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Pneumatic OPERATORS



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PED-97/23/EC
01 202 62010-02-05889001

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FEATURES

The Series RP actuator combines compactness and simplicity into one reliable unit. This unit is inherently maintenance free, having no scheduled maintenance. All seals are lubricated at the factory and require no further attention.

The actuator is a dual rack and pinion design with a one piece electroless plated pinion that is machined a continuous 360°. Drive dimensions are per ISO 5211 (H). The pinion has an upper and lower Delrin 500 encapsulated bearing.

The RP Series actuator body is extruded aluminum, hard anodized after machining and then painted with a one part dry powder epoxy polyester paint for additional protection (F). The end caps are aluminum die cast with one part dry powder epoxy polyester for corrosion protection (D). The end caps are affixed to the body utilizing stainless steel bolts.

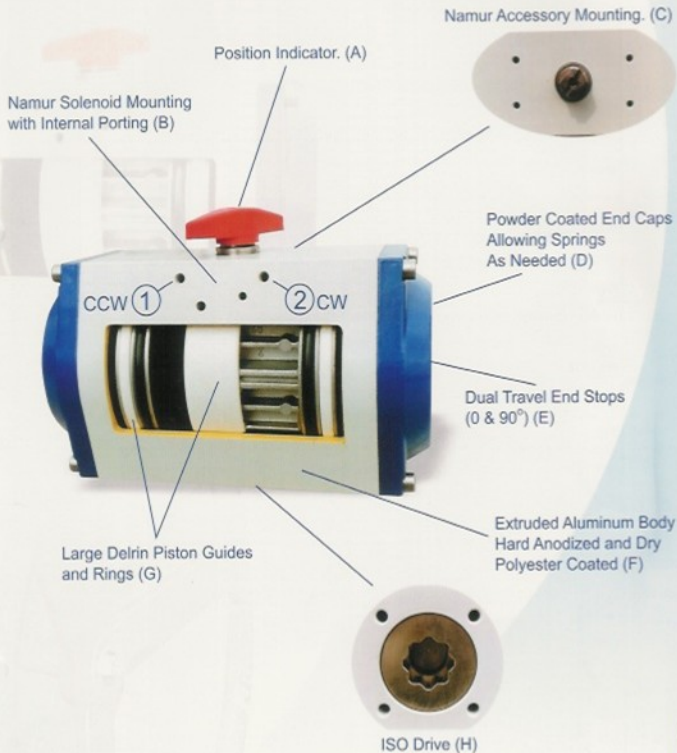
The RP Series actuator features dual travel stops that may be adjusted while the actuator is pressurized (E). Standard is a high visibility position indicator (A).

The RP Series actuator features removeable large Delrin 500 piston bearings affixed to the pistons (G). Standard seals are Buna N (-10°-195°), high and low temperature seals are available on request. Working pressure of the actuator is 20-150 psig.

The RP Series Double Acting actuator is easily converted to Spring Return utilizing existing end caps. The spring design features fully encapsulated springs for added safety. All accessory dimensions are per Namur (C) (B).

RP SERIES PNEUMATIC ACTUATOR

FEATURES



Pneumatic Actuator Torque Chart

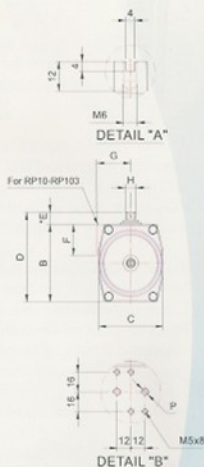
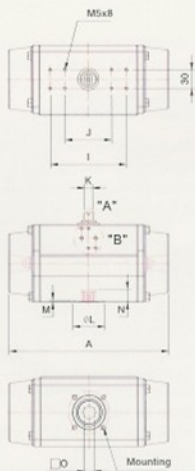
The Following Torque Values Are in IN.-LB. And Represent Air Stroke For The Spring Return Unit.

PSI	40	60	80	100	120	ALL	40	60	80	100	120							
	DOUBLE ACTING TORQUE in lbs.					SPRING	AIR		AIR		AIR							
	40	60	80	100	120	Start	End	Start	End	Start	End	Start	End					
RP10	50	75	100	125	150	2	56	36	—	13	10	35	42	40	57	85	92	118
	—	—	—	—	—	3	62	57	—	—	19	15	40	40	65	95	95	
	187	152	293	254	366	2	56	36	44	52	58	157	144	162	194	212	244	262
	—	—	—	—	—	3	62	57	15	42	60	82	115	142	165	192	215	242
RP20	—	—	—	—	—	4	111	76	—	22	36	72	80	122	136	177	185	222
	—	—	—	—	—	5	136	95	—	2	5	32	58	102	106	152	155	202
	—	—	—	—	—	6	167	114	—	—	—	31	26	81	76	132	129	182
	151	227	382	378	452	2	80	56	19	83	104	168	218	242	293	317	367	391
	—	—	—	—	—	3	119	83	30	66	104	148	179	215	253	289	339	364
RP30	—	—	—	—	—	4	158	111	—	38	64	117	139	167	213	261	289	336
	—	—	—	—	—	5	198	139	—	10	29	84	99	158	173	232	248	308
	—	—	—	—	—	6	238	162	—	—	—	32	111	133	204	209	288	324
	253	339	526	558	718	2	154	104	195	156	225	281	363	415	494	545	626	675
	—	—	—	—	—	3	232	154	28	100	158	233	267	383	417	492	547	623
RP52	—	—	—	—	—	4	368	268	—	51	100	181	258	311	340	441	469	578
	—	—	—	—	—	5	388	268	—	3	129	157	258	262	383	392	518	518
	—	—	—	—	—	6	482	312	—	—	70	50	286	185	236	314	405	405
	367	501	734	818	1101	2	198	137	183	236	344	417	525	588	706	779	887	988
	—	—	—	—	—	3	299	188	63	172	244	353	426	534	607	715	780	896
RP73	—	—	—	—	—	4	388	253	—	108	145	260	326	471	501	632	660	833
	—	—	—	—	—	5	498	217	—	45	85	226	276	487	487	588	588	796
	—	—	—	—	—	6	587	288	—	—	162	176	343	381	524	498	706	706
	516	714	1032	1206	1548	2	257	189	241	318	495	572	749	826	1002	1099	1254	1334
	—	—	—	—	—	3	438	284	187	273	461	537	615	731	868	968	1123	1209
RP80	—	—	—	—	—	4	553	278	—	22	77	267	326	526	526	699	699	1048
	—	—	—	—	—	5	667	473	—	32	93	267	347	541	661	795	885	1089
	—	—	—	—	—	6	800	568	—	—	152	213	446	467	709	721	964	964
	740	1189	1479	1648	2219	2	487	289	321	468	585	632	1048	1196	1413	1590	1777	1924
	—	—	—	—	—	3	811	391	117	337	481	781	845	1085	1299	1429	1753	1783
RP146	—	—	—	—	—	4	814	521	—	287	277	573	941	935	1085	1299	1389	1889
	—	—	—	—	—	5	1018	831	—	78	73	648	827	894	881	1168	1168	1502
	—	—	—	—	—	6	1521	781	—	—	388	232	973	988	1007	1007	1481	1481
	1189	1584	2219	2779	3527	2	553	499	689	845	1018	1174	1484	1794	2077	2302	2687	2783
	—	—	—	—	—	3	826	699	180	426	718	856	1247	1485	1727	2015	2287	2544
RP222	—	—	—	—	—	4	1331	899	—	289	487	728	109	1259	1489	1709	1999	2154
	—	—	—	—	—	5	1376	1000	—	34	491	814	1053	1184	1254	1554	1554	2084
	—	—	—	—	—	6	1851	1200	—	—	253	285	718	785	815	1212	1212	1548
	1479	2219	2969	3649	4437	2	814	916	941	933	1399	1847	2397	2595	2873	3152	3604	3604
	—	—	—	—	—	3	1572	775	254	681	962	1489	1989	2137	2417	2664	3145	3604
RP295	—	—	—	—	—	4	1629	1003	—	473	554	1158	1587	1878	2018	2508	2738	3334
	—	—	—	—	—	5	2036	1291	—	164	147	887	874	1608	1882	2148	2338	2675
	—	—	—	—	—	6	2463	1549	—	—	534	467	1381	1185	2089	1802	2817	2817
	2871	3706	4542	5177	6213	2	1133	881	808	1380	1874	2475	3339	3481	4045	4498	5089	5532
	—	—	—	—	—	3	1699	1802	271	1849	1487	2384	2443	3126	3478	4735	4735	6114
RP478	—	—	—	—	—	4	2796	1303	—	789	840	1743	1876	2778	2911	3641	3847	4888
	—	—	—	—	—	5	2832	1706	—	387	272	1482	1399	2458	2984	3473	3389	4588
	—	—	—	—	—	6	3356	2044	—	76	142	2387	124	2387	1777	2125	2818	3188
	2933	4098	5085	7331	8789	2	1542	1892	1344	1834	2787	3777	5379	6778	9679	8163	7112	7886
	—	—	—	—	—	3	2312	1578	513	1388	2015	2721	4370	4784	4882	5887	6345	7886
RP585	—	—	—	—	—	4	3963	2744	781	1246	2224	2980	3647	4531	5111	5574	6584	6584
	—	—	—	—	—	5	5064	2628	—	795	473	1693	1910	3141	3309	4884	4882	6627
	—	—	—	—	—	6	6025	3196	—	—	1771	1140	2934	2580	4888	4881	6681	6681
	4508	6023	8106	11373	13808	2	2251	1619	2227	2893	4086	5989	9795	7337	8944	9574	11183	11183
	—	—	—	—	—	3	3376	2408	1161	2949	3546	4780	5579	6377	7818	8784	10897	11885
RP900	—	—	—	—	—	4	4061	3528	—	1529	2214	3478	4082	5717	6952	7938	8901	11885
	—	—	—	—	—	5	5627	4947	—	429	1088	2960	3327	4987	5946	7148	7880	10885
	—	—	—	—	—	6	6752	4956	—	—	1368	2700	4987	6439	8338	9679	10879	11885
	6056	8099	12132	15193	18188	2	3688	2158	2889	3811	5854	8786	9390	8781	11934	12748	14812	15791
	—	—	—	—	—	3	4541	3234	1448	2779	4083	5718	7438	8781	12614	13614	15489	16479
RP1213	—	—	—	—	—	4	5861	4317	—	1961	2952	4618	5801	7673	9572	11889	13382	15889
	—	—	—	—	—	5	7161	5087	—	317	1451	3596	4536	6545	7451	10572	12688	15273
	—	—	—	—	—	6	8681	6478	—	7475	2483	5493	6978	9878	8448	14884	17481	17481
	11832	17248	22660	29381	35488	2	4637	4673	4912	7977	10635	15995	19467	19719	27790	28488	37780	39982
	—	—	—	—	—	3	10248	8858	1284	4730	7217	15801	15306	18439	18882	22720	24805	32828
RP2565	—	—	—	—	—	4	13865	8145	—	2407	3758	8215	9821	14142	15444	19905	21267	25788
	—	—	—	—	—	5	17881	11482	—	308	378	9021	6802	11854	12823	17877	17847	22488
	—	—	—	—	—	6	20487	12718	—	—	3745	2785	8685	9588	15388	14882	21239	21239
	14799	22706	29641	38676	44371	2	8148	1815	8819	9541	13253	18813	20671	24887	27888	31378	35128	38854
	—	—	—	—	—	3	12811	7382	1742	7002	9821	14818	16799	21889	23677	28867	30884	38145
RP2958	—	—	—	—	—	4	17881	18839	—	4073	4748	11881	12808	18678	19384	28768	29368	38366
	—	—	—	—	—	5	21281	12538	—	2913	474	8791	7732	18578	19688	29338	27338	37126
	—	—	—	—	—	6	25473	15845	—	—	—	8791	7732	18578	19688	29338	29338	38854
	18875	27838	37798	48837	58875	2	8148	1815	11881	14177	22774	27774	32774	37774	42774	47774	52774	57774
	—	—	—	—	—	3	13722	8274	7812	11044	16449	21189	26789	32489	38189	43889	49589	55289
RP3728	—	—	—	—	—	4	16764	10239	2445	9654	17644	18612	27127	32575	37875	47428	47428	57428
	—	—	—	—	—	5	20878	12789	—	6442	8481	16866	18114	26889	27728	37333	37333	44836
	—	—	—	—	—	6	24443	15838	—	8888	1413	17603	14886	23177	23849	33739	33739	42139
	—	—	—	—	—	7	28017	17918	—	1217	333	19945	9607	23884	18888	30187	30188	38613
	—	—	—	—	—	8	32581											

PNEUMATIC ACTUATOR

SERIES NO

RP



Series No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Mounting flange (ISO 5211) Type
RP10DA/SR	4.33	2.60	2.54	3.35	0.79	1.65	1.61	0.48		3.15	0.35	0.9	0.09	0.55	0.43	0.25	F04
RP20DA/SR	5.00	2.91	2.32	3.68	0.79	1.65	75.00	0.47		3.15	0.39	0.9	0.08	0.61	0.55	0.25	F03/F05
RP30DA/SR	5.24	3.46	2.76	4.25	0.79	1.97	1.95	0.47		3.15	0.39	0.9	0.08	0.61	0.55	0.25	F05/F07
RP52DA/SR	6.10	3.94	3.27	4.73	0.79	1.97	2.09	0.55		3.15	0.39	0.1	0.08	0.63	0.67	0.25	F05/F07
RP73DA/SR	6.97	4.25	3.58	5.04	0.79	2.28	2.28	0.55		3.15	0.39	1.3	0.08	0.63	0.67	0.25	F05/F07
RP103DA/SR	7.99	4.61	3.94	5.40	0.79	2.28	2.72	0.79		3.15	0.39	1.5	0.08	0.63	0.67	0.25	F05/F07
RP148DA/SR	8.50	5.51	4.72	6.30	0.79			0.79		3.15	0.55	1.6	0.10	0.81	0.87	0.25	F07/F10
RP222DA/SR	11.18	5.51	4.72	6.30	0.79			1.10		3.15	0.55	2.1	0.10	0.81	0.87	0.25	F07/F10
RP295DA/SR	11.42	6.30	5.39	7.09	0.79			1.10		3.15	0.79	2.1	0.12	0.83	0.87	0.25	F07/F10
RP470DA/SR	13.27	7.80	6.77	7.80	1.18			1.10	5.12		0.79	2.6	0.12	0.83	1.06	0.25	F10/F12
RP586DA/SR	14.49	7.80	6.77	8.98	1.18			1.42	5.12		1.10	2.6	0.12	0.83	1.06	0.25	F10/F12
RP900DA/SR	16.62	10.00	8.82	11.18	1.18			1.42	5.12		1.26	3.1	0.16	1.26	1.42	0.25	F12/F16
RP1213DA/SR	17.72	10.00	8.82	11.18	1.18			1.57	5.12		1.26	3.1	0.16	1.26	1.42	0.25	F14
RP2366DA/SR	23.07	11.89	10.71	13.07	1.18			1.57	5.12		1.26	4.1	0.16	1.26	1.81	0.25	F16
RP2958DA/SR	23.07	11.89	10.71	13.07	1.18			1.57	5.12		1.26	5.1	0.12	1.22	1.81	0.25	F16
RP3720DA/SR	26.89	14.17	14.17	15.35	1.18			1.58	5.12		1.26	5.1	0.12	1.26	1.81	0.5	F16

MODEL#	R10	R20	R30	R52	R73	R103	R148	R222	R295	R470	R486	R900	R1413	R2366	R2958	R3720
Air Consumption Cu. In/Cycle	12.8	15.3	36.6	36.6	52.5	67.1	112.9	152.6	218.5	335.6	416.2	762.8	872.6	1587	1922	2955
Weight#s	1	1.98	2.98	4.3	5.51	7.39	10.58	14.99	18.74	31	34.4	61.5	68.8	132.3	161	205

INSTALLATION & OPERATION INSTRUCTIONS

The RP Series actuator has simple operating characteristics. Port 1 is connected to the interior cavity between the pistons. Port 2 is connected to the end cavities. Pressurize port 2 to Close the actuator (CW). Pressurize Port 1 and pistons will rotate to the Open position (CCW).

The RP Series actuator is designed to be easily installed. Standard is an ISO bottom mounting pattern and star broached into the pinion allowing simple valve mounting to the ISO patterned Valve Valve, either directly or utilizing sleeve adapters. Simply match the FO pattern of the valve to the FO pattern of the RP actuator and utilize the appropriate sleeve adapter (if required)

Mount and Adjust the Actuator as Follows:

Insert coupling in actuator (if required)

Match butterfly valve disc position to slot in top stem of actuator

Place actuator on valve stem, checking for correct fit

Insert and tighten all assembly fasteners

Actuate valve several times to ensure proper, smooth operation

Adjust the End of Travel Stops as Follows:

The RP Series travel stops allow overtravel of 5° in either direction (-5° to 95°)

Rotate valve to the closed position (Full CW)

Loosen the RIGHT HAND sealing nut (looking at actuator solenoid ports)

Turn travel stop until it engages the piston, tighten sealing nut

Rotate valve to the open position (Full CCW)

Loosen the LEFT HAND sealing nut (looking at actuator solenoid ports)

Turn travel stop until it engages the piston, tighten sealing nut

Operate valve in both directions and check for accuracy of positioning

Converting to Spring Return as Follows:

The RP Series actuator has the unique ability to be field converted from Double Acting to Spring Return very easily by adding the spring configuration inside the existing end caps. The Series RP can accept up to 6 spring cartridges per end cap, but not less than 2 spring cartridges per end cap. The number of springs required depends on the amount of torque required by the valve. Please refer to page 3 of this brochure to determine actuator torque.

Remove end caps (per detailed instructions in User Manual)

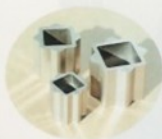
Insert correct number of springs in each end, staggering springs for best balance

Replace end caps, being cautious not to damage end cap o-rings

Pressure test assembly

Please request full Installation and Operation Manual for all other procedures

ACCESSORIES



*Tric ISO Mount Butterfly Valves-Direct Mount
ISO 5211*



Pneumatic & Electro-Pneumatic
Positioners
Namur Mount



Electric Actuators-Direct Mount
ISO 5211



Namur Mount Solenoid



Namur Mount
Limit Switches



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