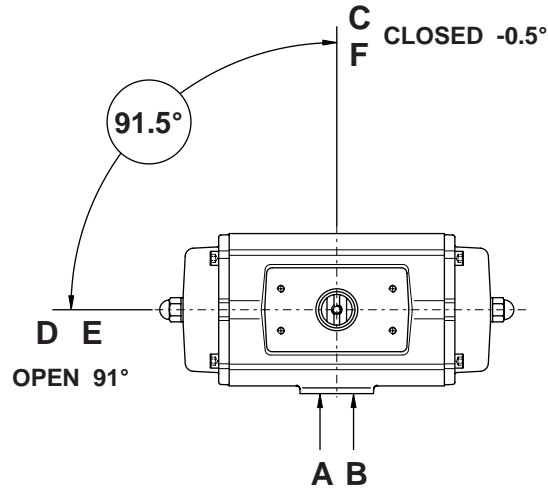
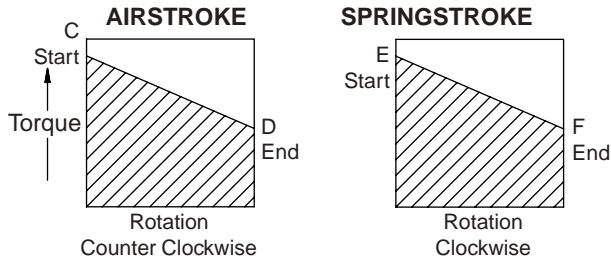


Subject to change without notice

**VALVE AUTOMATION SYSTEMS**  
**EMERSON**  
 w w . e l e m a t i c . c o m  
 N. :  
 A 1.104.02  
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 Date:  
 Jan. '06

### SINGLE ACTING TORQUE



**Note:**

1. Actuator torques are guaranteed minimum torque values. Emerson Process Management recommends that the valve manufacturer supply the maximum required torque values (Including any adjustments or suggested safety factors for valve service conditions or application). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (Counter Clock Wise or Clock Wise) these maximum requirements occur.
2. If in doubt, or you require any assistance with sizing actuators, do not hesitate to contact your nearest Emerson's Valve Automation Division representative.
- 3 Pressure on port "A" opens the actuator\*
- 4 The actuator is shown in closed position\*

(\* code A, data sheet A1.504).

Springset nr.	Actuator Type	Air Stroke (lbf/in) SUPPLY PRESSURE (in PSI)										Spring Stroke (lbf/in)	
		40		60		80		100		120		E	F
		C	D	C	D	C	D	C	D	C	D		
ES 12	2	-	-	48	23	80	55	112	87	143	119	64	41
ES 25	3	49	8	107	66	166	126	225	185	284	243	94	58
	4	-	-	85	31	144	90	202	149	261	208	125	78
	5	-	-	-	-	121	54	180	113	239	172	156	98
	6	-	-	-	-	99	18	157	77	216	136	188	117
ES 40	3	90	15	201	126	312	236	422	346	533	457	176	110
	4	-	-	159	58	270	169	380	279	491	390	234	146
	5	-	-	-	-	228	101	338	212	449	322	293	183
	6	-	-	-	-	185	34	296	144	407	255	351	220
ES 65	3	129	10	297	178	466	347	634	515	802	683	279	175
	4	-	-	230	72	398	240	566	408	735	576	372	234
	5	-	-	-	-	331	133	499	301	667	469	465	292
	6	-	-	-	-	264	26	432	195	601	363	558	351
ES 100	3	211	43	459	293	709	542	958	790	1,206	1,039	388	242
	4	-	-	366	143	615	392	863	641	1,112	889	516	323
	5	-	-	-	-	522	244	771	492	1,019	741	646	403
	6	-	-	-	-	429	95	678	344	927	593	775	484
ES 200	3	448	73	994	620	1,539	1,165	2,085	1,711	2,630	2,256	868	543
	4	-	-	786	287	1,332	833	1,878	1,378	2,423	1,924	1,157	723
	5	-	-	-	-	1,124	500	1,670	1,045	2,216	1,592	1,447	904
	6	-	-	-	-	916	167	1,462	713	2,008	1,259	1,736	1,085
ES 350	3	727	96	1,675	1,044	2,623	1,991	3,571	2,939	4,519	3,887	1,537	988
	4	-	-	1,297	454	2,245	1,403	3,192	2,351	4,140	3,299	2,049	1,316
	5	-	-	-	-	1,867	813	2,815	1,762	3,762	2,710	2,561	1,645
	6	-	-	-	-	1,488	225	2,436	1,173	3,384	2,121	3,074	1,975
ES 600	3	1,298	193	2,908	1,804	4,520	3,415	6,131	5,026	7,742	6,637	2,584	1,623
	4	-	-	2,287	813	3,898	2,425	5,509	4,036	7,120	5,647	3,447	2,165
	5	-	-	-	-	3,276	1,435	4,887	3,046	6,498	4,656	4,308	2,706
	6	-	-	-	-	2,654	444	4,265	2,055	5,876	3,666	5,170	3,247
ES 950	3	1,986	305	4,391	2,709	6,796	5,114	9,200	7,519	11,605	9,924	3,844	2,381
	4	-	-	3,478	1,237	5,883	3,641	8,289	6,046	10,694	8,451	5,126	3,175
	5	-	-	-	-	4,972	2,168	7,376	4,573	9,781	6,978	6,407	3,968
	6	-	-	-	-	4,059	696	6,464	3,100	8,869	5,505	7,688	4,762
ES 1600	3	3,245	579	7,220	4,554	11,195	8,530	15,171	12,505	19,147	16,481	6,289	3,970
	4	-	-	5,699	2,145	9,675	6,120	13,650	10,095	17,625	14,071	8,385	5,293
	5	-	-	-	-	8,153	3,710	12,129	7,686	16,105	11,662	10,481	6,616
	6	-	-	-	-	6,633	1,301	10,609	5,277	14,583	9,252	12,578	7,939
PS 2500	8	5,251	1,781	11,245	7,775	17,239	13,769	23,233	19,763	29,227	25,758	9,351	5,868
	10	-	-	9,615	5,277	15,609	11,272	21,603	17,266	27,597	23,260	11,689	7,335
	12	-	-	7,985	2,780	13,979	8,774	19,973	14,768	25,967	20,763	14,026	8,803
	14	-	-	-	-	12,349	6,277	18,343	12,271	24,337	18,265	16,364	10,270
PS 4000	8	8,949	3,096	19,111	13,257	29,272	23,418	39,434	33,580	49,595	43,741	15,780	9,905
	10	-	-	16,359	9,042	26,521	19,204	36,682	29,365	46,844	39,527	19,725	12,381
	12	-	-	13,608	4,827	23,770	14,989	33,931	25,150	44,092	35,312	23,670	14,857
	14	-	-	-	-	21,018	10,774	31,180	20,936	41,341	31,097	27,615	17,333

**SPRING RETURN ACTUATOR TORQUE (In.lb.)**

**E/P**