

Actuator Torque Ratings

Series A / B / C / S / HP

Spring Return and Double Acting Actuators Canted And Symmetrical Yoke Designs Output Torques to 146881 N-m

Table of Contents

Low Pressure Torques: Symmetrical Yoke Design

A/B/C/S Series: Double Acting	Page 2
A/B/C/S Series: Spring Return - Fail Closed (CW) & Fail Open (CCW)	Page 7

Low Pressure Torques: Canted Yoke Design

A/B/C/S Series: Double Acting	Page 4
A/B/C/S Series: Spring Return Fail Closed (CW)	Page 19
A/B/C/S Series: Spring Return Fail Open (CCW)	Page 29

High Pressure Torques: Symmetrical and Canted Design

HP Series: Double Acting : Symmetrical Yoke	Page 39
HP Series: Spring Return : Symmetrical Yoke	Page 42
HP Series: Double Acting : Canted Yoke Design	Page 40
HP Series: Spring Return-Fail Closed (CW): Canted Yoke Design	Page 43
HP Series: Spring Return-Fail Open (CCW): Canted Yoke Design	Page 44



Series A, B and C

A Series -Cast Steel/ Steel Quarter-turn
B Series -Ductile Iron/Stainless Steel Quarter-turn
C Series -Ductile Iron/Steel Quarter-turn
Spring Return and Double Acting Actuators
High Pressure to 103.5 bar g
A Series to 175 psig.

Series S

Stainless Steel
Spring Return and Double Acting Actuators
High Pressure to 103.5 bar g

Series HP

Ductile Iron/Stainless Steel Quarter-turn
Direct Gas / Hydraulic Actuators
Spring Return and Double Acting Actuators
B/C/S press rating US bar g

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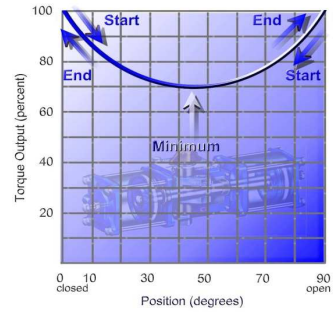
Series A/ B/ C/ S: Models 003 - 7114
Double Acting
Symmetrical Yoke Design

The chart to the right shows the torque curve of the Morin symmetrical yoke double acting actuator.

The start and end indications show how to interpret the following torque chart for correct sizing.

Proper selection of the actuator is critical to the successful operation of your automated package.

Air Start Clockwise = Air Start Counterclockwise
 Air End Clockwise = Air End Counterclockwise



Rev 1012

Model Number	Torque at	Output torques N-m												
		2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
Supply Pressure bar g														
003U-D000	Start/End	20	25	29	34	39	44	49	53	59	-	-	-	-
Series S only	Minimum	12	16	19	21	25	28	32	35	37	-	-	-	-
006U-D000	Start/End	34	42	51	59	68	76	85	93	102	110	119	127	136
Series A/B/S only	Minimum	27	33	40	46	52	59	65	72	78	85	92	98	106
012U-D000	Start/End	78	98	117	136	156	175	195	214	234	-	-	-	-
Series A/S only	Minimum	53	66	79	92	106	119	132	144	159	-	-	-	-
015U-D000	Start/End	85	106	127	148	169	190	212	-	-	-	-	-	-
Series B only	Minimum	67	83	100	116	133	150	167	-	-	-	-	-	-
023U-D000	Start/End	130	164	195	227	260	292	325	357	390	423	454	486	520
Series A/B/S only	Minimum	97	121	145	169	193	217	242	266	290	314	339	363	386
036U-D000	Start/End	224	280	336	391	447	503	559	615	671	727	783	839	895
Series A/B/S only	Minimum	155	193	232	271	310	348	387	426	464	503	542	581	619
050U-D000	Start/End	282	353	424	494	565	636	706	777	847	918	989	1059	1130
Series A/B/S only	Minimum	208	260	312	364	416	468	520	572	624	676	728	780	834
059U-D000	Start/End	333	417	500	583	667	750	833	917	1000	1083	-	-	-
Series A/B/S	Minimum	250	312	375	437	499	562	624	687	749	812	-	-	-
072U-D000	Start/End	447	559	671	783	895	1007	1119	1218	-	Maximum Allowable Pressure 8.3 bar g			
Series A/B/S only	Minimum	310	387	464	541	619	696	774	852	-	(Series A / Max Shell Pressure 12 bar g)			
100U-D000	Start/End	565	706	847	989	1130	-	-	-	-	Maximum Allowable Pressure 6.9 bar g			
Series B/S only	Minimum	416	520	624	728	832	-	-	-	-	-	-	-	-
135U-D000	Start/End	763	954	1144	1335	1525	1716	1907	2097	2288	2479	2670	2860	3051
	Minimum	381	477	572	667	763	858	954	1048	1144	1239	1335	1430	1525
210U-D000	Start/End	1305	1631	1957	2284	2610	2936	3262	3589	3915	4241	4567	4894	5220
	Minimum	652	816	979	1142	1305	1468	1631	1794	1957	2121	2284	2447	2610
270U-D000	Start/End	1602	2002	2402	2803	3203	3604	4004	4404	4805	-	-	-	-
	Minimum	1186	1483	1780	2076	2373	2669	2966	3262	3559	-	-	-	-
345U-D000	Start/End	2046	2558	3070	3581	4093	4605	5116	-	-	Maximum Allowable Pressure 8.3 bar g			
	Minimum	1516	1895	2274	2652	3031	3410	3789	-	-	(Series A / Max Shell Pressure 12 bar g)			
370U-D000	Start/End	2237	2796	3355	3914	4480	5032	5591	6150	6710	7269	7828	8387	8946
Series B/C/S only	Minimum	1478	1847	2217	2586	2956	3325	3695	4064	4434	4803	5172	5542	5911
420U-D000	Start/End	2373	2966	3559	4152	4745	-	-	-	-	-	-	-	-
	Minimum	1844	2305	2766	3227	3688	-	-	-	-	-	-	-	-
575U-D000	Start/End	3606	4502	5408	6308	7211	8113	9014	9915	10817	11719	12620	13521	14423
Series B/C/S only	Minimum	2535	3169	3803	4437	5071	5705	6338	6972	7606	8240	8874	9508	10142
740U-D000	Start/End	4389	5487	6584	7682	8779	9876	10974	12071	13168	Maximum Allowable Pressure 8.3 bar g			
Series B/C/S only	Minimum	2956	3695	4434	5172	5911	6650	7389	8128	8867	-	-	-	-
945U-D000	Start/End	5712	7140	8568	9996	11424	12853	-	-	-	Maximum Allowable Pressure 8.3 bar g			
Series B/C/S only	Minimum	4112	5139	6167	7195	8223	9251	-	-	-	-	-	-	-
1150U-D000	Start/End	6821	8527	10232	11938	13643	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
Series B/C/S only	Minimum	5071	6338	7606	8874	10142	-	-	-	-	(Series S / Max Shell Pressure 8.3 bar g)			



Series A/ B/ C/ S: Models 003 - 7114
Double Acting
Symmetrical Yoke Design

Model Number	Torque at	Output torques N-m												
		Supply Pressure bar g												
		2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
1480U-D000 Series S only	Start/End	8361	10451	12541	14632	16722	18812	20902	22992	25083	Maximum Allowable Pressure 8.3 bar g			
	Minimum	5267	6584	7901	9218	10535	11852	13169	14485	15802				
1485U-D000 Series B/C only	Start/End	9577	11971	14365	16759	19154	21548	23942	26336	28730	Maximum Allowable Pressure 8.3 bar g			
	Minimum	5267	6584	7901	9218	10534	11851	13168	14485	15802				
1935U-D000 Series B/C only	Start/End	12493	15616	18740	21863	24986	28109	31233	34356	37479	Maximum Allowable Pressure 8.3 bar g			
	Minimum	6871	8589	10307	12025	13742	15460	17178	18896	20614				
2380U-D000 Series S only	Start/End	13445	16806	20168	23529	26890	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Minimum	8531	10664	12797	14929	17062	-	-	-	-	(Series S / Max Shell Pressure 8.3 bar g)			
2385U-D000 Series B/C only	Start/End	15409	19262	23114	26966	30819	34671	38523	42376	46228	Maximum Operating Pressure 8.3 bar g			
	Minimum	8475	10594	12713	14831	16950	19069	21188	23307	25425				
3071U-D000 Series C Only	Start/End	19619	24524	29428	34333	39238	44143	49047	53952	58857	Maximum Operating Pressure 8.3 bar g			
	Minimum	10790	13488	16186	18883	21581	24278	26976	29674	32371				
3731U-D000 Series C Only	Start/End	23833	29791	35749	41707	47665	53624	59582	65540	-	Maximum Operating Pressure 8.3 bar g			
	Minimum	13108	16385	19662	22939	26216	29493	32770	36047	-				
4534U-D000 Series C Only	Start/End	28957	36196	43435	50674	57914	65153	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Minimum	15926	19908	23889	27871	31852	35834	-	-	-				
5336U-D000 Series C only	Start/End	34081	42601	51121	59642	68162	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Minimum	18745	23431	28117	32803	37489	-	-	-	-				
7114U-D000 Series C only	Start/End	44832	56040	67248	78456	89663	100871	112079	123287	134495	Maximum Operating Pressure 8.3 bar g			
	Minimum	24657	30822	36986	43151	49315	55479	61644	67808	73972				

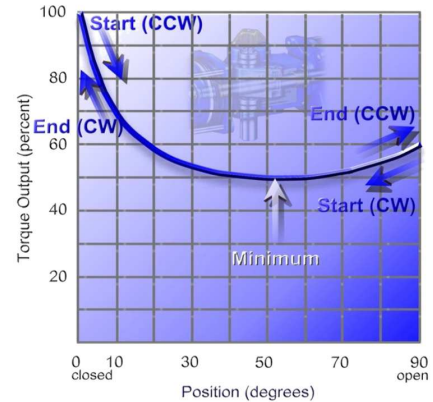
Model Number	Torque at	Output torques N-m										
		Supply Pressure bar g										
		2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7

The chart to the right shows the torque curve of the Morin canted yoke design double acting actuator.

The indications of Start (CCW), End (CCW), Start (CW), End (CW), and Minimum show how to interpret the following torque chart for correct sizing. The canted yoke design generates higher torques at the 0 degree position and less torque at the 90 degree position when compared to the symmetrical yoke.

Proper selection of the actuator is critical to the successful operation of your automated package.

CCW = Counterclockwise (usually opens valve)
CW = Clockwise (usually closes valve)



Model Number	Torque at	Output torques N-m												
		Supply Pressure bar g												
		2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
023UC-D000 Series A/B/S Only	Start (CCW)	175	221	263	307	351	394	438	482	526	570	613	656	702
	End (CCW)	104	131	156	182	208	234	260	292	312	338	363	389	416
	Start (CW)	107	134	160	186	213	240	266	293	320	346	373	398	426
	End (CW)	169	213	253	296	338	380	422	464	507	549	591	632	676
	Minimum	97	121	145	169	193	218	242	266	290	314	339	363	387
036UC-D000 Series A/B/S Only	Start (CCW)	302	377	453	529	604	679	755	831	906	981	1057	1133	—
	End (CCW)	179	224	268	313	358	403	447	492	537	582	626	671	—
	Start (CW)	183	229	275	321	367	413	459	504	550	596	642	688	—
	End (CW)	291	364	436	509	582	654	727	800	872	945	1018	1091	—
	Minimum	155	194	232	271	310	348	387	426	464	503	542	581	—
050UC-D000 Series A/B/S Only	Start (CCW)	381	477	572	667	763	858	953	1049	1144	—	—	—	—
	End (CCW)	226	282	339	395	452	508	565	621	678	—	—	—	—
	Start (CW)	232	290	347	405	463	521	579	637	695	—	—	—	—
	End (CW)	367	459	551	643	734	826	918	1010	1102	—	—	—	—
	Minimum	208	260	312	364	416	468	520	572	624	—	—	—	—
059UC-D000 Series A/B/S Only	Start (CCW)	450	562	675	787	900	1012	1125	—	—	—	—	—	—
	End (CCW)	267	333	400	467	533	600	667	—	—	—	—	—	—
	Start (CW)	273	342	410	478	547	615	683	—	—	—	—	—	—
	End (CW)	433	542	650	758	867	975	1083	—	—	—	—	—	—
	Minimum	250	312	375	437	499	562	624	—	—	—	—	—	—
072UC-D000 Series A/B/S Only	Start (CCW)	604	755	906	1057	—	—	—	—	—	—	—	—	—
	End (CCW)	358	447	537	626	—	—	—	—	—	—	—	—	—
	Start (CW)	367	459	550	642	—	—	—	—	—	—	—	—	—
	End (CW)	582	727	872	1018	—	—	—	—	—	—	—	—	—
	Minimum	310	387	464	541	—	—	—	—	—	—	—	—	—
100UC-D000 Series B/S Only	Start (CCW)	763	953	1144	—	—	—	—	—	—	—	—	—	—
	End (CCW)	452	565	678	—	—	—	—	—	—	—	—	—	—
	Start (CW)	463	579	695	—	—	—	—	—	—	—	—	—	—
	End (CW)	734	918	1102	—	—	—	—	—	—	—	—	—	—
	Minimum	416	520	624	—	—	—	—	—	—	—	—	—	—
135UC-D000	Start (CCW)	1030	1287	1544	1802	2059	2317	2575	2831	3089	3346	3604	3861	4118
	End (CCW)	610	763	915	1068	1220	1373	1526	1678	1830	1983	2136	2288	2440
	Start (CW)	625	782	938	1095	1251	1407	1564	1720	1876	2033	2189	2345	2501
	End (CW)	991	1240	1487	1735	1983	2231	2479	2726	2974	3223	3471	3718	3966
	Minimum	381	477	572	667	763	858	954	1048	1144	1239	1335	1430	1525
210UC-D000	Start (CCW)	1762	2202	2643	3083	3523	3964	4404	4845	—	—	—	—	—
	End (CCW)	1044	1305	1566	1827	2088	2349	2610	2871	—	—	—	—	—
	Start (CW)	1070	1338	1605	1873	2140	2408	2675	2943	—	—	—	—	—
	End (CW)	1696	2121	2545	2969	3393	3817	4241	4665	—	—	—	—	—
	Minimum	652	816	979	1142	1305	1468	1631	1794	—	—	—	—	—
270UC-D000	Start (CCW)	2162	2703	3243	3784	4324	4865	—	—	—	—	—	—	—
	End (CCW)	1281	1602	1922	2242	2562	2883	—	—	—	—	—	—	—
	Start (CW)	1313	1642	1970	2298	2627	2955	—	—	—	—	—	—	—
	End (CW)	2082	2603	3123	3644	4164	4685	—	—	—	—	—	—	—
	Minimum	1186	1483	1780	2076	2373	2669	—	—	—	—	—	—	—



Series A/ B/ C/ S : Models 023 - 7114

Double Acting
Canted Yoke Design

Model Number	Torque at	Output torques N-m												
		Supply Pressure bar g												
		2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
345UC-D000	Start (CCW)	2763	3453	4144	4835	—	—	—	—	—	—	—	—	—
	End (CCW)	1637	2046	2456	2865	—	—	—	—	—	—	—	—	Maximum Allowable Pressure 8.3 bar g
	Start (CW)	1678	2098	2517	2937	—	—	—	—	—	—	—	—	(Series A / Max Shell Pressure 12 bar g)
	End (CW)	2660	3326	3991	4656	—	—	—	—	—	—	—	—	
	Minimum	1516	1895	2274	2652	—	—	—	—	—	—	—	—	
370UC-D000 Series B/C/S Only	Start (CCW)	3019	3774	4529	5284	6039	6794	7549	8304	9059	9814	10569	11324	12079
	End (CCW)	1789	2237	2684	3131	3578	4026	4473	4920	5368	5815	6262	6710	7157
	Start (CW)	1834	2292	2751	3209	3668	4126	4585	5043	5502	5960	6419	6877	7336
	End (CW)	2907	3634	4361	5088	5815	6542	7269	7996	8723	9450	10177	10904	11631
	Minimum	1478	1847	2217	2586	2956	3325	3695	4064	4434	4803	5172	5542	5911
420UC-D000	Start (CCW)	3203	4004	4805	—	—	—	—	—	—	—	—	—	—
	End (CCW)	1898	2373	2847	—	—	—	—	—	—	—	—	—	—
	Start (CW)	1946	2432	2918	—	—	—	—	—	—	—	—	—	—
	End (CW)	3084	3856	4627	—	—	—	—	—	—	—	—	—	—
	Minimum	1844	2305	2766	—	—	—	—	—	—	—	—	—	—
575UC-D000 Series B/C/S Only	Start (CCW)	4868	6078	7301	8516	9735	10953	12169	13386	—	—	—	—	—
	End (CCW)	2885	3602	4327	5047	5769	6490	7211	7932	—	—	—	—	—
	Start (CW)	2957	3692	4435	5173	5913	6653	7392	8130	—	—	—	—	—
	End (CW)	4687	5853	7031	8201	9375	10547	11718	12890	—	—	—	—	—
	Minimum	2535	3169	3803	4437	5071	5705	6338	6972	—	—	—	—	—
740UC-D000 Series B/C/S Only	Start (CCW)	5926	7407	8889	10370	11852	13333	—	—	—	—	—	—	—
	End (CCW)	3512	4390	5267	6145	7023	7901	—	—	—	—	—	—	Maximum Allowable Pressure 8.3 bar g
	Start (CW)	3599	4499	5399	6299	7199	8099	—	—	—	—	—	—	
	End (CW)	5706	7133	8559	9986	11413	12839	—	—	—	—	—	—	
	Minimum	2956	3695	4434	5172	5911	6650	—	—	—	—	—	—	
945UC-D000 Series B/C/S Only	Start (CCW)	7712	9639	11567	—	—	—	—	—	—	—	—	—	—
	End (CCW)	4570	5712	6855	—	—	—	—	—	—	—	—	—	—
	Start (CW)	4684	5855	7026	—	—	—	—	—	—	—	—	—	Maximum Allowable Pressure 8.3 bar g
	End (CW)	7426	9282	11139	—	—	—	—	—	—	—	—	—	
	Minimum	4112	5139	6167	—	—	—	—	—	—	—	—	—	
1150UC-D000 Series B/C/S Only	Start (CCW)	9209	11511	—	—	—	—	—	—	—	—	—	—	—
	End (CCW)	5457	6821	—	—	—	—	—	—	—	—	—	—	—
	Start (CW)	5594	6992	—	—	—	—	—	—	—	—	—	—	Maximum Allowable Pressure 8.3 bar g
	End (CW)	8868	11085	—	—	—	—	—	—	—	—	—	—	
	Minimum	5071	6338	—	—	—	—	—	—	—	—	—	—	
1480UC-D000 Series S Only	Start (CCW)	11287	14109	16931	19753	22574	25396	—	—	—	—	—	—	—
	End (CCW)	6689	8361	10033	11705	13377	15050	—	—	—	—	—	—	—
	Start (CW)	6856	8570	10284	11998	13712	15426	—	—	—	—	—	—	Maximum Allowable Pressure 8.3 bar g
	End (CW)	10869	13586	16304	19021	21738	24456	—	—	—	—	—	—	
	Minimum	5267	6584	7901	9218	10535	11852	—	—	—	—	—	—	
1485UC-D000 Series B/C Only	Start (CCW)	13985	17482	20978	24474	27971	31467	34963	38460	41956	—	—	—	—
	End (CCW)	7552	9440	11328	13216	15104	16992	18880	20768	22656	—	—	—	—
	Start (CW)	7552	9440	11328	13216	15104	16992	18880	20768	22656	—	—	—	Maximum Allowable Pressure 8.3 bar g
	End (CW)	13985	17482	20978	24474	27971	31467	34963	38460	41956	—	—	—	
	Minimum	4755	5944	7133	8321	9510	10699	11888	13076	14265	—	—	—	—
1935UC-D000 Series B/C Only	Start (CCW)	18244	22805	27366	31927	36488	41049	45610	50172	54733	—	—	—	—
	End (CCW)	9852	12315	14778	17241	19704	22166	24629	27092	29555	—	—	—	—
	Start (CW)	9852	12315	14778	17241	19704	22166	24629	27092	29555	—	—	—	Maximum Allowable Pressure 8.3 bar g
	End (CW)	18244	22805	27366	31927	36488	41049	45610	50172	54733	—	—	—	
	Minimum	6203	7754	9305	10855	12406	13957	15508	17058	18609	—	—	—	—
2380UC-D000 Series S Only	Start (CCW)	18151	22689	27227	-	-	-	-	-	-	-	-	-	-
	End (CCW)	10756	13445	16134	-	-	-	-	-	-	-	-	-	-
	Start (CW)	11025	13781	16538	-	-	-	-	-	-	-	-	-	Maximum Allowable Pressure 8.3 bar g
	End (CW)	17479	21848	26218	-	-	-	-	-	-	-	-	-	
	Minimum	8531	10664	12797	-	-	-	-	-	-	-	-	-	
2385UC-D000 Series B/C Only	Start (CCW)	22503	28129	33754	39380	45006	50632	56257	61883	67509	—	—	—	—
	End (CCW)	12152	15189	18227	21265	24303	27341	30379	33417	36454	—	—	—	—
	Start (CW)	12152	15189	18227	21265	24303	27341	30379	33417	36454	—	—	—	Maximum Allowable Pressure 8.3 bar g
	End (CW)	22503	28129	33754	39380	45006	50632	56257	61883	67509	—	—	—	
	Minimum	7651	9564	11477	13389	15302	17215	19128	21040	22953	—	—	—	—
3071UC-D000 Series C Only	Start (CCW)	28651	35813	42976	50138	57301	64464	—	—	—	—	—	—	—
	End (CCW)	15471	19339	23207	27075	30942	34810	—	—	—	—	—	—	Maximum Allowable Pressure 8.3 bar g
	Start (CW)	15471	19339	23207	27075	30942	34810	—	—	—	—	—	—	
	End (CW)	28651	35813	42976	50138	57301	64464	—	—	—	—	—	—	
	Minimum	9741	12176	14612	17047	19482	21918	—	—	—	—	—	—	
3731UC-D000 Series C Only	Start (CCW)	34804	43505	52206	60907	69608	—	—	—	—	—	—	—	—
	End (CCW)	18794	23493	28191	32890	37588	—	—	—	—	—	—	—	Maximum Allowable Pressure 8.3 bar g
	Start (CW)	18794	23493	28191	32890	37588	—	—	—	—	—	—	—	
	End (CW)	34804	43505	52206	60907	69608	—	—	—	—	—	—	—	
	Minimum	11833	14792	17750	20708	23667	—	—	—	—	—	—	—	



Series A/ B/ C/ S : Models 023 - 7114

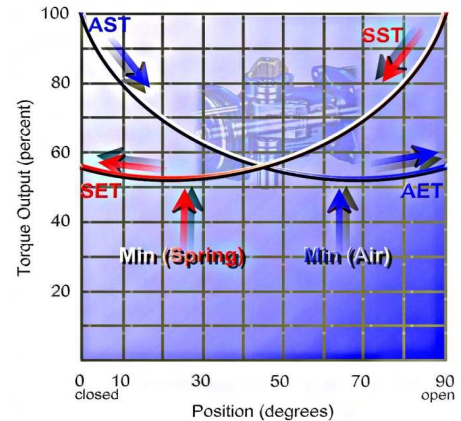
**Double Acting
Canted Yoke Design**

Model Number	Torque at	Output torques N-m												
		Supply Pressure bar g												
		2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
4534UC-D000 Series C Only	Start (CCW)	42287	52859	63431	-	-	-	-	-	-	-	-	-	-
	End (CCW)	22835	28543	34252	-	-	-	-	-	-	-	-	-	Maximum Allowable Pressure 8.3 bar g
	Start (CW)	22835	28543	34252	-	-	-	-	-	-	-	-	-	-
	End (CW)	42287	52859	63431	-	-	-	-	-	-	-	-	-	-
	Minimum	14378	17972	21566	-	-	-	-	-	-	-	-	-	-
5336UC-D000 Series C Only	Start (CCW)	49770	62212	-	-	-	-	-	-	-	-	-	-	-
	End (CCW)	26876	33594	-	-	-	-	-	-	-	-	-	-	Maximum Allowable Pressure 8.3 bar g
	Start (CW)	26876	33594	-	-	-	-	-	-	-	-	-	-	-
	End (CW)	49770	62212	-	-	-	-	-	-	-	-	-	-	-
	Minimum	16922	21152	-	-	-	-	-	-	-	-	-	-	-
7114UC-D000 Series C Only	Start (CCW)	62128	77660	93192	108724	124256	139788	155320	-	-	-	-	-	-
	End (CCW)	35135	43919	52702	61486	70270	79053	87837	-	-	-	-	-	Maximum Allowable Pressure 8.3 bar g
	Start (CW)	35135	43919	52702	61486	70270	79053	87837	-	-	-	-	-	-
	End (CW)	62128	77660	93192	108724	124256	139788	155320	-	-	-	-	-	-
	Minimum	25473	31841	38209	44577	50945	57313	63681	-	-	-	-	-	-
Model Number	Torque at	Supply Pressure bar g												
		2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
		Output torques N-m												



Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

The chart to the right shows the torque curve of the Morin symmetrical yoke spring return fail clockwise (Closed). This section of the torque charts is to be used for selection of both fail closed and fail open actuators. The fail open curve is identical to the fail closed curve, but the air curve and spring curves are reversed. (For fail open, SST is 100% at the 0 degree position and AST is at 100% at the 90 degree position).



Fail Closed (CW) Chart shown for clarity

Note: Air torque curve shown is with air pressure equal to spring code, i.e. -S060 at 60 psig. Curve will vary for pressures used not equal to spring code.

AST = Air Start Torque SST = Spring Start Torque
AET = Air End Torque SET = Spring End Torque
Mid = Torque at 45 degrees during the spring stroke or during the air stroke

Model Number	Spring torques N-m	Torque at	Air torques N-m												
			Supply Pressure bar g												
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
003U-S040 Series S Only	Start	12	12	17	22	27	32	37	42	47	51	56	-	-	-
	Mid	6	6	9	12	16	19	23	26	29	33	36	-	-	-
	End	6	6	11	16	21	26	31	35	40	45	50	-	-	-
003U-S050 Series S Only	Start	15	-	15	20	25	30	35	40	44	49	54	-	-	-
	Mid	7	-	7	11	14	17	21	24	27	31	34	-	-	-
	End	8	-	8	13	18	23	27	32	37	42	47	-	-	-
003U-S060 Series S Only	Start	18	-	-	18	23	28	33	38	42	47	52	57	-	-
	Mid	8	-	-	8	12	15	18	22	25	28	32	35	-	-
	End	9	-	-	9	14	19	24	29	33	38	43	48	-	-
003U-S070 Series S Only	Start	21	-	-	16	21	26	31	36	40	45	50	55	-	-
	Mid	10	-	-	6	10	13	16	20	23	27	30	33	-	-
	End	11	-	-	6	11	16	20	25	30	35	40	45	-	-
003U-S080 Series S Only	Start	24	-	-	-	19	24	29	33	38	43	48	53	-	-
	Mid	11	-	-	-	7	11	14	18	21	24	28	31	-	-
	End	12	-	-	-	7	12	17	22	26	31	36	41	-	-
006U-S040 Series A/B/S Only	Start	22	22	31	39	47	56	64	73	81	90	98	107	115	124
	Mid	11	11	18	25	32	38	45	52	59	65	72	79	86	93
	End	12	12	21	29	38	46	55	63	72	80	89	97	106	114
006U-S050 Series A/B/S Only	Start	28	-	28	36	45	53	62	70	79	87	95	104	112	121
	Mid	14	-	14	21	27	34	41	48	55	61	68	75	82	88
	End	15	-	15	24	32	41	49	58	66	75	83	92	100	109
006U-S060 Series A/B/S Only	Start	33	-	-	33	41	50	58	67	75	84	92	101	109	118
	Mid	17	-	-	17	24	31	37	44	51	58	65	71	78	85
	End	19	-	-	19	27	36	44	53	61	70	78	87	95	104
006U-S070 Series A/B/S Only	Start	38	-	-	30	38	47	55	64	72	81	89	98	106	115
	Mid	20	-	-	13	20	27	33	40	47	54	60	67	74	81
	End	22	-	-	13	22	30	39	47	56	64	73	81	90	98
006U-S080 Series A/B/S Only	Start	44	-	-	-	36	44	53	61	69	78	86	95	103	112
	Mid	19	-	-	-	12	19	26	33	39	46	53	60	67	73
	End	25	-	-	-	16	25	33	42	50	59	67	76	84	93
012U-S040 Series A/S Only	Start	44	44	64	83	103	122	142	161	180	200	219	-	-	-
	Mid	24	24	36	48	61	73	86	98	110	123	135	-	-	-
	End	26	26	46	65	85	104	124	143	163	182	202	-	-	-
012U-S050 Series A/S Only	Start	55	-	55	74	94	113	133	152	172	191	211	-	-	-
	Mid	30	-	30	42	55	67	79	92	104	117	129	-	-	-
	End	33	-	33	52	72	91	111	130	150	169	189	-	-	-
012U-S060 Series A/S Only	Start	66	-	-	66	86	105	125	144	164	183	203	222	-	-
	Mid	35	-	-	35	48	60	73	85	97	110	122	135	-	-
	End	39	-	-	39	59	78	98	117	137	156	176	195	-	-
012U-S070 Series A/S Only	Start	77	-	-	57	77	96	116	135	155	174	194	213	-	-
	Mid	41	-	-	29	41	54	66	79	91	103	116	128	-	-
	End	46	-	-	26	46	65	85	104	124	143	163	182	-	-

Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)



Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
012U-S080 Series A/S Only	Start	88	-	-	-	69	88	108	127	147	166	186	205	-	-	
	Mid	47	-	-	-	35	47	59	72	84	97	109	122	-	-	
	End	52	-	-	-	33	52	72	91	111	130	150	169	-	-	
015U-S040 Series B Only	Start	55	55	76	97	118	140	161	182	203	-	-	-	-	-	
	Mid	26	26	43	60	77	94	111	128	145	-	-	-	-	-	
	End	29	29	51	72	93	114	135	156	178	-	-	-	-	-	
015U-S050 Series B Only	Start	68	-	68	90	111	132	153	174	195	-	-	-	-	-	
	Mid	33	-	33	50	67	84	101	118	135	-	-	-	-	-	
	End	37	-	37	58	79	100	121	143	164	-	-	-	-	-	
015U-S060 Series B Only	Start	82	-	-	82	104	125	146	167	188	210	-	-	-	-	
	Mid	40	-	-	40	57	74	91	107	124	141	-	-	-	-	
	End	44	-	-	44	65	86	108	129	150	171	-	-	-	-	
015U-S070 Series B Only	Start	96	-	-	75	96	117	138	160	181	202	-	-	-	-	
	Mid	46	-	-	29	46	63	80	97	114	131	-	-	-	-	
	End	51	-	-	30	51	73	94	115	136	157	-	-	-	-	
015U-S080 Series B Only	Start	110	-	-	-	88	110	131	152	173	194	-	-	-	-	
	Mid	53	-	-	-	36	53	70	87	104	121	-	-	-	-	
	End	59	-	-	-	38	59	81	102	123	144	-	-	-	-	
023U-S040 Series A/B/S Only	Start	85	85	117	150	182	215	247	280	312	345	377	410	442	475	
	Mid	41	41	65	89	114	138	162	186	211	235	259	284	308	332	
	End	45	45	78	110	143	175	208	240	273	305	338	370	403	435	
023U-S050 Series A/B/S Only	Start	107	-	107	139	172	204	237	269	302	334	367	399	432	464	
	Mid	52	-	52	76	100	125	149	173	198	222	246	270	295	319	
	End	58	-	58	90	123	155	188	220	253	285	317	350	382	415	
023U-S060 Series A/B/S Only	Start	127	-	-	127	160	192	225	257	290	322	354	387	419	452	
	Mid	61	-	-	61	85	110	134	158	182	207	231	255	280	304	
	End	68	-	-	68	100	133	165	198	230	263	295	328	360	393	
023U-S070 Series A/B/S Only	Start	147	-	-	115	147	180	212	245	277	310	342	375	407	440	
	Mid	72	-	-	47	72	96	120	145	169	193	217	242	266	290	
	End	80	-	-	47	80	112	145	177	210	242	275	307	340	372	
023U-S080 Series A/B/S Only	Start	169	-	-	-	137	169	202	234	267	299	332	364	397	429	
	Mid	81	-	-	-	57	81	106	130	154	179	203	227	251	276	
	End	90	-	-	-	58	90	123	155	188	220	253	285	318	350	
023U-S090 Series A/B/S Only	Start	190	-	-	-	-	157	190	222	255	287	320	352	385	417	
	Mid	92	-	-	-	-	68	92	116	141	165	189	214	238	262	
	End	102	-	-	-	-	70	102	135	167	200	232	265	297	330	
023U-S100 Series A/B/S Only	Start	211	-	-	-	-	-	179	211	244	276	309	341	374	406	
	Mid	102	-	-	-	-	-	78	102	127	151	175	199	224	248	
	End	114	-	-	-	-	-	81	114	146	179	211	243	276	308	
023U-S120 Series A/B/S Only	Start	254	-	-	-	-	-	-	-	222	254	287	319	352	384	
	Mid	122	-	-	-	-	-	-	-	98	122	146	171	195	219	
	End	136	-	-	-	-	-	-	-	103	136	168	201	233	266	
023U-S140 Series A/B/S Only	Start	295	-	-	-	-	-	-	-	-	-	263	295	328	360	
	Mid	143	-	-	-	-	-	-	-	-	-	119	143	168	192	
	End	159	-	-	-	-	-	-	-	-	-	127	159	192	224	
023U-S160 Series A/B/S Only	Start	339	-	-	-	-	-	-	-	-	-	-	-	306	339	
	Mid	163	-	-	-	-	-	-	-	-	-	-	-	138	163	
	End	181	-	-	-	-	-	-	-	-	-	-	-	148	181	
036U-S040 Series A/B/S Only	Start	132	132	188	244	300	356	412	468	524	580	636	691	747	803	
	Mid	64	64	102	141	179	218	256	295	333	371	410	448	487	525	
	End	71	71	127	183	239	295	351	407	463	519	575	630	686	742	
036U-S050 Series A/B/S Only	Start	165	-	165	221	277	333	389	445	501	556	612	668	724	780	
	Mid	80	-	80	119	157	196	234	272	311	349	388	426	464	503	
	End	89	-	89	145	201	257	313	369	425	481	537	593	649	704	
036U-S060 Series A/B/S Only	Start	198	-	-	198	254	310	366	422	478	534	590	646	702	758	
	Mid	97	-	-	97	135	173	212	250	289	327	366	404	442	481	
	End	107	-	-	107	163	219	275	331	387	443	499	555	611	667	
036U-S070 Series A/B/S Only	Start	232	-	-	176	232	288	343	399	455	511	567	623	679	735	
	Mid	112	-	-	73	112	150	189	227	266	304	342	381	419	458	
	End	124	-	-	68	124	180	236	292	348	404	460	516	572	628	

Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)



Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m	Torque at	Air torques N-m												
			Supply Pressure bar g												
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
036U-S080 Series A/B/S Only	Start	264	-	-	-	208	264	320	376	432	488	544	600	656	712
	Mid	128	-	-	-	90	128	167	205	243	282	320	359	397	435
	End	142	-	-	-	86	142	198	254	310	366	422	478	534	590
036U-S090 Series A/B/S Only	Start	297	-	-	-	-	241	297	353	409	465	521	577	633	689
	Mid	144	-	-	-	-	106	144	182	221	259	298	336	374	413
	End	160	-	-	-	-	104	160	216	272	328	384	440	495	551
036U-S100 Series A/B/S Only	Start	330	-	-	-	-	-	275	330	386	442	498	554	610	666
	Mid	160	-	-	-	-	-	122	160	199	237	275	314	352	391
	End	178	-	-	-	-	-	122	178	234	290	346	402	458	514
036U-S120 Series A/B/S Only	Start	397	-	-	-	-	-	-	-	341	397	453	508	564	620
	Mid	192	-	-	-	-	-	-	-	154	192	231	269	307	346
	End	214	-	-	-	-	-	-	-	158	214	269	325	381	437
036U-S140 Series A/B/S Only	Start	463	-	-	-	-	-	-	-	-	-	407	463	519	575
	Mid	224	-	-	-	-	-	-	-	-	-	186	224	263	301
	End	249	-	-	-	-	-	-	-	-	-	193	249	305	361
036U-S160 Series A/B/S Only	Start	531	-	-	-	-	-	-	-	-	-	-	-	475	531
	Mid	254	-	-	-	-	-	-	-	-	-	-	-	216	254
	End	282	-	-	-	-	-	-	-	-	-	-	-	227	282
046U-S040 Series A/B/S Only	Start	169	169	234	299	364	429	494	559	624	689	-	-	-	-
	Mid	81	81	130	179	227	276	324	373	421	470	-	-	-	-
	End	90	90	155	220	285	350	415	480	545	610	-	-	-	-
046U-S050 Series A/B/S Only	Start	211	-	211	276	341	406	471	536	601	666	-	-	-	-
	Mid	102	-	102	151	199	248	297	345	394	442	-	-	-	-
	End	114	-	114	179	243	308	373	438	503	568	-	-	-	-
046U-S060 Series A/B/S Only	Start	254	-	-	254	319	384	449	514	579	644	-	-	-	-
	Mid	122	-	-	122	171	219	268	316	365	414	-	-	-	-
	End	136	-	-	136	201	266	330	395	460	525	-	-	-	-
046U-S070 Series A/B/S Only	Start	295	-	-	230	295	360	425	490	555	620	-	-	-	-
	Mid	143	-	-	95	143	192	241	289	338	386	-	-	-	-
	End	159	-	-	94	159	224	289	354	419	484	-	-	-	-
046U-S080 Series A/B/S Only	Start	339	-	-	-	274	339	404	469	534	599	-	-	-	-
	Mid	163	-	-	-	114	163	211	260	308	357	-	-	-	-
	End	181	-	-	-	116	181	246	311	376	441	-	-	-	-
058U-S040 Series A/B/S Only	Start	211	211	295	378	461	-	-	-	-	-	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	102	102	165	227	290	-	-	-	-	-				
	End	114	114	197	280	364	-	-	-	-	-				
058U-S050 Series A/B/S Only	Start	254	-	254	338	421	504	-	-	-	-	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	122	-	122	185	247	309	-	-	-	-				
	End	136	-	136	219	302	386	-	-	-	-				
058U-S060 Series A/B/S Only	Start	295	-	-	295	379	462	545	-	-	-	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	143	-	-	143	206	268	331	-	-	-				
	End	159	-	-	159	243	326	409	-	-	-				
058U-S070 Series A/B/S Only	Start	339	-	-	256	339	422	506	-	-	-	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	163	-	-	100	163	225	288	-	-	-				
	End	181	-	-	97	181	264	347	-	-	-				
059U-S080 Series A/B/S Only	Start	397	-	-	-	-	397	480	563	647	730	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	192	-	-	-	-	192	255	317	380	442				
	End	214	-	-	-	-	214	297	380	464	547				
059U-S090 Series A/B/S Only	Start	463	-	-	-	-	-	463	546	629	713	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	224	-	-	-	-	-	224	287	349	412				
	End	249	-	-	-	-	-	249	332	416	499				
059U-S100 Series A/B/S Only	Start	531	-	-	-	-	-	-	531	614	698	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	254	-	-	-	-	-	-	254	317	379				
	End	282	-	-	-	-	-	-	282	366	449				
072U-S040 Series A/B/S Only	Start	264	264	376	488	600	712	824	936	-	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	128	128	206	283	360	438	515	592	-	-				
	End	142	142	254	366	478	590	702	813	-	-				
072U-S050 Series A/B/S Only	Start	330	-	330	442	554	666	778	890	-	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid	160	-	160	238	315	392	470	547	-	-				
	End	178	-	178	290	402	514	625	737	-	-				

Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)



Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
072U-S060 Series A/B/S Only	Start	397	Start	-	-	397	508	620	732	844	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid	192	Mid	-	-	192	270	347	424	502						
	End	214	End	-	-	214	325	437	549	661						
072U-S070 Series A/B/S Only	Start	463	Start	-	-	351	463	575	686	798	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid	224	Mid	-	-	147	224	302	379	456						
	End	249	End	-	-	137	249	361	473	585						
072U-S080 Series A/B/S Only	Start	531	Start	-	-	-	419	531	643	755	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid	254	Mid	-	-	-	177	254	332	409						
	End	282	End	-	-	-	171	282	394	506						
100U-S040 Series B/S Only	Start	367	Start	367	508	650	791	932	1073	1215	Maximum Allowable Pressure 6.9 Bar g					
	Mid	178	Mid	178	282	386	490	594	698	802						
	End	198	End	198	339	480	621	763	904	1045						
100U-S050 Series B/S Only	Start	459	Start	-	459	600	741	882	1024	1165	Maximum Allowable Pressure 6.9 Bar g					
	Mid	223	Mid	-	223	327	431	535	638	742						
	End	247	End	-	247	389	530	671	812	954						
100U-S060 Series B/S Only	Start	551	Start	-	-	551	693	834	975	1116	Maximum Allowable Pressure 6.9 Bar g					
	Mid	266	Mid	-	-	266	370	474	578	682						
	End	296	End	-	-	296	437	578	720	861						
100U-S070 Series B/S Only	Start	643	Start	-	-	502	643	784	925	1067	Maximum Allowable Pressure 6.9 Bar g					
	Mid	311	Mid	-	-	207	311	415	519	623						
	End	346	End	-	-	205	346	487	628	769						
100U-S080 Series B/S Only	Start	734	Start	-	-	-	593	734	876	1017	Maximum Allowable Pressure 6.9 Bar g					
	Mid	356	Mid	-	-	-	252	356	460	564						
	End	395	End	-	-	-	254	395	537	678						
135U-S040	Start	496	Start	496	687	878	1069	1259	1450	1641	1832	2023	2214	2405	2596	2787
	Mid	186	Mid	186	282	377	473	568	664	759	855	950	1046	1141	1237	1332
	End	241	End	241	432	623	814	1005	1196	1387	1578	1769	1959	2150	2341	2532
135U-S050	Start	620	Start	-	620	811	1002	1193	1384	1575	1766	1956	2147	2338	2529	2720
	Mid	233	Mid	-	233	329	424	520	615	711	806	902	997	1092	1188	1283
	End	301	End	-	301	492	683	874	1065	1256	1447	1638	1829	2020	2211	2402
135U-S060	Start	744	Start	-	-	744	935	1125	1316	1507	1698	1889	2080	2271	2462	2653
	Mid	280	Mid	-	-	280	375	471	566	662	757	853	948	1044	1139	1234
	End	361	End	-	-	361	552	743	934	1125	1316	1507	1698	1889	2080	2271
135U-S070	Start	868	Start	-	-	677	868	1059	1250	1441	1631	1822	2013	2204	2395	2586
	Mid	326	Mid	-	-	231	326	422	517	613	708	804	899	995	1090	1186
	End	422	End	-	-	231	422	613	804	995	1186	1377	1567	1758	1949	2140
135U-S080	Start	991	Start	-	-	-	800	991	1182	1373	1564	1755	1946	2137	2328	2519
	Mid	373	Mid	-	-	-	277	373	468	564	659	755	850	946	1041	1137
	End	482	End	-	-	-	291	482	673	864	1055	1246	1437	1628	1819	2010
135U-S090	Start	1116	Start	-	-	-	-	925	1116	1306	1497	1688	1879	2070	2261	2452
	Mid	420	Mid	-	-	-	-	324	420	515	611	706	802	897	992	1088
	End	542	End	-	-	-	-	351	542	733	924	1115	1306	1497	1688	1879
135U-S100	Start	1240	Start	-	-	-	-	-	1049	1240	1431	1622	1813	2003	2194	2385
	Mid	466	Mid	-	-	-	-	-	371	466	562	657	753	848	944	1039
	End	603	End	-	-	-	-	-	412	603	794	985	1176	1366	1557	1748
135U-S120	Start	1487	Start	-	-	-	-	-	-	-	1296	1487	1678	1869	2060	2251
	Mid	559	Mid	-	-	-	-	-	-	-	464	559	655	750	846	941
	End	723	End	-	-	-	-	-	-	-	532	723	914	1105	1296	1487
135U-S140	Start	1735	Start	-	-	-	-	-	-	-	-	-	1544	1735	1926	2117
	Mid	559	Mid	-	-	-	-	-	-	-	-	-	464	559	655	750
	End	844	End	-	-	-	-	-	-	-	-	-	653	844	1035	1226
135U-S160	Start	1983	Start	-	-	-	-	-	-	-	-	-	-	-	1792	1983
	Mid	746	Mid	-	-	-	-	-	-	-	-	-	-	-	650	746
	End	964	End	-	-	-	-	-	-	-	-	-	-	-	773	964
210U-S040	Start	771	Start	771	1097	1424	1750	2076	2403	2729	3055	3382	3708	4034	4360	4687
	Mid	372	Mid	372	535	698	861	1025	1188	1351	1514	1677	1840	2003	2167	2330
	End	391	End	391	718	1044	1370	1697	2023	2349	2676	3002	3328	3654	3981	4307
210U-S050	Start	964	Start	-	964	1290	1616	1943	2269	2595	2922	3248	3574	3900	4227	4553
	Mid	465	Mid	-	465	628	791	954	1118	1281	1444	1607	1770	1933	2096	2260
	End	489	End	-	489	816	1142	1468	1795	2121	2447	2773	3100	3426	3752	4079

Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)



Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
210U-S060	Start	1157	Start	-	-	1157	1483	1810	2136	2462	2788	3115	3441	3767	4094	4420
	Mid	558	Mid	-	-	558	721	884	1047	1210	1374	1537	1700	1863	2026	2189
	End	587	End	-	-	587	914	1240	1566	1892	2219	2545	2871	3198	3524	3850
210U-S070	Start	1349	Start	-	-	1023	1349	1675	2002	2328	2654	2981	3307	3633	3959	4286
	Mid	651	Mid	-	-	488	651	814	977	1140	1303	1467	1630	1793	1956	2119
	End	685	End	-	-	359	685	1011	1338	1664	1990	2317	2643	2969	3296	3622
210U-S080	Start	1542	Start	-	-	-	1216	1542	1869	2195	2521	2847	3174	3500	3826	4153
	Mid	744	Mid	-	-	-	581	744	907	1070	1233	1396	1560	1723	1886	2049
	End	783	End	-	-	-	457	783	1109	1436	1762	2088	2414	2741	3067	3393
210U-S090	Start	1734	Start	-	-	-	-	1408	1734	2061	2387	2713	3040	3366	3692	4018
	Mid	837	Mid	-	-	-	-	674	837	1000	1163	1326	1489	1653	1816	1979
	End	881	End	-	-	-	-	555	881	1207	1533	1860	2186	2512	2839	3165
210U-S100	Start	1928	Start	-	-	-	-	-	1601	1928	2254	2580	2906	3233	3559	3885
	Mid	930	Mid	-	-	-	-	-	767	930	1093	1256	1419	1582	1746	1909
	End	979	End	-	-	-	-	-	652	979	1305	1631	1958	2284	2610	2937
210U-S120	Start	2313	Start	-	-	-	-	-	-	-	1987	2313	2640	2966	3292	3619
	Mid	1116	Mid	-	-	-	-	-	-	-	953	1116	1279	1442	1605	1768
	End	1174	End	-	-	-	-	-	-	-	848	1174	1501	1827	2153	2480
210U-S140	Start	2699	Start	-	-	-	-	-	-	-	-	-	2373	2699	3026	3352
	Mid	1302	Mid	-	-	-	-	-	-	-	-	-	1139	1302	1465	1628
	End	1370	End	-	-	-	-	-	-	-	-	-	1044	1370	1697	2023
210U-S160	Start	3084	Start	-	-	-	-	-	-	-	-	-	-	-	2758	3084
	Mid	1488	Mid	-	-	-	-	-	-	-	-	-	-	-	1325	1488
	End	1566	End	-	-	-	-	-	-	-	-	-	-	-	1240	1566
270U-S040	Start	992	Start	992	1392	1793	2193	2594	2994	3394	3795	4195	Maximum Allowable Pressure 11 Bar g			
	Mid	529	Mid	529	826	1122	1419	1715	2012	2309	2605	2902	(Series S / Max Shell Pressure 8.3 Bar g)			
	End	588	End	588	988	1389	1789	2189	2590	2990	3391	3791	(Series A / Max Shell Pressure 12 Bar g)			
270U-S050	Start	1239	Start	-	1239	1640	2040	2441	2841	3241	3642	4042	Maximum Allowable Pressure 11 Bar g			
	Mid	661	Mid	-	661	957	1254	1550	1847	2143	2440	2737	(Series S / Max Shell Pressure 8.3 Bar g)			
	End	734	End	-	734	1134	1535	1935	2336	2736	3136	3537	(Series A / Max Shell Pressure 12 Bar g)			
270U-S060	Start	1487	Start	-	-	1487	1887	2288	2688	3088	3489	3889	Maximum Allowable Pressure 11 Bar g			
	Mid	793	Mid	-	-	793	1090	1386	1683	1979	2276	2573	(Series S / Max Shell Pressure 8.3 Bar g)			
	End	881	End	-	-	881	1282	1682	2082	2483	2883	3284	(Series A / Max Shell Pressure 12 Bar g)			
270U-S070	Start	1735	Start	-	-	1334	1735	2135	2536	2936	3336	3737	Maximum Allowable Pressure 11 Bar g			
	Mid	925	Mid	-	-	628	925	1222	1518	1815	2111	2408	(Series S / Max Shell Pressure 8.3 Bar g)			
	End	1028	End	-	-	627	1028	1428	1829	2229	2629	3030	(Series A / Max Shell Pressure 12 Bar g)			
270U-S080	Start	1983	Start	-	-	-	1582	1983	2383	2784	3184	3584	Maximum Allowable Pressure 11 Bar g			
	Mid	1057	Mid	-	-	-	761	1057	1354	1650	1947	2243	(Series S / Max Shell Pressure 8.3 Bar g)			
	End	1174	End	-	-	-	774	1174	1575	1975	2376	2776	(Series A / Max Shell Pressure 12 Bar g)			
270U-S090	Start	2231	Start	-	-	-	-	1831	2231	2631	3032	3432	Maximum Allowable Pressure 11 Bar g			
	Mid	1189	Mid	-	-	-	-	892	1189	1486	1782	2079	(Series S / Max Shell Pressure 8.3 Bar g)			
	End	1321	End	-	-	-	-	921	1321	1722	2122	2522	(Series A / Max Shell Pressure 12 Bar g)			
270U-S100	Start	2479	Start	-	-	-	-	-	2078	2479	2879	3280	Maximum Allowable Pressure 11 Bar g			
	Mid	1321	Mid	-	-	-	-	-	1025	1321	1618	1914	(Series S / Max Shell Pressure 8.3 Bar g)			
	End	1468	End	-	-	-	-	-	1068	1468	1868	2269	(Series A / Max Shell Pressure 12 Bar g)			
344U-S040	Start	1239	Start	1239	1751	2263	2774	3286	3797	4309	4821	5332	Maximum Allowable Pressure 8.3 Bar g			
	Mid	642	Mid	642	1021	1400	1779	2158	2537	2916	3295	3674	(Series A / Max Shell Pressure 12 Bar g)			
	End	714	End	714	1225	1737	2249	2760	3272	3783	4295	4807				
344U-S050	Start	1487	Start	-	1487	1998	2510	3022	3533	4045	4557	5068	Maximum Allowable Pressure 8.3 Bar g			
	Mid	771	Mid	-	771	1150	1529	1908	2287	2666	3045	3424	(Series A / Max Shell Pressure 12 Bar g)			
	End	857	End	-	857	1369	1880	2392	2904	3415	3927	4438				
344U-S060	Start	1735	Start	-	-	1735	2246	2758	3270	3781	4293	4805	Maximum Allowable Pressure 8.3 Bar g			
	Mid	900	Mid	-	-	900	1279	1658	2037	2416	2795	3174	(Series A / Max Shell Pressure 12 Bar g)			
	End	1000	End	-	-	1000	1511	2023	2535	3046	3558	4069				
344U-S070	Start	2231	Start	-	-	1719	2231	2743	3254	3766	4277	4789	Maximum Allowable Pressure 8.3 Bar g			
	Mid	1157	Mid	-	-	645	1157	1535	1914	2293	2672	3051	(Series A / Max Shell Pressure 12 Bar g)			
	End	1285	End	-	-	773	1285	1797	2308	2820	3331	3843				
344U-S080	Start	2479	Start	-	-	-	1967	2479	2990	3502	4014	4525	Maximum Allowable Pressure 8.3 Bar g			
	Mid	1285	Mid	-	-	-	773	1285	1664	2043	2422	2801	(Series A / Max Shell Pressure 12 Bar g)			
	End	1428	End	-	-	-	916	1428	1939	2451	2963	3474				

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Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
944U-S050 Series B/C/S Only	Start	4076	Start	-	4076	5504	6932	8360	9788	11216	12644	-	Maximum Allowable Pressure			
	Mid	2114	Mid	-	2114	3142	4169	5197	6225	7253	8281	-	8.3 bar g			
	End	2348	End	-	2348	3776	5205	6633	8061	9489	10917	-				
944U-S060 Series B/C/S Only	Start	4756	Start	-	-	4756	6184	7612	9040	10468	11896	13324	Maximum Allowable Pressure			
	Mid	2465	Mid	-	-	2465	3493	4521	5549	6577	7605	8633	8.3 bar g			
	End	2739	End	-	-	2739	4167	5596	7024	8452	9880	11308				
944U-S070 Series B/C/S Only	Start	5435	Start	-	-	4007	5435	6863	8291	9719	11147	12575	Maximum Allowable Pressure			
	Mid	2818	Mid	-	-	1790	2818	3846	4874	5902	6930	7958	8.3 bar g			
	End	3131	End	-	-	1703	3131	4559	5987	7415	8843	10271				
945U-S080 Series B/C/S Only	Start	6334	Start	-	-	-	4906	6334	7762	9190	10618	12046	Maximum Allowable Pressure			
	Mid	3285	Mid	-	-	-	2257	3285	4313	5341	6369	7397	8.3 bar g			
	End	3650	End	-	-	-	2222	3650	5078	6506	7934	9362				
945U-S090 Series B/C/S Only	Start	7389	Start	-	-	-	-	5961	7389	8817	10245	11673	Maximum Allowable Pressure			
	Mid	3832	Mid	-	-	-	-	2804	3832	4860	5888	6916	8.3 bar g			
	End	4258	End	-	-	-	-	2830	4258	5686	7114	8542				
945U-S100 Series B/C/S Only	Start	8446	Start	-	-	-	-	-	7018	8446	9874	11302	Maximum Allowable Pressure			
	Mid	4379	Mid	-	-	-	-	-	3351	4379	5407	6435	8.3 bar g			
	End	4866	End	-	-	-	-	-	3438	4866	6294	7722				
945U-S110 Series B/C/S Only	Start	9501	Start	-	-	-	-	-	-	8073	9501	10929	Maximum Allowable Pressure			
	Mid	4927	Mid	-	-	-	-	-	-	3899	4927	5955	8.3 bar g			
	End	5474	End	-	-	-	-	-	-	4046	5474	6902				
945U-S120 Series B/C/S Only	Start	9501	Start	-	-	-	-	-	-	8073	9501	10929	Maximum Allowable Pressure			
	Mid	4927	Mid	-	-	-	-	-	-	3899	4927	5955	8.3 bar g			
	End	5474	End	-	-	-	-	-	-	4046	5474	6902				
945U-S130 Series B/C/S Only	Start	10557	Start	-	-	-	-	-	-	-	-	9129	Maximum Allowable Pressure			
	Mid	5777	Mid	-	-	-	-	-	-	-	-	4349	8.3 bar g			
	End	6081	End	-	-	-	-	-	-	-	-	4653				
1150U-S040 Series B/C/S Only	Start	4223	Start	4223	6026	7828	9631	11434	13237	-	-	-	Maximum Allowable Pressure			
	Mid	2149	Mid	2149	3416	4684	5952	7220	8487	-	-	-	8.3 bar g			
	End	2387	End	2387	4190	5993	7796	9599	11402	-	-	-				
1150U-S050 Series B/C/S Only	Start	5279	Start	-	5279	7081	8884	10687	12490	-	-	-	Maximum Allowable Pressure			
	Mid	2685	Mid	-	2685	3953	5221	6488	7756	-	-	-	8.3 bar g			
	End	2984	End	-	2984	4787	6589	8392	10195	-	-	-				
1150U-S060 Series B/C/S Only	Start	6334	Start	-	-	6334	8137	9940	11742	13545	-	-	Maximum Allowable Pressure			
	Mid	3223	Mid	-	-	3223	4491	5759	7027	8294	-	-	8.3 bar g			
	End	3582	End	-	-	3582	5384	7187	8990	10793	-	-				
1150U-S070 Series B/C/S Only	Start	7389	Start	-	-	5586	7389	9192	10995	12798	-	-	Maximum Allowable Pressure			
	Mid	3760	Mid	-	-	2493	3760	5028	6296	7564	-	-	8.3 bar g			
	End	4178	End	-	-	2375	4178	5981	7784	9587	-	-				
1150U-S080 Series B/C/S Only	Start	8446	Start	-	-	-	6643	8446	10248	12051	-	-	Maximum Allowable Pressure			
	Mid	4298	Mid	-	-	-	3030	4298	5565	6833	-	-	8.3 bar g			
	End	4775	End	-	-	-	2972	4775	6578	8381	-	-				
1150U-S090 Series B/C/S Only	Start	9501	Start	-	-	-	-	7698	9501	11304	13107	-	Maximum Allowable Pressure			
	Mid	4835	Mid	-	-	-	-	3567	4835	6102	7370	-	8.3 bar g			
	End	5372	End	-	-	-	-	3569	5372	7175	8977	-				
1150U-S100 Series B/C/S Only	Start	10557	Start	-	-	-	-	-	8754	10557	12360	-	Maximum Allowable Pressure			
	Mid	5371	Mid	-	-	-	-	-	4103	5371	6638	-	8.3 bar g			
	End	5967	End	-	-	-	-	-	4164	5967	7770	-				
1480U-S040 Series S Only	Start	5435	Start	5435	7525	9615	11705	13795	15886	17976	20066	22156	Maximum Allowable Pressure			
	Mid	2634	Mid	2634	3951	5267	6584	7901	9218	10535	11852	13168	8.3 bar g			
	End	2926	End	2926	5017	7107	9197	11287	13377	15468	17558	19648				
1480U-S050 Series S Only	Start	6793	Start	-	6793	8883	10974	13064	15154	17244	19335	21425	Maximum Allowable Pressure			
	Mid	3292	Mid	-	3292	4609	5926	7243	8560	9876	11193	12510	8.3 bar g			
	End	3658	End	-	3658	5748	7838	9929	12019	14109	16199	18289				
1480U-S060 Series S Only	Start	8152	Start	-	-	8152	10242	12332	14423	16513	18603	20693	Maximum Allowable Pressure			
	Mid	3951	Mid	-	-	3951	5267	6584	7901	9218	10535	11852	8.3 bar g			
	End	4389	End	-	-	4389	6480	8570	10660	12750	14841	16931				
1480U-S070 Series S Only	Start	9510	Start	-	-	7420	9510	11601	13691	15781	17871	19962	Maximum Allowable Pressure			
	Mid	4600	Mid	-	-	3283	4600	5917	7234	8550	9867	11184	8.3 bar g			
	End	5111	End	-	-	3021	5111	7201	9291	11382	13472	15562				

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Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
1480U-S080 Series S Only	Start	10869	Start	-	-	-	8779	10869	12959	15050	17140	19230	Maximum Allowable Pressure			
	Mid	5267	Mid	-	-	-	3951	5267	6584	7901	9218	10535	8.3 bar g			
	End	5853	End	-	-	-	3762	5853	7943	10033	12123	14213				
1480U-S090 Series S Only	Start	12228	Start	-	-	-	-	10138	12228	14318	16408	18498	Maximum Allowable Pressure			
	Mid	5926	Mid	-	-	-	-	4609	5926	7243	8560	9876	8.3 bar g			
	End	6584	End	-	-	-	-	4494	6584	8674	10765	12855				
1480U-S100 Series S Only	Start	13586	Start	-	-	-	-	-	11496	13586	15677	17767	Maximum Allowable Pressure			
	Mid	6859	Mid	-	-	-	-	-	5542	6859	8176	9492	8.3 bar g			
	End	7621	End	-	-	-	-	-	5531	7621	9711	11801				
1485U-S040 Series B/C Only	Start	6129	Start	6129	8523	10917	13312	15706	18100	20494	22888	25282	Maximum Allowable Pressure			
	Mid	3017	Mid	3017	4334	5650	6967	8284	9601	10918	12235	13551	8.3 bar g			
	End	3352	End	3352	5746	8140	10534	12928	15323	17717	20111	22505				
1485U-S050 Series B/C Only	Start	7661	Start	5267	7661	10056	12450	14844	17238	19632	22026	24420	Maximum Allowable Pressure			
	Mid	3771	Mid	1377	3771	5088	6405	7721	9038	10355	11672	12989	8.3 bar g			
	End	4190	End	1796	4190	6584	8978	11372	13766	16161	18555	20949				
1485U-S060 Series B/C Only	Start	9194	Start	-	6800	9194	11588	13982	16376	18770	21164	23559	Maximum Allowable Pressure			
	Mid	4525	Mid	-	3208	4525	5842	7159	8476	9792	11109	12426	8.3 bar g			
	End	5028	End	-	2634	5028	7422	9816	12210	14604	16999	19393				
1485U-S070 Series B/C Only	Start	10726	Start	-	-	8332	10726	13120	15514	17908	20303	22697	Maximum Allowable Pressure			
	Mid	5279	Mid	-	-	3962	5279	6596	7913	9230	10547	11863	8.3 bar g			
	End	5866	End	-	-	3472	5866	8260	10654	13048	15442	17836				
1485U-S080 Series B/C Only	Start	12258	Start	-	-	-	9864	12258	14652	17046	19441	21835	Maximum Allowable Pressure			
	Mid	6033	Mid	-	-	-	4717	6033	7350	8667	9984	11301	8.3 bar g			
	End	6704	End	-	-	-	4310	6704	9098	11492	13886	16280				
1485U-S090 Series B/C Only	Start	13790	Start	-	-	-	-	11396	13790	16185	18579	20973	Maximum Allowable Pressure			
	Mid	6788	Mid	-	-	-	-	5471	6788	8104	9421	10738	8.3 bar g			
	End	7542	End	-	-	-	-	5148	7542	9936	12330	14724				
1485U-S100 Series B/C Only	Start	15323	Start	-	-	-	-	-	12929	15323	17717	20111	Maximum Allowable Pressure			
	Mid	7542	Mid	-	-	-	-	-	6225	7542	8859	10175	8.3 bar g			
	End	8380	End	-	-	-	-	-	5985	8380	10774	13168				
1934U-S040 Series B/C Only	Start	7661	Start	7661	10785	13908	17031	20154	23278	26401	29524	32647	Maximum Allowable Pressure			
	Mid	3771	Mid	3771	5489	7207	8924	10642	12360	14078	15796	17513	8.3 bar g			
	End	4190	End	4190	7313	10436	13560	16683	19806	22929	26052	29176				
1934U-S050 Series B/C Only	Start	9194	Start	6070	9194	12317	15440	18563	21687	24810	27933	31056	Maximum Allowable Pressure			
	Mid	4525	Mid	2807	4525	6243	7961	9679	11396	13114	14832	16550	8.3 bar g			
	End	5028	End	1905	5028	8151	11274	14398	17521	20644	23767	26890				
1934U-S060 Series B/C Only	Start	10726	Start	-	7603	10726	13849	16972	20096	23219	26342	29465	Maximum Allowable Pressure			
	Mid	5279	Mid	-	3561	5279	6997	8715	10433	12150	13868	15586	8.3 bar g			
	End	5866	End	-	2742	5866	8989	12112	15235	18359	21482	24605				
1934U-S070 Series B/C Only	Start	13790	Start	-	-	10667	13790	16914	20037	23160	26283	29407	Maximum Allowable Pressure			
	Mid	6788	Mid	-	-	5070	6788	8505	10223	11941	13659	15377	8.3 bar g			
	End	7542	End	-	-	4418	7542	10665	13788	16911	20035	23158				
1935U-S080 Series B/C Only	Start	15024	Start	-	-	-	11901	15024	18147	21271	24394	27517	Maximum Allowable Pressure			
	Mid	7281	Mid	-	-	-	5563	7281	8999	10716	12434	14152	8.3 bar g			
	End	8090	End	-	-	-	4967	8090	11213	14336	17460	20583				
1935U-S090 Series B/C Only	Start	17528	Start	-	-	-	-	14405	17528	20651	23774	26898	Maximum Allowable Pressure			
	Mid	8494	Mid	-	-	-	-	6777	8494	10212	11930	13648	8.3 bar g			
	End	9438	End	-	-	-	-	6315	9438	12561	15685	18808				
1935U-S100 Series B/C Only	Start	20032	Start	-	-	-	-	-	16909	20032	23155	26279	Maximum Allowable Pressure			
	Mid	9708	Mid	-	-	-	-	-	7990	9708	11426	13144	8.3 bar g			
	End	10787	End	-	-	-	-	-	7663	10787	13910	17033				
1935U-S110 Series B/C Only	Start	22536	Start	-	-	-	-	-	-	19413	22536	25659	Maximum Allowable Pressure			
	Mid	10921	Mid	-	-	-	-	-	-	9204	10921	12639	8.3 bar g			
	End	12135	End	-	-	-	-	-	-	9012	12135	15258				
1935U-S120 Series B/C Only	Start	22536	Start	-	-	-	-	-	-	-	19413	22536	Maximum Allowable Pressure			
	Mid	10921	Mid	-	-	-	-	-	-	-	9204	10921	8.3 bar g			
	End	12135	End	-	-	-	-	-	-	-	9012	12135				
2380U-S040 Series S Only	Start	8739	Start	8739	12101	15462	18823	22185	25546	-	-	-	Maximum Allowable Pressure			
	Mid	4235	Mid	4235	6368	8501	10634	12766	14899	-	-	-	8.3 bar g			
	End	4706	End	4706	8067	11428	14790	18151	21512	-	-	-				

Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)



Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
3072U-S110 Series C Only	Start	34855	Start	-	-	-	-	-	-	29951	34855	39760	Maximum Allowable Pressure			
	Mid	16891	Mid	-	-	-	-	-	-	14194	16891	19589	8.3 bar g			
	End	18768	End	-	-	-	-	-	-	13863	18768	23673				
3072U-S120 Series C Only	Start	34855	Start	-	-	-	-	-	-	29951	34855	Maximum Allowable Pressure				
	Mid	16891	Mid	-	-	-	-	-	-	14194	16891	8.3 bar g				
	End	18768	End	-	-	-	-	-	-	13863	18768					
3731U-S040 Series C Only	Start	15491	Start	15491	21449	27408	33366	39324	45282	51240	57198	63156	Maximum Allowable Pressure			
	Mid	7507	Mid	7507	10784	14061	17338	20615	23892	27169	30446	33723	8.3 bar g			
	End	8341	End	8341	14300	20258	26216	32174	38132	44090	50048	56007				
3731U-S050 Series C Only	Start	19364	Start	13406	19364	25322	31280	37238	43197	49155	55113	61071	Maximum Allowable Pressure			
	Mid	9384	Mid	6107	9384	12661	15938	19215	22492	25769	29046	32323	8.3 bar g			
	End	10427	End	4469	10427	16385	22343	28301	34259	40218	46176	52134				
3731U-S060 Series C Only	Start	23237	Start	-	17279	23237	29195	35153	41111	47069	53028	58986	Maximum Allowable Pressure			
	Mid	11261	Mid	-	7984	11261	14538	17815	21092	24369	27646	30923	8.3 bar g			
	End	12512	End	-	6554	12512	18470	24428	30387	36345	42303	48261				
3731U-S070 Series C Only	Start	27110	Start	-	-	21152	27110	33068	39026	44984	50942	56900	Maximum Allowable Pressure			
	Mid	13138	Mid	-	-	9861	13138	16415	19692	22969	26246	29523	8.3 bar g			
	End	14598	End	-	-	8639	14598	20556	26514	32472	38430	44388				
3731U-S080 Series C Only	Start	30982	Start	-	-	-	25024	30982	36941	42899	48857	54815	Maximum Allowable Pressure			
	Mid	15015	Mid	-	-	-	11738	15015	18292	21569	24846	28123	8.3 bar g			
	End	16683	End	-	-	-	10725	16683	22641	28599	34557	40515				
3731U-S090 Series C Only	Start	34855	Start	-	-	-	-	28897	34855	40813	46772	52730	Maximum Allowable Pressure			
	Mid	16891	Mid	-	-	-	-	13614	16891	20168	23445	26722	8.3 bar g			
	End	18768	End	-	-	-	-	12810	18768	24726	30685	36643				
3731U-S100 Series C Only	Start	38728	Start	-	-	-	-	-	32770	38728	44686	50644	Maximum Allowable Pressure			
	Mid	18768	Mid	-	-	-	-	-	15491	18768	22045	25322	8.3 bar g			
	End	20854	End	-	-	-	-	-	14895	20854	26812	32770				
4534U-S040 Series C Only	Start	15491	Start	15491	22730	29970	37209	44448	51687	58926	66165	-	Maximum Allowable Pressure			
	Mid	7507	Mid	7507	11489	15470	19452	23434	27415	31397	35378	-	8.3 bar g			
	End	8341	End	8341	15581	22820	30059	37298	44537	51776	59016	-				
4534U-S050 Series C Only	Start	23237	Start	15998	23237	30476	37715	44954	52194	59433	66672	-	Maximum Allowable Pressure			
	Mid	11261	Mid	7279	11261	15243	19224	23206	27187	31169	35150	-	8.3 bar g			
	End	12512	End	5273	12512	19751	26990	34230	41469	48708	55947	-				
4534U-S060 Series C Only	Start	27110	Start	-	19871	27110	34349	41588	48827	56066	63305	-	Maximum Allowable Pressure			
	Mid	13138	Mid	-	9156	13138	17119	21101	25083	29064	33046	-	8.3 bar g			
	End	14598	End	-	7358	14598	21837	29076	36315	43554	50793	-				
4534U-S070 Series C Only	Start	30982	Start	-	-	23743	30982	38222	45461	52700	59939	67178	Maximum Allowable Pressure			
	Mid	15015	Mid	-	-	11033	15015	18996	22978	26959	30941	34922	8.3 bar g			
	End	16683	End	-	-	9444	16683	23922	31161	38400	45640	52879				
4534U-S080 Series C Only	Start	34855	Start	-	-	-	27616	34855	42095	49334	56573	63812	Maximum Allowable Pressure			
	Mid	16891	Mid	-	-	-	12910	16891	20873	24855	28836	32818	8.3 bar g			
	End	18768	End	-	-	-	11529	18768	26007	33247	40486	47725				
4534U-S090 Series C Only	Start	38728	Start	-	-	-	-	31489	38728	45967	53206	60446	Maximum Allowable Pressure			
	Mid	18768	Mid	-	-	-	-	14787	18768	22750	26731	30713	8.3 bar g			
	End	20854	End	-	-	-	-	13614	20854	28093	35332	42571				
5336U-S040 Series C Only	Start	22153	Start	22153	30673	39193	47713	56233	64754	-	-	-	Maximum Allowable Pressure			
	Mid	10735	Mid	10735	15422	20108	24794	29480	34166	-	-	-	8.3 bar g			
	End	11928	End	11928	20448	28969	37489	46009	54529	-	-	-				
5336U-S050 Series C Only	Start	27691	Start	19170	27691	36211	44731	53251	61771	-	-	-	Maximum Allowable Pressure			
	Mid	13419	Mid	8733	13419	18105	22792	27478	32164	-	-	-	8.3 bar g			
	End	14910	End	6390	14910	23431	31951	40471	48991	-	-	-				
5336U-S060 Series C Only	Start	33229	Start	-	24709	33229	41749	50269	58789	67310	-	-	Maximum Allowable Pressure			
	Mid	16103	Mid	-	11417	16103	20789	25475	30162	34848	-	-	8.3 bar g			
	End	17892	End	-	9372	17892	26413	34933	43453	51973	-	-				
5336U-S070 Series C Only	Start	38767	Start	-	-	30247	38767	47287	55807	64328	-	-	Maximum Allowable Pressure			
	Mid	18787	Mid	-	-	14101	18787	23473	28159	32846	-	-	8.3 bar g			
	End	20875	End	-	-	12354	20875	29395	37915	46435	-	-				

Air torques N-m

Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)



Series A/ B/ C/ S: Models 003 - 7114
Spring Return Fail Closed and Fail Open
Symmetrical Yoke Design

Model Number	Spring torques N-m		Torque at	Air torques N-m												
				Supply Pressure bar g												
				2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
5336U-S080 Series C Only	Start	44305	Start	-	-	-	35785	44305	52825	61345	-	-	Maximum Allowable Pressure			
	Mid	21471	Mid	-	-	-	16785	21471	26157	30843	-	-	8.3 bar g			
	End	23857	End	-	-	-	15336	23857	32377	40897	-	-				
5336U-S090 Series C Only	Start	49843	Start	-	-	-	-	41323	49843	58363	66884	-	Maximum Allowable Pressure			
	Mid	24155	Mid	-	-	-	-	19469	24155	28841	33527	-	8.3 bar g			
	End	26839	End	-	-	-	-	18318	26839	35359	43879	-	POA, Consult Factory			
5336U-S100 Series C Only	Start	55381	Start	-	-	-	-	-	46861	55381	63901	-	Maximum Allowable Pressure			
	Mid	26839	Mid	-	-	-	-	-	22152	26839	31525	-	8.3 bar g			
	End	29821	End	-	-	-	-	-	21301	29821	38341	-	POA, Consult Factory			
5336U-S110 Series C Only	Start	60919	Start	-	-	-	-	-	-	52399	60919	69440	Maximum Allowable Pressure			
	Mid	29522	Mid	-	-	-	-	-	-	24836	29522	34209	8.3 bar g			
	End	32803	End	-	-	-	-	-	-	24283	32803	41323	POA, Consult Factory			
5336U-S120 Series C Only	Start	66458	Start	-	-	-	-	-	-	-	57937	66458	Maximum Allowable Pressure			
	Mid	32206	Mid	-	-	-	-	-	-	-	23686	28372	8.3 bar g			
	End	35785	End	-	-	-	-	-	-	-	27265	35785	POA, Consult Factory			
6044U-S040 Series C Only	Start	24759	Start	24759	34282	43805	53328	62851	72373	81896	91419	100942	Maximum Allowable Pressure			
	Mid	11999	Mid	11999	17236	22474	27711	32949	38186	43424	48661	53899	8.3 bar g			
	End	13332	End	13332	22855	32378	41900	51423	60946	70469	79992	89514				
6044U-S050 Series C Only	Start	30949	Start	21426	30949	40472	49995	59518	69040	78563	88086	97609	Maximum Allowable Pressure			
	Mid	14998	Mid	9761	14998	20236	25473	30711	35948	41186	46424	51661	8.3 bar g			
	End	16665	End	7142	16665	26188	35711	45233	54756	64279	73802	83325				
6044U-S060 Series C Only	Start	37139	Start	-	27616	37139	46662	56185	65707	75230	84753	94276	Maximum Allowable Pressure			
	Mid	17998	Mid	-	12761	17998	23236	28473	33711	38948	44186	49423	8.3 bar g			
	End	19998	End	-	10475	19998	29521	39044	48566	58089	67612	77135				
6044U-S070 Series C Only	Start	43329	Start	-	-	33806	43329	52852	62375	71897	81420	90943	Maximum Allowable Pressure			
	Mid	20998	Mid	-	-	15760	20998	26235	31473	36710	41948	47185	8.3 bar g			
	End	23331	End	-	-	13808	23331	32854	42377	51899	61422	70945				
6044U-S080 Series C Only	Start	49519	Start	-	-	-	39996	49519	59041	68564	78087	87610	Maximum Allowable Pressure			
	Mid	23998	Mid	-	-	-	18760	23998	29235	34473	39710	44948	8.3 bar g			
	End	26664	End	-	-	-	17141	26664	36187	45709	55232	64755				
7114U-S040 Series C Only	Start	29141	Start	29141	40348	51556	62764	73972	85180	96388	107596	118804	Maximum Allowable Pressure			
	Mid	14122	Mid	14122	20286	26451	32615	38779	44944	51108	57272	63437	8.3 bar g			
	End	15691	End	15691	26899	38107	49315	60523	71730	82938	94146	105354				
7114U-S050 Series C Only	Start	36426	Start	25218	36426	47634	58842	70050	81258	92466	103674	114882	Maximum Allowable Pressure			
	Mid	17653	Mid	11488	17653	23817	29981	36146	42310	48474	54639	60803	8.3 bar g			
	End	19613	End	8405	19613	30821	42029	53237	64445	75653	86861	98069				
7114U-S060 Series C Only	Start	43711	Start	-	32503	43711	54919	66127	77335	88542	99750	110958	Maximum Allowable Pressure			
	Mid	21183	Mid	-	15019	21183	27347	33512	39676	45840	52005	58169	8.3 bar g			
	End	23537	End	-	12329	23537	34745	45952	57160	68368	79576	90784				
7114U-S070 Series C Only	Start	50996	Start	-	-	39788	50996	62204	73412	84620	95828	107036	Maximum Allowable Pressure			
	Mid	24714	Mid	-	-	18549	24714	30878	37042	43207	49371	55535	8.3 bar g			
	End	27459	End	-	-	16252	27459	38667	49875	61083	72291	83499				
7114U-S080 Series C Only	Start	58281	Start	-	-	-	47073	58281	69489	80697	91905	103113	Maximum Allowable Pressure			
	Mid	28244	Mid	-	-	-	22080	28244	34408	40573	46737	52901	8.3 bar g			
	End	31382	End	-	-	-	20174	31382	42590	53798	65006	76214				
7114U-S090 Series C Only	Start	65566	Start	-	-	-	-	54358	65566	76774	87982	99190	Maximum Allowable Pressure			
	Mid	31774	Mid	-	-	-	-	25610	31774	37939	44103	50268	8.3 bar g			
	End	35305	End	-	-	-	-	24097	35305	46513	57721	68929	POA, Consult Factory			
7114U-S100 Series C Only	Start	72852	Start	-	-	-	-	-	61644	72852	84059	95267	Maximum Allowable Pressure			
	Mid	35305	Mid	-	-	-	-	-	29141	35305	41469	47634	8.3 bar g			
	End	39228	End	-	-	-	-	-	28020	39228	50436	61643	POA, Consult Factory			
7114U-S110 Series C Only	Start	80137	Start	-	-	-	-	-	-	68929	80137	91345	Maximum Allowable Pressure			
	Mid	38835	Mid	-	-	-	-	-	-	32671	38835	45000	8.3 bar g			
	End	43151	End	-	-	-	-	-	-	31943	43151	54359	POA, Consult Factory			
7114U-S120 Series C Only	Start	87422	Start	-	-	-	-	-	-	-	76214	87422	Maximum Allowable Pressure			
	Mid	42366	Mid	-	-	-	-	-	-	-	36202	42366	8.3 bar g			
	End	47073	End	-	-	-	-	-	-	-	35865	47073	POA, Consult Factory			

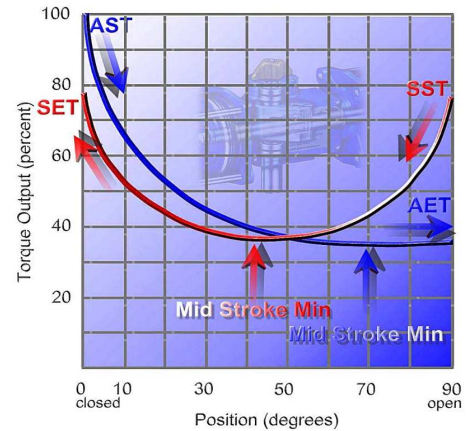
Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)

The chart to the right shows the torque curve of the Morin canted yoke spring return for fail closed(fail clockwise) operation.

Proper selection of the actuator is critical to the successful operation of your automated package.

Note: Air torque curve shown is with air pressure equal to spring code, i.e. -S060 at 60 psig. Curve will vary for pressures used not equal to spring code.

AST = Air Start Torque SST = Spring Start Torque
 AET = Air End Torque SET = Spring End Torque



Model Number	Spring Torques N-m	Torque at	Air torques N-m														
			Supply Pressure bar g														
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0		
023UC-S040	SST	78	AST	95	139	183	227	271	314	358	402	446	490	534	577	621	
	Series A/B/S Only	Mid Stroke Min	31	Mid Stroke Min	31	57	83	109	135	161	187	213	239	265	291	317	343
		SET	63	AET	31	57	83	109	135	161	187	213	239	265	291	317	343
023UC-S050	SST	98	AST	-	120	164	208	251	295	339	383	427	471	515	558	602	
	Series A/B/S Only	Mid Stroke Min	40	Mid Stroke Min	-	40	66	92	118	144	170	196	222	248	274	300	326
		SET	81	AET	-	40	66	92	118	144	170	196	222	248	274	300	326
023UC-S060	SST	116	AST	-	-	143	187	230	274	318	362	406	450	493	537	581	
	Series A/B/S Only	Mid Stroke Min	47	Mid Stroke Min	-	47	73	99	125	151	177	203	229	255	281	307	
		SET	95	AET	-	47	73	99	125	151	177	203	229	255	281	307	
023UC-S070	SST	135	AST	-	-	-	166	209	253	297	341	385	429	473	516	560	
	Series A/B/S Only	Mid Stroke Min	55	Mid Stroke Min	-	-	55	81	107	133	159	185	211	237	263	289	
		SET	112	AET	-	-	55	81	107	133	159	185	211	237	263	289	
023UC-S080	SST	155	AST	-	-	-	-	190	234	278	322	366	410	453	497	541	
	Series A/B/S Only	Mid Stroke Min	62	Mid Stroke Min	-	-	-	62	88	114	140	166	192	218	244	270	
		SET	127	AET	-	-	-	62	88	114	140	166	192	218	244	270	
023UC-S090	SST	174	AST	-	-	-	-	-	213	257	301	345	389	432	476	520	
	Series A/B/S Only	Mid Stroke Min	71	Mid Stroke Min	-	-	-	-	71	96	122	148	174	200	226	252	
		SET	143	AET	-	-	-	-	71	96	122	148	174	200	226	252	
023UC-S100	SST	194	AST	-	-	-	-	-	-	237	281	325	369	413	457	500	
	Series A/B/S Only	Mid Stroke Min	78	Mid Stroke Min	-	-	-	-	-	78	104	130	156	182	208	234	
		SET	159	AET	-	-	-	-	-	78	104	130	156	182	208	234	
023UC-S120	SST	233	AST	-	-	-	-	-	-	-	-	286	329	373	417	461	
	Series A/B/S Only	Mid Stroke Min	94	Mid Stroke Min	-	-	-	-	-	-	-	94	120	146	172	197	
		SET	190	AET	-	-	-	-	-	-	-	94	120	146	172	197	
023UC-S140	SST	271	AST	-	-	-	-	-	-	-	-	-	-	332	376	420	
	Series A/B/S Only	Mid Stroke Min	110	Mid Stroke Min	-	-	-	-	-	-	-	-	-	110	136	162	
		SET	223	AET	-	-	-	-	-	-	-	-	-	110	136	162	
023UC-S160	SST	310	AST	-	-	-	-	-	-	-	-	-	-	-	-	381	
	Series A/B/S Only	Mid Stroke Min	125	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	-	125	
		SET	253	AET	-	-	-	-	-	-	-	-	-	-	-	125	
036UC-S040	SST	121	AST	148	224	299	375	450	526	602	677	753	828	904	979	1055	
	Series A/B/S Only	Mid Stroke Min	49	Mid Stroke Min	49	94	139	183	228	273	318	362	407	452	497	541	586
		SET	100	AET	49	94	139	183	228	273	318	362	407	452	497	541	586
036UC-S050	SST	151	AST	-	185	261	336	412	487	563	638	714	789	865	940	1016	
	Series A/B/S Only	Mid Stroke Min	62	Mid Stroke Min	-	62	106	151	196	241	285	330	375	420	464	509	554
		SET	125	AET	-	62	106	151	196	241	285	330	375	420	464	509	554
036UC-S060	SST	182	AST	-	-	223	298	374	449	525	600	676	751	827	902	978	
	Series A/B/S Only	Mid Stroke Min	74	Mid Stroke Min	-	74	119	164	208	253	298	343	387	432	477	522	
		SET	150	AET	-	74	119	164	208	253	298	343	387	432	477	522	
036UC-S070	SST	212	AST	-	-	-	260	336	411	487	562	638	713	789	864	940	
	Series A/B/S Only	Mid Stroke Min	86	Mid Stroke Min	-	-	86	130	175	220	265	309	354	399	444	488	
		SET	174	AET	-	-	86	130	175	220	265	309	354	399	444	488	
036UC-S080	SST	242	AST	-	-	-	-	297	372	448	523	599	674	750	825	901	
	Series A/B/S Only	Mid Stroke Min	98	Mid Stroke Min	-	-	-	98	143	188	232	277	322	367	411	456	
		SET	199	AET	-	-	-	98	143	188	232	277	322	367	411	456	



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Closed (CW)
Canted Yoke Design

Model Number	Spring Torques		Torque at	Air torques N-m												
				Supply Pressure bar g												
				2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
036UC-S090 Series A/B/S Only	SST	272	AST	-	-	-	-	-	334	409	485	560	636	711	787	862
	Mid Stroke Min	110	Mid Stroke Min	-	-	-	-	-	110	155	200	244	289	334	379	423
	SET	224	AET	-	-	-	-	-	110	155	200	244	289	334	379	423
036UC-S100 Series A/B/S Only	SST	303	AST	-	-	-	-	-	-	371	447	522	598	673	749	824
	Mid Stroke Min	123	Mid Stroke Min	-	-	-	-	-	-	123	168	212	257	302	347	391
	SET	249	AET	-	-	-	-	-	-	123	168	212	257	302	347	391
036UC-S120 Series A/B/S Only	SST	363	AST	-	-	-	-	-	-	-	-	445	521	596	672	747
	Mid Stroke Min	147	Mid Stroke Min	-	-	-	-	-	-	-	-	147	192	237	282	326
	SET	299	AET	-	-	-	-	-	-	-	-	147	192	237	282	326
036UC-S140 Series A/B/S Only	SST	424	AST	-	-	-	-	-	-	-	-	-	-	520	595	671
	Mid Stroke Min	172	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	172	217	261
	SET	349	AET	-	-	-	-	-	-	-	-	-	-	172	217	261
036UC-S160 Series A/B/S Only	SST	486	AST	-	-	-	-	-	-	-	-	-	-	-	-	596
	Mid Stroke Min	195	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	-	-	195
	SET	395	AET	-	-	-	-	-	-	-	-	-	-	-	-	195
046UC-S040 Series A/B/S Only	SST	155	AST	190	278	366	453	541	629	716	804	892	979	1067	1155	-
	Mid Stroke Min	62	Mid Stroke Min	62	114	166	218	270	322	374	426	478	530	582	634	-
	SET	127	AET	62	114	166	218	270	322	374	426	478	530	582	634	-
046UC-S050 Series A/B/S Only	SST	194	AST	-	237	325	413	500	588	676	763	851	939	1026	1114	-
	Mid Stroke Min	78	Mid Stroke Min	-	78	130	182	234	286	338	390	442	494	546	598	-
	SET	159	AET	-	78	130	182	234	286	338	390	442	494	546	598	-
046UC-S060 Series A/B/S Only	SST	233	AST	-	-	286	373	461	549	636	724	812	899	987	1075	1162
	Mid Stroke Min	94	Mid Stroke Min	-	-	94	146	197	249	301	353	405	457	509	561	613
	SET	190	AET	-	-	94	146	197	249	301	353	405	457	509	561	613
046UC-S070 Series A/B/S Only	SST	271	AST	-	-	-	332	420	507	595	683	770	858	946	1033	1121
	Mid Stroke Min	110	Mid Stroke Min	-	-	-	110	162	214	266	318	370	422	474	526	578
	SET	223	AET	-	-	-	110	162	214	266	318	370	422	474	526	578
046UC-S080 Series A/B/S Only	SST	289	AST	-	-	-	-	381	468	556	644	731	819	907	994	1082
	Mid Stroke Min	125	Mid Stroke Min	-	-	-	-	125	177	229	281	333	385	437	489	541
	SET	235	AET	-	-	-	-	125	177	229	281	333	385	437	489	541
058UC-S040 Series A/B/S Only	SST	194	AST	237	350	462	575	687	800	912	1025	1137	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	78	Mid Stroke Min	78	145	212	278	345	412	478	545	612				
	SET	159	AET	78	145	212	278	345	412	478	545	612				
058UC-S050 Series A/B/S Only	SST	233	AST	-	286	398	510	623	735	848	960	1073	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	94	Mid Stroke Min	-	94	160	227	294	360	427	494	560				
	SET	190	AET	-	94	160	227	294	360	427	494	560				
058UC-S060 Series A/B/S Only	SST	271	AST	-	-	332	444	557	669	782	894	1007	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	110	Mid Stroke Min	-	-	110	177	243	310	377	443	510				
	SET	223	AET	-	-	110	177	243	310	377	443	510				
058UC-S070 Series A/B/S Only	SST	310	AST	-	-	-	381	493	606	718	831	943	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	125	Mid Stroke Min	-	-	-	125	191	258	325	391	458				
	SET	253	AET	-	-	-	125	191	258	325	391	458				
059UC-S080 Series A/B/S Only	SST	363	AST	-	-	-	-	445	558	670	783	895	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	147	Mid Stroke Min	-	-	-	-	147	214	281	347	414				
	SET	299	AET	-	-	-	-	147	214	281	347	414				
059UC-S090 Series A/B/S Only	SST	424	AST	-	-	-	-	-	520	632	745	857	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	172	Mid Stroke Min	-	-	-	-	-	172	239	305	372				
	SET	349	AET	-	-	-	-	-	172	239	305	372				
059UC-S100 Series A/B/S Only	SST	486	AST	-	-	-	-	-	-	596	709	821	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	195	Mid Stroke Min	-	-	-	-	-	-	195	262	328				
	SET	395	AET	-	-	-	-	-	-	195	262	328				
072UC-S040 Series A/B/S Only	SST	242	AST	297	448	599	750	901	1052	-	-	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	98	Mid Stroke Min	98	188	277	367	456	546	-	-	-				
	SET	199	AET	98	188	277	367	456	546	-	-	-				
072UC-S050 Series A/B/S Only	SST	303	AST	-	371	522	673	824	975	1126	-	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	123	Mid Stroke Min	-	123	212	302	391	481	570	-	-				
	SET	249	AET	-	123	212	302	391	481	570	-	-				
072UC-S060 Series A/B/S Only	SST	363	AST	-	-	445	596	747	898	1049	-	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	147	Mid Stroke Min	-	-	147	237	326	416	505	-	-				
	SET	299	AET	-	-	147	237	326	416	505	-	-				
072UC-S070 Series A/B/S Only	SST	424	AST	-	-	-	520	671	822	973	-	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	172	Mid Stroke Min	-	-	-	172	261	351	440	-	-				
	SET	349	AET	-	-	-	172	261	351	440	-	-				
072UC-S080 Series A/B/S Only	SST	486	AST	-	-	-	-	596	747	898	-	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	195	Mid Stroke Min	-	-	-	-	195	284	374	-	-				
	SET	395	AET	-	-	-	-	195	284	374	-	-				
100UC-S040 Series B/S Only	SST	336	AST	412	603	794	984	-	-	-	-	-	Maximum Allowable Pressure 6.9 bar g			
	Mid Stroke Min	136	Mid Stroke Min	136	249	362	475	-	-	-	-	-				
	SET	277	AET	136	249	362	475	-	-	-	-	-				



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Closed (CW)
Canted Yoke Design

Model Number	Spring Torques		Torque at	Air torques N-m												
				Supply Pressure bar g												
				2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
100UC-S050 Series B/S Only	SST	420	AST	-	515	706	896	1087	-	-	Maximum Allowable Pressure					
	Mid Stroke Min	171	Mid Stroke Min	-	171	284	397	510	-	-	6.9 bar g					
	SET	346	AET	-	171	284	397	510	-	-						
100UC-S060 Series B/S Only	SST	505	AST	-	-	619	810	1000	-	-	Maximum Allowable Pressure					
	Mid Stroke Min	204	Mid Stroke Min	-	-	204	317	430	-	-	6.9 bar g					
	SET	414	AET	-	-	204	317	430	-	-						
100UC-S070 Series B/S Only	SST	589	AST	-	-	-	722	913	1103	-	Maximum Allowable Pressure					
	Mid Stroke Min	239	Mid Stroke Min	-	-	-	239	351	464	-	6.9 bar g					
	SET	484	AET	-	-	-	239	351	464	-						
100UC-S080 Series B/S Only	SST	673	AST	-	-	-	-	825	1015	-	Maximum Allowable Pressure					
	Mid Stroke Min	273	Mid Stroke Min	-	-	-	-	273	386	-	6.9 bar g					
	SET	554	AET	-	-	-	-	273	386	-						
135UC-S040	SST	454	AST	557	815	1072	1330	1588	1846	2104	2361	2619	2877	3135	3393	3651
	Mid Stroke Min	166	Mid Stroke Min	166	319	472	625	777	930	1083	1236	1388	1541	1694	1847	1999
	SET	337	AET	166	319	472	625	777	930	1083	1236	1388	1541	1694	1847	1999
135UC-S050	SST	568	AST	-	696	954	1212	1470	1727	1985	2243	2501	2759	3017	3274	3532
	Mid Stroke Min	208	Mid Stroke Min	-	208	361	513	666	819	972	1124	1277	1430	1583	1735	1888
	SET	422	AET	-	208	361	513	666	819	972	1124	1277	1430	1583	1735	1888
135UC-S060	SST	681	AST	-	-	835	1093	1351	1609	1866	2124	2382	2640	2898	3156	3413
	Mid Stroke Min	249	Mid Stroke Min	-	-	249	402	555	708	860	1013	1166	1319	1472	1624	1777
	SET	506	AET	-	-	249	402	555	708	860	1013	1166	1319	1472	1624	1777
135UC-S070	SST	795	AST	-	-	-	974	1232	1490	1748	2006	2264	2521	2779	3037	3295
	Mid Stroke Min	291	Mid Stroke Min	-	-	-	291	444	597	749	902	1055	1208	1360	1513	1666
	SET	591	AET	-	-	-	291	444	597	749	902	1055	1208	1360	1513	1666
135UC-S080	SST	908	AST	-	-	-	-	1113	1371	1629	1887	2145	2403	2660	2918	3176
	Mid Stroke Min	333	Mid Stroke Min	-	-	-	-	333	485	638	791	944	1096	1249	1402	1555
	SET	675	AET	-	-	-	-	333	485	638	791	944	1096	1249	1402	1555
135UC-S090	SST	1022	AST	-	-	-	-	995	1253	1511	1768	2026	2284	2542	2800	3058
	Mid Stroke Min	374	Mid Stroke Min	-	-	-	-	221	374	527	680	832	985	1138	1291	1443
	SET	759	AET	-	-	-	-	221	374	527	680	832	985	1138	1291	1443
135UC-S100	SST	1136	AST	-	-	-	-	-	1134	1392	1650	1908	2166	2424	2681	2939
	Mid Stroke Min	416	Mid Stroke Min	-	-	-	-	-	263	416	569	721	874	1027	1180	1332
	SET	844	AET	-	-	-	-	-	263	416	569	721	874	1027	1180	1332
135UC-S120	SST	1362	AST	-	-	-	-	-	-	-	1412	1670	1928	2186	2444	2701
	Mid Stroke Min	499	Mid Stroke Min	-	-	-	-	-	-	-	346	499	652	804	957	1110
	SET	1012	AET	-	-	-	-	-	-	-	346	499	652	804	957	1110
135UC-S140	SST	1590	AST	-	-	-	-	-	-	-	-	-	1691	1949	2207	2465
	Mid Stroke Min	582	Mid Stroke Min	-	-	-	-	-	-	-	-	-	429	582	735	888
	SET	1181	AET	-	-	-	-	-	-	-	-	-	429	582	735	888
135UC-S160	SST	1816	AST	-	-	-	-	-	-	-	-	-	-	-	1969	2227
	Mid Stroke Min	665	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	-	512	665
	SET	1350	AET	-	-	-	-	-	-	-	-	-	-	-	512	665
210UC-S040	SST	706	AST	866	1306	1747	2187	2628	3068	3508	3949	4389	4830	-	-	-
	Mid Stroke Min	270	Mid Stroke Min	270	531	792	1053	1314	1575	1836	2097	2358	2619	-	-	-
	SET	548	AET	270	531	792	1053	1314	1575	1836	2097	2358	2619	-	-	-
210UC-S050	SST	883	AST	-	1082	1523	1963	2404	2844	3284	3725	4165	4606	-	-	-
	Mid Stroke Min	338	Mid Stroke Min	-	338	599	860	1121	1382	1643	1904	2165	2426	-	-	-
	SET	685	AET	-	338	599	860	1121	1382	1643	1904	2165	2426	-	-	-
210UC-S060	SST	1060	AST	-	-	1299	1740	2180	2621	3061	3501	3942	4382	4823	-	-
	Mid Stroke Min	405	Mid Stroke Min	-	-	405	666	927	1188	1449	1710	1971	2232	2493	-	-
	SET	822	AET	-	-	405	666	927	1188	1449	1710	1971	2232	2493	-	-
210UC-S070	SST	1236	AST	-	-	1075	1515	1955	2396	2836	3277	3717	4157	4598	-	-
	Mid Stroke Min	473	Mid Stroke Min	-	-	212	473	734	995	1256	1517	1778	2039	2300	-	-
	SET	959	AET	-	-	212	473	734	995	1256	1517	1778	2039	2300	-	-
210UC-S080	SST	1413	AST	-	-	-	1292	1732	2172	2613	3053	3494	3934	4374	4815	-
	Mid Stroke Min	540	Mid Stroke Min	-	-	-	279	540	801	1062	1323	1584	1845	2106	2367	-
	SET	1096	AET	-	-	-	279	540	801	1062	1323	1584	1845	2106	2367	-
210UC-S090	SST	1589	AST	-	-	-	-	1507	1948	2388	2828	3269	3709	4150	4590	-
	Mid Stroke Min	608	Mid Stroke Min	-	-	-	-	347	608	869	1130	1391	1652	1913	2174	-
	SET	1233	AET	-	-	-	-	347	608	869	1130	1391	1652	1913	2174	-
210UC-S100	SST	1766	AST	-	-	-	-	-	1724	2165	2605	3045	3486	3926	4367	4807
	Mid Stroke Min	675	Mid Stroke Min	-	-	-	-	-	414	675	936	1197	1458	1719	1980	2241
	SET	1370	AET	-	-	-	-	-	414	675	936	1197	1458	1719	1980	2241
210UC-S120	SST	2119	AST	-	-	-	-	-	-	-	2157	2598	3038	3479	3919	4360
	Mid Stroke Min	810	Mid Stroke Min	-	-	-	-	-	-	-	549	810	1071	1332	1593	1854
	SET	1644	AET	-	-	-	-	-	-	-	549	810	1071	1332	1593	1854



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Closed (CW)
Canted Yoke Design

Model Number	Spring Torques		Torque at	Air torques N-m														
				Supply Pressure bar g														
				2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0		
210UC-S140	SST	2472	AST	-	-	-	-	-	-	-	-	-	-	2591	3031	3472	3912	
	Mid Stroke Min	945	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	684	945	1206	1467	
	SET	1918	AET	-	-	-	-	-	-	-	-	-	-	684	945	1206	1467	
210UC-S160	SST	2825	AST	-	-	-	-	-	-	-	-	-	-	-	-	-	3023	3464
	Mid Stroke Min	1081	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	-	-	-	820	1081
	SET	2192	AET	-	-	-	-	-	-	-	-	-	-	-	-	-	820	1081
270UC-S040	SST	909	AST	1114	1655	2195	2736	3276	3817	4357	-	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	406	Mid Stroke Min	406	726	1046	1367	1687	2007	2327	-	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	823	AET	406	726	1046	1367	1687	2007	2327	-	-	-					
270UC-S050	SST	1135	AST	-	1392	1932	2473	3013	3554	4094	4635	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	506	Mid Stroke Min	-	506	827	1147	1467	1788	2108	2428	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1027	AET	-	506	827	1147	1467	1788	2108	2428	-	-					
270UC-S060	SST	1362	AST	-	-	1670	2210	2751	3291	3832	4372	4913	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	608	Mid Stroke Min	-	-	608	928	1249	1569	1889	2210	2530	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1234	AET	-	-	608	928	1249	1569	1889	2210	2530	-					
270UC-S070	SST	1589	AST	-	-	1408	1948	2489	3029	3570	4110	4651	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	709	Mid Stroke Min	-	-	389	709	1030	1350	1670	1990	2311	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1439	AET	-	-	389	709	1030	1350	1670	1990	2311	-					
270UC-S080	SST	1816	AST	-	-	-	1686	2227	2767	3308	3848	4389	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	810	Mid Stroke Min	-	-	-	490	810	1131	1451	1771	2092	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1644	AET	-	-	-	490	810	1131	1451	1771	2092	-					
270UC-S090	SST	2044	AST	-	-	-	-	1965	2505	3046	3586	4127	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	912	Mid Stroke Min	-	-	-	-	591	912	1232	1552	1872	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1850	AET	-	-	-	-	591	912	1232	1552	1872	-					
270UC-S100	SST	2271	AST	-	-	-	-	-	2243	2784	3324	3865	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	1013	Mid Stroke Min	-	-	-	-	-	692	1013	1333	1653	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	2055	AET	-	-	-	-	-	692	1013	1333	1653	-					
344UC-S040	SST	1135	AST	-	1392	2083	2773	3464	4155	4845	-	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	493	Mid Stroke Min	493	902	1311	1721	2130	2539	-	-	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	999	AET	493	902	1311	1721	2130	2539	-	-	-	-					
344UC-S050	SST	1362	AST	-	1670	2360	3051	3742	4433	-	-	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	591	Mid Stroke Min	-	591	1001	1410	1819	2229	-	-	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1200	AET	-	591	1001	1410	1819	2229	-	-	-	-					
344UC-S060	SST	1589	AST	-	-	1948	2639	3330	4020	4711	-	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	690	Mid Stroke Min	-	-	690	1099	1509	1918	2327	-	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1400	AET	-	-	690	1099	1509	1918	2327	-	-	-					
344UC-S070	SST	2044	AST	-	-	1815	2505	3196	3887	4577	-	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	887	Mid Stroke Min	-	-	477	887	1296	1705	2115	-	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1799	AET	-	-	477	887	1296	1705	2115	-	-	-					
344UC-S080	SST	2271	AST	-	-	-	2093	2784	3475	4165	4856	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	985	Mid Stroke Min	-	-	-	576	985	1395	1804	2213	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	1999	AET	-	-	-	576	985	1395	1804	2213	-	-					
345UC-S090	SST	2472	AST	-	-	-	-	2340	3031	3722	4413	-	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	1073	Mid Stroke Min	-	-	-	-	663	1073	1482	1891	-	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	2177	AET	-	-	-	-	663	1073	1482	1891	-	-					
345UC-S100	SST	2825	AST	-	-	-	-	-	2773	3464	4155	4845	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	1226	Mid Stroke Min	-	-	-	-	-	817	1226	1636	2045	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	2488	AET	-	-	-	-	-	817	1226	1636	2045	-					
345UC-S110	SST	3178	AST	-	-	-	-	-	-	3205	3896	4587	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	1380	Mid Stroke Min	-	-	-	-	-	-	970	1380	1789	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	2799	AET	-	-	-	-	-	-	970	1380	1789	-					
345UC-S120	SST	3178	AST	-	-	-	-	-	-	3205	3896	4587	-	Maximum Allowable Pressure 8.3 Bar g				
	Mid Stroke Min	1380	Mid Stroke Min	-	-	-	-	-	-	970	1380	1789	-	(Series A / Max Shell Pressure 12 Bar g)				
	SET	2799	AET	-	-	-	-	-	-	970	1380	1789	-					
370UC-S040	SST	1245	AST	-	1526	2281	3035	3790	4545	5300	6055	6810	7565	8319	9074	9829	10584	
	Mid Stroke Min	581	Mid Stroke Min	581	1028	1475	1922	2370	2817	3264	3712	4159	4606	5054	5501	5948		
	SET	1178	AET	581	1028	1475	1922	2370	2817	3264	3712	4159	4606	5054	5501	5948		
370UC-S050	SST	1555	AST	-	1907	2662	3417	4172	4926	5681	6436	7191	7946	8701	9456	10210		
	Mid Stroke Min	815	Mid Stroke Min	-	815	1262	1709	2156	2604	3051	3498	3946	4393	4840	5288	5735		
	SET	1473	AET	-	815	1262	1709	2156	2604	3051	3498	3946	4393	4840	5288	5735		
370UC-S060	SST	1867	AST	-	-	2289	3044	3799	4554	5308	6063	6818	7573	8328	9083	9837		
	Mid Stroke Min	871	Mid Stroke Min	-	-	871	1318	1765	2212	2660	3107	3554	4002	4449	4896	5344		
	SET	1766	AET	-	-	871	1318	1765	2212	2660	3107	3554	4002	4449	4896	5344		



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Closed (CW)
Canted Yoke Design

Model Number	Spring Torques N-m	Torque at	Air torques N-m												
			Supply Pressure bar g												
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
1935UC-S080 Series B/C Only	SST	14036	AST	-	-	-	12647	17207	21768	26329	30890	35451	Maximum Allowable Pressure		
	Mid Stroke Min	5782	Mid Stroke Min	-	-	-	3319	5782	8245	10708	13171	15634	8.3 bar g		
	SET	11732	AET	-	-	-	3319	5782	8245	10708	13171	15634			
1935UC-S090 Series B/C Only	SST	16056	AST	-	-	-	-	15123	19684	24245	28806	33367	Maximum Allowable Pressure		
	Mid Stroke Min	6512	Mid Stroke Min	-	-	-	-	4049	6512	8975	11438	13901	8.3 bar g		
	SET	13213	AET	-	-	-	-	4049	6512	8975	11438	13901			
1935UC-S100 Series B/C Only	SST	18349	AST	-	-	-	-	-	17935	22496	27057	31618	Maximum Allowable Pressure		
	Mid Stroke Min	7443	Mid Stroke Min	-	-	-	-	-	4980	7443	9906	12369	8.3 bar g		
	SET	15101	AET	-	-	-	-	-	4980	7443	9906	12369			
1935UC-S110 Series B/C Only	SST	20643	AST	-	-	-	-	-	-	20747	25308	29869	Maximum Allowable Pressure		
	Mid Stroke Min	8373	Mid Stroke Min	-	-	-	-	-	-	5910	8373	10836	8.3 bar g		
	SET	16989	AET	-	-	-	-	-	-	5910	8373	10836			
1935UC-S120 Series B/C Only	SST	22937	AST	-	-	-	-	-	-	-	23559	28120	Maximum Allowable Pressure		
	Mid Stroke Min	9303	Mid Stroke Min	-	-	-	-	-	-	-	6840	9303	8.3 bar g		
	SET	18876	AET	-	-	-	-	-	-	-	6840	9303			
2380UC-S040 Series S Only	SST	8005	AST	9814	14352	18890	23428	-	-	-	-	-	Maximum Allowable Pressure		
	Mid Stroke Min	3247	Mid Stroke Min	3247	5936	8625	11314	-	-	-	-	-	8.3 bar g		
	SET	6588	AET	3247	5936	8625	11314	-	-	-	-	-			
2380UC-S050 Series S Only	SST	10007	AST	-	12268	16806	21344	25881	-	-	-	-	Maximum Allowable Pressure		
	Mid Stroke Min	4059	Mid Stroke Min	-	4059	6748	9437	12126	-	-	-	-	8.3 bar g		
	SET	8235	AET	-	4059	6748	9437	12126	-	-	-	-			
2380UC-S060 Series S Only	SST	12008	AST	-	-	14721	19259	23797	-	-	-	-	Maximum Allowable Pressure		
	Mid Stroke Min	4871	Mid Stroke Min	-	-	4871	7560	10249	-	-	-	-	8.3 bar g		
	SET	9882	AET	-	-	4871	7560	10249	-	-	-	-			
2380UC-S070 Series S Only	SST	14009	AST	-	-	12637	17175	21713	26251	-	-	-	Maximum Allowable Pressure		
	Mid Stroke Min	5682	Mid Stroke Min	-	-	2993	5682	8371	11060	-	-	-	8.3 bar g		
	SET	11529	AET	-	-	2993	5682	8371	11060	-	-	-			
2380UC-S080 Series S Only	SST	16011	AST	-	-	-	15091	19629	24166	-	-	-	Maximum Allowable Pressure		
	Mid Stroke Min	6494	Mid Stroke Min	-	-	-	3805	6494	9183	-	-	-	8.3 bar g		
	SET	13176	AET	-	-	-	3805	6494	9183	-	-	-			
2380UC-S090 Series S Only	SST	18012	AST	-	-	-	-	17545	22082	26620	-	-	Maximum Allowable Pressure		
	Mid Stroke Min	7306	Mid Stroke Min	-	-	-	-	4617	7306	9995	-	-	8.3 bar g		
	SET	14823	AET	-	-	-	-	4617	7306	9995	-	-			
2380UC-S100 Series S Only	SST	20013	AST	-	-	-	-	19998	24536	-	-	-	Maximum Allowable Pressure		
	Mid Stroke Min	8118	Mid Stroke Min	-	-	-	-	5428	8118	-	-	-	8.3 bar g		
	SET	16470	AET	-	-	-	-	5428	8118	-	-	-			
2385UC-S040 Series B/C Only	SST	9175	AST	11248	16874	22499	28125	33751	39377	45002	50628	56254	Maximum Allowable Pressure		
	Mid Stroke Min	3721	Mid Stroke Min	3721	6759	9797	12835	15873	18910	21948	24986	28024	8.3 bar g		
	SET	7551	AET	3721	6759	9797	12835	15873	18910	21948	24986	28024			
2385UC-S050 Series B/C Only	SST	11468	AST	8434	14060	19686	25312	30937	36563	42189	47814	53440	Maximum Allowable Pressure		
	Mid Stroke Min	4652	Mid Stroke Min	1614	4652	7690	10727	13765	16803	19841	22879	25916	8.3 bar g		
	SET	9438	AET	1614	4652	7690	10727	13765	16803	19841	22879	25916			
2385UC-S060 Series B/C Only	SST	13762	AST	-	11246	16872	22498	28123	33749	39375	45001	50626	Maximum Allowable Pressure		
	Mid Stroke Min	5582	Mid Stroke Min	-	2544	5582	8620	11658	14695	17733	20771	23809	8.3 bar g		
	SET	11326	AET	-	2544	5582	8620	11658	14695	17733	20771	23809			
2385UC-S070 Series B/C Only	SST	16056	AST	-	-	14058	19684	25310	30935	36561	42187	47813	Maximum Allowable Pressure		
	Mid Stroke Min	6512	Mid Stroke Min	-	-	3475	6512	9550	12588	15626	18664	21701	8.3 bar g		
	SET	13213	AET	-	-	3475	6512	9550	12588	15626	18664	21701			
2385UC-S080 Series B/C Only	SST	18349	AST	-	-	-	16870	22496	28122	33748	39373	44999	Maximum Allowable Pressure		
	Mid Stroke Min	7443	Mid Stroke Min	-	-	-	4405	7443	10480	13518	16556	19594	8.3 bar g		
	SET	15101	AET	-	-	-	4405	7443	10480	13518	16556	19594			
2385UC-S090 Series B/C Only	SST	20643	AST	-	-	-	-	19682	25308	30934	36560	42185	Maximum Allowable Pressure		
	Mid Stroke Min	8373	Mid Stroke Min	-	-	-	-	5335	8373	11411	14449	17486	8.3 bar g		
	SET	16989	AET	-	-	-	-	5335	8373	11411	14449	17486			
2385UC-S100 Series B/C Only	SST	22937	AST	-	-	-	-	-	22494	28120	33746	39371	Maximum Allowable Pressure		
	Mid Stroke Min	9303	Mid Stroke Min	-	-	-	-	-	6266	9303	12341	15379	8.3 bar g		
	SET	18876	AET	-	-	-	-	-	6266	9303	12341	15379			
3071UC-S040 Series C Only	SST	11468	AST	14060	21223	28385	35548	42711	49873	57036	64199	-	Maximum Allowable Pressure		
	Mid Stroke Min	4652	Mid Stroke Min	4652	8520	12387	16255	20123	23991	27859	31726	-	8.3 bar g		
	SET	9438	AET	4652	8520	12387	16255	20123	23991	27859	31726	-			
3071UC-S050 Series C Only	SST	13762	AST	9709	16872	24035	31197	38360	45522	52685	59847	67010	Maximum Allowable Pressure		
	Mid Stroke Min	5582	Mid Stroke Min	1714	5582	9450	13318	17185	21053	24921	28789	32657	8.3 bar g		
	SET	11326	AET	1714	5582	9450	13318	17185	21053	24921	28789	32657			



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Closed (CW)
Canted Yoke Design

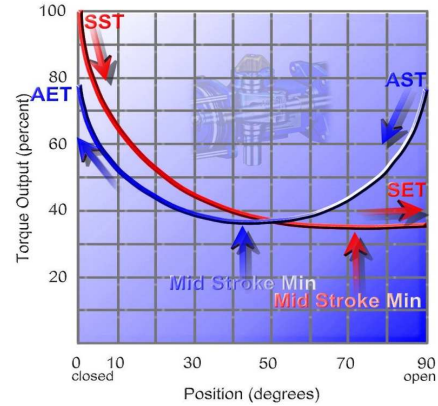
Model Number	Spring Torques		Torque at	Air torques N-m												
				Supply Pressure bar g												
				2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
3071UC-S060 Series C Only	SST	16056	AST	-	12521	19684	26847	34009	41172	48335	55497	62660	Maximum Allowable Pressure			
	Mid Stroke Min	6512	Mid Stroke Min	-	2645	6512	10380	14248	18116	21984	25851	29719	8.3 bar g			
	SET	13213	AET	-	2645	6512	10380	14248	18116	21984	25851	29719				
3071UC-S070 Series C Only	SST	20643	AST	-	-	18145	25308	32471	39633	46796	53958	61121	Maximum Allowable Pressure			
	Mid Stroke Min	8373	Mid Stroke Min	-	-	4505	8373	12241	16109	19976	23844	27712	8.3 bar g			
	SET	16989	AET	-	-	4505	8373	12241	16109	19976	23844	27712				
3071UC-S080 Series C Only	SST	22937	AST	-	-	-	20957	28120	35283	42445	49608	56770	Maximum Allowable Pressure			
	Mid Stroke Min	9303	Mid Stroke Min	-	-	-	5436	9303	13171	17039	20907	24775	8.3 bar g			
	SET	18876	AET	-	-	-	5436	9303	13171	17039	20907	24775				
3072UC-S090 Series C Only	SST	24832	AST	-	-	-	-	23282	30444	37607	44769	51932	Maximum Allowable Pressure			
	Mid Stroke Min	10072	Mid Stroke Min	-	-	-	-	6204	10072	13940	17808	21676	8.3 bar g			
	SET	20437	AET	-	-	-	-	6204	10072	13940	17808	21676				
3072UC-S100 Series C Only	SST	28380	AST	-	-	-	-	-	27631	34793	41956	49118	Maximum Allowable Pressure			
	Mid Stroke Min	11511	Mid Stroke Min	-	-	-	-	-	7643	11511	15379	19247	8.3 bar g			
	SET	23356	AET	-	-	-	-	-	7643	11511	15379	19247				
3072UC-S110 Series C Only	SST	31927	AST	-	-	-	-	-	-	31980	39143	46305	Maximum Allowable Pressure			
	Mid Stroke Min	12950	Mid Stroke Min	-	-	-	-	-	-	9082	12950	16818	8.3 bar g			
	SET	26276	AET	-	-	-	-	-	-	9082	12950	16818				
3072UC-S120 Series C Only	SST	31927	AST	-	-	-	-	-	-	-	-	39143	Maximum Allowable Pressure			
	Mid Stroke Min	12950	Mid Stroke Min	-	-	-	-	-	-	-	-	12950	8.3 bar g			
	SET	26276	AET	-	-	-	-	-	-	-	-	12950				
3731UC-S040 Series C Only	SST	14190	AST	17397	26098	34799	43500	52201	60902	69603	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	5756	Mid Stroke Min	5756	10454	15153	19851	24550	29248	33947	-	-	8.3 bar g			
	SET	11678	AET	5756	10454	15153	19851	24550	29248	33947	-	-				
3731UC-S050 Series C Only	SST	17737	AST	13045	21746	30447	39148	47849	56550	65251	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	7195	Mid Stroke Min	2496	7195	11893	16592	21290	25989	30687	-	-	8.3 bar g			
	SET	14598	AET	2496	7195	11893	16592	21290	25989	30687	-	-				
3731UC-S060 Series C Only	SST	21285	AST	-	17394	26095	34796	43497	52198	60899	69600	-	Maximum Allowable Pressure			
	Mid Stroke Min	8633	Mid Stroke Min	-	3935	8633	13332	18031	22729	27428	32126	-	8.3 bar g			
	SET	17517	AET	-	3935	8633	13332	18031	22729	27428	32126	-				
3731UC-S070 Series C Only	SST	24832	AST	-	-	21743	30444	39145	47846	56547	65248	-	Maximum Allowable Pressure			
	Mid Stroke Min	10072	Mid Stroke Min	-	-	5374	10072	14771	19469	24168	28867	-	8.3 bar g			
	SET	20437	AET	-	-	5374	10072	14771	19469	24168	28867	-				
3731UC-S080 Series C Only	SST	28380	AST	-	-	-	26092	34793	43494	52195	60896	69597	Maximum Allowable Pressure			
	Mid Stroke Min	11511	Mid Stroke Min	-	-	-	6813	11511	16210	20908	25607	30306	8.3 bar g			
	SET	23356	AET	-	-	-	6813	11511	16210	20908	25607	30306				
3731UC-S090 Series C Only	SST	31927	AST	-	-	-	-	30442	39143	47844	56544	65245	Maximum Allowable Pressure			
	Mid Stroke Min	12950	Mid Stroke Min	-	-	-	-	8252	12950	17649	22347	27046	8.3 bar g			
	SET	26276	AET	-	-	-	-	8252	12950	17649	22347	27046				
3731UC-S100 Series C Only	SST	35475	AST	-	-	-	-	-	34791	43492	52193	60894	Maximum Allowable Pressure			
	Mid Stroke Min	14389	Mid Stroke Min	-	-	-	-	-	9690	14389	19088	23786	8.3 bar g			
	SET	29195	AET	-	-	-	-	-	9690	14389	19088	23786				
4534UC-S040 Series C Only	SST	14190	AST	17397	27968	38540	49112	59684	-	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	5756	Mid Stroke Min	5756	11464	17173	22882	28591	-	-	-	-	8.3 bar g			
	SET	11678	AET	5756	11464	17173	22882	28591	-	-	-	-				
4534UC-S050 Series C Only	SST	21285	AST	15523	26095	36667	47238	57810	68382	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	8633	Mid Stroke Min	2925	8633	14342	20051	25759	31468	-	-	-	8.3 bar g			
	SET	17517	AET	2925	8633	14342	20051	25759	31468	-	-	-				
4534UC-S060 Series C Only	SST	24832	AST	-	19872	30444	41016	51588	62159	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	10072	Mid Stroke Min	-	4363	10072	15781	21490	27199	-	-	-	8.3 bar g			
	SET	20437	AET	-	4363	10072	15781	21490	27199	-	-	-				
4534UC-S070 Series C Only	SST	28380	AST	-	-	24222	34793	45365	55937	66509	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	11511	Mid Stroke Min	-	-	5803	11511	17220	22929	28637	-	-	8.3 bar g			
	SET	23356	AET	-	-	5803	11511	17220	22929	28637	-	-				
4534UC-S080 Series C Only	SST	31927	AST	-	-	-	28571	39143	49714	60286	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	12950	Mid Stroke Min	-	-	-	7241	12950	18659	24368	-	-	8.3 bar g			
	SET	26276	AET	-	-	-	7241	12950	22048	27757	-	-				
4534UC-S090 Series C Only	SST	35475	AST	-	-	-	-	32920	43492	54063	64635	-	Maximum Allowable Pressure			
	Mid Stroke Min	14389	Mid Stroke Min	-	-	-	-	8680	14389	20098	25806	-	8.3 bar g			
	SET	29195	AET	-	-	-	-	8680	14389	20098	25806	-				
5336UC-S040 Series C Only	SST	20292	AST	24877	37320	49762	62205	-	-	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	8230	Mid Stroke Min	8230	14949	21668	28387	-	-	-	-	-	8.3 bar g			
	SET	16700	AET	8230	14949	21668	28387	-	-	-	-	-				
5336UC-S050 Series C Only	SST	25365	AST	18654	31097	43539	55981	68424	-	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	10288	Mid Stroke Min	3569	10288	17007	23726	30444	-	-	-	-	8.3 bar g			
	SET	20875	AET	3569	10288	17007	23726	30444	-	-	-	-				

The chart to the right shows the torque curve of the Morin canted yoke spring return for fail open (fail counter-clockwise) operation.

Proper selection of the actuator is critical to the successful operation of your automated package.

Note: Air torque curve shown is with air pressure equal to spring code, i.e. - S061 at 60 psig. Curve will vary for pressures used not equal to spring code.

AST = Air Start Torque SST = Spring Start Torque
AET = Air End Torque SET = Spring End Torque



Model Number	Spring Torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
023UC-S041 Series A/B/S Only	SST	95	AST	78	104	131	158	184	211	237	264	291	317	344	371	397
	Mid Stroke Min	31	Mid Stroke Min	31	73	116	158	200	242	285	327	369	411	454	496	538
	SET	31	AET	63	106	148	190	232	274	317	359	401	443	486	528	570
023UC-S051 Series A/B/S Only	SST	120	AST	-	98	124	151	178	204	231	258	284	311	338	364	391
	Mid Stroke Min	40	Mid Stroke Min	-	40	82	124	166	209	251	293	335	378	420	462	504
	SET	40	AET	-	714	123	165	207	250	292	334	376	419	461	503	545
023UC-S061 Series A/B/S Only	SST	143	AST	-	-	116	143	170	196	223	250	276	303	330	356	383
	Mid Stroke Min	47	Mid Stroke Min	-	-	47	89	131	173	216	258	300	342	385	427	469
	SET	47	AET	-	-	95	137	179	222	264	306	348	391	433	475	517
023UC-S071 Series A/B/S Only	SST	166	AST	-	-	-	135	162	188	215	242	268	295	322	348	375
	Mid Stroke Min	55	Mid Stroke Min	-	-	-	55	97	139	182	224	266	308	351	393	435
	SET	55	AET	-	-	-	112	154	196	238	280	323	365	407	449	492
023UC-S081 Series A/B/S Only	SST	190	AST	-	-	-	-	155	182	209	235	262	288	315	342	368
	Mid Stroke Min	62	Mid Stroke Min	-	-	-	-	62	105	147	189	231	274	316	358	400
	SET	62	AET	-	-	-	-	127	169	211	253	295	338	380	422	464
023UC-S091 Series A/B/S Only	SST	213	AST	-	-	-	-	-	174	201	227	254	280	307	334	360
	Mid Stroke Min	71	Mid Stroke Min	-	-	-	-	-	71	113	155	197	239	282	324	366
	SET	71	AET	-	-	-	-	-	143	185	228	270	312	354	397	439
023UC-S101 Series A/B/S Only	SST	237	AST	-	-	-	-	-	-	194	220	247	273	300	327	353
	Mid Stroke Min	78	Mid Stroke Min	-	-	-	-	-	-	78	121	163	205	247	289	332
	SET	78	AET	-	-	-	-	-	-	159	201	243	286	328	370	412
023UC-S121 Series A/B/S Only	SST	286	AST	-	-	-	-	-	-	-	-	233	260	286	313	339
	Mid Stroke Min	94	Mid Stroke Min	-	-	-	-	-	-	-	-	94	136	178	220	262
	SET	94	AET	-	-	-	-	-	-	-	-	190	232	274	317	359
023UC-S141 Series A/B/S Only	SST	332	AST	-	-	-	-	-	-	-	-	-	-	271	297	324
	Mid Stroke Min	110	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	110	152	194
	SET	110	AET	-	-	-	-	-	-	-	-	-	-	223	265	307
023UC-S161 Series A/B/S Only	SST	381	AST	-	-	-	-	-	-	-	-	-	-	-	-	310
	Mid Stroke Min	125	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	-	-	125
	SET	125	AET	-	-	-	-	-	-	-	-	-	-	-	-	253
036UC-S041 Series A/B/S Only	SST	148	AST	121	167	213	259	305	350	396	442	488	534	580	626	671
	Mid Stroke Min	49	Mid Stroke Min	49	122	195	267	340	413	485	558	631	703	776	849	922
	SET	49	AET	100	172	245	318	390	463	536	609	681	754	827	899	972
036UC-S051 Series A/B/S Only	SST	185	AST	-	151	197	243	289	335	380	426	472	518	564	610	656
	Mid Stroke Min	62	Mid Stroke Min	-	62	134	207	280	352	425	498	571	643	716	789	861
	SET	62	AET	-	125	198	270	343	416	488	561	634	707	779	852	925
036UC-S061 Series A/B/S Only	SST	223	AST	-	-	182	228	273	319	365	411	457	503	549	594	640
	Mid Stroke Min	74	Mid Stroke Min	-	-	74	147	220	292	365	438	510	583	656	728	801
	SET	74	AET	-	-	150	223	296	368	441	514	587	659	732	805	877
036UC-S071 Series A/B/S Only	SST	260	AST	-	-	-	212	258	304	350	396	441	487	533	579	625
	Mid Stroke Min	86	Mid Stroke Min	-	-	-	86	158	231	304	377	449	522	595	667	740
	SET	86	AET	-	-	-	174	247	319	392	465	538	610	683	756	828
036UC-S081 Series A/B/S Only	SST	297	AST	-	-	-	-	242	288	334	380	426	471	517	563	609
	Mid Stroke Min	98	Mid Stroke Min	-	-	-	-	98	171	244	316	389	462	534	607	680
	SET	98	AET	-	-	-	-	199	272	345	417	490	563	636	708	781



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Open (CCW)
Canted Yoke Design

Model Number	Spring Torques N-m	Torque at	Air torques N-m													
			Supply Pressure bar g													
			2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0	
036UC-S091 Series A/B/S Only	SST	334	AST	-	-	-	-	-	272	318	364	410	456	501	547	593
	Mid Stroke Min	110	Mid Stroke Min	-	-	-	-	-	110	183	256	328	401	474	547	619
	SET	110	AET	-	-	-	-	-	224	297	369	442	515	587	660	733
036UC-S101 Series A/B/S Only	SST	371	AST	-	-	-	-	-	-	303	349	394	440	486	532	578
	Mid Stroke Min	123	Mid Stroke Min	-	-	-	-	-	-	123	196	268	341	414	486	559
	SET	123	AET	-	-	-	-	-	249	322	395	467	540	613	685	
036UC-S121 Series A/B/S Only	SST	445	AST	-	-	-	-	-	-	-	-	363	409	455	501	547
	Mid Stroke Min	147	Mid Stroke Min	-	-	-	-	-	-	-	-	147	220	293	365	438
	SET	147	AET	-	-	-	-	-	-	-	-	299	372	444	517	590
036UC-S141 Series A/B/S Only	SST	520	AST	-	-	-	-	-	-	-	-	-	-	424	470	516
	Mid Stroke Min	172	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	172	245	317
	SET	172	AET	-	-	-	-	-	-	-	-	-	-	349	421	494
036UC-S161 Series A/B/S Only	SST	596	AST	-	-	-	-	-	-	-	-	-	-	-	-	486
	Mid Stroke Min	195	Mid Stroke Min	-	-	-	-	-	-	-	-	-	-	-	-	195
	SET	195	AET	-	-	-	-	-	-	-	-	-	-	-	-	395
046UC-S041 Series A/B/S Only	SST	190	AST	155	209	262	315	368	422	475	528	582	635	688	741	795
	Mid Stroke Min	62	Mid Stroke Min	62	147	231	316	400	485	569	654	738	823	907	992	1076
	SET	62	AET	127	211	295	380	464	549	633	718	802	887	971	1056	1140
046UC-S051 Series A/B/S Only	SST	237	AST	-	194	247	300	353	407	460	513	567	620	673	726	780
	Mid Stroke Min	78	Mid Stroke Min	-	78	163	247	332	416	501	585	670	754	839	923	1007
	SET	78	AET	-	159	243	328	412	497	581	666	750	835	919	1004	1088
046UC-S061 Series A/B/S Only	SST	286	AST	-	-	233	286	339	393	446	499	553	606	659	712	766
	Mid Stroke Min	94	Mid Stroke Min	-	-	94	178	262	347	431	516	600	685	769	854	938
	SET	94	AET	-	-	190	274	359	443	528	612	697	781	866	950	1034
046UC-S071 Series A/B/S Only	SST	332	AST	-	-	-	271	324	377	430	484	537	590	644	697	750
	Mid Stroke Min	110	Mid Stroke Min	-	-	-	110	194	279	363	448	532	617	701	786	870
	SET	110	AET	-	-	-	223	307	392	476	561	645	730	814	899	983
046UC-S081 Series A/B/S Only	SST	381	AST	-	-	-	-	310	364	417	470	524	577	630	683	737
	Mid Stroke Min	125	Mid Stroke Min	-	-	-	-	125	209	294	378	463	547	632	716	800
	SET	125	AET	-	-	-	-	253	338	422	506	591	675	760	844	929
058UC-S041 Series A/B/S Only	SST	237	AST	194	262	330	399	467	535	604	672	740	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	78	Mid Stroke Min	78	187	295	403	512	620	728	837	945				
	SET	78	AET	159	267	376	484	592	701	809	917	1026				
058UC-S051 Series A/B/S Only	SST	286	AST	-	233	301	370	438	506	575	643	711	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	94	Mid Stroke Min	-	94	202	310	419	527	635	744	852				
	SET	94	AET	-	190	298	406	515	623	731	840	948				
058UC-S061 Series A/B/S Only	SST	332	AST	-	-	271	339	407	476	544	612	681	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	110	Mid Stroke Min	-	-	110	218	327	435	543	652	760				
	SET	110	AET	-	-	223	331	440	548	656	765	873				
058UC-S071 Series A/B/S Only	SST	381	AST	-	-	-	310	379	447	515	584	652	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	125	Mid Stroke Min	-	-	-	125	233	341	450	558	666				
	SET	125	AET	-	-	-	253	361	470	578	686	795				
059UC-S081 Series A/B/S Only	SST	445	AST	-	-	-	-	363	432	500	568	637	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	147	Mid Stroke Min	-	-	-	-	147	256	364	472	581				
	SET	147	AET	-	-	-	-	299	407	516	624	732				
059UC-S091 Series A/B/S Only	SST	520	AST	-	-	-	-	-	424	492	560	629	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	172	Mid Stroke Min	-	-	-	-	-	172	280	389	497				
	SET	172	AET	-	-	-	-	-	349	457	565	674				
059UC-S101 Series A/B/S Only	SST	596	AST	-	-	-	-	-	-	486	555	623	Maximum Allowable Pressure 8.3 Bar g (Series A / Max Shell Pressure 12 Bar g)			
	Mid Stroke Min	195	Mid Stroke Min	-	-	-	-	-	-	195	303	412				
	SET	195	AET	-	-	-	-	-	-	395	504	612				
072UC-S041 Series A/B/S Only	SST	297	AST	242	334	426	517	609	701	792	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid Stroke Min	98	Mid Stroke Min	98	244	389	534	680	825	971						
	SET	98	AET	199	345	490	636	781	926	1072						
072UC-S051 Series A/B/S Only	SST	371	AST	-	303	394	486	578	670	761	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid Stroke Min	123	Mid Stroke Min	-	123	268	414	559	704	850						
	SET	123	AET	-	249	395	540	685	831	976						
072UC-S061 Series A/B/S Only	SST	445	AST	-	-	363	455	547	638	730	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid Stroke Min	147	Mid Stroke Min	-	-	147	293	438	584	729						
	SET	147	AET	-	-	299	444	590	735	881						
072UC-S071 Series A/B/S Only	SST	520	AST	-	-	-	424	516	607	699	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid Stroke Min	172	Mid Stroke Min	-	-	-	172	317	463	608						
	SET	172	AET	-	-	-	349	494	640	785						
072UC-S081 Series A/B/S Only	SST	596	AST	-	-	-	-	486	578	670	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid Stroke Min	195	Mid Stroke Min	-	-	-	-	195	340	486						
	SET	195	AET	-	-	-	-	395	541	686						
100UC-S041 Series B/S Only	SST	412	AST	336	452	568	684	800	915	-	Maximum Allowable Pressure 6.9 Bar g (Series A / Max Shell Pressure 12 Bar g)					
	Mid Stroke Min	136	Mid Stroke Min	136	320	504	687	871	1054	-						
	SET	136	AET	277	460	644	828	1011	1195	-						



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Open (CCW)
Canted Yoke Design

Model Number	Spring Torques N-m		Torque at	Air torques N-m												
				Supply Pressure bar g												
				2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
740UC-S061 Series B,C,S only	SST	4577	AST	-	-	3734	4633	5533	6433	7333	8233	-	Maximum Allowable Pressure			
	Mid Stroke Min	1742	Mid Stroke Min	-	-	1742	2480	3219	3958	4697	5436	-	8.3 bar g			
	SET	1742	AET	-	-	3534	4960	6387	7813	9240	10667	-				
740UC-S071 Series B,C,S only	SST	5340	AST	-	-	3456	4356	5256	6156	7056	7955	8855	Maximum Allowable Pressure			
	Mid Stroke Min	2032	Mid Stroke Min	-	-	1293	2032	2771	3509	4248	4987	5726	8.3 bar g			
	SET	2032	AET	-	-	2695	4122	5549	6975	8402	9828	11255				
740UC-S081 Series B,C,S only	SST	6103	AST	-	-	-	4078	4978	5878	6778	7678	8578	Maximum Allowable Pressure			
	Mid Stroke Min	2322	Mid Stroke Min	-	-	-	1583	2322	3061	3800	4539	5278	8.3 bar g			
	SET	2322	AET	-	-	-	3285	4711	6138	7565	8991	10418				
740UC-S091 Series B,C,S only	SST	6865	AST	-	-	-	-	4700	5600	6500	7400	8299	Maximum Allowable Pressure			
	Mid Stroke Min	2613	Mid Stroke Min	-	-	-	-	1874	2613	3352	4091	4830	8.3 bar g			
	SET	2613	AET	-	-	-	-	3875	5301	6728	8154	9581				
740UC-S101 Series B,C,S only	SST	7628	AST	-	-	-	-	-	5322	6222	7122	8022	Maximum Allowable Pressure			
	Mid Stroke Min	2903	Mid Stroke Min	-	-	-	-	-	2164	2903	3642	4381	8.3 bar g			
	SET	2903	AET	-	-	-	-	-	4464	5890	7317	8743				
944UC-S041 Series B,C,S only	SST	3814	AST	3111	4282	5453	6624	7795	8966	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	1351	Mid Stroke Min	1351	2378	3406	4434	5462	6490	-	-	-	8.3 bar g			
	SET	1351	AET	2740	4597	6453	8310	10166	12022	-	-	-				
944UC-S051 Series B,C,S only	SST	4577	AST	-	3734	4905	6076	7247	8418	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	1620	Mid Stroke Min	-	1620	2648	3676	4704	5732	-	-	-	8.3 bar g			
	SET	1620	AET	-	3288	5144	7001	8857	10714	-	-	-				
944UC-S061 Series B,C,S only	SST	5340	AST	-	-	4356	5527	6698	7869	9040	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	1890	Mid Stroke Min	-	-	1890	2918	3946	4974	6002	-	-	8.3 bar g			
	SET	1890	AET	-	-	3835	5692	7548	9405	11261	-	-				
944UC-S071 Series B,C,S only	SST	6103	AST	-	-	3807	4978	6149	7320	8491	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	2160	Mid Stroke Min	-	-	1133	2160	3188	4216	5244	-	-	8.3 bar g			
	SET	2160	AET	-	-	2527	4384	6240	8097	9953	-	-				
945UC-S081 Series B,C,S only	SST	7113	AST	-	-	-	4631	5802	6973	8144	9315	-	Maximum Allowable Pressure			
	Mid Stroke Min	2518	Mid Stroke Min	-	-	-	1490	2518	3546	4574	5602	-	8.3 bar g			
	SET	2518	AET	-	-	-	3253	5110	6966	8823	10679	-				
945UC-S091 Series B,C,S only	SST	8298	AST	-	-	-	-	5597	6768	7939	9111	-	Maximum Allowable Pressure			
	Mid Stroke Min	2938	Mid Stroke Min	-	-	-	-	1910	2938	3966	4994	-	8.3 bar g			
	SET	2938	AET	-	-	-	-	4104	5961	7817	9674	-				
945UC-S101 Series B,C,S only	SST	9484	AST	-	-	-	-	-	6565	7736	8907	-	Maximum Allowable Pressure			
	Mid Stroke Min	3358	Mid Stroke Min	-	-	-	-	-	2330	3358	4385	-	8.3 bar g			
	SET	3358	AET	-	-	-	-	-	43864	60295	76726	-				
945UC-S111 Series B,C,S only	SST	10669	AST	-	-	-	-	-	-	7532	8703	9874	Maximum Allowable Pressure			
	Mid Stroke Min	3777	Mid Stroke Min	-	-	-	-	-	-	2749	3777	4805	8.3 bar g			
	SET	3777	AET	-	-	-	-	-	-	5807	7664	9520				
945UC-S121 Series B,C,S only	SST	10669	AST	-	-	-	-	-	-	-	7532	8703	Maximum Allowable Pressure			
	Mid Stroke Min	3777	Mid Stroke Min	-	-	-	-	-	-	-	2749	3777	8.3 bar g			
	SET	3777	AET	-	-	-	-	-	-	-	5807	7664				
1150UC-S041 Series B,C,S only	SST	4742	AST	3868	5267	6665	8063	-	-	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	1647	Mid Stroke Min	1647	2915	4183	5450	-	-	-	-	-	8.3 bar g			
	SET	1647	AET	3342	5559	7776	9993	-	-	-	-	-				
1150UC-S051 Series B,C,S only	SST	5928	AST	-	4835	6234	7632	9031	-	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	2059	Mid Stroke Min	-	2059	3326	4594	5862	-	-	-	-	8.3 bar g			
	SET	2059	AET	-	4177	6394	8611	10828	-	-	-	-				
1150UC-S061 Series B,C,S only	SST	7113	AST	-	-	5802	7200	8599	-	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	2471	Mid Stroke Min	-	-	2471	3739	5007	-	-	-	-	8.3 bar g			
	SET	2471	AET	-	-	5014	7231	9448	-	-	-	-				
1150UC-S071 Series B,C,S only	SST	8298	AST	-	-	5370	6768	8167	9565	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	2883	Mid Stroke Min	-	-	1615	2883	4151	5418	-	-	-	8.3 bar g			
	SET	2883	AET	-	-	3633	5850	8067	10284	-	-	-				
1150UC-S081 Series B,C,S only	SST	9484	AST	-	-	-	6338	7736	9135	-	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	3295	Mid Stroke Min	-	-	-	2027	3295	4562	-	-	-	8.3 bar g			
	SET	3295	AET	-	-	-	4468	6685	8902	-	-	-				
1150UC-S091 Series B,C,S only	SST	10669	AST	-	-	-	-	7304	8703	10101	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	3706	Mid Stroke Min	-	-	-	-	2439	3706	4974	-	-	8.3 bar g			
	SET	3706	AET	-	-	-	-	5304	7520	9737	-	-				
1150UC-S101 Series B,C,S only	SST	11856	AST	-	-	-	-	-	8272	9670	-	-	Maximum Allowable Pressure			
	Mid Stroke Min	4117	Mid Stroke Min	-	-	-	-	-	2850	4117	-	-	8.3 bar g			
	SET	4117	AET	-	-	-	-	-	6137	8354	-	-				



Series A/B/C/S: Models 023 - 7114
Spring Return - Fail Open (CCW)
Canted Yoke Design

Model Number	Spring Torques N-m		Torque at	Air torques N-m												
				Supply Pressure bar g												
				2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3	11.0
5336UC-S081 Series C Only	SST	49755	AST	-	-	-	33865	40583	47302	54021	60740	-	Maximum Allowable Pressure			
	Mid Stroke Min	16461	Mid Stroke Min	-	-	-	12231	16461	20691	24922	29152	-	8.3 bar g			
	SET	16461	AET	-	-	-	20957	33399	45842	58284	70727	-				
5336UC-S091 Series C Only	SST	55974	AST	-	-	-	-	38937	45656	52375	59094	-	Maximum Allowable Pressure			
	Mid Stroke Min	18519	Mid Stroke Min	-	-	-	-	14288	18519	22749	26979	-	8.3 bar g			
	SET	18519	AET	-	-	-	-	25132	37574	50017	62459	-	POA, Consult Factory			
5336UC-S101 Series C Only	SST	62193	AST	-	-	-	-	-	44011	50729	57448	64167	Maximum Allowable Pressure			
	Mid Stroke Min	20576	Mid Stroke Min	-	-	-	-	-	16346	20576	24807	29037	8.3 bar g			
	SET	20576	AET	-	-	-	-	-	29307	41749	54191	66634	POA, Consult Factory			
5336UC-S111 Series C Only	SST	68413	AST	-	-	-	-	-	-	49083	55802	62521	Maximum Allowable Pressure			
	Mid Stroke Min	22624	Mid Stroke Min	-	-	-	-	-	-	18404	22634	26864	8.3 bar g			
	SET	22624	AET	-	-	-	-	-	-	33481	45924	58366	POA, Consult Factory			
5336UC-S121 Series C Only	SST	74632	AST	-	-	-	-	-	-	-	54156	60875	Maximum Allowable Pressure			
	Mid Stroke Min	24692	Mid Stroke Min	-	-	-	-	-	-	-	20461	24692	8.3 bar g			
	SET	24692	AET	-	-	-	-	-	-	-	37656	50099	POA, Consult Factory			
6044UC-S041 Series C Only	SST	27805	AST	22680	30143	37606	45069	52531	59994	67457	74920	82383	Maximum Allowable Pressure			
	Mid Stroke Min	9199	Mid Stroke Min	9199	14610	20020	25431	30842	36253	41663	47074	52485	8.3 bar g			
	SET	9199	AET	18665	31862	45058	58255	71452	84649	97846	111043	124239				
6044UC-S051 Series C Only	SST	34756	AST	20886	28349	35812	43275	50738	58201	65664	73127	80590	Maximum Allowable Pressure			
	Mid Stroke Min	11499	Mid Stroke Min	6088	11499	16909	22320	27731	33141	38552	43962	49373	8.3 bar g			
	SET	11499	AET	10134	23331	36528	49724	62921	76118	89315	102511	115708				
6044UC-S061 Series C Only	SST	41707	AST	-	26556	34019	41482	48945	56408	63871	71334	78797	Maximum Allowable Pressure			
	Mid Stroke Min	13799	Mid Stroke Min	-	8388	13799	19209	24620	30031	35442	40852	46263	8.3 bar g			
	SET	13799	AET	-	14800	27997	41194	54391	67588	80784	93981	107178				
6044UC-S071 Series C Only	SST	48658	AST	-	-	32226	39689	47152	54615	62078	69541	77004	Maximum Allowable Pressure			
	Mid Stroke Min	16098	Mid Stroke Min	-	-	10688	16098	21509	26920	32330	37741	43151	8.3 bar g			
	SET	16098	AET	-	-	19466	32663	45860	59057	72253	85450	98647				
6044UC-S081 Series C Only	SST	55609	AST	-	-	-	37896	45359	52822	60285	67748	75211	Maximum Allowable Pressure			
	Mid Stroke Min	18398	Mid Stroke Min	-	-	-	12987	18398	23809	29220	34630	40041	8.3 bar g			
	SET	18398	AET	-	-	-	24133	37330	50526	63723	76920	90117				
7114UC-S041 Series C Only	SST	32725	AST	26693	35477	44260	53044	61828	70612	79395	88179	96963	Maximum Allowable Pressure			
	Mid Stroke Min	10827	Mid Stroke Min	10827	17195	23563	29931	36299	42667	49035	55403	61771	8.3 bar g			
	SET	10827	AET	21968	37500	53032	68564	84096	99628	115160	130692	146224				
7114UC-S051 Series C Only	SST	40906	AST	24582	33366	42150	50933	59717	68501	77284	86068	94852	Maximum Allowable Pressure			
	Mid Stroke Min	13534	Mid Stroke Min	7165	13534	19902	26270	32638	39006	45374	51742	58110	8.3 bar g			
	SET	13534	AET	11927	27459	42992	58524	74056	89588	105120	120652	136184				
7114UC-S061 Series C Only	SST	49087	AST	-	31255	40039	48823	57607	66391	75174	83958	92742	Maximum Allowable Pressure			
	Mid Stroke Min	16240	Mid Stroke Min	-	9872	16240	22608	28976	35344	41713	48081	54449	8.3 bar g			
	SET	16240	AET	-	17419	32951	48483	64016	79548	95080	110612	126144				
7114UC-S071 Series C Only	SST	57269	AST	-	-	37929	46712	55496	64280	73063	81847	90631	Maximum Allowable Pressure			
	Mid Stroke Min	18947	Mid Stroke Min	-	-	12579	18947	25315	31683	38051	44419	50787	8.3 bar g			
	SET	18947	AET	-	-	22911	38443	53975	69507	85039	100571	116103				
7114UC-S081 Series C Only	SST	65450	AST	-	-	-	44602	53386	62169	70953	79737	88521	Maximum Allowable Pressure			
	Mid Stroke Min	21654	Mid Stroke Min	-	-	-	15286	21654	28022	34390	40758	47126	8.3 bar g			
	SET	21654	AET	-	-	-	28403	43935	59467	74999	90532	106064				
7114UC-S091 Series C Only	SST	73631	AST	-	-	-	-	51275	60059	68843	77626	86410	Maximum Allowable Pressure			
	Mid Stroke Min	24360	Mid Stroke Min	-	-	-	-	17992	24360	30728	37097	43465	8.3 bar g			
	SET	24360	AET	-	-	-	-	33895	49427	64959	80491	96023	POA, Consult Factory			
7114UC-S101 Series C Only	SST	81812	AST	-	-	-	-	-	57948	66732	75516	84300	Maximum Allowable Pressure			
	Mid Stroke Min	27067	Mid Stroke Min	-	-	-	-	-	20699	27067	33435	39803	8.3 bar g			
	SET	27067	AET	-	-	-	-	-	39387	54919	70451	85983	POA, Consult Factory			
7114UC-S111 Series C Only	SST	89994	AST	-	-	-	-	-	-	64622	73405	82189	Maximum Allowable Pressure			
	Mid Stroke Min	29774	Mid Stroke Min	-	-	-	-	-	-	23406	29774	36142	8.3 bar g			
	SET	29774	AET	-	-	-	-	-	-	44879	60411	75943	POA, Consult Factory			
7114UC-S121 Series C Only	SST	98175	AST	-	-	-	-	-	-	-	71295	80078	Maximum Allowable Pressure			
	Mid Stroke Min	32481	Mid Stroke Min	-	-	-	-	-	-	-	26113	32481	8.3 bar g			
	SET	32481	AET	-	-	-	-	-	-	-	50371	65903	POA, Consult Factory			



Direct Gas / Hydraulic Actuators

Model Number	Torque at	Hydraulic/Gas Output torques N-m											Max Pressures	
		Supply Pressure bar g												
		27.6	34.5	41.4	48.3	55.2	62.1	68.9	82.7	103.4	124.1	137.9		155.1
HP65UC-4-2DA	Start (CCW)	6,536	8,170	9,805	11,439	13,073	14,707	16,341	19,609	24,511	29,414	32,682	36,767	MOP = 155.1 bar g MAP = 155.1 bar g
	END (CCW)	3,873	4,842	5,810	6,778	7,747	8,715	9,684	11,620	14,525	17,430	19,367	21,788	
	Start (CW)	3,970	4,963	5,955	6,948	7,941	8,933	9,926	11,911	14,888	17,866	19,851	22,333	
	END (CW)	6,294	7,868	9,441	11,015	12,589	14,162	15,736	18,883	23,604	28,324	31,471	35,405	
	MINIMUM	3,847	4,808	5,770	6,732	7,694	8,655	9,617	11,540	14,425	17,311	19,234	21,638	
HP65UC-6-2DA	Start (CCW)	14,136	17,670	21,204	24,738	28,272	31,806	35,339	42,407	53,009	-	-	-	MOP = 75.8 bar g MAP = 155.1 bar g
	END (CCW)	8,377	10,471	12,565	14,659	16,754	18,848	20,942	25,130	31,413	-	-	-	
	Start (CW)	8,586	10,733	12,879	15,026	17,172	19,319	21,465	25,759	32,198	-	-	-	
	END (CW)	13,612	17,015	20,418	23,821	27,224	30,628	34,031	40,837	51,046	-	-	-	
	MINIMUM	8,319	10,399	12,479	14,559	16,638	18,718	20,798	24,958	31,197	-	-	-	
HP65UC-8-2DA	Start (CCW)	24,666	30,833	36,999	43,166	49,332	55,499	-	-	-	-	-	-	MOP = 62 bar g MAP = 137.8 bar g
	END (CCW)	14,617	18,271	21,925	25,580	29,234	32,888	-	-	-	-	-	-	
	Start (CW)	14,982	18,728	22,473	26,219	29,965	33,710	-	-	-	-	-	-	
	END (CW)	23,752	29,691	35,629	41,567	47,505	53,443	-	-	-	-	-	-	
	MINIMUM	14,516	18,146	21,775	25,404	29,033	32,662	-	-	-	-	-	-	
HP80UC-4-1DA	Start (CCW)	6,785	8,481	10,178	11,874	13,570	15,267	16,963	20,356	25,444	30,533	33,926	38,167	MOP = 155.1 bar g MAP = 155.1 bar g
	END (CCW)	4,021	5,026	6,031	7,036	8,042	9,047	10,052	12,063	15,078	18,094	20,104	22,617	
	Start (CW)	4,121	5,152	6,182	7,212	8,243	9,273	10,303	12,364	15,455	18,546	20,607	23,183	
	END (CW)	6,534	8,167	9,801	11,434	13,068	14,701	16,335	19,602	24,502	29,402	32,669	36,753	
	MINIMUM	3,993	4,992	5,990	6,988	7,986	8,985	9,983	11,980	14,975	17,969	19,966	22,462	
HP80UC-6-1DA	Start (CCW)	16,918	21,147	25,377	29,606	33,835	38,065	42,294	50,753	63,441	76,130	84,589	95,162	MOP = 155.1 bar g MAP = 155.1 bar g
	END (CCW)	10,025	12,532	15,038	17,544	20,051	22,557	25,063	30,076	37,595	45,114	50,127	56,392	
	Start (CW)	10,276	12,845	15,414	17,983	20,552	23,121	25,690	30,828	38,535	46,242	51,380	57,802	
	END (CW)	16,291	20,364	24,437	28,509	32,582	36,655	40,728	48,873	61,092	73,310	81,456	91,638	
	MINIMUM	9,956	12,446	14,935	17,424	19,913	22,402	24,891	29,869	37,337	44,804	49,782	56,005	
HP80UC-8-1DA	Start (CCW)	30,958	38,698	46,437	54,177	61,916	69,656	77,395	92,874	116,093	-	-	-	MOP = 103.4 bar g MAP = 137.8 bar g
	END (CCW)	18,346	22,932	27,518	32,105	36,691	41,277	45,864	55,037	68,796	-	-	-	
	Start (CW)	18,804	23,505	28,206	32,907	37,608	42,309	47,010	56,412	70,516	-	-	-	
	END (CW)	29,811	37,264	44,717	52,170	59,623	67,076	74,529	89,434	111,793	-	-	-	
	MINIMUM	18,219	22,774	27,329	31,884	36,439	40,994	45,549	54,658	68,323	-	-	-	
HP80UC-4-2DA	Start (CCW)	8,715	10,894	13,073	15,252	17,430	19,609	21,788	26,146	32,682	39,218	43,576	49,023	MOP = 155.1 bar g MAP = 155.1 bar g
	END (CCW)	5,165	6,456	7,747	9,038	10,329	11,620	12,911	15,494	19,367	23,240	25,823	29,051	
	Start (CW)	5,294	6,617	7,941	9,264	10,587	11,911	13,234	15,881	19,851	23,822	26,468	29,777	
	END (CW)	8,392	10,490	12,589	14,687	16,785	18,883	20,981	25,177	31,471	37,766	41,962	47,207	
	MINIMUM	5,129	6,411	7,694	8,976	10,258	11,540	12,823	15,387	19,234	23,081	25,645	28,851	
HP80UC-6-2DA	Start (CCW)	18,848	23,560	28,272	32,983	37,695	42,407	47,119	56,543	70,679	84,815	94,239	106,018	MOP = 155.1 bar g MAP = 155.1 bar g
	END (CCW)	11,169	13,961	16,754	19,546	22,338	25,130	27,923	33,507	41,884	50,261	55,845	62,826	
	Start (CW)	11,448	14,310	17,172	20,034	22,896	25,759	28,621	34,345	42,931	51,517	57,241	64,396	
	END (CW)	18,150	22,687	27,224	31,762	36,299	40,837	45,374	54,449	68,061	81,673	90,748	102,092	
	MINIMUM	11,092	13,865	16,638	19,411	22,185	24,958	27,731	33,277	41,596	49,915	55,461	62,394	
HP80UC-8-2DA	Start (CCW)	32,888	41,110	49,332	57,554	65,776	73,998	82,220	98,664	123,330	-	-	-	MOP = 103.4 bar g MAP = 137.8 bar g
	END (CCW)	19,489	24,362	29,234	34,106	38,978	43,851	48,723	58,468	73,085	-	-	-	
	Start (CW)	19,976	24,971	29,965	34,959	39,953	44,947	49,941	59,929	74,912	-	-	-	
	END (CW)	31,670	39,587	47,505	55,422	63,340	71,257	79,175	95,010	118,762	-	-	-	
	MINIMUM	19,355	24,194	29,033	33,872	38,711	43,549	48,388	58,066	72,582	-	-	-	

Maximum Operating Pressure (MOP) = The Maximum pressure under normal operation producing the maximum allowable output torque
 Maximum Allowable Pressure (MAP) = The Static pressure allowed under normal operating conditions for a fully stroked actuator against the travel stop.



Direct Gas / Hydraulic Actuators

Model Number	Torque at	Hydraulic/Gas Output torques N-m											Max Pressures	
		27.6	34.5	41.4	48.3	55.2	62.1	68.9	82.7	103.4	124.1	137.9		155.1
HP15U-2-1-XXXX	Break	190	254	295	339	397	463	463	551	734	734	734	734	MOP = 155.1 bar g MAP = 155.1 bar g
	End	102	136	159	181	214	249	249	296	395	395	395	395	
	Minimum	92	122	143	163	192	224	224	266	356	356	356	356	
	Spring Pack	23S090	046S060	046S070	046S080	072S060	072S070	072S070	100S060	100S080	100S080	100S080	100S080	
HP15U-3-1-XXXX	Break	459	551	643	734	734	-	-	-	-	-	-	-	MOP = 62 bar g MAP = 103.4 bar g
	End	247	296	346	395	395	-	-	-	-	-	-	-	
	Minimum	223	266	311	356	356	-	-	-	-	-	-	-	
	Spring Pack	100S050	100S060	100S070	100S080	100S080	100S080	-	-	-	-	-	-	
HP25U-3-1-XXXX	Break	771	964	1,157	1,349	1,542	1,734	1,928	2,313	2,699	3,469	3,469	3,855	MOP = 155.1 bar g MAP = 155.1 bar g
	End	457	570	685	799	913	1,028	1,090	1,308	1,526	1,962	1,962	2,180	
	Minimum	411	513	616	719	822	925	981	1,177	1,373	1,766	1,766	1,962	
	Spring Pack	210S040	210S050	210S060	210S070	210S080	210S090	420S050	420S060	420S070	420S090	420S090	420S100	
HP25U-4-1-XXXX	Break	1,157	1,542	1,928	2,313	2,699	2,699	3,084	3,855	-	-	-	-	MOP = 96.5 bar g MAP = 155.1 bar g
	End	685	872	1,090	1,308	1,526	1,526	1,744	2,180	-	-	-	-	
	Minimum	616	785	981	1,177	1,373	1,373	1,570	1,962	-	-	-	-	
	Spring Pack	210S060	420S040	420S050	420S060	420S070	420S070	420S080	420S100	-	-	-	-	
HP30U-4-1-XXXX	Break	1,359	1,698	2,378	2,717	3,057	3,396	3,396	4,756	5,435	6,113	6,793	6,793	MOP = 155.1 bar g MAP = 155.1 bar g
	End	841	1,180	1,472	1,683	1,893	2,104	2,104	2,944	3,365	3,787	4,207	4,207	
	Minimum	757	1,062	1,325	1,514	1,704	1,893	1,893	2,650	3,029	3,408	3,787	3,787	
	Spring Pack	370S040	370S050	370S070	370S080	370S090	740S050	740S050	740S070	740S080	740S090	740S100	740S100	
HP30U-6-1-XXXX	Break	3,396	4,223	4,756	5,435	6,334	7,389	8,446	9,501	10,557	-	-	-	MOP = 103.4 bar g MAP = 155.1 bar g
	End	2,104	2,387	2,944	3,365	3,582	4,178	4,775	5,372	5,967	-	-	-	
	Minimum	1,893	2,149	2,650	3,029	3,223	3,760	4,298	4,835	5,371	-	-	-	
	Spring Pack	740S050	575S080	740S070	740S080	1150S060	1150S070	1150S080	1150S090	1150S100	-	-	-	
HP30U-8-1-XXXX	Break	5,435	7,389	8,446	9,501	10,557	10,557	-	-	-	-	-	-	MOP = 62 bar g MAP = 137.8 bar g
	End	3,365	4,178	4,775	5,372	5,967	5,967	-	-	-	-	-	-	
	Minimum	3,029	3,760	4,298	4,835	5,371	5,371	-	-	-	-	-	-	
	Spring Pack	740S080	1150S070	1150S080	1150S090	1150S100	1150S100	-	-	-	-	-	-	
HP65U-6-1-XXXX	Break	6,129	7,661	9,194	10,726	12,258	13,790	15,323	20,032	25,040	27,110	30,982	34,855	MOP = 155.1 bar g MAP = 155.1 bar g
	End	3,352	4,190	5,028	5,866	6,704	7,542	8,380	10,787	13,483	14,598	16,683	18,768	
	Minimum	3,017	3,771	4,525	5,279	6,033	6,788	7,542	9,708	12,135	13,138	15,015	16,891	
	Spring Pack	1485S040	1485S050	1485S060	1485S070	1485S080	1485S090	1485S100	2385S080	2385S100	3731S070	3731S080	3731S090	
HP65U-8-1-XXXX	Break	10,726	13,790	15,491	19,364	23,237	23,237	27,110	34,855	44,305	-	-	-	MOP = 103.4 bar g MAP = 137.8 bar g
	End	5,866	7,542	8,341	10,427	12,512	12,512	14,598	18,768	23,857	-	-	-	
	Minimum	5,279	6,788	7,507	9,384	11,261	11,261	13,138	16,891	21,471	-	-	-	
	Spring Pack	1485S070	1485S090	3731S040	3731S050	3731S060	3731S060	3731S070	3731S090	5336S080	-	-	-	
HP80U-6-1-XXXX	Break	-	-	-	-	-	-	-	24,759	30,949	36,426	43,711	50,996	MOP = 155.1 bar g MAP = 155.1 bar g
	End	-	-	-	-	-	-	-	13,332	16,665	19,613	23,537	27,459	
	Minimum	-	-	-	-	-	-	-	11,999	14,998	17,653	21,183	24,714	
	Spring Pack	-	-	-	-	-	-	-	6044S040	6044S050	7114S050	7114S060	7114S070	
HP80U-8-1-XXXX	Break	-	-	-	24,759	30,949	30,949	37,139	43,711	58,281	-	-	-	MOP = 103.4 bar g MAP = 137.8 bar g
	End	-	-	-	13,332	16,665	16,665	19,998	23,537	31,382	-	-	-	
	Minimum	-	-	-	11,999	14,998	14,998	17,998	21,183	28,244	-	-	-	
	Spring Pack	-	-	-	6044S040	6044S050	6044S050	6044S060	7114S060	7114S080	-	-	-	

Note: For Fail Open operation replace last "0" of spring code with "1" (i.e. -S040 becomes S041)

Maximum Operating Pressure (MOP) = The Maximum pressure under normal operation producing the maximum allowable output torque
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