Single Acting Actuator Output Torque(Nm)

Model	Spring Q.ty	2.5		3.0		3.5		4.0		4.5		5.0		5.5		6.0		7.0		8.0		Spring's Output Torque	
		0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
AT50S	5	4.6	2.3	6.3	4	7.9	5.6	9.6	7.3	11.3	9	12.9	10.6									6	3.7
	6	3.9	1.1	5.6	2.8	7.2	4.4	8.9	6.1	10.6	7.8	12.2	9.4	13.9	11.1							7.2	4.4
	7			4.8	1.6	6.4	3.2	8.1	4.9	9.8	6.6	11.4	8.2	13.1	9.9	14.8	11.6					8.4	5.2
	8					5.7	2	7.4	3.7	9.1	5.4	10.7	7	12.4	8.7	14.1	10.4	17.4	13.7			9.6	5.9
	9							6.7	2.5	8.4	4.2	10	5.8	11.7	7.5	13.4	9.2	16.7	12.5	20	15.8	10.8	6.6
	10									7.6	3	9.2	4.6	10.9	6.3	12.6	8	15.9	11.3	19.2	14.6	12	7.4
	11											8.5	3.4	10.2	5.1	11.9	6.8	15.2	10.1	18.5	13.4	13.2	8.1
	12													9.4	3.9	11.1	5.6	14.4	8.9	17.7	12.2	14.4	8.9
AT63S	5	8.1	4	11.1	7	14	9.9	16.9	12.8	19.9	15.8	22.8	18.7									10.6	6.5
	6	6.8	1.9	9.8	4.9	12.7	7.8	15.6	10.7	18.6	13.7	21.5	16.6	24.4	19.5							12.7	7.8
	7			8.5	2.8	11.4	5.7	14.3	8.6	17.3	11.6	20.2	14.5	23.1	17.4	26.1	20.4					14.8	9.1
	8					10.1	3.5	13	6.4	16	9.4	18.9	12.3	21.8	15.2	24.8	18.2	30.6	24			17	10.4
	9							11.7	4.4	14.7	7.4	17.6	10.3	20.5	13.2	23.5	16.2	29.3	22	35.3	28	19	11.7
	10									13.4	5.2	16.3	8.1	19.2	11	22.2	14	28	19.8	34	25.8	21.2	13
	11											15	6	17.9	8.9	20.9	11.9	26.7	17.7	32.7	23.7	23.3	14.3
	12													16.6	6.8	19.6	9.8	25.4	15.6	31.4	21.6	25.4	15.6
AT75S	5	16.1	8	22.1	14	27.8	19.7	33.6	25.5	39.4	31.3	45.2	37.1									21	12.9
	6	13.5	3.8	19.5	9.8	25.2	15.5	31	21.3	36.8	27.1	42.6	32.9	48.5	38.8							25.2	15.5
	7			17	5.6	22.7	11.3	28.5	17.1	34.3	22.9	40.1	28.7	46	34.6	51.7	40.3					29.4	18
	8					20.1	7.1	25.9	12.9	31.7	18.7	37.5	24.5	43.4	30.4	49.1	36.1	60.8	47.8			33.6	20.6
	9							23.3	8.7	29.1	14.5	34.9	20.3	40.8	26.2	46.5	31.9	58.2	43.6	69.8	55.2	37.8	23.2
	10									26.5	10.3	32.3	16.1	38.2	22	43.9	27.7	55.6	39.4	67.2	51	42	25.8
	11											29.8	11.9	35.7	17.8	41.4	23.5	53.1	35.2	64.7	46.8	46.2	28.3
	12													33.1	13.6	38.8	19.3	50.5	31	62.1	42.6	50.4	30.9
AT88S	5	25.5	12.7	34.8	22	43.8	31	53	40.2	62.1	49.3	71.2	58.4									33	20.2
	6	21.4	6.1	30.7	15.4	39.7	24.4	48.9	33.6	58	42.7	67.1	51.8	76.7	61.4							39.6	24.3
	7			26.7	8.7	35.7	17.7	44.9	26.9	54	36	63.1	45.1	72.7	54.7	81.7	63.7					46.3	28.3
	8					31.6	11.1	40.8	20.3	49.9	29.4	59	38.5	68.6	48.1	77.6	57.1	95.6	75.1			52.9	32.4
	9							36.8	13.7	45.9	22.8	55	31.9	64.6	41.5	73.6	50.5	91.6	68.5	110	86.5	59.5	36.4
	10									41.8	16.3	50.9	25.4	60.5	35	69.5	44	87.5	62	106	80	66	40.5
	11											46.9	18.7	56.5	28.3	65.5	37.3	83.5	55.3	102	73.3	72.7	44.5
	12													52.4	21.7	61.4	30.7	79.4	48.7	97.4	66.7	79.3	48.6
AT100S	5	37	18.4	50.3	31.7	63.6	45	76.6	58	90.6	72	103.6	85									48	29.4
	6	31.1	8.7	44.4	22	57.7	35.3	70.7	48.3	84.7	62.3	97.7	75.3	111	88.3							57.7	35.3
	7			38.5	12.4	51.8	25.7	64.8	38.7	78.8	52.7	91.8	65.7	105	78.7	118	91.7					67.3	41.2
	8					46	16.1	59	29.1	73	43.1	86	56.1	99	69.1	112	82.1	139	109			76.9	47
	9							53	19.5	67	33.5	80	46.5	93	59.5	106	72.5	133	99.5	160	127	86.5	53
	10									61.1	24	74.1	37	87.1	50	100	63	127	90	154	117	96	58.9
	11											68.3	27	81.3	40	94.3	53	121	80	148	107	106	64.7
	12													75.4	31	88.4	44	115	71	142	98	115	70.6
AT115S	5	59.4	29.3	81.4	51.3	102.4	72.3	124	94.3	145	115	167	137									77.7	47.6
	6	49.8	13.8	71.8	35.8	92.8	56.8	115	78.8	136	100	158	122	179	143							93.2	57.2
	7			62.3	20	83.3	41	105	63	126	84	148	106	169	127	191	149					109	66.7
	8					73.8	26	95.8	48	117	69	139	91	160	112	182	134	225	177			124	76.2
	9							86.3	32	107	53	129	75	150	96	172	118	215	161	258	204	140	85.7
	10									98	38	120	60	141	81	163	103	206	146	249	189	155	95.3
	11											110	44	131	65	153	87	196	130	239	173	171	105
	12													122	50	144	72	187	115	230	158	186	114
AT125S	5	76.7	38	104.7	66	132.7	94	160	121	188	149	216	177									100	61.3
	6	64.4	18	92.4	46	120.4	74	147	101	175	129	203	157	230	184							120	73.6
	7			80.2	26	108.2	54	135	81	163	109	191	137	218	164	246	192					140	85.8
	8					96	34	123	61	151	89	179	117	206	144	234	172	289	227			160	98
	9							111	41	139	69	167	97	194	124	222	152	277	207	333	263	180	110
	10									126	49	154	77	181	104	209	132	264	187	320	243	200	123
	11											142	57	169	84	197	112	252	167	308	223	220	135
	12													157	64	185	92	240	147	296	203	240	147
AT145S	5	120.7	60	164.7	104	207.7	147	252	191	295	234	338	277									157	96.3
	6	101	29	145	73	188	116	232	160	275	203	318	246	362	290							188	116
	7			126	41	169	84	213	128	256	171	299	214	343	258	386	301					220	135
	8					150	53	194	97	237	140	280	183	324	227	367	270	454	357			251	154
	9							175	65	218	108	261	151	305	195	348	238	435	325	522	412	283	173
	10									198	77	241	120	285	164	328	207	415	294	502	381	314	193
	11											222	88	266	132	309	175	396	262	483	349	346	212
	12													247	101	290	144	377	231	464	318	377	231
AT160S	5	158	78	215	135	272	192	328	248	385	305	452	372									205	125
	6	133	37	190	94	247	151	303	207	360	264	427	331	473	377							246	150
	7			164	53	221	110	277	166	334	223	401	290	447	336	504	393					287	176
	8					197	69	253	125	310	182	377	249	423	295	480	352	593	465			328	200
	9							227	84	284	141	351	208	397	254	454	311	567	424	681	538	369	226
	10									259	100	326	167	372	213	429	270	542	383	656	497	410	251
	11											301	127	347	173	404	230	517	343	631	457	450	276
	12													322	131	379	188	492	301	606	415	492	301
AT190S	5	259	129	352	222	446	316	539	409	632	502	725	595									337	207
	6	218	61	311	154	405	248	498	341	591	434	684	527	778	621							405	248
	7			270	87	364	181	457	274	550	367	643	460	737	554	830	647					472	289
	8					323	113	416	206	509	299	602	392	696	486	789	579	975	765			540	330
	9							374	139	467	232	560	325	654	419	747	512	933	698	1120	885	607	372
	10									426	165	519	258	613	352	706	445	892	631	1079	818	674	413
	11											477	190	571	284	664	377	850	563	1037	750	742	455
	12													530	217	623	310	809	496	996	683	809	496
AT210S	5	380	189	517	326	654	463	790	599	927	736	1064	873									494	303
	6	319	90	456	227	593	364	729	500	866	637	1003	774	1139	910							593	364
	7			396	128	533	265	669	401	806	538	943	675	1079	811	1216	948					692	424
	8					472	167	608	303	745	440	882	577	1018	713	1155	850	1428	1123			790	485
	9							548	203	685	340	822	477	958	613	1095	750	1368	1023	1642	1297	890	545
	10									624	241	761	378	897	514	1034	651	1307	924	1581	1198	989	606
	11											700	279	836	415	973	552	1246	825	1520	1099	1088	667
	12													776	317	913	454	1186	727	1460	1001	1186	727
AT240S	5	568	282	772	486	976	690	1180	894	1384	1098	1588	1302									738	452
	6	477	135	681	339	885	543	1089	747	1293	951	1497	1155	1701	1359							885	543
	7			591	191	795	395	999	599	1203	803	1407	1007	1611	1211	1815	1415					1033	633
	8					705	248	909	452	1113	656	1317	860	1521	1064	1725	1268	2133	1676			1180	723
	9							818	304	1022	508	1226	712	1430	916	1634	1120	2042	1528	2450	1936	1328	814
	10									932	360	1136	564	1340	768	1544	972	1952	1380	2360	1788	1476	904
	11											1045	417	1249	621	1453	825	1861	1233	2269	1641	1623	995
	12													1159	474	1363	678	1771	1086	2179	1494	1770	1085
AT270S	5	808	402	1099	693	1389	983	1680	1274	1970	1564	2261	1855									1050	644
	6	679	192	970	483	1260	773	1551	1064	1841	1354	2132	1645	2422	1935							1260	773
	7			841	273	1131	563	1422	854	1712	1144	2003	1435	2293	1725	2584	2016					1470	902
	8					1003	353	1294	644	1584	934	1875	1225	2165	1515	2456	1806	3037	2387			1680	1030
	9							1165	434	1455	724	1746	1015	2036	1305	2327	1596	2908	2177	3489	2758	1890	1159
	10									1326	514	1617	805	1907	1095	2198	1386	2779	1967	3360	2548	2100	1288
	11											1488	595	1778	885	2069	1176	2650	1757	3231	2338	2310	1417
	12													1650	675	1941	966	2522	1547	3103	2128	2520	1545
AT300S	5	1036	515	1407	886	1779	1258	2151	1630	2523	2002	2895	2374									1345	824
	6	871	246	1242	617	1614	989	1986	1361	2358	1733	2730	2105	3102	2477							1614	989
	7			1077	348	1449	720	1821	1092	2193	1464	2565	1836	2937	2208	3309	2580					1883	1154
	8					1284	451	1656	823	2028	1195	2400	1567	2772	1939	3144	2311	3888	3055			2152	1319
	9							1491	555	1863	927	2235	1299	2607	1671	2979	2043	3723	2787	4466	3530	2420	1484
	10									1698	657	2070	1029	2442	1401	2814	1773	3558	2517	4301	3260	2690	1649
	11											1905	760	2277	1132	2649	1504	3393	2248	4136	2991	2959	1814
	12													2113	863	2485	1235	3229	1979	3972	2722	3228	1978
AT350S	5	1661	825	2258	1422	2854	2018	3451	2615	4047	3211	4644	3808									2158	1322
	6	1396	394	1993	991	2589	1587	3186	2184	3782	2780	4379	3377	4976	3974							2589	1587
	7			1729	560	2325	1156	2922	1753	3518	2349	4115	2946	4712	3543	5308	4139					3020	1851
	8					2060	724	2657	1321	3253	1917	3850	2514	4447	3111	5043	3707	6236	4900			3452	2116
	9							2393	889	2989	1485	3586	2082	4183	2679	4779	3275	5972	4468	7166	5662	3884	2380
	10									2724	1054	3321	1651	3918	2248	4514	2844	5707	4037	6901	5231	4315	2645
	11									2460	622	3057	1219	3654	1816	4250	2412	5443	3605	6637	4799	4747	2909
	12											2792	788	3389	1385	3985	1981	5178	3174	6372	4368	5178	3174