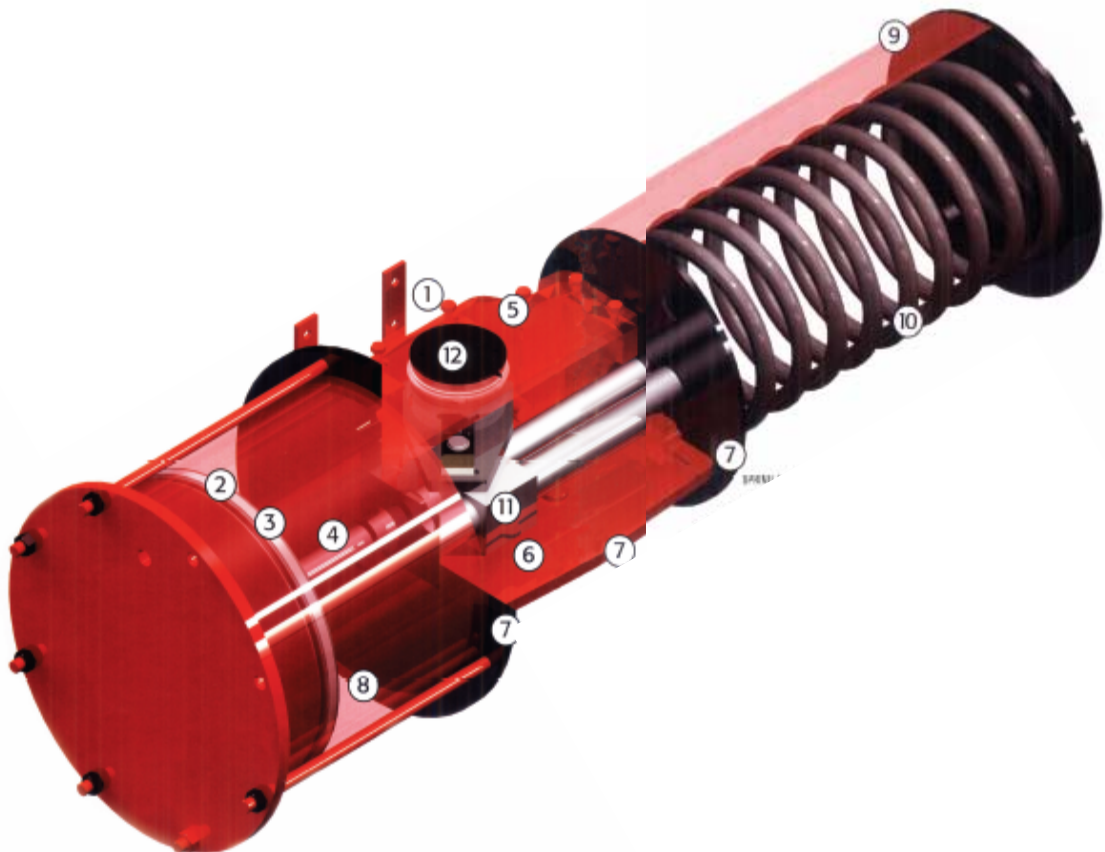


SDH Series

Heavy Duty Actuators

**Pneumatic Actuators for Quarter-Turn Valves
and Dampers Torques to 299,000 Nm**

Double Acting and Spring Return



Heavy Duty Double Acting Actuators

SYMMETRIC TYPE

Heavy Duty Double Acting Torque Chart

	TORQUE OUTPUT Nm											
MODEL NUMBER	2.8 bar		4.2 bar		5.6 bar		7 bar		MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
	Start	Min	Start	Min	Start	Min	Start	Min				
S09DA200	1091	561	1636	842	2182	1122	2727	1403	7.0	14.0	6.6	127
S09DA280	2138	1100	3207	1650	4277	2199	5346	2749	7.0	10.5	12.9	158
S09DA335	3061	1574	4591	2361	6122	3148	7652	3935	7.0	8.8	18.5	170
S09DA385	4043	2079	6064	3119	8085	4158			5.6	7.0	24.4	198
S11DA280	2613	1344	3920	2016	5227	2688	6534	3360	7.0	10.5	16.0	238
S11DA335	3741	1924	5611	2886	7482	3848	9352	4810	7.0	10.5	22.9	264
S11DA385	4941	2541	7412	3812	9882	5082	12353	6353	7.0	8.8	30.3	290
S11DA435	6308	3244	9462	4866	12615	6488			5.6	7.0	38.6	315
S13DA385	5839	3003	8759	4505	11679	6006	14598	7508	7.0	10.5	35.3	480
S13DA435	7455	3834	11182	5751	14909	7668	18636	9584	7.0	9.1	45.0	515
S13DA485	9267	4766	13900	7149	18534	9532	23167	11914	7.0	8.8	56.0	570
S13DA535	11276	5799	16914	8699	22552	11598	28190	14498	7.0	8.8	68.1	595
S13DA585	13482	6934	20223	10400	26964	13867	33705	17334	7.0	7.7	81.4	648
S13DA635	15885	8170	23828	12254	31770	16339			5.6	5.9	96.0	695
S16DA485	11405	5866	17108	8798	22810	11731	28513	14664	7.0	8.8	68.9	885
S16DA535	13878	7137	20817	10706	27756	14275	34695	17843	7.0	8.8	83.9	950
S16DA585	16593	8534	24890	12801	33187	17067	41483	21334	7.0	8.8	100.3	1018
S16DA635	19551	10055	29326	15082	39102	20110	48877	25137	7.0	7.0	118.1	1075
S16DA685	22751	11701	34127	17551	45502	23401			5.6	6.3	137.5	1130
S20DA585	20742	10667	31112	16001	41483	21334	51854	26668	7.0	8.8	125.3	1330
S20DA635	24439	12568	36658	18853	48877	25137	61097	31421	7.0	8.8	147.6	1430
S20DA685	28439	14626	42658	21939	56878	29251	71097	36564	7.0	8.8	171.7	1492
S20DA735	32742	16839	49113	25258	65484	33678	81855	42097	7.0	8.8	197.7	1560
S20DA785	37348	19208	56022	28812	74696	38415			5.6	7.0	225.5	1645
S20DA835	42258	21732	63386	32599	84515	43465			5.6	7.0	255.2	1725
S27DA735	44202	22732	66303	34099	88403	45465	110504	56831	7.0	8.8	266.9	CF
S27DA785	50420	25930	75630	38896	100840	51861	126050	64826	7.0	8.8	304.4	CF
S27DA835	57048	29339	85571	44008	114095	58678	142619	73347	7.0	8.8	344.4	CF
S27DA885	64084	32958	96126	49436	128168	65915	160211	82394	7.0	8.1	386.9	CF
S27DA935	71530	36787	107295	55180	143060	73574	178825	91967	7.0	7.7	431.9	CF
S27DA985	79385	40827	119077	61240	158770	81653			5.6	7.0	479.3	CF
S27DA1020	85127	43779	127690	65669	170253	87559			5.6	6.3	514.0	CF

★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

*** Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart

		TORQUE OUTPUT Nm									
MODEL NUMBER	SPRING CODE		SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar	MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
S09SR200	AA	START	712	676	1222	1767	2313	7	14.0	6.6	177
		MIN	268	262	513	736	1013				
		END	415	379	924	1470	2015				
	AB	START	1126		1015	1560	2106	7	14.0	6.6	182
		MIN	415		381	631	882				
		END	622		510	1056	1601				
	AC	START	1425		807	1353	1898	7	14.0	6.6	184
		MIN	535		274	524	775				
		END	829		212	757	1303				
	AD	START	1771			1146	1691	7	14.0	6.6	197
		MIN	667			407	657				
		END	1036			411	957				
	AE	START	1997			1019	1564	7	14.0	6.6	190
		MIN	751			332	582				
		END	1163			185	730				
	AF	START	2112				1509	7	14.0	6.6	190
		MIN	791				546				
		END	1219				615				
S09SR280	AB	START	1126	1517	2586	3655	4724	7	10.5	12.9	213
		MIN	415	611	1102	1593	2084				
		END	622	1012	2081	3151	4220				
	AC	START	1425	1309	2378	3448	4517	7	10.5	12.9	215
		MIN	535	504	995	1486	1977				
		END	829	714	1783	2852	3921				
	AD	START	1771	1102	2171	3240	4310	7	10.5	12.9	228
		MIN	667	387	878	1369	1859				
		END	1036	368	1437	2506	3575				
	AE	START	1997	975	2044	3113	4182	7	10.5	12.9	221
		MIN	751	312	803	1294	1785				
		END	1163	141	1210	2279	3349				
	AF	START	2112		1989	3058	4127	7	10.5	12.9	221
		MIN	791		767	1257	1748				
		END	1219		1095	2164	3233				
	AG	START	2776			2652	3721	7	10.5	12.9	225
		MIN	1045			1030	1521				
		END	1625			1500	2569				
	AH	START	3460			2246	3315	7	10.5	12.9	238
		MIN	1304			799	1290				
		END	2031			816	1885				
	AJ	START	3954				3020	7	10.5	12.9	238
		MIN	1491				1123				
		END	2326				1392				
	AK	START	4953				2438	7	10.5	12.9	244
		MIN	1867				788				
		END	2908				393				

★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart(cont.)

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S09SR335	AE	START	1997	1897	3428	4958	6489	7	8.8	18.5	233
		MIN	751	735	1438	2141	2844				
		END	1163	1064	2594	4124	5655				
	AF	START	2112	1842	3372	4903	6433	7	8.8	18.5	237
		MIN	791	699	1402	2105	2807				
		END	1219	949	2479	4009	5540				
	AG	START	2776		2966	4497	6027	7	8.8	18.5	250
		MIN	1045		1175	1878	2580				
		END	1625		1815	3345	4876				
	AH	START	3460		2560	4091	5621	7	8.8	18.5	250
		MIN	1304		944	1647	2349				
		END	2031		1131	2661	4192				
	AJ	START	3954		2265	3795	5326	7	8.8	18.5	250
		MIN	1491		777	1479	2182				
		END	2326		637	2168	3698				
	AK	START	4953			3213	4744	7	8.8	18.5	256
		MIN	1867			1144	1847				
		END	2908			1169	2699				
	AL	START	5217			3049	4579	7	8.8	18.5	256
		MIN	1969			1053	1756				
		END	3073			905	2435				
	AM	START	6620				3811	7	8.8	18.5	262
		MIN	2484				1296				
		END	3841				1032				
S09SR385	AG	START	2776	2418	4439	6460	8482	5.6	7.0	24.4	265
		MIN	1045	923	1851	2779	3708				
		END	1625	1266	3288	5309	7330				
	AH	START	3460	2012	4033	6054	8076	5.6	7.0	24.4	278
		MIN	1304	692	1620	2548	3476				
		END	2031	582	2604	4625	6646				
	AJ	START	3954		3738	5759	7780	5.6	7.0	24.4	278
		MIN	1491		1453	2381	3309				
		END	2326		2110	4131	6153				
	AK	START	4953		3156	5177	7199	5.6	7.0	24.4	284
		MIN	1867		1118	2046	2974				
		END	2908		1111	3132	5154				
	AL	START	5217		2991	5013	7034	5.6	7.0	24.4	284
		MIN	1969		1027	1955	2883				
		END	3073		847	2868	4890				
	AM	START	6620			4245	6266	6	7.0	24.4	290
		MIN	2484			1495	2423				
		END	3841			1465	3487				

★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S11SR280	BA	START	1704	1621	2928	4234	5541	7	10.5	16.0	375
		MIN	640	628	1228	1828	2428				
		END	993	909	2216	3522	4829				
	BB	START	2429	1192	2499	3806	5112	7	10.5	16.0	380
		MIN	914	384	984	1584	2184				
		END	1421	184	1491	2797	4104				
	BC	START	3212		2042	3349	4656	7	10.5	16.0	401
		MIN	1209		721	1321	1921				
		END	1878		708	2015	3321				
	BD	START	3675		1788	3094	4401	7	10.5	16.0	401
		MIN	1379		569	1169	1769				
		END	2132		246	1552	2859				
	BE	START	4117			2830	4137	7	10.5	16.0	446
		MIN	1547			1019	1619				
		END	2397			1110	2417				
	BF	START	4922			2411	3717	7	10.5	16.0	446
		MIN	1838			759	1359				
		END	2816			305	1612				
	BG	START	6394				2779	7	10.5	16.0	453
		MIN	2410				848				
		END	3755				139				
S11SR335	BB	START	2429	2320	4190	6061	7931	7	10.5	22.9	406
		MIN	914	901	1760	2619	3478				
		END	1421	1312	3182	5053	6923				
	BC	START	3212	1863	3734	5604	7475	7	10.5	22.9	427
		MIN	1209	639	1497	2356	3215				
		END	1878	529	2399	4270	6140				
	BD	START	3675		3479	5350	7220	7	10.5	22.9	427
		MIN	1379		1345	2204	3063				
		END	2132		1937	3807	5678				
	BE	START	4117		3215	5085	6956	7	10.5	22.9	472
		MIN	1547		1196	2055	2913				
		END	2397		1495	3365	5236				
	BF	START	4922		2795	4666	6536	7	10.5	22.9	472
		MIN	1838		936	1795	2654				
		END	2816		690	2560	4430				
	BG	START	6394			3727	5598	7	10.5	22.9	479
		MIN	2410			1284	2143				
		END	3755			1088	2958				
	BH	START	8145				4558	7	10.5	22.9	487
		MIN	3073				1551				
		END	4794				1207				

★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart(cont.)

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S11SR385	BC	START	3212	3063	5534	8004	10475	7	8.8	30.3	453
		MIN	1209	1190	2324	3458	4593				
		END	1878	1729	4199	6670	9140				
	BD	START	3675	2809	5279	7750	10220	7	8.8	30.3	453
		MIN	1379	1038	2172	3306	4441				
		END	2132	1266	3737	6207	8678				
	BE	START	4117	2544	5015	7485	9956	7	8.8	30.3	498
		MIN	1547	888	2022	3157	4291				
		END	2397	824	3295	5765	8236				
	BF	START	4922		4595	7066	9536	7	8.8	30.3	498
		MIN	1838		1763	2897	4031				
		END	2816		2490	4960	7431				
	BG	START	6394		3657	6127	8598	7	8.8	30.3	505
		MIN	2410		1251	2386	3520				
		END	3755		1017	3488	5958				
	BH	START	8145			5088	7559	7	8.8	30.3	513
		MIN	3073			1794	2929				
		END	4794			1737	4207				
	BJ	START	10204				6360	7	8.8	30.3	530
		MIN	3846				2238				
		END	5993				2149				
S11SR435	BE	START	4117	3911	7065	10219	13373	5.6	7.0	38.6	523
		MIN	1547	1515	2964	4412	5860				
		END	2397	2191	5345	8499	11653				
	BF	START	4922	3491	6645	9799	12953	5.6	7.0	38.6	523
		MIN	1838	1256	2704	4152	5600				
		END	2816	1386	4540	7694	10847				
	BG	START	6394		5707	8861	12014	5.6	7.0	38.6	530
		MIN	2410		2193	3641	5089				
		END	3755		3067	6221	9375				
	BH	START	8145		4668	7821	10975	5.6	7.0	38.6	538
		MIN	3073		1601	3049	4497				
		END	4794		1316	4470	7624				
	BJ	START	10204			6623	9777	5.6	7.0	38.6	555
		MIN	3846			2359	3807				
		END	5993			2411	5565				

★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S13SR385	CA	START	3793	3620	6540	9460	12379	7	10.5	35.3	688
		MIN	1428	1407	2747	4088	5429				
		END	2219	2046	4966	7886	10805				
	CB	START	5896		5431	8350	11270	7	10.5	35.3	698
		MIN	2191		2066	3407	4747				
		END	3328		2863	5782	8702				
	CC	START	7397		4510	7430	10349	7	10.5	35.3	817
		MIN	2766		1553	2893	4234				
		END	4249		1362	4282	7201				
	CD	START	9009			6397	9317	7	10.5	35.3	808
		MIN	3394			2333	3673				
		END	5281			2670	5589				
	CE	START	11067				8171	7	10.5	35.3	825
		MIN	4155				2994				
		END	6428				3532				
	CF	START	13152				6914	7	10.5	35.3	831
		MIN	4948				2285				
		END	7684				1447				
S13SR435	CB	START	5896	4126	7853	11581	15308	7	9.1	45.0	733
		MIN	2191	1467	3179	4890	6602				
		END	3328	1558	5286	9013	12740				
	CC	START	7397	3206	6933	10660	14387	7	9.1	45.0	852
		MIN	2766	954	2665	4377	6088				
		END	4249	58	3785	7512	11239				
	CD	START	9009		5900	9628	13355	7	9.1	45.0	843
		MIN	3394		2104	3816	5527				
		END	5281		2173	5900	9627				
	CE	START	11067			8481	12209	7	9.1	45.0	860
		MIN	4155			3137	4848				
		END	6428			3842	7570				
	CF	START	13152			7225	10952	7	9.1	45.0	866
		MIN	4948			2428	4140				
		END	7684			1757	5485				
	CG	START	15434				9582	7	9.1	45.0	875
		MIN	5815				3365				
		END	9055				3203				
S13SR485	CC	START	7397	5018	9651	14284	18918	7	8.8	56.0	907
		MIN	2766	1786	3913	6041	8168				
		END	4249	1870	6503	11137	15770				
	CD	START	9009	3985	8619	13252	17885	7	8.8	56.0	899
		MIN	3394	1225	3353	5480	7608				
		END	5281	258	4891	9524	14158				
	CE	START	11067		7472	12106	16739	7	8.8	56.0	915
		MIN	4155		2673	4801	6928				
		END	6428		2833	7467	12100				
	CF	START	13152			10849	15483	7	8.8	56.0	921
		MIN	4948			4092	6220				
		END	7684			5382	10015				
	CG	START	15434			9479	14112	7	8.8	56.0	930
		MIN	5815			3318	5446				
		END	9055			3100	7733				
	CH	START	20522				11095	7	8.8	56.0	932
		MIN	7741				3727				
		END	12072				2645				

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart(cont.)

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S13SR535	CD	START	9009	5994	11632	17270	22908	7	8.8	68.1	923
		MIN	3394	2148	4737	7325	9914				
		END	5281	2267	7905	13543	19181				
	CE	START	11067		10486	16124	21762	7	8.8	68.1	940
		MIN	4155		4057	6646	9235				
		END	6428		5847	11485	17123				
	CF	START	13152		9230	14868	20506	7	8.8	68.1	946
		MIN	4948		3349	5938	8526				
		END	7684		3762	9400	15038				
	CG	START	15434			13497	19135	7	8.8	68.1	955
		MIN	5815			5163	7752				
		END	9055			7118	12756				
	CH	START	20522				16117	7	8.8	68.1	957
		MIN	7741				6033				
		END	12072				7668				
	CJ	START	25695				13099	7	8.8	68.1	970
		MIN	9686				4296				
		END	15091				2495				
S13SR585	CE	START	11067	7054	13795	20536	27277	7	7.7	81.4	993
		MIN	4155	2481	5577	8672	11767				
		END	6428	2415	9156	15897	22638				
	CF	START	13152		12539	19280	26021	7	7.7	81.4	999
		MIN	4948		4868	7964	11059				
		END	7684		7071	13812	20553				
	CG	START	15434		11168	17909	24651	7	7.7	81.4	1008
		MIN	5815		4094	7189	10285				
		END	9055		4790	11531	18272				
	CH	START	20522			14892	21633	7	7.7	81.4	1010
		MIN	7741			5470	8566				
		END	12072			6442	13183				
	CJ	START	25695			11873	18614	7	7.7	81.4	1023
		MIN	9686			3734	6829				
		END	15091			1269	8010				
S13SR635	CF	START	13152	8201	16144	24086	32029	6	5.9	96.0	1046
		MIN	4948	2876	6523	10171	13818				
		END	7648	2734	10676	18619	26561				
	CG	START	15434		14773	22716	30658	6	5.9	96.0	1055
		MIN	5815		5749	9396	13043				
		END	9055		8394	16337	24279				
	CH	START	20522			19698	27641	6	5.9	96.0	1057
		MIN	7741			7677	11324				
		END	12072			11248	19191				
	CJ	START	25695			16679	24622	6	5.9	96.0	1070
		MIN	9686			5941	9588				
		END	15091			6076	14018				

★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S16SR485	DA	START	7471	7072	12775	18477	24180	7	8.8	68.9	1236
		MIN	2803	2734	5353	7971	10590				
		END	4333	3935	9637	15340	21042				
	DB	START	11143		10608	16310	22013	7	8.8	68.9	1242
		MIN	4190		4115	6733	9352				
		END	6500		5965	11667	17370				
	DC	START	13557		9198	14901	20603	7	8.8	68.9	1255
		MIN	5098		3304	5922	8541				
		END	7910		3551	9253	14956				
	DD	START	16297			13353	19056	7	8.8	68.9	1261
		MIN	6116			5014	7632				
		END	9457			6514	12216				
	DE	START	18924			11667	17370	7	8.8	68.9	1266
		MIN	7140			4099	6718				
		END	11143			3887	9590				
	DF	START	22065				15546	7	8.8	68.9	1270
		MIN	8320				5665				
		END	12967				6448				
S16SR535	DB	START	11143	7378	14317	21256	28195	7	8.8	83.9	1307
		MIN	4190	2632	5818	9004	12191				
		END	6500	2735	9674	16613	23552				
	DC	START	13557		12907	19846	26785	7	8.8	83.9	1320
		MIN	5098		5007	8193	11380				
		END	7910		7260	14199	21138				
	DD	START	16297		11360	18299	25238	7	8.8	83.9	1326
		MIN	6116		4098	7284	10471				
		END	9457		4520	11459	18398				
	DE	START	18924		9674	16613	23552	7	8.8	83.9	1331
		MIN	7140		3184	6370	9556				
		END	11143		1894	8833	15772				
	DF	START	22065			14789	21728	7	8.8	83.9	1335
		MIN	8320			5317	8503				
		END	12967			5691	12630				
	DG	START	29401				17404	7	8.8	83.9	1341
		MIN	11088				6031				
		END	17291				5295				
S16SR585	DC	START	13557	8683	16980	25277	33573	7	8.8	100.3	1388
		MIN	5098	3068	6877	10687	14497				
		END	7910	3036	11333	19630	27926				
	DD	START	16297		15433	23729	32026	7	8.8	100.3	1394
		MIN	6116		5968	9778	13588				
		END	9457		8593	16890	25187				
	DE	START	18924		13747	22043	30340	7	8.8	100.3	1399
		MIN	7140		5054	8864	12673				
		END	11143		5966	14263	22560				
	DF	START	22065		11923	20219	28516	7	8.8	100.3	1403
		MIN	8320		4001	7811	11620				
		END	12967		2825	11121	19418				
	DG	START	29401			15896	24193	7	8.8	100.3	1409
		MIN	11088			5339	9148				
		END	17291			3786	12083				
	DH	START	37048				19870	7	8.8	100.3	1416
		MIN	13931				6610				
		END	21613				4435				

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart(cont.)

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S16SR635	DD	START	16297	10094	19869	29645	39420	7	7.0	118.1	1451
		MIN	6116	3517	8006	12494	16983				
		END	9457	3254	13030	22805	32581				
	DE	START	18924		18183	27959	37734	7	7.0	118.1	1456
		MIN	7140		7091	11580	16069				
		END	11143		10403	20178	29954				
	DF	START	22065		16359	26135	35910	7	7.0	118.1	1460
		MIN	8320		6038	10527	15016				
		END	12967		7261	17037	26812				
	DG	START	29401			21811	31587	7	7.0	118.1	1466
		MIN	11088			8055	12544				
		END	17291			9701	19477				
	DH	START	37048			17489	27264	7	7.0	118.1	1473
		MIN	13931			5517	10005				
		END	21613			2054	11829				
S16SR685	DE	START	18924	11608	22983	34359	45734	5.6	6.3	137.5	1511
		MIN	7140	4072	9295	14519	19742				
		END	11143	3828	15203	26579	37954				
	DF	START	22065		21159	32535	43910	5.6	6.3	137.5	1515
		MIN	8320		8242	13466	18689				
		END	12967		12061	23437	34812				
	DG	START	29401		16836	28211	39587	5.6	6.3	137.5	1521
		MIN	11088		5770	10994	16217				
		END	17291		4726	16102	27477				
	DH	START	37048			23889	35264	5.6	6.3	137.5	1528
		MIN	13931			8456	13679				
		END	21613			8454	19829				

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★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S20SR585	EA	START	13567	12861	23231	33602	43973	7	8.8	125.3	1720
		MIN	5094	4976	9739	14501	19263				
		END	7881	7174	17545	27916	38287				
	EB	START	20253	8920	19291	29662	40032	7	8.8	125.3	1730
		MIN	7617	2723	7485	12247	17010				
		END	11822	489	10859	21230	31601				
	EC	START	23929		17183	27554	37925	7	8.8	125.3	1791
		MIN	8990		6259	11021	15783				
		END	13929		7184	17554	27925				
	ED	START	27582		14903	25274	35645	7	8.8	125.3	1845
		MIN	10399		5001	9763	14525				
		END	16209		3531	13902	24272				
	EE	START	31702			22821	33192	7	8.8	125.3	1855
		MIN	11960			8370	13132				
		END	18662			9782	20152				
	EF	START	36189			20196	30567	7	8.8	125.3	1935
		MIN	13649			6861	11624				
		END	21287			5294	15665				
	EG	START	40949				27767	7	8.8	125.3	2010
		MIN	15445				10021				
		END	24087				10905				
S20SR635	EB	START	20253	12617	24836	37056	49275	7	8.8	147.6	1830
		MIN	7617	4421	10032	15643	21254				
		END	11822	4186	16405	28624	40844				
	EC	START	23929		22729	34948	47168	7	8.8	147.6	1891
		MIN	8990		8806	14417	20027				
		END	13929		12729	24949	37168				
	ED	START	27582		20449	32668	44888	7	8.8	147.6	1945
		MIN	10399		7548	13159	18769				
		END	16209		9076	21296	33515				
	EE	START	31702		17996	30215	42434	7	8.8	147.6	1955
		MIN	11960		6154	11765	17376				
		END	18662		4956	17176	29395				
	EF	START	36189			27590	39809	7	8.8	147.6	2035
		MIN	13649			10257	15868				
		END	21287			12688	24908				
	EG	START	40949			24791	37010	7	8.8	147.6	2110
		MIN	15445			8654	14265				
		END	24087			7928	20147				
	EH	START	54664				28982	7	8.8	147.6	2145
		MIN	20608				9655				
		END	32115				6433				
S20SR685	EC	START	23929	14510	28729	42949	57168	7	8.8	171.7	1953
		MIN	8990	5031	11561	18090	24619				
		END	13929	4510	18729	32949	47168				
	ED	START	27582		26449	40669	54888	7	8.8	171.7	2007
		MIN	10399		10303	16832	23361				
		END	16209		15077	29296	43515				
	EE	START	31702		23996	38215	52435	7	8.8	171.7	2017
		MIN	11960		8909	15438	21968				
		END	18662		10957	25176	39396				
	EF	START	36189		21371	35590	49810	7	8.8	171.7	2097
		MIN	13649		7401	13930	20460				
		END	21287		6469	20668	34908				
	EG	START	40949			32791	47011	7	8.8	171.7	2172
		MIN	15445			12327	18857				
		END	24087			15928	30148				
	EH	START	54664			24763	38982	7	8.8	171.7	2207
		MIN	20608			7717	14247				
		END	32115			2214	16433				

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart(cont.)

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S20SR735	ED	START	27582	16533	32904	49275	65646	7	8.8	197.7	2075
		MIN	10399	5749	13267	20784	28301				
		END	16209	5160	21531	37920	54273				
	EE	START	31702		30451	46822	63193	7	8.8	197.7	2085
		MIN	11960		11873	19390	26908				
		END	18662		17411	33782	50153				
	EF	START	36189		27826	44197	60568	7	8.8	197.7	2165
		MIN	13649		10365	17882	25400				
		END	21287		12924	29295	45666				
	EG	START	40949		25026	41397	57769	7	8.8	197.7	2240
		MIN	15445		8762	16279	23797				
		END	24087		8164	24535	40906				
	EH	START	54664			33369	49740	7	8.8	197.7	2275
		MIN	20608			11669	19187				
		END	32115			10820	27191				
	EJ	START	68575				41711	7	8.8	197.7	2325
		MIN	25818				14534				
		END	40144				13280				
S20SR785	EE	START	31702	18686	37360	56043	74708	5.6	7.0	225.5	2170
		MIN	11960	6471	15046	23621	32195				
		END	18662	5647	24321	42995	61669				
	EF	START	36189		34735	53409	72083	5.6	7.0	225.5	2250
		MIN	13649		13538	22112	30687				
		END	21287		19833	38507	57181				
	EG	START	40949		31936	50610	69284	5.6	7.0	225.5	2325
		MIN	15445		11935	20510	29084				
		END	24087		15073	33747	52421				
	EH	START	54664			42582	61256	5.6	7.0	225.5	2360
		MIN	20608			15900	24474				
		END	32115			20033	38707				
	EJ	START	68575			34553	53227	5.6	7.0	225.5	2410
		MIN	25818			11247	19822				
		END	40144			6122	24796				
S20SR835	EF	START	36189	20970	42099	63228	84356	5.6	7.0	255.2	2330
		MIN	13649	7217	16919	26621	36323				
		END	21287	6068	27197	48326	69455				
	EG	START	40949		39300	60428	81557	5.6	7.0	255.2	2405
		MIN	15445		15316	25018	34720				
		END	24087		22437	43566	64694				
	EH	START	54664		31272	52400	73529	5.6	7.0	255.2	2440
		MIN	20608		10706	20408	30110				
		END	32115		8723	29851	50980				
	EJ	START	68575			44371	65500	5.6	7.0	255.2	2490
		MIN	25818			15756	25458				
		END	40144			15940	37069				

★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

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★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S27SR735	FA	START	28946	27406	49506	71607	93708	7	8.8	266.9	CF
		MIN	10863	10598	20746	30895	41043				
		END	16796	15256	37357	59458	81558				
	FB	START	43062		41108	63209	85310	7	8.8	266.9	CF
		MIN	16209		15972	26121	36269				
		END	25194		23241	45342	67443				
	FC	START	57892		32710	54811	76912	7	8.8	266.9	CF
		MIN	21725		11047	21196	31344				
		END	33592		8410	30511	52612				
	FD	START	71293			46413	68514	7	8.8	266.9	CF
		MIN	26902			16574	26722				
		END	41990			17110	39211				
S27SR785	FE	START	32916	31261	56471	81681	106892	7	8.8	304.4	CF
		MIN	12367	12110	23686	35263	46839				
		END	19159	17504	42714	67924	93134				
	FF	START	49464		46892	72102	97321	7	8.8	304.4	CF
		MIN	18571		18147	29723	41299				
		END	28738		26166	51376	76586				
	FG	START	65120		37311	62521	87731	7	8.8	304.4	CF
		MIN	24565		12796	24372	35948				
		END	38319		10510	35720	60930				
	FH	START	81489			52942	78152	7	8.8	304.4	CF
		MIN	30727			18870	30446				
		END	47898			19351	44561				
S27SR835	FJ	START	37043	35370	63894	92418	120942	7	8.8	344.4	CF
		MIN	13945	13745	26842	39940	53038				
		END	21677	20004	48528	77052	105576				
	FK	START	55745	24531	53055	81578	110102	7	8.8	344.4	CF
		MIN	20960	7481	20579	33676	46774				
		END	32517	1303	29827	58351	86874				
	FL	START	74444		42217	70740	99264	7	8.8	344.4	CF
		MIN	27975		14316	27413	40511				
		END	43355		11127	39651	68175				
	FM	START	92788			59901	88425	7	8.8	344.4	CF
		MIN	34905			21225	34323				
		END	54194			21307	49831				
S27SR885	FN	START	41861	39733	71775	103818	135860	7	8.1	386.9	CF
		MIN	15724	15387	30101	44814	59527				
		END	24351	22223	54265	86308	118350				
	FO	START	63150		59599	91641	123683	7	8.1	386.9	CF
		MIN	23671		23005	37718	52431				
		END	36528		32976	65018	97060				
	FP	START	83009		47423	79465	111507	7	8.1	386.9	CF
		MIN	31279		16212	30925	45639				
		END	48703		13118	45160	77202				
	FR	START	104832			67290	99332	7	8.1	386.9	CF
		MIN	39353			23717	38430				
		END	60878			23336	55378				

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★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Spring Return Actuators

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart(cont.)

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
S27SR935	FS	START	46834	44350	80115	115880	151645	7	7.7	431.9	CF
		MIN	17577	17152	33574	49997	66420				
		END	27180	24696	60461	96225	131990				
	FT	START	70073		66524	102289	138054	7	7.7	431.9	CF
		MIN	26323		25766	42188	58611				
		END	40771		37222	72987	108752				
	FU	START	93671		52932	88697	124462	7	7.7	431.9	CF
		MIN	35155		17880	34303	50725				
		END	54362		13624	49389	85154				
	FV	START	116195			75107	110872	7	7.7	431.9	CF
		MIN	43731			26645	43068				
		END	67952			26865	62630				
S27SR985	FW	START	51965	49219	88911	128603	168296	5.6	7.0	479.3	CF
		MIN	19504	19038	37264	55490	73716				
		END	30166	27420	67113	106805	146497				
	FX	START	77053		73829	113521	153213	5.6	7.0	479.3	CF
		MIN	29044		28746	46972	65198				
		END	45249		42025	81717	121409				
	FY	START	103213		58747	98439	138131	5.6	7.0	479.3	CF
		MIN	38838		20002	38228	56454				
		END	60331		15864	55557	95249				
	FZ	START	128302			83355	123047	5.6	7.0	479.3	CF
		MIN	48379			29709	47935				
		END	75415			30467	70159				
S27SR1020	FAA	START	55575	52779	95343	137906	180469	5.6	6.3	514.0	CF
		MIN	20880	20446	39991	59535	79079				
		END	32347	29551	72115	114678	157241				
	FAB	START	82470		79168	121731	164295	5.6	6.3	514.0	CF
		MIN	31108		30858	50403	69947				
		END	48522		45220	87783	130346				
	FAC	START	111152		62994	105557	148120	5.6	6.3	514.0	CF
		MIN	41760		21347	40892	60436				
		END	64696		16538	59101	101665				
	FAD	START	138045			89384	131947	5.6	6.3	514.0	CF
		MIN	51987			31760	51305				
		END	80869			32208	74771				

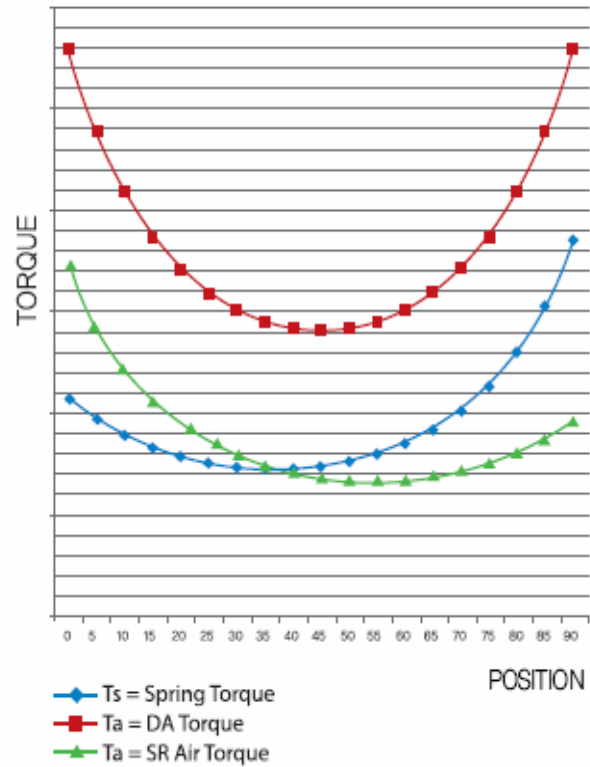
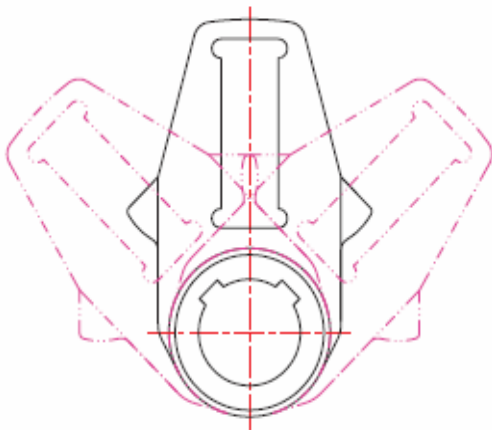
★ Maximum operating Pressure(MOP) is the pressure required to produce the maximum rated torque of the actuator.

★★ Maximum Allowable Working Pressure(MAWP) is the Maximum static pressure that may be applied to a fully stroked actuator against the travels stops.

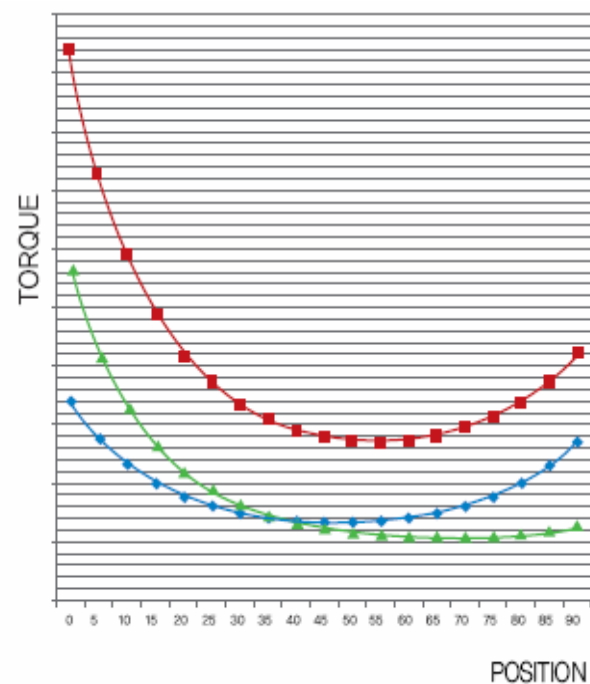
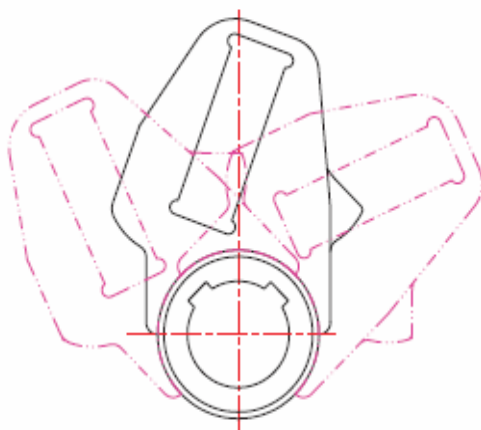
★★★ Swept Volume is the maximum volume including the cavity required for calculating consumption per 90° stroke.

Heavy Duty Actuator Torque Chart

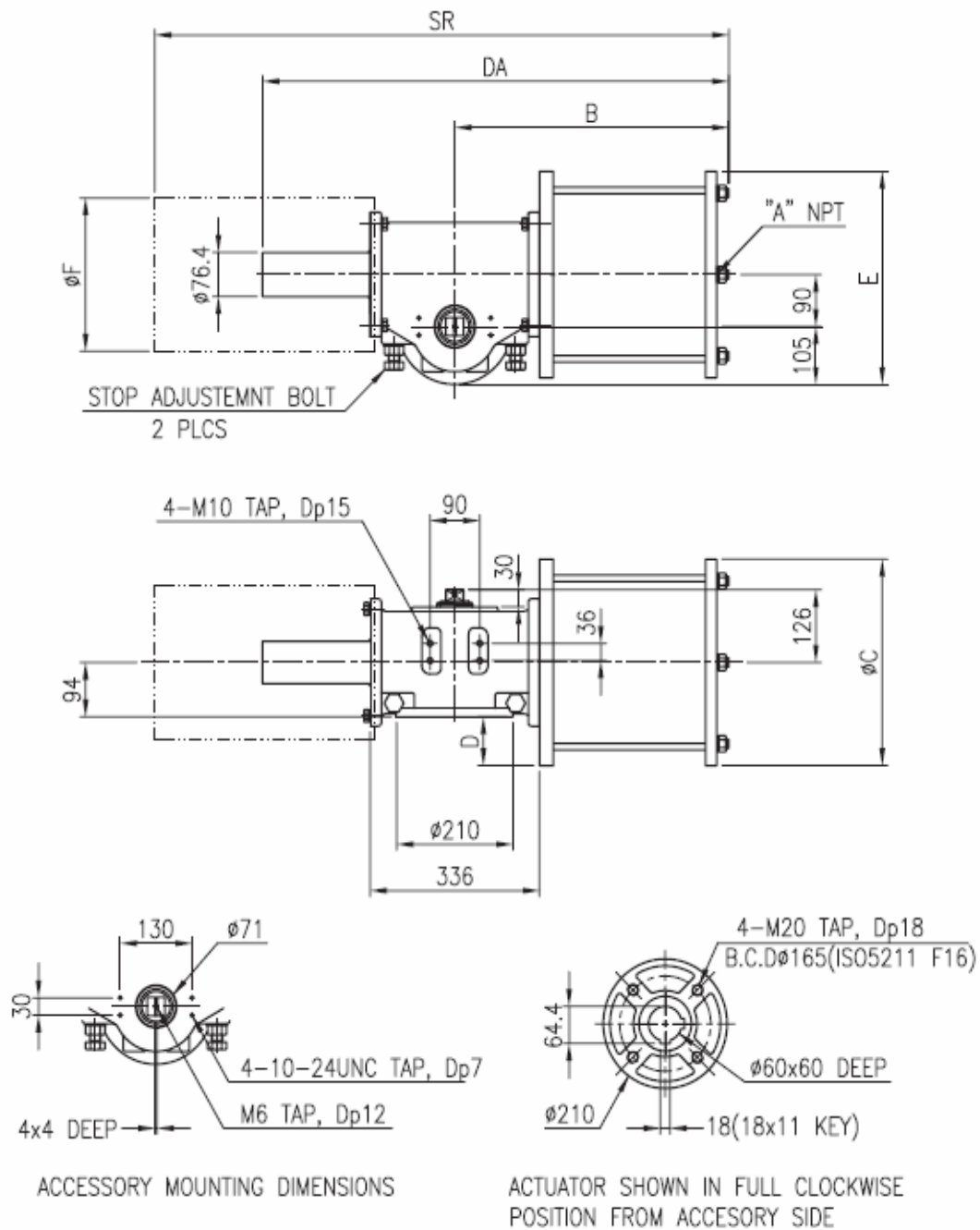
1. Symmetric Yoke Design Single Acting / Double Acting Design



2. Cantled Yoke Design Single Acting / Double Acting Design



Heavy Duty Actuators

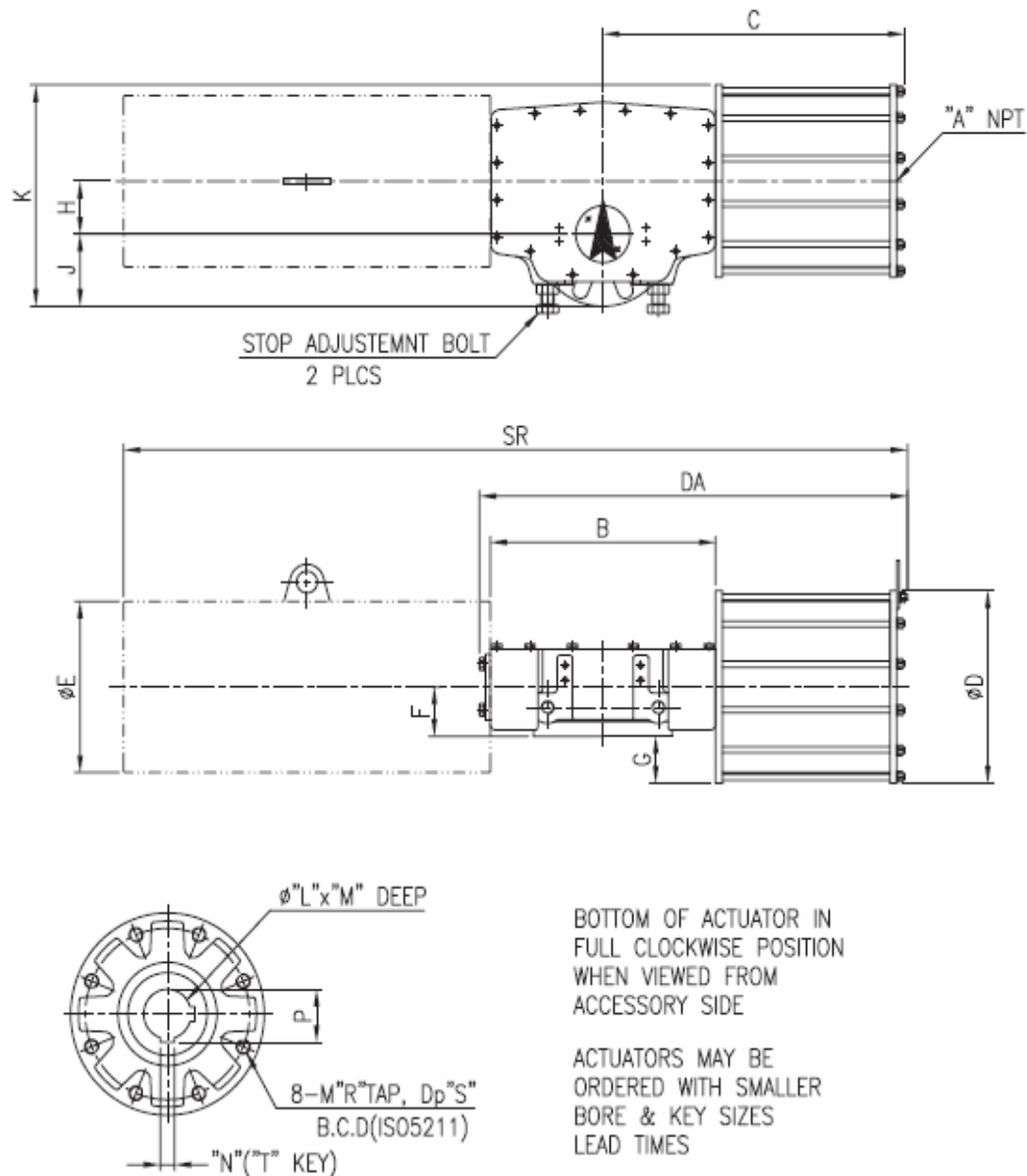


ACTUATORS MAY BE ORDERED WITH
SPECIAL DRIVE ARRANGEMENTS
ACTUATORS MAY BE ORDERED WITH

ACTUATOR MODEL	A	B	DA	C	D	E
S09DA/SR200	3/8"NPT	560	1025	260	47	325
S09DA/SR280	1/2"NPT	570	1035	357	100	373
S09DA/SR335	1/2"NPT	570	1035	410	122	400
S09DA/SR385	1/2"NPT	570	1035	465	150	428

SPRING MODEL	F DIA.	SR	
		200	280,335,380
AA	267.5	1361	1361
AB-AE	318.5	1361	1361
AF-AH	318.5	1461	1461
AJ-AM	318.5		1511

Heavy Duty Actuators

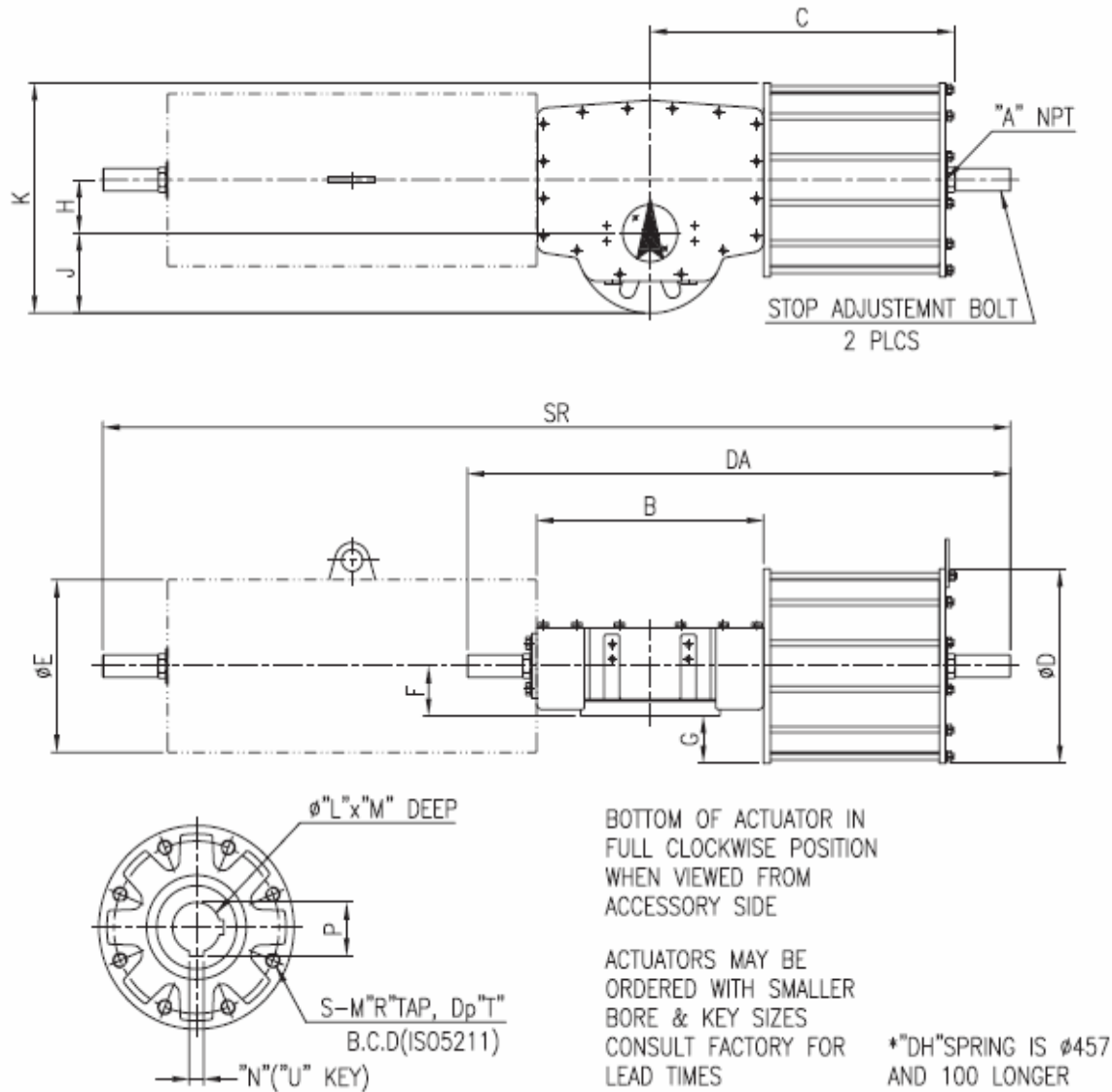


BOTTOM OF ACTUATOR IN
FULL CLOCKWISE POSITION
WHEN VIEWED FROM
ACCESSORY SIDE

ACTUATORS MAY BE
ORDERED WITH SMALLER
BORE & KEY SIZES
LEAD TIMES

ACTUATOR MODEL	A	B	C	DA	SR	D	E	F	G	H	J	K	L	M	N	P	R	S	B.C.D	T
S11DA/RS280	1/2"NPT	488	722	998	1966	357	356	110	78.5	110	140	279	75	140	20	79.9	M16	22	254	20x12
S11DA/RS335	1/2"NPT	488	722	998	1966	410	356	110	105	110	140	215	75	140	20	79.9	M16	22	254	20x12
S11DA/RS385	1/2"NPT	488	722	998	1966	465	356	110	132.5	110	140	483	75	140	20	79.9	M16	22	254	20x12
S11DA/RS435	1/2"NPT	488	722	998	1966	516	356	110	146	110	140	508	75	140	20	79.9	M16	22	254	20x12
S13DA/RS385	1/2"NPT	556	822	1145	2220	465	406	112	120.5	130	180	543	90	160	22	95.4	M20	25	298	22x14
S13DA/RS435	3/4"NPT	556	822	1145	2220	516	406	112	146	130	180	568	90	160	22	95.4	M20	25	298	22x14
S13DA/RS485	3/4"NPT	556	822	1145	2220	578	406	112	177	130	180	600	90	160	22	95.4	M20	25	298	22x14
S13DA/RS535	3/4"NPT	556	822	1145	2220	627	406	112	202	130	180	624	90	160	22	95.4	M20	25	298	22x14
S13DA/RS585	3/4"NPT	556	822	1145	2220	677	406	112	227	130	180	649	90	160	22	95.4	M20	25	298	22x14
S13DA/RS635	3/4"NPT	556	822	1145	2220	730	406	112	253	130	180	675	90	160	22	95.4	M20	25	298	22x14

Heavy Duty Actuators



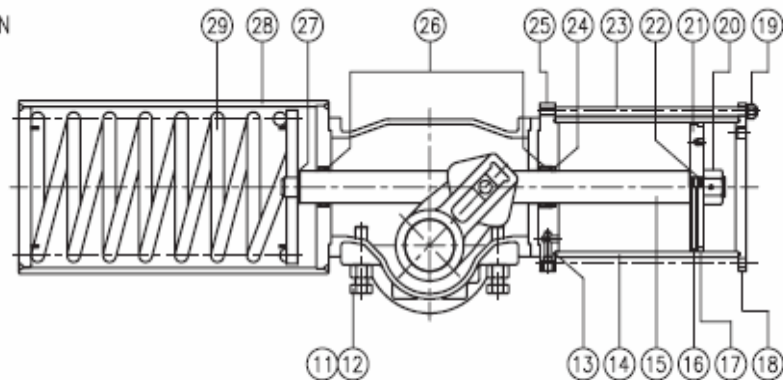
ACTUATOR MODEL	A	B	C	DA	SR	D	E	F	G	H	J	K	L	M	N	P	R	S	T	B.C.D	U
S16DA/RS485	3/4"NPT	694	976	1746	2859	578	406	140	149	160	210	660	110	200	32	117.4	M30	8	36	356	32x18
S16DA/RS535	3/4"NPT	694	976	1746	2859	630	406	140	175	160	210	685	110	200	32	117.4	M30	8	36	356	32x18
S16DA/RS585	1" NPT	694	991	1754	2859	690	406	140	205	160	210	715	110	200	32	117.4	M30	8	36	356	32x18
S16DA/RS635	1" NPT	694	991	1754	2959	740	406	140	230	160	210	740	110	200	32	117.4	M30	8	36	356	32x18
S16DA/RS685	1" NPT	694	991	1754	2959	795	406	140	258	160	210	768	110	200	32	117.4	M30	8	36	356	32x18
S20DA/RS585	1" NPT	836	1187	2029	3423	690	457	159	186	200	240	785	130	230	32	137.4	M36	8	43	406	32x18
S20DA/RS635	1" NPT	836	1187	2029	3423	740	457	159	211	200	240	810	130	230	32	137.4	M36	8	43	406	32x18
S20DA/RS685	1" NPT	836	1187	2030	3428	795	457	159	239	200	240	838	130	230	32	137.4	M36	8	43	406	32x18
S20DA/RS735	1" NPT	836	1192	2032	3428	845	457	159	264	200	240	863	130	230	32	137.4	M36	8	43	406	32x18
S20DA/RS785	1" NPT	836	1197	2032	3430	905	457	159	294	200	240	893	130	230	32	137.4	M36	8	43	406	32x18
S20DA/RS835	1" NPT	836	1197	2036	3430	955	457	159	319	200	240	918	130	230	32	137.4	M36	8	43	406	32x18
S27DA/RS735	1" NPT	1120	1848	2760	4425	845	508	200	223	270	345	1038	200	300	45	210.4	M36	12	54	483	45x25
S27DA/RS785	1" NPT	1120	1848	2760	4425	905	508	200	253	270	345	1068	200	300	45	210.4	M36	12	54	483	45x25
S27DA/RS835	1" NPT	1120	1848	2760	4429	955	559	200	278	270	345	1093	200	300	45	210.4	M36	12	54	483	45x25
S27DA/RS885	1" NPT	1120	1855	2767	4429	1007	559	200	305	270	345	1119	200	300	45	210.4	M36	12	54	483	45x25
S27DA/RS935	1" NPT	1120	1855	2767	4434	1065	559	200	333	270	345	1148	200	300	45	210.4	M36	12	54	483	45x25
S27DA/RS985	1" NPT	1120	1857	2769	4434	1115	559	200	358	270	345	1173	200	300	45	210.4	M36	12	54	483	45x25
S27DA/RS1020	1" NPT	1120	1857	2769	4439	1150	559	200	375	270	345	1190	200	300	45	210.4	M36	12	54	483	45x25

Heavy Duty Actuators

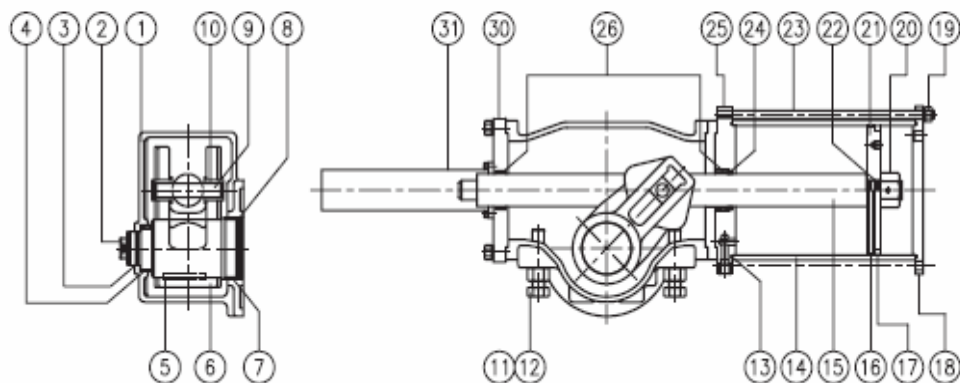
Bill of Materials

NO	Q'TY	SEAL KIT	DESCRIPTION	MATERIAL
1	1		HOUSING	A536 GR. 65-45-12
2	1		HOUSING COVER	ASTM A36
3	1	*	UPPER PISTON O-RING	NBR
4	1	*	UPPER PISTON BEARING	PTFE
5	1		YOKE / PINION KEY	ANSI 1045
6	1		YOKE	A216 WCC
7	1	*	LOWER PISTON BEARING	PTFE
8	1	*	LOWER PISTON O-RING	NBR
9	1		YOKE PIN	17-4 PH STAINLESS STEEL
10	2		YOKE PIN BUSHING	B505 C836
11	2		STOP BOLT	A193 GR. B7
12	2		STOP BOLT NUT	A194 GR. 2H
13	2	*	CYLINDER O-RING	NBR
14	1		CYLINDER	A106 GR. A CHROME PLATED
15	1		PISTON ROD	ANSI 1045 CHROME PLATED
16	1	*	BACK UP RING	PTFE
17	1	*	PISTON O-RING	NBR
18	1		END CAP	ASTM A36
19	**		TIE ROD NUT	A194 GR. 2H
20	1		LOCK NUT ASSY	A194 GR. 8
21	1		PISTON	ASTM A36
22	1	*	PISTON ROD O-RING	NBR
23	**		TIE ROD	ANSI 1045
24	1	*	PISTON ROD O-RING	NBR
25	1		ADAPTER	ASTM A36
26	2	*	PISTON ROD BEARING	PTFE
27	1		THRUST BUSHING	B505 C836
28	1		SPRING CYLINDER WELDMENT	A106 GR. A
29	1		SPRING	SAE 9254
30	1		ROD COVER ADAPTER	ASTM A36
31	1		ROD COVER	A106 GR. A

SPRING RETURN



DOUBLE ACTING

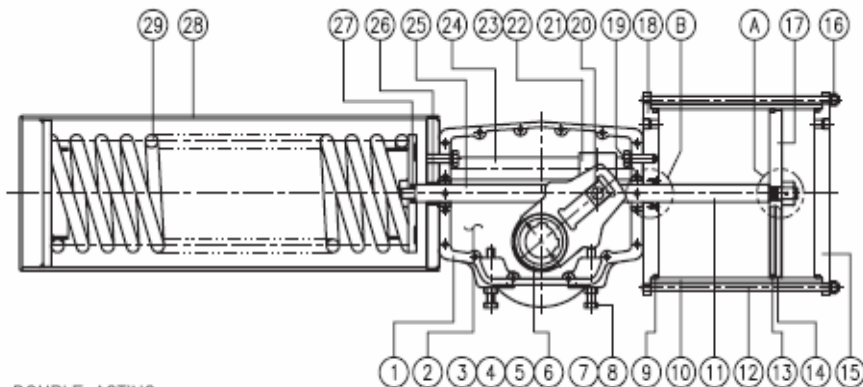


Heavy Duty Actuators

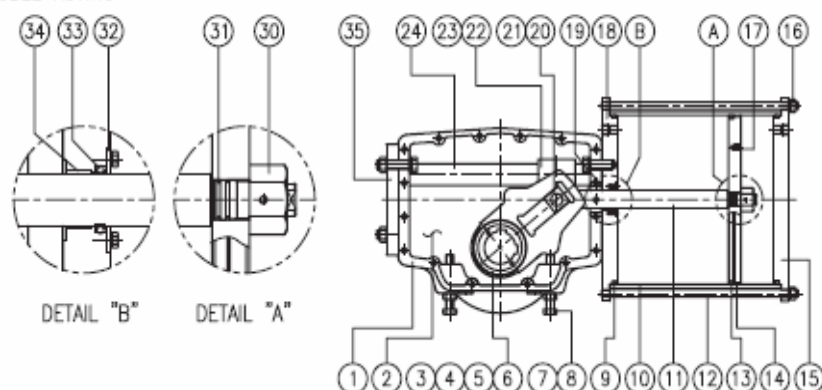
Bill of Materials

NO	Q'TY	SEAL KIT	DESCRIPTION	MATERIAL
1	1		HOUSING	A536 GR. 65-45-12
2	1		HOUSING COVER	ASTM A36
3	1		YOKE	ANSI 1045
4	2		YOKE BUSHING	B505 C836
5	4	*	YOKE O-RING	NBR
6	1		INDICATOR PLATE	ASTM A36
7	2		STOP BOLT	A193 GR. B7
8	2		STOP BOLT NUT	A194 GR. 2H
9	2	*	CYLINDER O-RING	NBR
10	1		CYLINDER	A106 GR. A CHROME PLATED
11	1		PISTON ROD	ANSI 1045 CHROME PLATED
12	**		TIE ROD	ANSI 1045
13	1	*	PISTON O-RING	NBR
14	1	*	BACK UP RING	PTFE
15	1		END CAP	ASTM A36
16	**		TIE ROD NUT	A194 GR. 2H
17	1		PISTON	ASTM A36
18	1		ADAPTER	ASTM A36
19	1		ALIGNMENT RING	C1018
20	2		YOKE PIN BUSHING	B505 C836
21	1		YOKE PIN	17-4 PH STAINLESS STEEL
22	1		SLIDING BLOCK	ASTM A36
23	2		SLIDING BLOCK BEARING	Du BEARING
24	1		GUIDE BAR	ANSI 1045 CHROME PLATED
25	1		SPRING PISTON ROD	ANSI 1045
26	1		SPRING PISTON ROD BEARING	Du BEARING
27	1		THRUST BEARING	B505 C836
28	1		SPRING CYLINDER WELDMENT	A106 GR. A
29	1		SPRING	SAE 9254
30	1		LOCK NUT ASSY	A194 GR. 8
31	1	*	PISTON ROD O-RING	NBR
32	1		COVER PLATE	C1018
33	1	*	ROD SEAL O-RING	NBR
34	1		ROD BEARING	Du BEARING
35	1		DA COVER PLATE	ASTM A36

SPRING RETURN



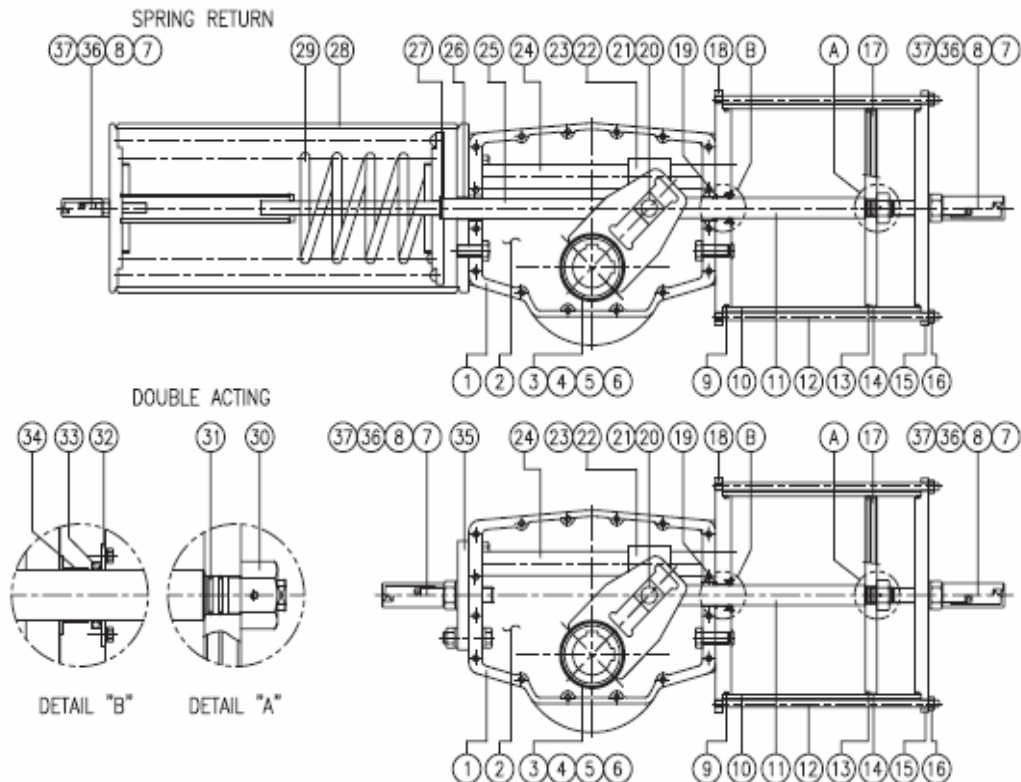
DOUBLE ACTING



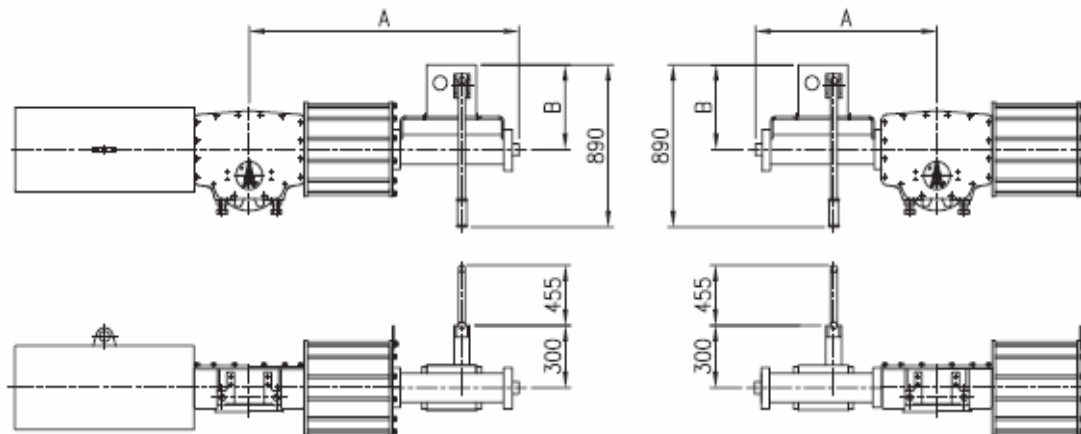
Heavy Duty Actuators

Bill of Materials

NO	Q'TY	SEAL KIT	DESCRIPTION	MATERIAL
1	1		HOUSING	A536 GR. 65-45-12
2	1		HOUSING COVER	ASTM A36
3	1		YOKE	ANSI 1045
4	2		YOKE BUSHING	B505 C836
5	4	*	YOKE O-RING	NBR
6	1		INDICATOR PLATE	ASTM A36
7	2		STOP BOLT	A193 GR. B7
8	2		STOP BOLT NUT	A194 GR. 2H
9	2	*	CYLINDER O-RING	NBR
10	1		CYLINDER	A106 GR. A CHROME PLATED
11	1		PISTON ROD	ANSI 1045 CHROME PLATED
12	**		TIE ROD	ANSI 1045
13	1	*	PISTON O-RING	NBR
14	1	*	BACK UP RING	PTFE
15	1		END CAP	ASTM A36
16	**		TIE ROD NUT	A194 GR. 2H
17	1		PISTON	ASTM A36
18	1		ADAPTER	ASTM A36
19	1		ALIGNMENT RING	C1018
20	2		YOKE PIN BUSHING	B505 C836
21	1		YOKE PIN	17-4 PH STAINLESS STEEL
22	1		SLIDING BLOCK	ASTM A36
23	2		SLIDING BLOCK BEARING	Du BEARING
24	1		GUIDE BAR	ANSI 1045 CHROME PLATED
25	1		SPRING PISTON ROD	ANSI 1045
26	1		SPRING PISTON ROD BEARING	Du BEARING
27	1		THRUST BEARING	B505 C836
28	1		SPRING CYLINDER WELDMENT	A106 GR. A
29	1		SPRING	SAE 9254
30	1		LOCK NUT ASSY	A194 GR. B
31	1	*	PISTON ROD O-RING	NBR
32	1		COVER PLATE	C1018
33	1	*	ROD SEAL O-RING	NBR
34	1		ROD BEARING	Du BEARING
35	1		DA COVER PLATE	ASTM A36
36	2		STOP BOLT COVER	C1018
37	2	*	STOP BOLT O-RING	NBR



Heavy Duty Actuators



SR/Hydraulic
Override

ACTUATOR MODEL	A	B
S11 SRxxxH	1240	320
S13 SRxxxH	1425	330
S16 SRxxxH	1690	350
S20 SRxxxH	2040	375
S27 SRxxxH	2900	489

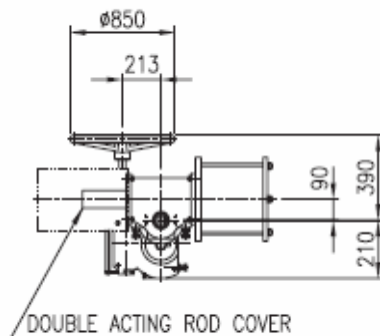
The mounting attitude must be specified at time of order to ensure the hydraulic reservoir and pump pickup are correctly located. Due to continuous product improvement, please contact Sung Do for certified drawings with the most current dimensions and specifications.

DA/Hydraulic
Override

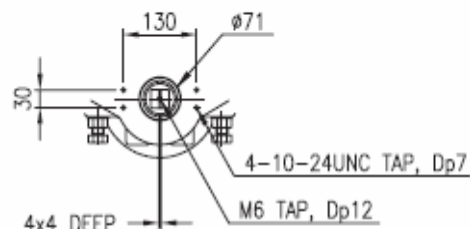
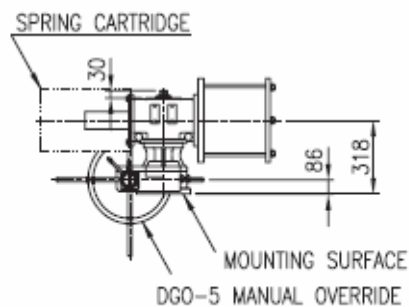
ACTUATOR MODEL	A	B
S11 DAxxxH	794	320
S13 DAxxxH	905	330
S16 DAxxxH	1082	350
S20 DAxxxH	1278	375
S27 DAxxxH	1816	503

The mounting attitude must be specified at time of order to ensure the hydraulic reservoir and pump pickup are correctly located. Due to continuous product improvement, please contact Sung Do for certified drawings with the most current dimensions and specifications.

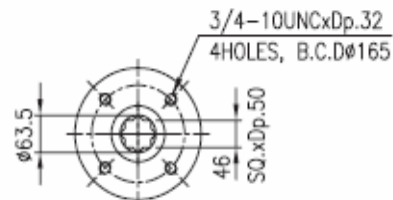
Dec clutchable Manual Override



DOUBLE ACTING ROD COVER



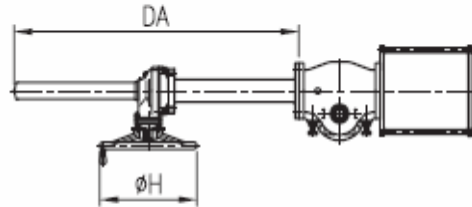
ACCESSORY MOUNTING DIMENSIONS



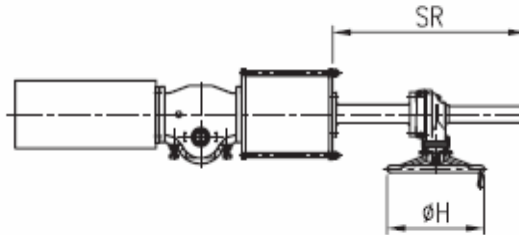
ACTUATOR SHOWN IN FULL CLOCKWISE
POSITION FROM ACCESSORY SIDE

Jackscrew Override

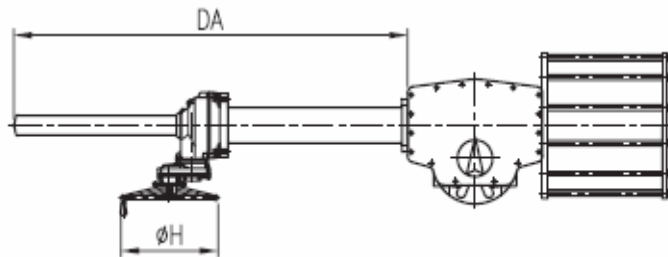
SDJS 09 Double Acting with jackscrew manual override



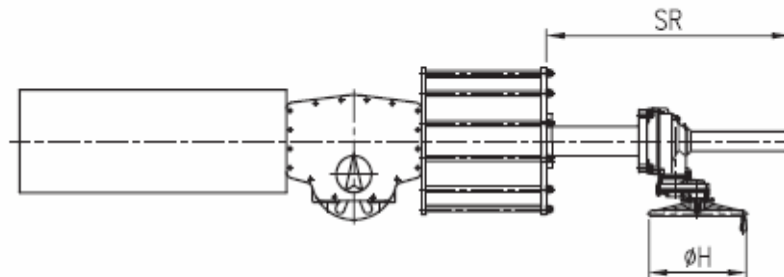
SDJS 09 Spring Return with jackscrew manual override



SDJS 11,13,16,20,27 Double Acting with jackscrew manual override

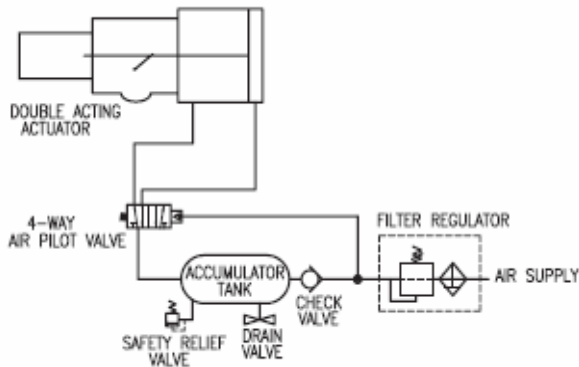


SDJS 11,13,16,20,27 Spring Return with jackscrew manual override

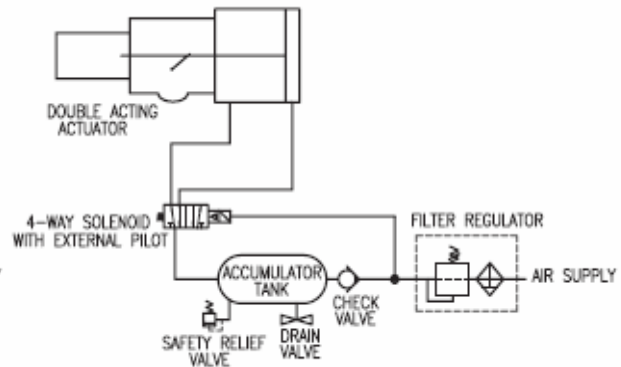


ACTUATOR MODEL	DA	SR	HAND WHEEL øH	HAND WHEEL REV.	
				Standard	Option
SDJS 09	1175	800	400	73	146/293
SDJS 11	1401	870	500	96	193/385
SDJS 13	1623	1005	630	263	667
SDJS 16	1986	1231	800	405	1027
SDJS 20	2361	1450	1000	550	1650
SDJS 27	3067	1912	1000	608	1823/1975

Heavy Duty Actuators



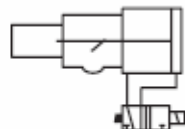
Air Failsafe 1
When air supply drops below 30 psi, the spool valve will shift and rotate the actuator to the failsafe position, either clockwise or counter-clockwise as specified by the customer for one each 90° cycle.



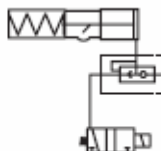
Air Failsafe 2
Upon loss of electric, or when air supply drops below 30 psi, the spool valve will shift and rotate the actuator to the failsafe position, either clockwise (as shown) or counter-clockwise as specified by the customer for one each 90° cycle.



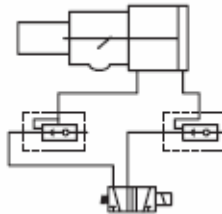
Spring return with 3-way solenoid valve



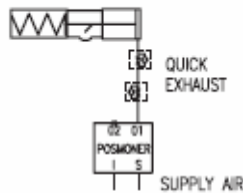
Double acting with 4-way solenoid valve



Spring return with quick exhaust valves and 3-way solenoid valve

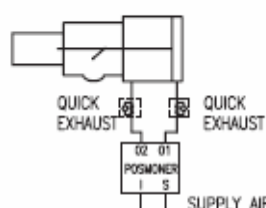


Double acting with quick exhaust valves and 4-way solenoid valve



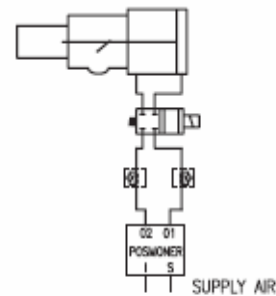
3-15 instrument signal /
4-20 mA instrument signal

Spring return with flow controls
and positioner



3-15 instrument signal / SUPPLY AIR
4-20 mA instrument signal

Double acting with flow controls
and positioner



3-15 instrument signal /
4-20 mA instrument signal

Double acting with lockup valve,
flow controls and positioner
for use on double acting only

Heavy Duty Actuators

How to order

Heavy Duty Double Acting Type

Product Number : SDH (MODEL NUMBER)

Example : SDHS09DA200

SYMMETRIC TYPE

Heavy Duty Double Acting Torque Chart

	TORQUE OUTPUT Nm											
MODEL NUMBER	2.8 bar		4.2 bar		5.6 bar		7 bar		MOP★	MAWP★★	SWEPT VOLUME Liter★★★	WEIGH T KG
	Start	Min	Start	Min	Start	Min	Start	Min				
S09DA200	1091	561	1636	842	2182	1122	2727	1403	7.0	14.0	6.6	127
S09DA280	2138	1100	3207	1650	4277	2199	5346	2749	7.0	10.5	12.9	158
S09DA335	3061	1574	4591	2361	6122	3148	7652	3935	7.0	8.8	18.5	170
S09DA385	4043	2079	6064	3119	8085	4158			5.6	7.0	24.4	198

Heavy Duty Spring Return Type

Product Number : SDH (MODEL NUMBER+SPRING CODE)

Example : SDHS09SR200AA

SYMMETRIC TYPE

Heavy Duty Spring Return Torque Chart

MODEL NUMBER	SPRING CODE	TORQUE OUTPUT Nm						MOP★	MAWP★★	SWEPT VOLUME	WEIGHT KG
			SPRING	2.8 bar	4.2 bar	5.6 bar	7 bar				
		START	MIN	END	START	MIN	END				
S09SR200	AA	START	712	676	1222	1767	2313	7	14.0	6.6	177
		MIN	268	262	513	736	1013				
		END	415	379	924	1470	2015				
	AB	START	1126		1015	1560	2106	7	14.0	6.6	182
		MIN	415		381	631	882				
		END	622		510	1056	1601				