

# CRP SERIES

## Rack & Pinion Actuator

Designed & engineered for severe service applications

- Torques up to 110,000 in-lbs
- Double-Acting or Spring Return
- Fail-Close or Fail-Open



# Design & Materials

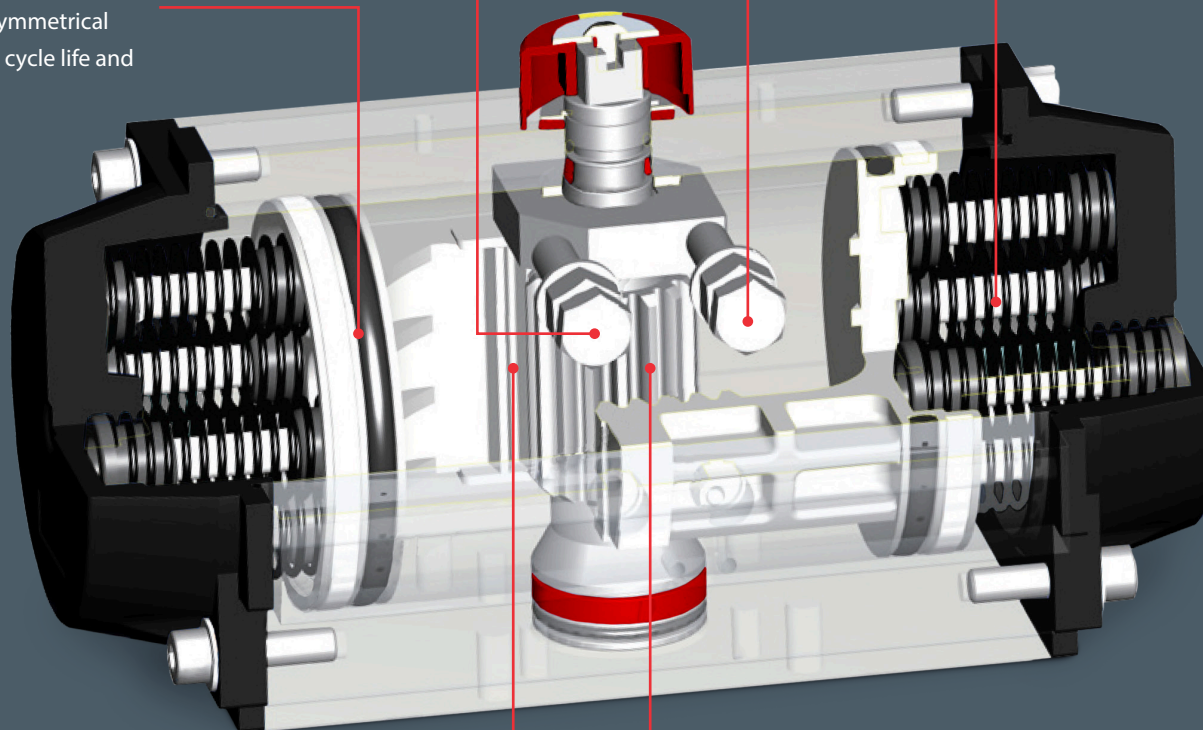
## Double-Opposed Piston-Racks

Dual piston design allows for compactness, symmetrical mounting, high cycle life and rapid operation

## Travel Stop Adjustments

External, allows for independent +/- 4° adjustment in close or open position

## Preloaded Spring Cartridges



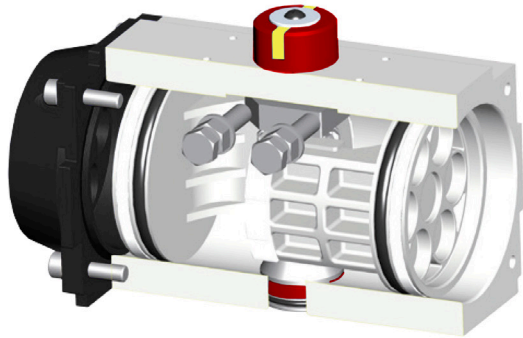
## Pinion Shaft

One piece, provides blowout protection and maximum cycle life

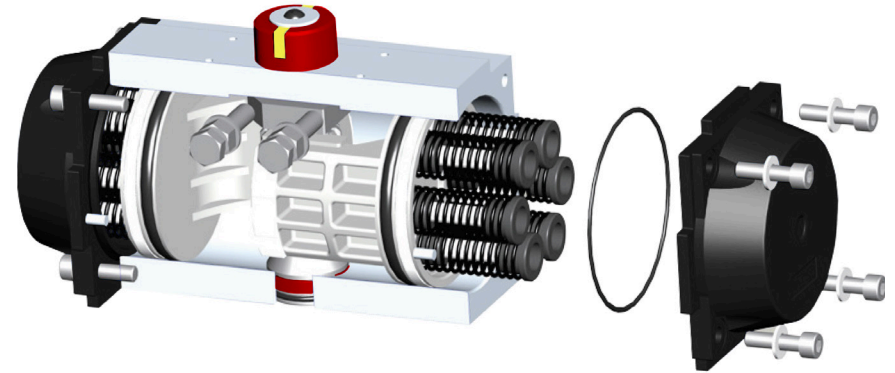
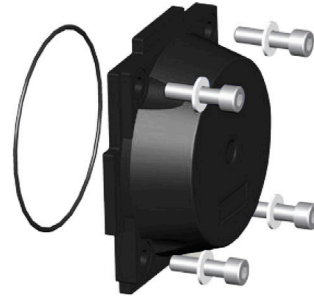
## High Precision Machining

Allows for accurate positioning on piston racks and pinion shaft.

Material Breakdown	STANDARD
Body	Aluminum Alloy, Hard Anodized
End Caps	Aluminum Alloy
Spring Seat	Nylon
Spring	Stainless Steel
Straining Beam	Steel Alloy
Drive Shaft	Carbon Steel ENP (420 SS Optional)



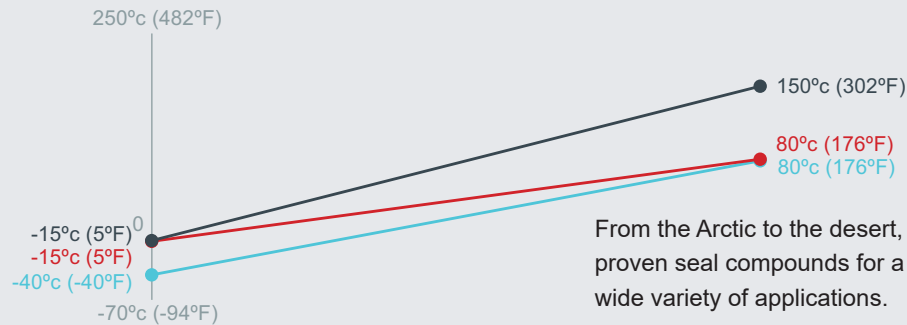
Double-Acting Actuator



Spring Return Actuator

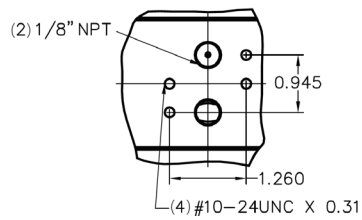
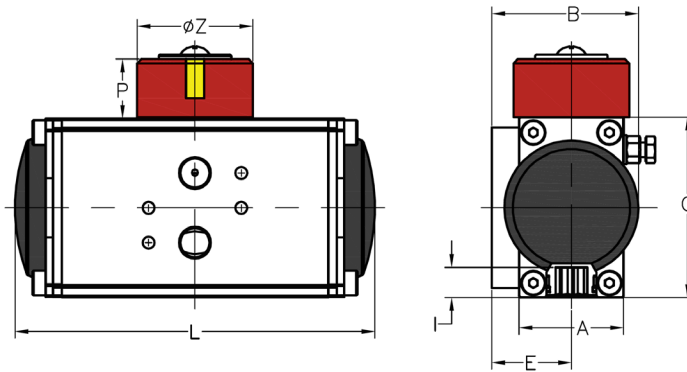
## Specifications

Cowan CRP Series Rack & Pinion Actuators are designed to suit a wide range of applications; from commodity to severe-service extremes.

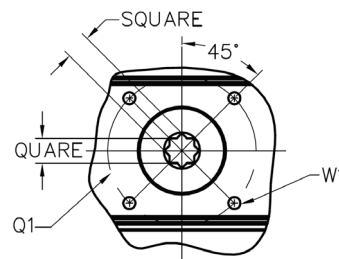


- **Torques up to 110,000 in-lbs**
- **Pressure Rating: up to 115psi**
- **All moving parts are contained in Nylon bearings**
- **Full compliance to worldwide standards and specifications**
- **Innovative universal drive shaft: Customized drive connections can be made in lieu of the standard double square bottom drive shaft connection**

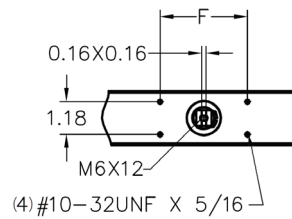
## CRP0125



Side View

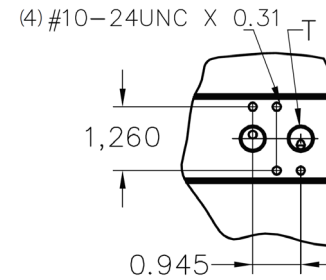
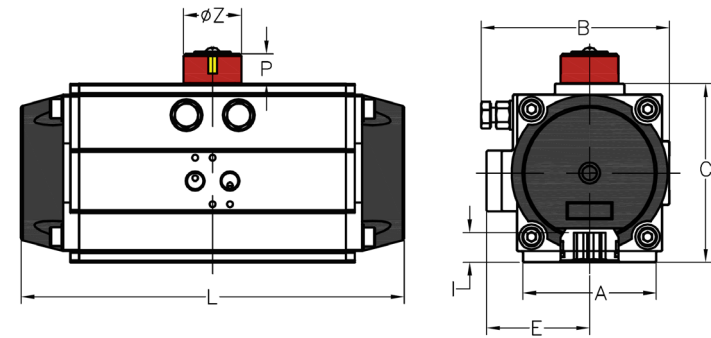


Bottom View

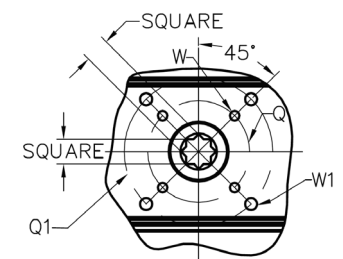


CRP0125-CRP0625  
Top View

## CRP0200-CRP0625



Side View

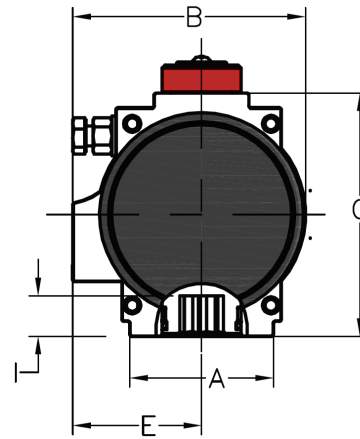
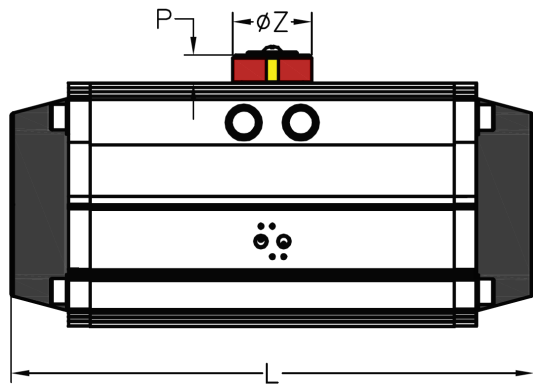


Bottom View

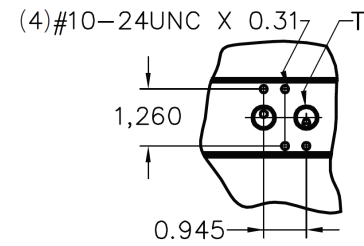
### Actuator Dimensions (in)

Model	A	B	C	E	F	P	Z	L	I	Flange	Q	Q1	W	W1	Square	T
CRP0125	1.46	1.85	1.97	1.06	1.97	0.79	1.57	4.33	0.39	FA03	-	1.42	-	#10-24UNC x 0.35	0.4 x 0.4	1/8 NPT
CRP0200	1.77	2.78	2.76	1.63	3.15	0.79	1.57	6.06	0.47	FA03/05	1.42	1.97	#10-24UNC x 0.29	1/4-20UNC x 0.35	0.4 x 0.4	1/4 NPT
CRP0250	2.44	3.52	3.50	2.03	3.15	0.79	1.57	7.44	0.63	FA05/07	1.97	2.76	1/4-20UNC x 0.35	5/16-18UNC x 0.47	0.6 x 0.6	1/4 NPT
CRP0300	2.68	4.04	3.94	2.32	3.15	0.79	1.57	8.27	0.63	FA05/07	1.97	2.76	1/4-20UNC x 0.35	5/16-18UNC x 0.47	0.6 x 0.6	1/4 NPT
CRP0325	2.68	4.43	4.45	2.50	3.15	0.79	1.57	9.02	0.75	FA05/07	1.97	2.76	1/4-20UNC x 0.35	5/16-18UNC x 0.47	0.7 x 0.7	1/4 NPT
CRP0375	3.62	4.96	4.84	2.80	3.15	0.79	1.57	10.39	0.75	FA05/07	2.76	4.02	1/4-20UNC x 0.35	5/16-18UNC x 0.47	0.7 x 0.7	1/4 NPT
CRP0425	3.66	5.45	5.35	3.01	3.15	0.79	1.57	10.47	0.75	FA07/10	2.76	4.02	5/16-18UNC x 0.47	3/8-16UNC x 0.59	0.7 x 0.7	1/4 NPT
CRP0500	3.78	6.18	6.34	3.35	3.15	1.18	2.20	13.27	0.98	FA07/10	2.76	4.02	5/16-18UNC x 0.47	3/8-16UNC x 0.59	0.9 x 0.9	1/4 NPT
CRP0550	4.33	7.01	7.01	3.82	3.15	1.18	2.20	14.84	1.22	FA10/12	4.02	4.92	3/8-16UNC x 0.59	1/2-13UNC x 0.71	1.1 x 1.1	1/4 NPT
CRP0625	4.41	7.72	7.87	4.17	5.12	1.18	2.20	16.22	1.22	FA10/12	4.02	4.92	3/8-16UNC x 0.59	1/2-13UNC x 0.71	1.1 x 1.1	1/4 NPT

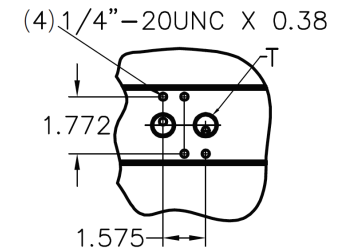
CRP0750-CRP1375



Side Views

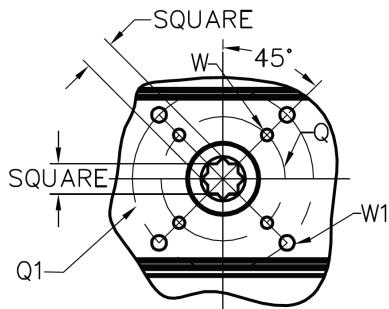


CRP0750-CRP0825

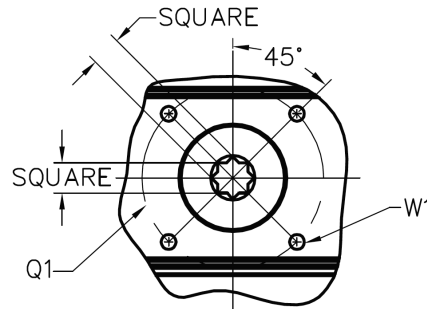


CRP0950-CRP1375

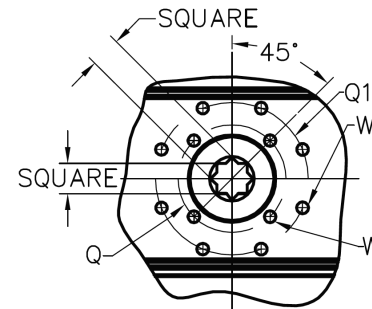
Bottom Views



CRP0750

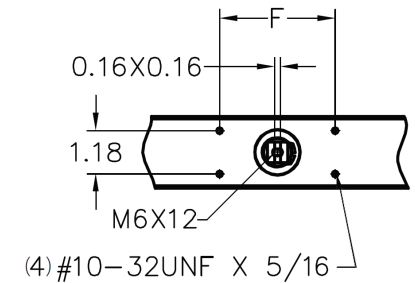


CRP0825-CRP1175



CRP1375

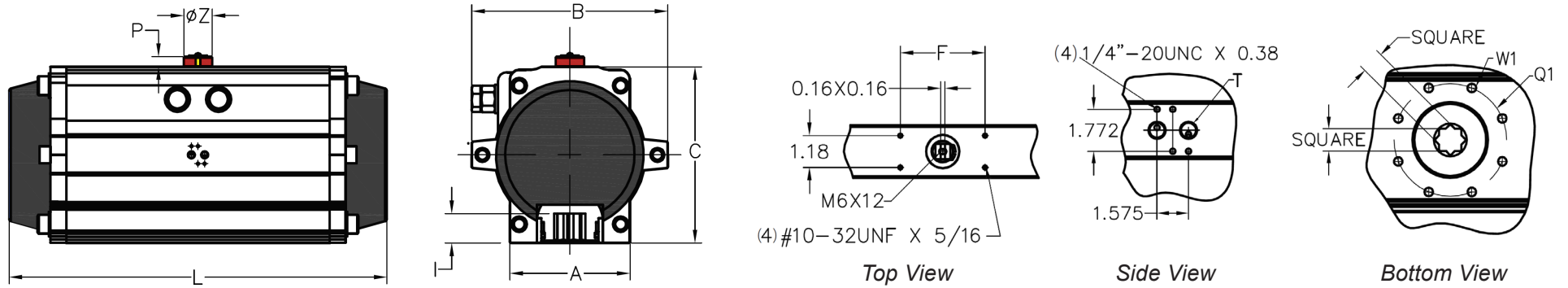
Top View



CRP0750-CRP1375

Actuator Dimensions (in)

Model	A	B	C	E	F	P	Z	L	I	Flange	Q	Q1	W	W1	Square	T
CRP0750	5.25	8.52	9.13	4.41	5.12	1.18	2.20	19.21	1.61	FA10/14	4.02	5.51	4 3/8-16UNC x 0.59	4 5/8-11UNC x 0.94	1.4 x 1.4	1/8 NPT
CRP0825	5.51	9.27	10.04	4.72	5.12	1.18	3.15	21.65	1.57	FA14	-	5.51	-	4 5/8-11UNC x 0.94	1.4 x 1.4	1/4 NPT
CRP0950	6.26	10.31	11.50	5.16	5.12	1.18	3.15	23.70	1.97	FA16	-	6.50	-	4 3/4-10UNC x 1.10	1.8 x 1.8	1/2 NPT
CRP1050	6.26	11.61	13.03	5.81	5.12	1.18	3.15	26.46	1.97	FA16	-	6.50	-	4 3/4-10UNC x 1.10	1.8 x 1.8	1/2 NPT
CRP1175	7.09	13.19	13.94	6.81	5.12	1.18	3.15	30.87	1.97	FA16	-	6.50	-	4 3/4-10UNC x 1.10	1.8 x 1.8	1/2 NPT
CRP1375	10.63	15.16	16.14	7.68	5.12	1.18	3.15	33.27	1.97	FA16/25	6.50	10.00	4 3/4-10UNC x 1.10	8 5/8-11UNC x 1.19	1.8 x 1.8	1/2 NPT



Actuator Dimensions (in)														
Model	A	B	C	E	F	P	Z	L	I	Flange	Q1	W1	Square	T
CRP1575	11.42	20.47	18.35	10.24	5.12	1.18	3.15	37.64	2.36	FA25	10.00	8 5/8-11UNC x 1.19	2.2 x 2.2	1/2 NPT

Torque Ratings — Double-Acting Actuators

Double Acting Torque Ratings (in-lbs)						
Model	40 PSIG	50 PSIG	60 PSIG	80 PSIG	100 PSIG	115 PSIG
CRP0125 D	29	36	45	58	73	84
CRP0200 D	86	108	131	176	223	258
CRP0250 D	172	221	266	356	452	522
CRP0300 D	267	342	413	552	703	812
CRP0325 D	392	501	606	810	1,029	1,192
CRP0375 D	550	704	851	1,138	1,452	1,675
CRP0425 D	710	924	1,118	1,485	1,891	2,178
CRP0500 D	1,268	1,650	1,987	2,652	3,369	3,890
CRP0550 D	1,932	2,446	2,948	3,915	4,971	5,730
CRP0625 D	2,597	3,378	4,074	5,430	6,906	7,968
CRP0750 D	4,223	5,344	6,438	8,543	10,839	12,497
CRP0825 D	5,895	7,459	8,988	11,926	15,141	17,447
CRP0950 D	9,148	11,569	13,929	18,501	23,481	27,064
CRP1050 D	12,860	16,267	19,592	26,010	33,017	38,054
CRP1175 D	16,541	20,932	25,207	33,466	42,475	48,958
CRP1375 D	24,560	31,066	37,409	49,667	63,043	72,660
CRP1575 D	37,425	47,338	57,010	75,682	96,069	110,719

Note - Max. operating pressure 115psig. Design pressure rating 175psig.

# Torque Ratings — Spring Return Actuators

Actuation Solutions and Systems for the World's Most Challenging Environments

Spring Return Torque Ratings (in-lbs)													
Model	Springs (#)	40 PSIG		60 PSIG		80 PSIG		100 PSIG		115 PSIG		Spring Stroke	
		Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)
CRP0200 S	05	53	39	100	85							46	31
	06	47	30	94	76	138	120					55	37
	07	41	21	88	67	132	112					64	43
	08			81	58	126	102	175	151			73	50
	09			75	49	120	93	169	143	202	175	82	56
	10			69	40	113	84	163	134	196	166	91	62
	11					107	74	157	124	190	158	100	68
	12					101	66	150	115	183	148	110	74
CRP0250 S	05	94	55	187	148							116	77
	06	79	32	172	125	263	216					139	92
	07	63	9	156	102	247	193					162	108
	08			141	78	232	169	332	270			186	123
	09			127	55	216	146	317	247	384	314	209	139
	10			112	32	201	123	301	223	368	290	232	154
	11					185	100	286	200	353	267	255	169
	12					170	77	271	177	337	244	278	185
CRP0300 S	05	171	116	317	262							150	95
	06	152	87	299	233	438	373					179	113
	07	134	58	279	203	419	343					209	133
	08			261	173	400	313	556	469			239	151
	09			242	144	381	283	538	439	641	543	268	172
	10			224	114	362	253	518	409	623	514	298	190
	11					343	223	499	379	603	484	329	208
	12					324	193	480	350	585	453	358	228
CRP0325 S	05	244	159	475	368							231	147
	06	213	112	428	322	634	533					277	176
	07	183	66	399	276	605	487					323	205
	08			369	230	575	440	804	670			369	235
	09			340	184	546	394	775	623	928	777	415	264
	10			311	138	516	348	746	577	899	731	461	293
	11					487	302	716	531	869	684	507	322
	12					458	256	687	485	840	638	553	352

Note - Max. operating pressure 115psig. Design pressure rating 170psig.

# Torque Ratings — Spring Return Actuators

Actuation Solutions and Systems for the World's Most Challenging Environments

Spring Return Torque Ratings (in-lbs)													
Model	Springs (#)	40 PSIG		60 PSIG		80 PSIG		100 PSIG		115 PSIG		Spring Stroke	
		Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)
CRP0375 S	05	352	239	653	538							309	196
	06	313	177	614	477	903	768					370	235
	07	272	115	575	415	864	706					432	274
	08			535	353	825	644	1,147	966			494	314
	09			467	292	786	583	1,108	904	1,322	1,119	555	352
	10			457	230	747	521	1,068	842	1,283	1,057	617	392
	11					708	459	1,029	781	1,244	995	679	430
	12					668	397	990	719	1,204	933	740	469
CRP0425 S	05	461	308	858	707							406	253
	06	411	228	807	626	1,181	997					487	304
	07	360	147	757	544	1,130	916					569	354
	08			705	463	1,080	835	1,496	1,251			650	406
	09			655	383	1,028	754	1,444	1,170	1,723	1,447	730	456
	10			604	301	978	672	1,394	1,088	1,671	1,366	812	507
	11					927	591	1,343	1,007	1,621	1,285	894	557
	12					877	510	1,293	926	1,570	1,204	974	608
CRP0500 S	05	825	563	1,528	1,272							714	452
	06	734	420	1,438	1,130	2,110	1,795					856	542
	07	644	276	1,348	989	2,019	1,653					999	632
	08			1,257	846	1,929	1,510	2,672	2,253			1,142	723
	09			1,167	704	1,839	1,367	2,582	2,110	3,077	2,606	1,284	813
	10			1,077	561	1,748	1,225	2,491	1,968	2,987	2,464	1,427	903
	11					1,658	1,082	2,401	1,825	2,897	2,321	1,569	994
	12					1,569	940	2,311	1,683	2,806	2,179	1,712	1,084
CRP0550 S	05	1,193	838	2,212	1,858							1,084	729
	06	1,047	621	2,067	1,642	3,040	2,613					1,300	874
	07	902	404	1,921	1,425	2,895	2,397					1,517	1,020
	08			1,776	1,208	2,749	2,180	3,836	3,268			1,734	1,165
	09			1,629	992	2,604	1,964	3,690	3,052	4,416	3,776	1,950	1,312
	10			1,484	775	2,458	1,747	3,545	2,835	4,269	3,559	2,167	1,457
	11					2,312	1,530	3,399	2,618	4,124	3,343	2,384	1,603
	12					2,166	1,314	3,254	2,401	3,978	3,126	2,600	1,748

Note - Max. operating pressure 115psig. Design pressure rating 170psig.



# Torque Ratings — Spring Return Actuators

Actuation Solutions and Systems for the World's Most Challenging Environments

Spring Return Torque Ratings (in-lbs)													
Model	Springs (#)	40 PSIG		60 PSIG		80 PSIG		100 PSIG		115 PSIG		Spring Stroke	
		Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)
CRP0625 S	05	1,639	1,177	3,087	2,627							1,437	974
	06	1,444	889	2,892	2,340	4,261	3,705					1,724	1,169
	07	1,250	601	2,697	2,052	4,066	3,418					2,012	1,364
	08			2,502	1,765	3,871	3,131	5,393	4,653			2,299	1,559
	09			2,308	1,477	3,676	2,844	5,198	4,366	6,214	5,381	2,587	1,753
	10			2,113	1,190	3,481	2,556	5,004	4,078	6,019	5,094	2,874	1,948
	11					3,286	2,269	4,809	3,791	5,825	4,806	3,162	2,143
	12					3,092	1,981	4,614	3,503	5,630	5,419	3,449	2,338
CRP0750 S	05	2,582	1,879	4,808	4,099							2,313	1,610
	06	2,260	1,416	4,486	3,637	6,611	5,767					2,775	1,932
	07	1,938	953	4,164	3,174	6,289	535					3,238	2,254
	08			3,843	2,712	5,967	4,842	8,349	7,215			3,700	2,575
	09			3,520	2,249	5,645	4,379	8,017	6,752	9,600	8,334	4,163	2,898
	10			3,199	1,787	5,323	3,917	7,696	6,290	9,278	7,871	4,625	3,219
	11					5,001	3,454	7,347	5,827	8,956	7,409	5,088	3,542
	12					4,680	2,992	7,052	5,364	8,634	6,947	5,551	3,868
CRP0825 S	05	3,678	2,671	6,782	5,773							3,180	2,173
	06	3,242	2,035	6,347	5,137	9,318	8,109					3,816	2,608
	07	2,808	1,399	5,912	4,501	8,883	7,474					4,452	3,043
	08			5,478	3,864	8,449	6,838	11,762	10,515			5,089	3,477
	09			5,043	3,228	8,014	6,202	11,327	9,514	13,536	11,723	5,725	3,912
	10			4,608	2,563	7,579	5,565	10,892	8,878	13,101	11,087	6,360	4,347
	11					7,145	4,929	10,457	8,242	12,666	10,451	6,996	4,781
	12					6,710	4,293	10,023	7,606	12,231	9,815	7,632	5,216
CRP0950 S	05	5,442	4,171	10,258	8,983							4,906	3,635
	06	4,715	3,190	9,531	8,002	14,135	12,610					5,887	4,362
	07	3,988	2,209	8,803	7,020	13,408	11,629					6,869	5,090
	08			8,076	6,039	12,681	10,648	17,819	15,786			7,850	5,817
	09			7,349	5,058	11,954	9,666	17,092	14,805	20,518	18,230	8,831	6,544
	10			6,622	4,077	11,227	8,685	16,365	13,823	19,791	17,249	9,812	7,271
	11					10,500	7,704	15,638	12,842	19,063	16,268	10,794	7,998
	12					9,773	6,723	14,911	11,861	18,336	15,286	11,775	8,725

Note - Max. operating pressure 115psig. Design pressure rating 170psig.

# Torque Ratings — Spring Return Actuators

Actuation Solutions and Systems for the World's Most Challenging Environments

Spring Return Torque Ratings (in-lbs)													
Model	Springs (#)	40 PSIG		60 PSIG		80 PSIG		100 PSIG		115 PSIG		Spring Stroke	
		Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)	Start (0°)	End (90°)
CRP1050 S	05	7,810	5,804	14,585	12,574							6,961	4,955
	06	6,819	4,412	13,594	11,182	20,066	17,632					8,353	5,946
	07	5,828	3,020	12,603	9,790	19,075	16,267					9,745	6,937
	08			11,611	8,398	18,084	14,875	25,310	22,100			11,137	7,929
	09			10,621	7,006	17,092	13,482	24,319	20,708	29,135	25,525	12,529	8,919
	10			9,630	5,613	16,102	12,090	23,328	19,316	28,144	24,133	13,922	9,910
	11					15,111	10,698	22,337	17,924	27,153	22,740	15,314	10,901
	12					14,120	9,306	21,346	16,532	26,162	21,348	16,706	11,892
CRP1175 S	05	10,299	7,281	19,016	15,995							9,138	6,120
	06	9,075	5,453	17,792	14,167	26,121	22,500					10,966	7,344
	07	7,851	3,625	16,568	12,339	24,897	20,672					12,794	8,568
	08			15,343	10,512	23,673	18,844	32,969	28,140			14,621	9,793
	09			14,119	8,684	22,449	17,016	31,745	26,312	37,943	32,509	16,449	11,017
	10			12,895	6,856	21,225	15,189	30,520	24,484	36,718	30,682	18,277	12,241
	11					20,000	13,361	29,297	22,657	35,949	28,855	20,105	13,465
	12					18,777	11,533	28,073	20,829	34,270	27,027	21,933	14,689
CRP1375 S	05	15,568	11,307	28,499	24,239							13,067	8,806
	06	13,807	8,694	26,738	21,626	39,099	33,987					15,680	10,567
	07	12,045	6,081	24,977	19,013	37,339	31,733					18,293	12,328
	08			23,216	16,400	35,577	28,760	49,373	42,556			20,906	14,089
	09			21,455	13,786	33,817	26,146	47,612	39,942	56,809	49,140	23,520	15,850
	10			19,694	11,173	32,055	23,533	45,851	37,329	55,049	46,527	26,133	17,611
	11			17,933	8,559	30,294	20,920	44,090	34,716	53,287	43,913	28,747	19,373
	12			16,172	5,946	28,533	18,306	42,329	32,102	51,527	41,300	31,360	21,133
CRP1575 S	05	23,181	16,760	42,888	36,467							20,378	13,957
	06	20,391	12,686	40,098	32,394	58,937	51,232					24,451	16,747
	07	17,601	8,612	37,309	28,320	56,138	47,149					28,525	19,536
	08			34,520	24,237	53,348	43,076	74,373	64,100			32,608	22,335
	09			31,731	20,163	50,559	39,002	71,583	60,026	85,593	74,036	36,682	25,124
	10			28,941	16,090	47,769	34,928	69,793	55,952	82,804	69,962	40,755	27,914
	11			26,151	12,016	44,980	30,854	64,995	51,870	80,014	65,889	44,829	30,704
	12			23,362	7,942	42,181	26,772	63,205	47,796	77,224	61,815	48,903	33,493

Note - Max. operating pressure 115psig. Design pressure rating 170psig.

## CRP0125–CRP0625

Technical Data																				
Model Type	CRP0125		CRP0200		CRP0250		CRP0300		CRP0325		CRP0375		CRP0425		CRP0500		CRP0550		CRP0625	
	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Air Volume Opening (in3)	1.83		5.49		11.59		18.30		26.84		53.68		50.63		86.10		107.4		174	
Air Volume Closing (in3)	2.44		9.15		19.52		30.50		40.26		71.37		77.47		129.9		165.9		249	
Opening Time (sec)	0.3		0.3	0.9	0.4	0.9	0.4	0.9	0.9	1.0	0.9	1.4	0.9	1.4	1.3	2.4	1.3	2.8	2.0	4.8
Closing Time (sec)	0.4		0.4	0.7	0.4	0.8	0.4	0.9	0.9	1.2	1.0	1.4	1.0	1.6	1.4	2.4	1.4	3.0	2.4	4.9
Weight (lbs)	1.0	1.3	2.5	2.7	4.3	4.9	6.4	7.2	8.3	9.4	11.3	12.9	13.4	15.7	23.9	27.5	30.3	34.9	44.4	52.3

### 1. For models CRP0125–CRP0625

- Room temperature
- Actuator stroke 90°
- Solenoid valve with orifice of 1/6" and a flow capacity of Qn 106G/min
- Inside pipe diameter 1/4"
- Medium: Clean air
- Air supply pressure 80psig
- Actuator without external resistance load

## CRP0750–CRP1575

Technical Data														
Model Type	CRP0750		CRP0825		CRP0950		CRP1050		CRP1175		CRP1375		CRP1575	
	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Air Volume Opening (in3)	290		403		695		964		1,164		1,687		2,611	
Air Volume Closing (in3)	439		628		921		1,147		1,722		2,690		3,785	
Opening Time (sec)	2.2	2.4	2.9	3.4	3.2	3.8	4.4	5.0	5.0	6.0	6.2	7.4	7.5	9.6
Closing Time (sec)	2.6	3.0	3.8	4.1	3.7	4.0	4.9	5.5	6.0	6.8	7.2	8.4	8.5	10.6
Weight (lbs)	62.4	74.2	88.2	106.7	116.0	139.6	162.3	199.7	237.2	298.7	324.0	412.8	483.1	621.5

### 2. For models CRP0750–CRP1575

- Room temperature
- Actuator stroke 90°
- Solenoid valve with orifice of 1/2" and a flow capacity of Qn 1347G/min
- Inside pipe diameter 5/16"
- Medium: Clean air
- Air supply pressure 80psig
- Actuator without external resistance load

*Note - Field applications, where one or more of the parameters above differ from the test conditions, may result in a stroke time difference*

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