1824	
CSR160		4	1363	881	1951	1470	2794	2059	3717	3236	-	-	-	-	-	-	-	-	1472	991
		5	-	-	1877	1212	2640	1943	3592	2966	-	-	-	-	-	-	-	-	1844	1236
		6	-	-	1609	805	2359	1518	3340	2583	4256	3549	-	-	-	-	-	-	2212	1483
	7	-	-	1322	398	2069	1093	3079	2200	4012	3192	-	-	-	-	-	-	2581	1730	
	8	-	-	-	-	1789	667	2826	1818	3777	2022	4680	3782	5556	4691	-	-	2949	1977	
	9	-	-	-	-	-	-	2566	1435	3533	2477	4448	3442	5332	4363	-	-	3321	2225	
	10	-	-	-	-	-	-	2313	1052	3297	2120	4223	3102	5116	4034	5986	4935	3691	2472	
	11	-	-	-	-	-	-	-	-	3062	1771	3999	2769	4900	3714	5776	4624	4056	2719	
	12	-	-	-	-	-	-	-	-	2818	1413	3787	2429	4676	3386	5559	4305	4422	2966	
	CSR190	4	2350	1579	3392	2520	4637	3462	6117	5346	-	-	-	-	-	-	-	-	2187	1416
		5	-	-	3228	2164	4457	3345	5957	4957	-	-	-	-	-	-	-	-	2737	1774
		6	-	-	2839	1563	4051	2717	5592	4392	7041	5921	-	-	-	-	-	-	3287	2127
7		-	-	2451	962	3645	2088	5227	3827	6700	5393	-	-	-	-	-	-	3834	2480	
8		-	-	-	-	3239	1460	4861	3261	6359	4865	7789	6366	9180	7808	-	-	4380	2833	
9		-	-	-	-	-	-	4496	2696	6018	4337	7464	5863	8867	7323	-	-	4927	3186	
10		-	-	-	-	-	-	4131	2131	5677	3809	7139	5360	8554	6838	9936	8269	5473	3540	
11		-	-	-	-	-	-	-	-	5336	3281	6814	4858	8240	6354	9632	7798	6020	3893	
12		-	-	-	-	-	-	-	-	4995	2753	6490	4355	7927	5869	9327	7327	6566	4246	
CSR210		4	2761	2018	3938	3192	5527	4561	7470	6726	-	-	-	-	-	-	-	-	2690	1947
		5	-	-	3801	2774	5327	4254	7227	6262	-	-	-	-	-	-	-	-	3363	2430
		6	-	-	3265	2035	4767	3481	6723	5566	8552	7472	-	-	-	-	-	-	4036	2917
	7	-	-	2728	1295	4206	2702	6218	4870	8081	6822	-	-	-	-	-	-	4708	3405	
	8	-	-	-	-	3645	1934	5714	4174	7610	6172	9413	8044	11164	9844	-	-	5381	3893	
	9	-	-	-	-	-	-	5209	3479	7139	5523	8965	7426	10731	9247	-	-	6053	4380	
	10	-	-	-	-	-	-	4705	2783	6668	4873	8516	6807	10299	8651	12038	10436	6726	4868	
	11	-	-	-	-	-	-	-	-	6197	4223	8068	6188	9866	8054	11617	9856	7399	5356	
	12	-	-	-	-	-	-	-	-	5726	3574	7619	5569	9434	7457	11197	9276	8071	5843	
	CSR240	4	3907	2887	5610	4591	7754	6608	10718	9698	-	-	-	-	-	-	-	-	3922	2903
		5	-	-	5373	3977	7571	6111	10332	9018	-	-	-	-	-	-	-	-	4902	3632
		6	-	-	4578	2895	6739	4979	9584	8001	12239	10761	-	-	-	-	-	-	5885	4355
7		-	-	3773	1822	5898	3858	8827	6992	11533	9819	-	-	-	-	-	-	6861	5087	
8		-	-	-	-	5066	2727	8079	5975	10834	8869	13451	11579	15989	14184	-	-	7844	5810	
9		-	-	-	-	-	-	7323	4957	10128	7919	12778	10674	15340	13312	-	-	8828	6541	
10		-	-	-	-	-	-	6575	3948	9429	6976	12113	9777	14699	12446	17220	15031	9803	7264	
11		-	-	-	-	-	-	-	-	8731	6026	11448	8872	14057	11574	16596	14183	10787	7987	
12		-	-	-	-	-	-	-	-	8024	5076	10775	7967	13408	10701	15966	13335	11771	8719	
CSR270		4	6386	4779	8975	7736	12742	10553	16870	15132	-	-	-	-	-	-	-	-	5572	3966
		5	-	-	8786	6576	12163	9852	16289	14210	-	-	-	-	-	-	-	-	6961	4952
		6	-	-	7695	5050	11022	8257	15263	12775	19256	16934	-	-	-	-	-	-	8349	5944
	7	-	-	6612	3514	9891	6652	14245	11332	18306	15585	-	-	-	-	-	-	9744	6928	
	8	-	-	-	-	8750	5057	13219	9897	17348	14245	21286	18332	25109	22260	-	-	11132	7920	
	9	-	-	-	-	-	-	12139	8453	16389	12897	20374	17048	24229	21023	-	-	12527	8912	
	10	-	-	-	-	-	-	11167	7018	15431	11557	19461	15771	23349	19792	27156	23699	13914	9904	
	11	-	-	-	-	-	-	-	-	14473	10209	18548	14487	22469	18554	26300	22496	15310	10896	
	12	-	-	-	-	-	-	-	-	13523	8869	17643	13211	21597	17324	25452	21300	16697	11880	

\*Larger sizes are available - see next page



## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

**TORQUE VALUES:** Spring Return Actuators (lbf/in) [sizes 300 to 400]

Model	# of Springs	Supply Air Pressure																			
		30		40		50		60		70		80		90		100		120		Spring	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
CSR300	5	6328	3071	9709	6452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9391	6461
	6	4898	991	8275	4372	12230	8131	-	-	-	-	-	-	-	-	-	-	-	-	11267	7753
	7	-	-	6833	2283	10715	5939	16958	12409	-	-	-	-	-	-	-	-	-	-	13143	9045
	8	-	-	-	-	9210	3745	15524	10320	18156	13914	22277	17073	-	-	-	-	-	-	15020	10338
	9	-	-	-	-	-	-	14090	8231	16988	12212	20844	14984	27597	21737	-	-	-	-	16896	11630
	10	-	-	-	-	-	-	12657	6151	15819	10517	19410	12904	26163	19658	31270	25090	39669	33164	18781	12922
	11	-	-	-	-	-	-	-	-	14643	8815	17967	10816	24720	17569	29899	23106	38226	31705	20658	14214
	12	-	-	-	-	-	-	-	-	13474	7113	16533	8727	23286	15480	28537	21121	36793	28986	22534	15507
CSR350	5	8691	3478	13745	8532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15064	10382
	6	6381	133	11435	5187	17313	10752	-	-	-	-	-	-	-	-	-	-	-	-	18082	12462
	7	-	-	9125	1841	14888	7240	24295	17011	-	-	-	-	-	-	-	-	-	-	21091	14533
	8	-	-	-	-	12462	3726	21985	13666	26156	19375	32093	23773	-	-	-	-	-	-	24109	16613
	9	-	-	-	-	-	-	19684	10311	24280	16641	29792	20419	39899	30526	-	-	-	-	27119	18693
	10	-	-	-	-	-	-	17374	6966	22398	13914	27482	17073	37589	27181	45321	35432	57813	47405	30137	20764
	11	-	-	-	-	-	-	-	-	20515	11188	25172	13728	35279	23835	43125	32253	55503	33951	33146	22844
	12	-	-	-	-	-	-	-	-	18639	8454	22870	10373	32978	20481	40939	29067	53202	40705	36164	24924
CSR400	7	10754	496	17949	7691	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25490	16259
	8	-	-	15365	3638	23697	11384	-	-	-	-	-	-	-	-	-	-	-	-	29137	18587
	9	-	-	-	-	20994	7137	34403	21206	-	-	-	-	-	-	-	-	-	-	32774	20905
	10	-	-	-	-	18279	2891	31818	17162	37675	25730	46227	31571	-	-	-	-	-	-	36421	23224
	11	-	-	-	-	-	-	29234	13117	35569	22434	43643	27526	58052	41935	-	-	-	-	40058	25552
	12	-	-	-	-	-	-	26658	9072	33470	19137	41067	23481	55477	37890	66383	49676	84286	66699	43705	27871
	13	-	-	-	-	-	-	-	-	31364	15833	38483	19427	52892	33836	63927	45825	81701	62646	47343	30199
	14	-	-	-	-	-	-	-	-	29264	12537	35907	15383	50317	29792	61481	41982	79126	58601	50989	32518
	15	-	-	-	-	-	-	-	-	27158	9240	33323	11338	47732	25747	59025	38140	76541	54556	54627	34845
16	-	-	-	-	-	-	-	-	-	-	-	-	-	45148	21702	56571	34297	73957	50511	58273	37164



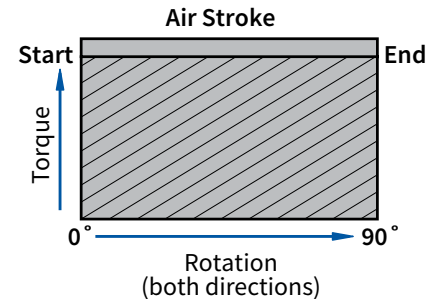
## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

### TORQUE VALUES: Double Acting Actuators (lbf/in) [sizes 40 to 270]\*

Rack-n-Pinion mechanics provide a constant conversion factor of linear force to rotational force throughout the entire travel of the stroke, and since there are no springs involved on double acting models, the force is constant throughout the stroke and equal in both directions.



Model	Supply Air Pressure (psi)									
	30	40	50	60	70	80	90	100	110	120
CDA40	42	55	71	85	100	115	129	142	157	171
CDA52	70	97	122	146	171	195	219	244	268	292
CDA63	129	178	223	267	313	356	401	446	490	535
CDA75	177	245	306	368	430	490	551	613	674	735
CDA83	278	383	476	574	671	766	861	957	1053	1149
CDA92	399	551	689	827	967	1103	1240	1378	1516	1654
CDA105	585	808	1009	1211	1416	1615	1817	2019	2221	2423
CDA125	877	1225	1532	1833	2149	2450	2757	3063	3369	3676
CDA140	1513	2088	2611	3133	3662	4177	4699	5221	5743	6265
CDA160	2354	3249	4061	4873	5697	6497	7309	8122	8934	9746
CDA190	3767	5198	6497	7797	9115	10396	11695	12995	14294	15594
CDA210	4708	6497	8122	9746	11394	12995	14619	16243	17868	19492
CDA240	6810	9398	11753	14097	16480	18796	21151	23495	25850	28194
CDA270	10352	14282	17856	21430	25046	28565	32139	35712	39286	42859
CDA300	13506	16887	21270	27012	30393	33766	40519	44900	49390	54025
CDA350	20224	25278	31840	40448	45502	50555	60663	67240	73960	80887
CDA400	28818	36014	45375	57627	64832	72036	86445	95800	105380	115254

### Air Consumption: in Cubic Inches

Stroke	040	052	063	075	083	092	105	125	140	160	190	210	240	270	300	350	400
CCW	< 7.3	7.3	12.9	18.3	26.2	39.1	58.0	97.6	152.5	225.7	359.9	457.5	671.2	1038	1452	2142	3210
CW	< 9.7	9.7	14.1	20.7	28.7	44.6	53.7	85.4	134.2	195.2	329.4	457.5	549.3	854.4	1812	2825	2197

### Stroke Speeds: in Seconds

Stroke	Type	040	052	063	075	083	092	105	125	140	160	190	210	240	270	300	350	400
CCW	DA	0.3	0.3	0.5	0.5	0.5	0.6	0.8	0.9	1.2	1.5	2.2	2.8	3.5	3.51	15	23.7	31
	SR	-	0.4	0.6	0.6	0.6	0.7	1.0	1.1	1.4	2.0	2.5	3.5	4.2	4.5	31.6	52.1	85.9
CW	DA	0.4	0.4	0.6	0.6	0.7	0.8	1.0	1.2	1.5	1.8	2.5	3.5	4.2	4.5	14.9	18.6	29
	SR	-	0.4	0.8	1.0	1.0	1.2	1.2	1.5	1.8	2.5	3.0	4.0	5.0	6.0	16.5	26.2	35.9

\*Larger sizes are available - see next page



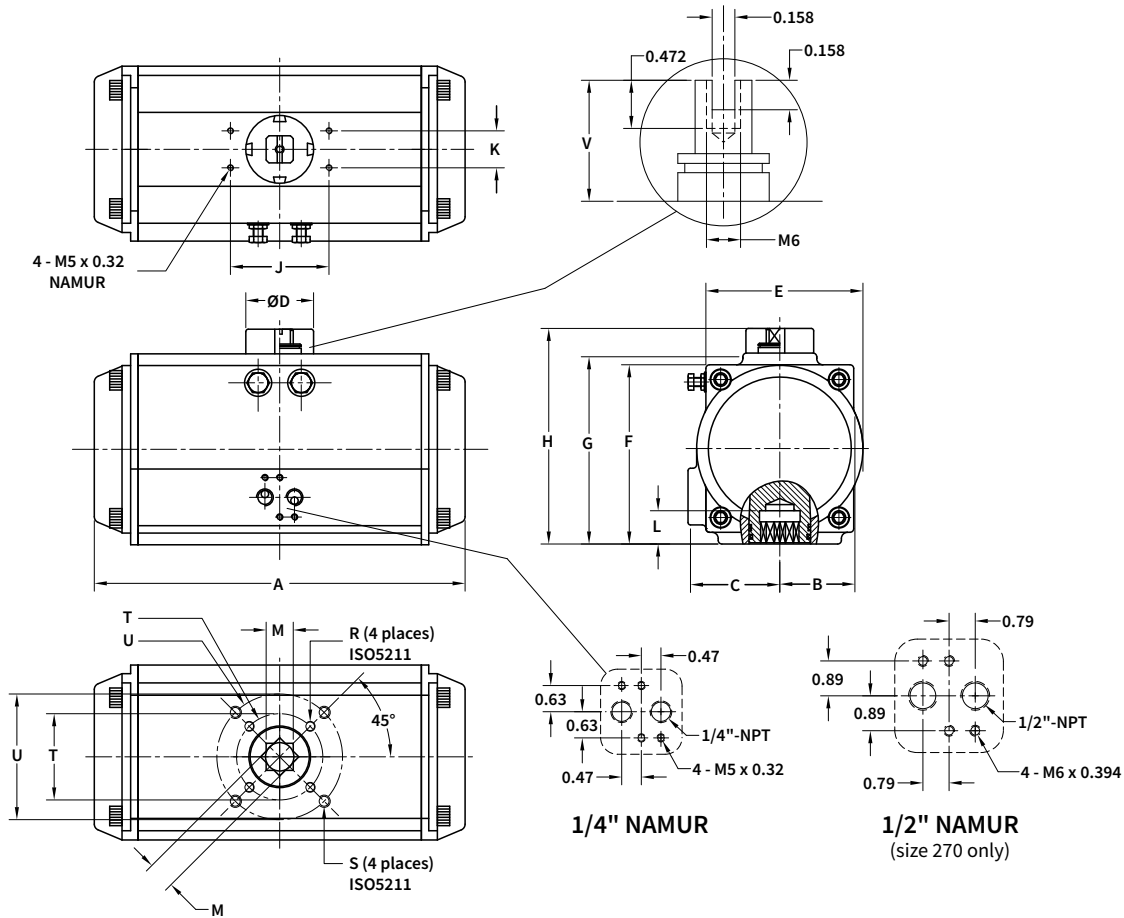


## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

**DIMENSIONS:** in inches [sizes 40 to 270]\*



Size	A	B	C	D	E	F	G	H	J	K	L	M	R	S	T	U	Weight**
40	4.81	1.13	1.44	1.58	2.05	2.36	-	3.15	3.15	1.18	0.55	0.43	M5x8	M6x10	F03/1.417	F05/1.969	2 lbs.
52	5.79	1.18	1.63	1.58	2.56	2.58	2.83	3.62	3.15	1.18	0.55	0.43	M5x8	M6x10	F03/1.417	F05/1.969	3 lbs.
63	6.61	1.42	1.85	1.58	2.83	3.19	3.44	4.23	3.15	1.18	0.71	0.55	M6x10	M8x13	F05/1.969	F07/2.756	4 lbs.
75	7.24	1.65	2.09	1.58	3.19	3.70	3.92	4.70	3.15	1.18	0.71	0.55	M6x10	M8x13	F05/1.969	F07/2.756	6 lbs.
83	8.03	1.81	2.24	1.58	3.62	3.88	4.28	5.07	3.15	1.18	0.83	0.67	M6x10	M8x13	F05/1.969	F07/2.756	7 lbs.
92	10.31	1.97	2.30	1.58	3.86	4.37	4.60	5.39	3.15	1.18	0.83	0.67	M6x10	M8x13	F05/1.969	F07/2.756	10 lbs.
105	10.55	2.26	2.52	1.58	4.31	4.82	5.24	6.02	3.15	1.18	1.02	0.87	M8x13	M10x16	F07/2.756	F10/4.016	13 lbs.
125	11.85	2.66	2.93	2.17	5.02	5.73	6.10	6.89	3.15	1.18	1.02	0.87	M8x13	M10x16	F07/2.756	F10/4.016	19 lbs.
140	15.35	2.95	3.03	2.17	5.41	6.33	6.75	7.54	3.15	1.18	1.22	1.06	M10x16	M12x20	F10/4.016	F12/4.921	25 lbs.
160	18.03	3.43	3.43	2.17	6.22	7.24	7.76	8.54	3.15	1.18	1.22	1.06	M10x16	M12x20	F10/4.016	F12/4.921	36 lbs.
190	20.79	4.06	4.06	3.15	7.44	8.50	9.06	10.24	5.12	1.18	1.57	1.42	-	M16x25	-	F14/5.512	70 lbs.
210	20.94	4.45	4.45	3.15	8.27	9.27	10.04	11.22	5.12	1.18	1.57	1.42	-	M16x25	-	F14/5.512	76 lbs.
240	23.70	5.12	5.12	3.15	9.65	10.39	11.38	12.56	5.12	1.18	1.97	1.81	-	M16x25	-	F16/6.496	106 lbs.
270	28.42	5.79	5.79	3.15	10.75	11.77	12.83	14.01	5.12	1.18	1.97	1.81	-	M16x25	-	F16/6.496	163 lbs.

\*Larger sizes are available - see next page

\*\*Weights shown are for double acting models. Spring return models will have the additional weight of the springs.

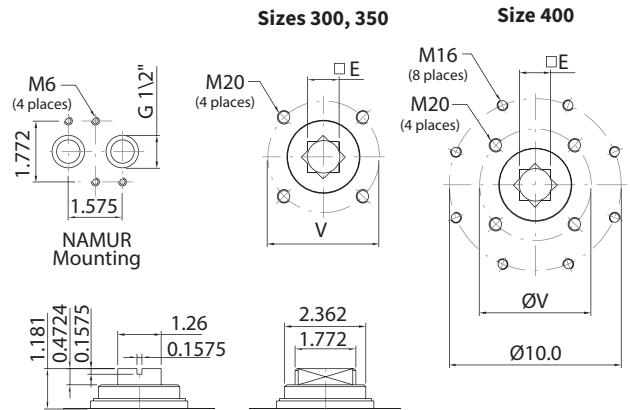
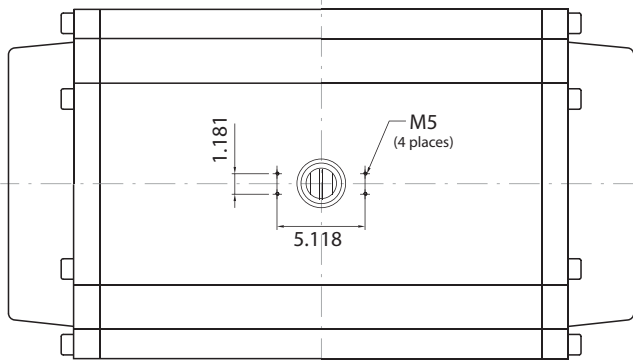
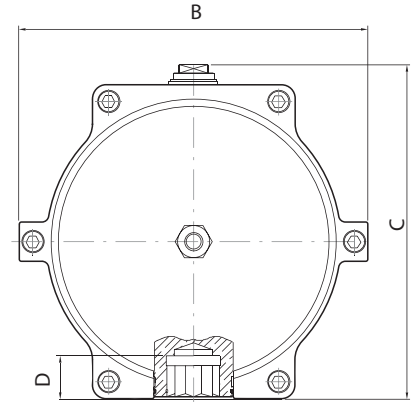
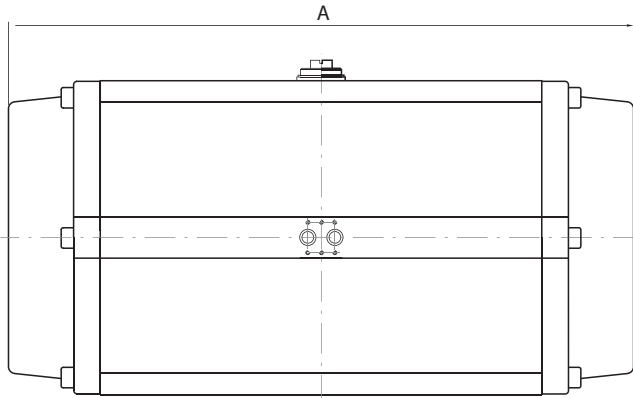


## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

**DIMENSIONS:** in inches [sizes 300 to 400]



Size	A	B	C	D	E	V	U	Weight* (Spring Return)	Weight* (Double Acting)
300	29.2	12.8	14.9	2.36	1.811	6.496	-	287 lbs.	243 lbs.
350	33.9	15.0	17.0	2.36	1.811	6.496	-	517 lbs.	411 lbs.
400	36.4	20.3	19.4	2.36	2.165	6.496	M16	795 lbs.	637 lbs.

\*Weights shown for spring return models include the weight of the maximum number of springs per size.



## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

### SPECIAL OPTIONS AVAILABLE: Stainless Steel Actuators



Dual Rack-n-pinion pneumatic actuators with stainless steel body, pinion, piston, and fasteners. Torque output up to 6500 lbf-in. for double acting and 3600 lbf-in. for spring return.

[Call for details](#)

### 180° and 3-position Actuators



These actuators are ideal for use on multi-port valves to provide the increased functionality using 3 positions to add achieve additional flow path possibilities using one valve.

[Call for details](#)



## C Series



## Dual Rack-n-Pinion Pneumatic Valve Actuators

**CSR 160 - 12**

Type	Size	Springs
------	------	---------

Type: \_\_\_\_\_

**CSR** = Spring Return  
**CDA** = Double Acting

Size: (see [torque](#) and [dimension](#) tables to select the proper size) \_\_\_\_\_

<b>40</b>	<b>92</b>	<b>190</b>	<b>400</b>
<b>52</b>	<b>105</b>	<b>210</b>	
<b>63</b>	<b>125</b>	<b>270</b>	
<b>75</b>	<b>140</b>	<b>300</b>	
<b>83</b>	<b>160</b>	<b>350</b>	

Larger sizes are available - [Call for Details](#)

Springs: \_\_\_\_\_

(omit) = No springs for Double Acting models  
**5 - 12** = number of springs in total (see [page 3](#) for spring arrangements and [pages 4 & 5](#) for torque values)

### ACCESSORIES

#### NAMUR Solenoid Valves



Either 3-way for Spring return or 4-way for double acting. Each is available with various coils and connectors that are either NEMA 4/4X Weatherproof, NEMA 7 Explosion proof.

For complete details visit:

<https://assuredautomation.com/NAMUR-solenoid-valves>

#### Limit Switches



We offer a wide range of limit switches that includes proximity sensors and mechanical switches. Our offering includes NEMA 4/4X Weatherproof, NEMA 7 Explosion proof.

For complete details visit:

<https://assuredautomation.com/limit-switches>

#### Positioners



Pneumatic and Electro-pneumatic positioners are available. Electro-pneumatic models are available as standard, intrinsically safe, and explosion proof. All units are available with or without feedback units.

For complete details visit:

<https://assuredautomation.com/valve-positioners>

#### FireChek® Thermal Shutoff Valve



This revolutionary product turns any spring return pneumatic actuator into a thermally activated shutoff valve. Not only does it vent the actuator allowing for the springs to return the valve to fail-safe, it also shuts off the supply air which would feed oxygen to the fire. Sizes are available for ANY size actuator.

For complete details visit:

<https://assuredautomation.com/firechek>