BIFFI MORIN S SERIES ACTUATORS

Stainless steel spring return and double acting pneumatic quarter-turn actuators
Output torques to 26890 Nm

GENERAL APPLICATIONS

For remote control of any quarter-turn application: ball, butterfly, rotary plug or damper style valves, etc. To be used in chemical process, food and beverage, iron and steel, off-shore marine, pharmaceutical, power, oil and gas, pulp and paper, and textile industries.

TECHNICAL DATA

Supply pressure:	3 to 11 bar (see torque charts)
Supply medium:	Air or any gas compatible with materials of construction
Temperature rating	
Standard range:	-29°C to 99°C
Optional range:	-54°C to 149°C
Angular rotation:	90 degrees (adjustable between 82 and 98 degrees)
Mounting pattern:	ISO 5211
Protection:	IP66; IP68 (optional)
Certification:	SIL3 capable

FEATURES AND BENEFITS

- Innovative stainless steel construction provides superior internal and external corrosion resistance.
- Scotch yoke design using precision bearings eliminates dead band in the yoke mechanism, providing the greatest torque output at the beginning and end of stroke.
- High strength 17-4PH stainless output shaft transmits torque and gives long service life.
- Heat-treated stainless steel thrust pin and rollers transfer piston force to yoke to reduce friction for longer life and more efficient torque transmission.
- Bi-directional travel stops provide accurate valve rotation adjustment.
- PTFE piston bearings, piston rod bushings and output shaft bushings provide longer life, reduce maintenance and require no lubrication.
- Universal design position indicator and pointer allows for either parallel or perpendicular mounting.
- Stainless steel construction allows proximity switches to be direct-mounted in the actuator housing, eliminating the need to mount bracket and cam assemblies on top.
- NAMUR drive slot maintains a compact assembly for accessory-driven components with no couplings necessary.
- Available in symmetrical and canted yoke design to suit application.
- Spring return model design requires no special tools to disarm springs safely and easily, reducing down time.

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DESIGNED WITH A HEART OF STAINLESS STEEL

Stainless steel yoke
The heart of any scotch yoke actuator is the yoke. S series actuators use 17-4PH stainless for this critical area as standard.
The yoke is the mechanism used to convert linear force to torque. This area is most often where the life of the actuator is controlled.

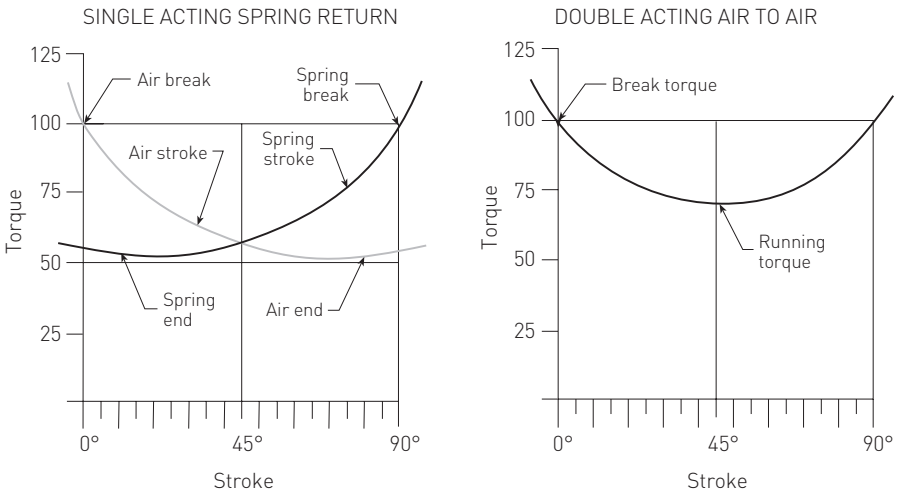
Principles of construction
Using high quality materials of construction and modern rugged design concepts provides the standard for high quality, low cost valve actuation.
The S actuator housings are all machined from 316 stainless steel castings. This produces a rugged, low cost product through reduced machining time and by eliminating wasteful excess material.
Any components that rotate or slide during operation, such as the high strength stainless steel output shaft, stainless steel piston rod, stainless steel thrust pin or the stainless steel piston, are all supported by replaceable friction reducing bearings.

Bi-directional travel stops
Adjustable stops on each end cap provide the flexibility of accurate valve rotation positioning at the end of the 'open' and 'close' stroke. Both stops are located on the cylinder centerline, the optimal position to maximize travel adjustment and eliminate any detrimental side loading on the travel stops. Adjustable from 82° to 98°.

Ingress protection
Standard IP66. Optional IP68.

Spring designed for safety
All spring return models incorporate a 'man-safe' spring design that allows the actuator to be safely assembled and disassembled in the field without the need for special tools. The integral tie rods are bored and tapped to provide a means of loading and unloading the spring in a safe and convenient manner.

SYMMETRICAL SCOTCH YOKE TORQUE CHARACTERISTICS



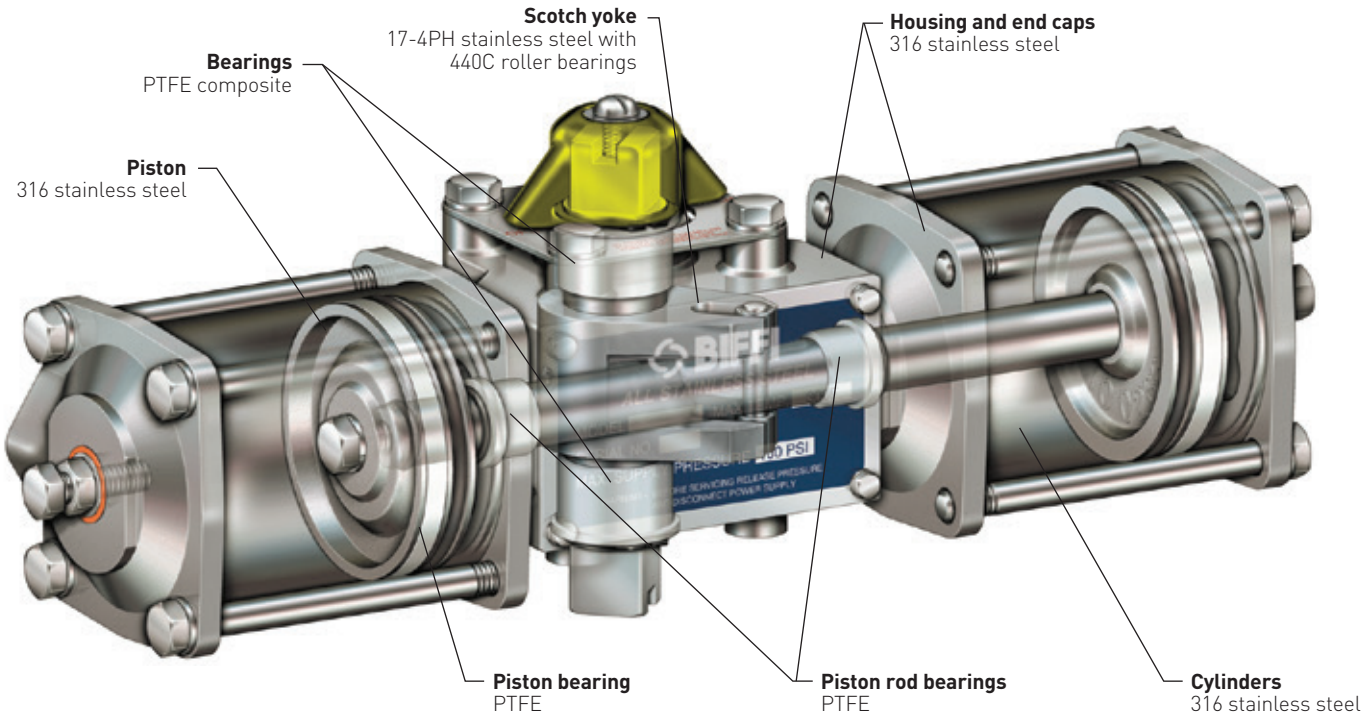
AVAILABLE OPTIONS

- Jackscrew override
- Hydraulic override
- Full stroke adjustment
- Proximity preparation
- Lockout device
- Partial stroke test

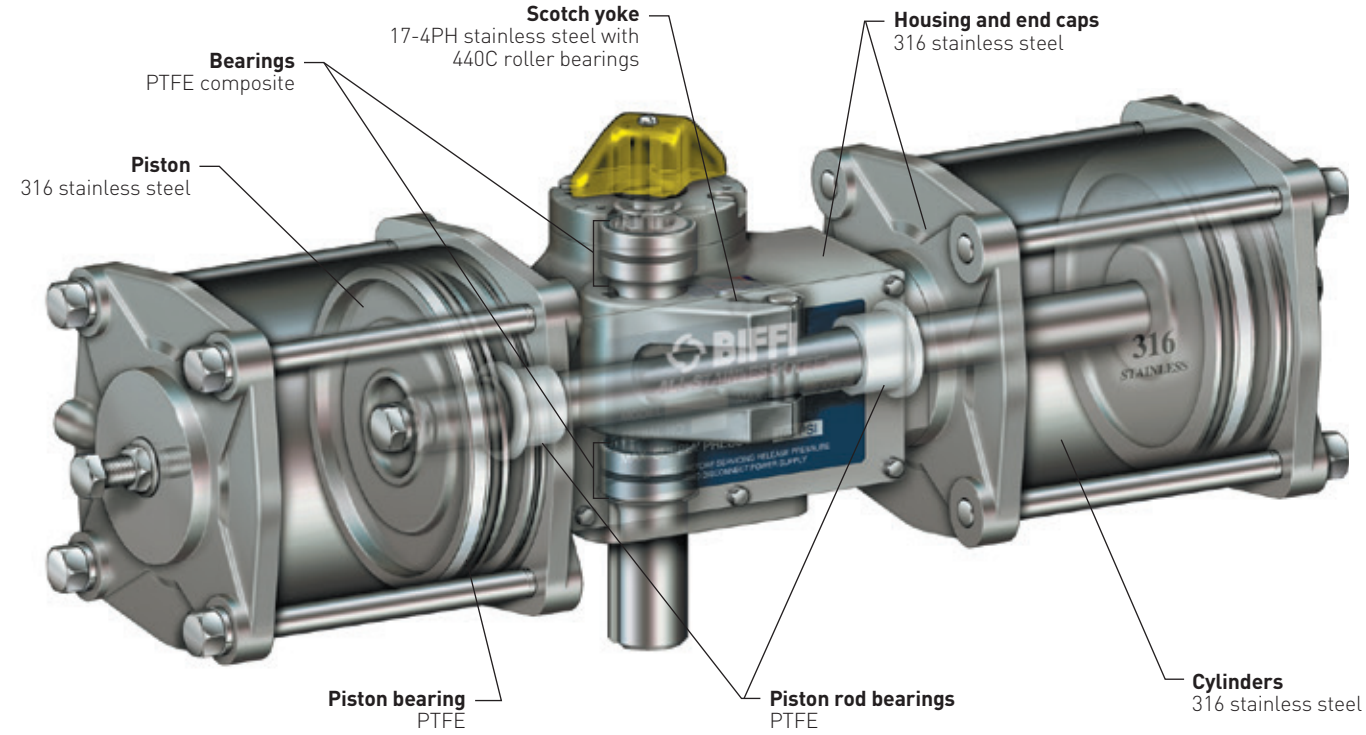
BIFFI MORIN S SERIES ACTUATORS

MATERIALS OF CONSTRUCTION

DOUBLE ACTING - MODELS 003 TO 100



DOUBLE ACTING - MODELS 135 TO 1150

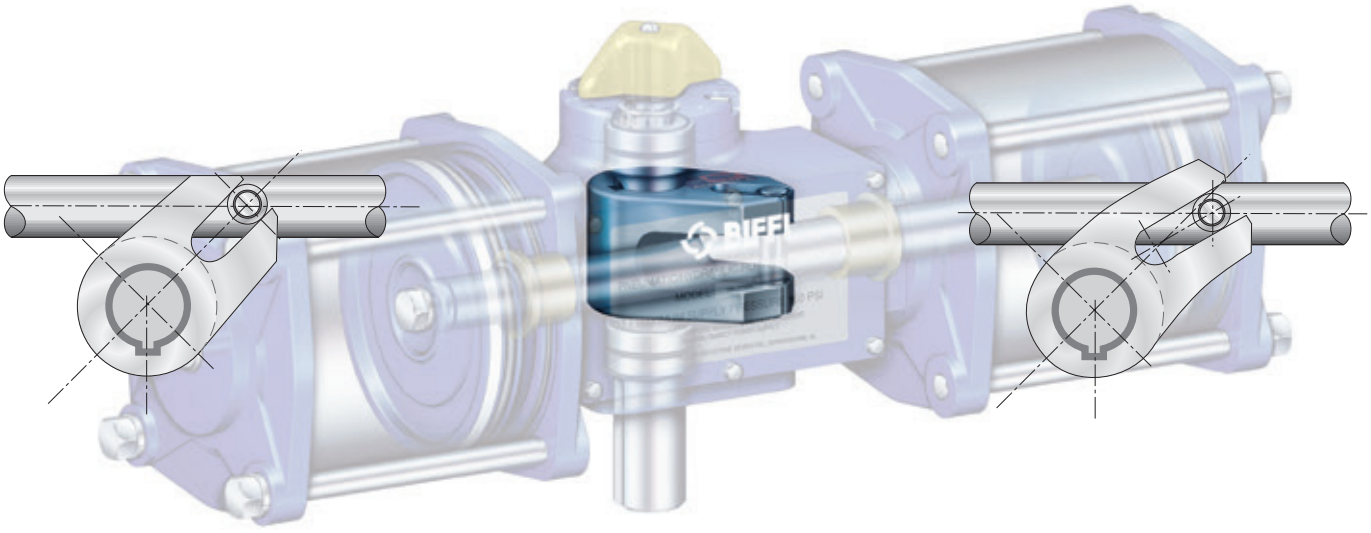


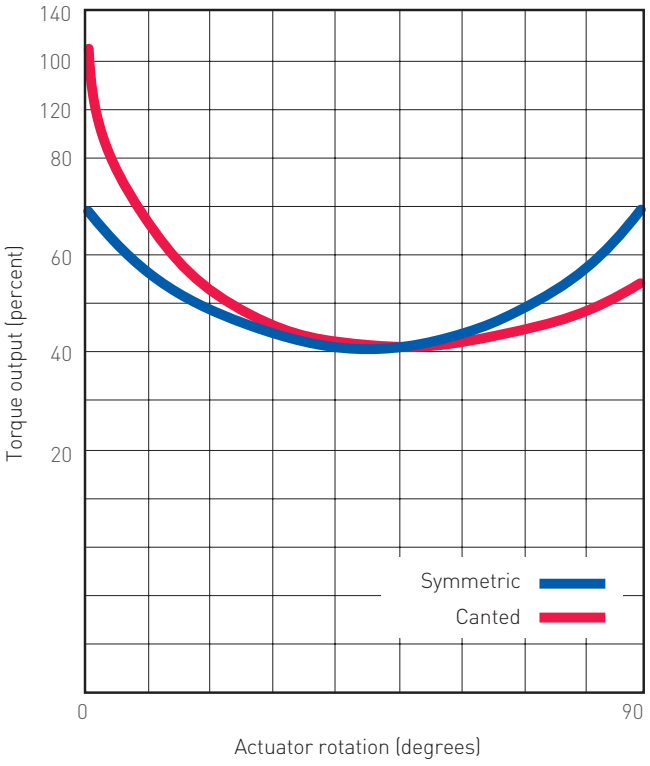
SYMMETRICAL AND CANTED YOKES

It's about fitting the torque curve of the actuator to the valve . . .
It's about lower cost, lighter weight, smaller actuators . . .
It's about CHOICE . . .

Symmetric
Symmetrical yoke design offers the standard torque curve seen most often in relation to scotch yoke actuators. It offers the increased torque advantage at both ends of the 90° stroke as shown on the blue curve below. This torque curve covers most quarter-turn applications.

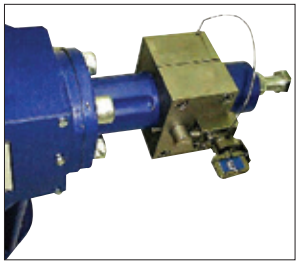
Canted
Canted yoke design moves the torque curve to where it's needed most, gaining as much as 35% more break and reseat torque for the same size actuator. The canted yoke curve is shown in red below. Canted yoke actuators allow selection of smaller, lighter, and less expensive actuator packages.





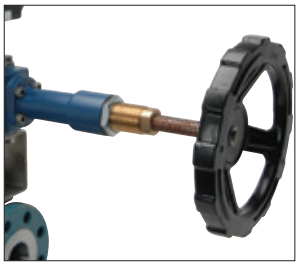
MANUAL OPTIONS

To provide the actuation package best suited for your application, we offer a full range of manual accessories.



Partial stroke test device (PSTD)
Provides a method of testing ESD packages without shutdown.

Lockout
Integral lockout allows safe shutdowns for maintenance and isolation of systems.

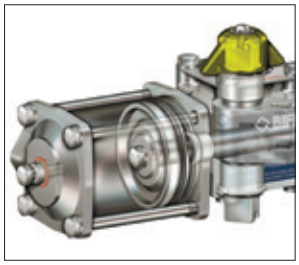


Jackscrew override (JSO)
Manual operation when power is lost. Simple and effective.

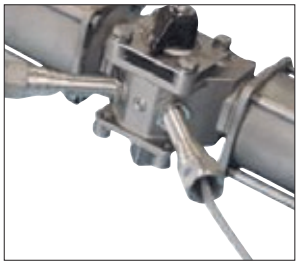
Hydraulic override (MHP)
Manual operation when power is lost. Includes speed controls.

AWWA
Tested per American Waterworks Association C540. Available for pneumatic or water service operation.

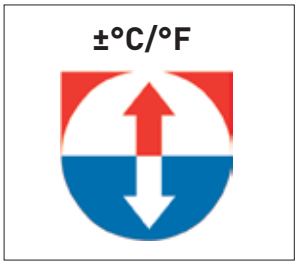
Direct mounting cast adapters
Many valve top works covered, including some ISO mounting. Assures economic but correct mounting alignment.



Full stroke adjuster
Provides mechanical control of maximum and/or minimum valve stroke.



Proximity switch preparation
Allows installation of cartridge style proximity switches. Leaves top works open for mounting of other devices.



High or low temperature ratings
Standard rating of -29°C to 99°C [-20°F to 210°F] covers most applications. Optional ratings down to -54°C [-65°F] and up to 149°C [300°F].

MECHANICAL DATA

Actuator model	Number of pistons	Cylinder bore (mm)	Stroke (mm)	Volume[1] (liters) 90° stroke	Cycle time[2] (seconds) 90° stroke	Weight (kg)
Double acting						
003	1	57.2	38.1	0.10	0.3	2.27
006	1	69.9	50.8	0.20	0.5	4.54
012	2	69.9	50.8	0.38	0.7	5.44
023	1	111.1	76.2	0.74	1.0	12.25
036	1	138.1	76.2	1.15	1.5	13.61
050	1	158.8	76.2	1.51	2.2	14.97
059	2	111.1/138.1	76.2	1.84	2.4	16.33
072	2	138.1	76.2	2.25	2.5	17.23
100	2	158.8	76.2	2.98	3.0	20.87
135	1	209.6	127.0	4.38	4.5	74.84
210	1	260.4	127.0	6.77	5.0	83.91
270	2	209.6	127.0	8.62	6.0	95.25
345	2	209.6/260.4	127.0	11.00	7.0	104.78
370	1	311.2	152.4	11.59	8.0	176.90
420	2	260.4	127.0	13.37	8.5	116.57
575	1	393.7	152.4	18.55	9.5	235.41
740	2	311.2	152.4	22.86	10.0	240.40
945	2	311.2/393.7	152.4	29.82	11.0	296.20
1150	2	393.7	152.4	36.79	12.0	351.53
1480	2	311.2	304.8	44.97	20.0	385.55
2380	2	393.7	304.8	72.82	24.0	476.27
Spring return						
003	1	57.2	38.1	0.10	0.3	2.72
006	1	69.9	50.8	0.20	0.5	4.99
012	2	69.9	50.8	0.38	0.7	6.35
023	1	111.1	76.2	0.74	1.0	15.42
036	1	138.1	76.2	1.15	1.5	19.05
046	2	111.1	76.2	1.44	2.0	19.50
058	2	138.1/111.1	76.2	1.84	2.3	23.13
059	2	111.1/138.1	76.2	1.84	2.4	23.13
072	2	138.1	76.2	2.25	2.5	24.95
100	2	158.8	76.2	2.98	3.0	29.03
135	1	209.6	127.0	4.38	4.5	95.25
210	1	260.4	127.0	6.77	5.0	106.59
270	2	209.6	127.0	8.62	6.0	113.40
344	2	260.4/209.6	127.0	11.00	7.0	143.00
345	2	209.6/260.4	127.0	11.00	7.0	143.00
370	1	311.2	152.4	11.59	8.0	244.94
420	2	260.4	127.0	13.37	8.5	171.91
575	1	393.7	152.4	18.55	9.5	353.35
740	2	311.2	152.4	22.86	10.0	319.33
944	2	393.7/311.2	152.4	29.82	11.0	395.00
945	2	311.2/393.7	152.4	29.82	11.0	395.00
1150	2	393.7	152.4	36.79	12.0	490.79
1480	2	311.2	304.8	44.97	20.0	748.43
2380	2	393.7	304.8	72.82	24.0	839.15

NOTES

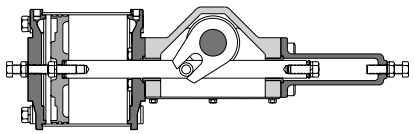
1. Air consumption:
   Liter shown in chart represent actual free air volume in cylinder between piston and end cap when furthest apart.
   Air consumption will vary depending on supply pressure. To determine standard cubic meter per second use the following formula:

$$\left(\frac{\text{Vol. ltr.}}{1000}\right)\left(\frac{\text{Supply air barg} + 1}{1\ \text{barg}}\right)\left(\frac{\text{Strokes/min}}{60}\right)$$

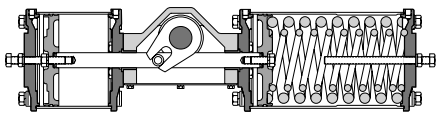
Example: Calculate SCMS for model 023 double acting using 5.5 barg air supply and 5 strokes/minute.

$$\text{SCMS} = \left(\frac{0.737}{1000}\right)\left(\frac{5.5+1}{1\ \text{barg}}\right)\left(\frac{5}{60}\right) = 0.000401$$

2. Cycle times shown represent average time to stroke 90 degrees using standard pilot valves and should be used as a guide only. Cycle times can be increased or decreased dramatically by using speed controls, oversized pilot valves or quick exhaust valves.



TYPICAL SECTION - double acting/one piston



TYPICAL SECTION - spring return/two pistons

OUTPUT TORQUES (NM) - DOUBLE ACTING, SYMMETRIC 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
003U-D000	Start/End	20	25	29	34	39	44	49	53	59	-	-	-	-
	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
	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	-	-	-	-
	Minimum	53	66	79	92	106	119	132	144	159	-	-	-	-
023U-D000	Start/End	130	164	195	227	260	292	325	357	390	423	454	486	520
	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
	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
	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	-	-	-
	Minimum	250	312	375	437	499	562	624	687	749	812	-	-	-
072U-D000	Start/End	447	559	671	783	895	1007	1119	1218	-				
	Minimum	310	387	464	541	619	696	774	852	-				
100U-D000	Start/End	565	706	847	989	1130	-	-						
	Minimum	416	520	624	728	832	-	-						
135U-D000	Start/End	801	1001	1201	1402	1602	1802	2003	2202	2402	2603	2803	3003	3203
	Minimum	593	742	890	1038	1186	1334	1483	1632	1780	1928	2076	2225	2373
210U-D000	Start/End	1305	1631	1957	2284	2610	2936	3262	3589	3915	4241	4567	4894	5220
	Minimum	922	1152	1383	1613	1844	2105	2305	2535	2766	2996	3227	3457	3688
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	-	-				
	Minimum	1516	1895	2274	2652	3031	3410	3789	-	-				
370U-D000	Start/End	2237	2796	3355	3914	4180	5032	5591	6150	6710	7269	7828	8387	8946
	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
	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				
	Minimum	2956	3695	4434	5172	5911	6650	7389	8128	8867				
945U-D000	Start/End	5712	7140	8568	9996	11424	12853	-	-	-				
	Minimum	4112	5139	6167	7195	8223	9251	-	-	-				
1150U-D000	Start/End	6821	8527	10232	11938	13643	-	-	-	-				
	Minimum	5071	6338	7606	8874	10142	-	-	-	-				
1480U-D000	Start/End	8361	10451	12541	14632	16722	18812	20902	22992	25083	Maximum Operating Pressure 8.3 bar g			
	Minimum	5267	6584	7901	9218	10535	11852	13169	14485	15802				
2380U-D000	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)			

OUTPUT TORQUES (NM) - 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
023UC-D000	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	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	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	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	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	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)	1081	1352	1622	1892	2162	2433	2703	2972	3243	3514	3785	4054	4324
	End (CCW)	641	801	961	1121	1281	1442	1602	1761	1922	2082	2243	2402	2562
	Start (CW)	657	821	985	1149	1313	1478	1642	1806	1970	2134	2299	2462	2627
	End (CW)	1041	1302	1561	1822	2082	2343	2603	2862	3123	3384	3644	3903	4164
	Minimum	593	742	890	1038	1186	1334	1483	1632	1780	1928	2076	2225	2373
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	922	1152	1383	1613	1844	2074	2305	2535	-	-	-	-	-
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	-	-	-	-	-	-	-
345UC-D000	Start (CCW)	2763	3453	4144	4835	-	-	-	-	-				
	End (CCW)	1637	2046	2456	2865	-	-	-	-	-				
	Start (CW)	1678	2098	2517	2937	-	-	-	-	-				
	End (CW)	2660	3326	3991	4656	-	-	-	-	-				
	Minimum	1516	1895	2274	2652	-	-	-	-	-				
	Start (CCW)	3019	3774	4529	5284	6039	6794	7549	8304	9059	9814	10569	11324	12079
370UC-D000	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	-	-	-	-	-	-	-	-	-	-
	Start (CCW)	4868	6078	7301	8516	9735	10953	12169	13386	-	-	-	-	-

OUTPUT TORQUES (NM) - DOUBLE ACTING, CANTED YOKE DESIGN (Continued)

		Output torques N-m												
Model		Supply Pressure bar g												
Number	Torque at	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
575UC-D000	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	-	-	-	-	-
	Start (CCW)	5926	7407	8889	10370	11852	13333	-	-	-				
740UC-D000	End (CCW)	3512	4390	5267	6145	7023	7901	-	-	-				
	Start (CW)	3599	4499	5399	6299	7199	8099	-	-	-				
	End (CW)	5706	7133	8559	9986	11413	12839	-	-	-				
	Minimum	2956	3695	4434	5172	5911	6650	-	-	-				
	Start (CCW)	9209	11511	-	-	-	-	-	-	-				
1150UC-D000	End (CCW)	5457	6821	-	-	-	-	-	-	-				
	Start (CW)	5594	6992	-	-	-	-	-	-	-				
	End (CW)	8868	11085	-	-	-	-	-	-	-				
	Minimum	5071	6338	-	-	-	-	-	-	-				
1480UC-D000	Start (CCW)	11287	14109	16931	19753	22574	25396	-	-	-				
	End (CCW)	6689	8361	10033	11705	13377	15050	-	-	-				
	Start (CW)	6856	8570	10284	11998	13712	15426	-	-	-				
	End (CW)	10869	13586	16304	19021	21738	24456	-	-	-				
	Minimum	5267	6584	7901	9218	10535	11852	-	-	-				
2380UC-D000	Start (CCW)	18151	22689	27227										
Series S Only	End (CCW)	10756	13445	16134										
	Start (CW)	11025	13781	16538										
	End (CW)	17479	21848	26218										
	Minimum	8531	10664	12797										

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring torques N-m		Torque at	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	Start	12	Start	12	17	22	27	32	37	42	47	51	56	-	-	-
	Min	6	Min	6	11	15	20	25	30	35	40	45	49	-	-	-
	End	6	End	6	11	16	21	26	31	35	40	45	50	-	-	-
003U-S050	Start	15	Start	-	15	20	25	30	35	40	44	49	54	-	-	-
	Min	7	Min	-	7	12	17	22	27	31	36	41	46	-	-	-
	End	8	End	-	8	13	18	23	27	32	37	42	47	-	-	-
003U-S060	Start	18	Start	-	-	18	23	28	33	38	42	47	52	57	-	-
	Min	8	Min	-	-	8	13	18	23	28	32	37	42	47	-	-
	End	9	End	-	-	9	14	19	24	29	33	38	43	48	-	-
003U-S070	Start	21	Start	-	-	16	21	26	31	36	40	45	50	55	-	-
	Min	10	Min	-	-	5	10	15	19	24	29	34	39	44	-	-
	End	11	End	-	-	6	11	16	20	25	30	35	40	45	-	-
003U-S080	Start	24	Start	-	-	-	19	24	29	33	38	43	48	53	-	-
	Min	11	Min	-	-	-	6	11	16	20	25	30	35	40	-	-
	End	12	End	-	-	-	7	12	17	22	26	31	36	41	-	-
006U-S040	Start	22	Start	22	31	39	47	56	64	73	81	90	98	107	115	124
	Min	11	Min	11	20	28	37	45	54	62	71	79	87	96	104	113
	End	12	End	12	21	29	38	46	55	63	72	80	89	97	106	114
006U-S050	Start	28	Start	-	28	36	45	53	62	70	79	87	95	104	112	121
	Min	14	Min	-	14	22	31	39	48	56	65	73	82	90	99	107
	End	15	End	-	15	24	32	41	49	58	66	75	83	92	100	109
006U-S060	Start	33	Start	-	-	33	41	50	58	67	75	84	92	101	109	118
	Min	17	Min	-	-	17	26	34	42	51	59	68	76	85	93	102
	End	19	End	-	-	19	27	36	44	53	61	70	78	87	95	104
006U-S070	Start	38	Start	-	-	30	38	47	55	64	72	81	89	98	106	115
	Min	20	Min	-	-	11	20	28	37	45	54	62	71	79	88	96
	End	22	End	-	-	13	22	30	39	47	56	64	73	81	90	98
006U-S080	Start	44	Start	-	-	-	36	44	53	61	69	78	86	95	103	112
	Min	19	Min	-	-	-	11	19	28	36	45	53	61	70	78	87
	End	25	End	-	-	-	16	25	33	42	50	59	67	76	84	93

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring torques N-m		Torque at	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-S040	Start	44	Start	44	64	83	103	122	142	161	180	200	219	-	-	-
	Min	24	Min	24	43	62	82	101	121	140	160	179	199	-	-	-
	End	26	End	26	46	65	85	104	124	143	163	182	202	-	-	-
012U-S050	Start	55	Start	-	55	74	94	113	133	152	172	191	211	-	-	-
	Min	30	Min	-	30	49	69	88	108	127	147	166	186	-	-	-
	End	33	End	-	33	52	72	91	111	130	150	169	189	-	-	-
012U-S060	Start	66	Start	-	-	66	86	105	125	144	164	183	203	222	-	-
	Min	35	Min	-	-	35	55	74	94	113	133	152	172	191	-	-
	End	39	End	-	-	39	59	78	98	117	137	156	176	195	-	-
012U-S070	Start	77	Start	-	-	57	77	96	116	135	155	174	194	213	-	-
	Min	41	Min	-	-	22	41	61	80	100	119	139	158	178	-	-
	End	46	End	-	-	26	46	65	85	104	124	143	163	182	-	-
012U-S080	Start	88	Start	-	-	-	69	88	108	127	147	166	186	205	-	-
	Min	47	Min	-	-	-	28	47	66	86	105	125	144	164	-	-
	End	52	End	-	-	-	33	52	72	91	111	130	150	169	-	-
023U-S040	Start	85	Start	85	117	150	182	215	247	280	312	345	377	410	442	475
	Min	41	Min	41	73	106	138	171	203	236	268	301	333	366	398	430
	End	45	End	45	78	110	143	175	208	240	273	305	338	370	403	435
023U-S050	Start	107	Start	-	107	139	172	204	237	269	302	334	367	399	432	464
	Min	52	Min	-	52	84	117	149	182	214	247	279	312	344	377	409
	End	58	End	-	58	90	123	155	188	220	253	285	317	350	382	415
023U-S060	Start	127	Start	-	-	127	160	192	225	257	290	322	354	387	419	452
	Min	61	Min	-	-	61	93	126	158	191	223	256	288	321	353	386
	End	68	End	-	-	68	100	133	165	198	230	263	295	328	360	393
023U-S070	Start	147	Start	-	-	115	147	180	212	245	277	310	342	375	407	440
	Min	72	Min	-	-	39	72	104	137	169	202	234	267	299	332	364
	End	80	End	-	-	47	80	112	145	177	210	242	275	307	340	372
023U-S080	Start	169	Start	-	-	-	137	169	202	234	267	299	332	364	397	429
	Min	81	Min	-	-	-	49	81	114	146	179	211	244	276	309	341
	End	90	End	-	-	-	58	90	123	155	188	220	253	285	318	350
023U-S090	Start	190	Start	-	-	-	-	157	190	222	255	287	320	352	385	417
	Min	92	Min	-	-	-	-	60	92	125	157	190	222	254	287	319
	End	102	End	-	-	-	-	70	102	135	167	200	232	265	297	330
023U-S100	Start	211	Start	-	-	-	-	-	179	211	244	276	309	341	374	406
	Min	102	Min	-	-	-	-	-	70	102	135	167	200	232	265	297
	End	114	End	-	-	-	-	-	81	114	146	179	211	243	276	308
023U-S120	Start	254	Start	-	-	-	-	-	-	-	222	254	287	319	352	384
	Min	122	Min	-	-	-	-	-	-	-	90	122	155	187	219	252
	End	136	End	-	-	-	-	-	-	-	103	136	168	201	233	266
023U-S140	Start	295	Start	-	-	-	-	-	-	-	-	-	263	295	328	360
	Min	143	Min	-	-	-	-	-	-	-	-	-	111	143	176	208
	End	159	End	-	-	-	-	-	-	-	-	-	127	159	192	224
023U-S160	Start	339	Start	-	-	-	-	-	-	-	-	-	-	-	306	339
	Min	163	Min	-	-	-	-	-	-	-	-	-	-	-	130	163
	End	181	End	-	-	-	-	-	-	-	-	-	-	-	148	181
036U-S040	Start	132	Start	132	188	244	300	356	412	468	524	580	636	691	747	803
	Min	64	Min	64	120	176	232	288	344	400	456	511	567	623	679	735
	End	71	End	71	127	183	239	295	351	407	463	519	575	630	686	742
036U-S050	Start	165	Start	-	165	221	277	333	389	445	501	556	612	668	724	780
	Min	80	Min	-	80	136	192	248	304	360	416	472	528	584	640	696
	End	89	End	-	89	145	201	257	313	369	425	481	537	593	649	704
036U-S060	Start	198	Start	-	-	198	254	310	366	422	478	534	590	646	702	758
	Min	97	Min	-	-	97	153	208	264	320	376	432	488	544	600	656
	End	107	End	-	-	107	163	219	275	331	387	443	499	555	611	667
036U-S070	Start	232	Start	-	-	176	232	288	343	399	455	511	567	623	679	735
	Min	112	Min	-	-	56	112	168	224	280	336	391	447	503	559	615
	End	124	End	-	-	68	124	180	236	292	348	404	460	516	572	628

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring torques N-m**		**Torque at**	**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	Start	264	Start	-	-	-	208	264	320	376	432	488	544	600	656	712
	Min	128	Min	-	-	-	72	128	184	240	296	352	408	464	520	576
	End	142	End	-	-	-	86	142	198	254	310	366	422	478	534	590
036U-S090	Start	297	Start	-	-	-	-	241	297	353	409	465	521	577	633	689
	Min	144	Min	-	-	-	-	88	144	200	256	312	368	424	480	535
	End	160	End	-	-	-	-	104	160	216	272	328	384	440	495	551
036U-S100	Start	330	Start	-	-	-	-	-	275	330	386	442	498	554	610	666
	Min	160	Min	-	-	-	-	-	104	160	216	272	328	384	440	496
	End	178	End	-	-	-	-	-	122	178	234	290	346	402	458	514
036U-S120	Start	397	Start	-	-	-	-	-	-	-	341	397	453	508	564	620
	Min	192	Min	-	-	-	-	-	-	-	136	192	248	304	360	416
	End	214	End	-	-	-	-	-	-	-	158	214	269	325	381	437
036U-S140	Start	463	Start	-	-	-	-	-	-	-	-	-	407	463	519	575
	Min	224	Min	-	-	-	-	-	-	-	-	-	168	224	280	336
	End	249	End	-	-	-	-	-	-	-	-	-	193	249	305	361
036U-S160	Start	531	Start	-	-	-	-	-	-	-	-	-	-	-	475	531
	Min	254	Min	-	-	-	-	-	-	-	-	-	-	-	198	254
	End	282	End	-	-	-	-	-	-	-	-	-	-	-	227	282
046U-S040	Start	169	Start	169	234	299	364	429	494	559	624	689	-	-	-	-
	Min	81	Min	81	146	211	276	341	406	471	536	601	-	-	-	-
	End	90	End	90	155	220	285	350	415	480	545	610	-	-	-	-
046U-S050	Start	211	Start	-	211	276	341	406	471	536	601	666	-	-	-	-
	Min	102	Min	-	102	167	232	297	362	427	492	557	-	-	-	-
	End	114	End	-	114	179	243	308	373	438	503	568	-	-	-	-
046U-S060	Start	254	Start	-	-	254	319	384	449	514	579	644	-	-	-	-
	Min	122	Min	-	-	122	187	252	317	382	447	512	-	-	-	-
	End	136	End	-	-	136	201	266	330	395	460	525	-	-	-	-
046U-S070	Start	295	Start	-	-	230	295	360	425	490	555	620	-	-	-	-
	Min	143	Min	-	-	78	143	208	273	338	403	468	-	-	-	-
	End	159	End	-	-	94	159	224	289	354	419	484	-	-	-	-
046U-S080	Start	339	Start	-	-	-	274	339	404	469	534	599	-	-	-	-
	Min	163	Min	-	-	-	98	163	228	293	358	423	-	-	-	-
	End	181	End	-	-	-	116	181	246	311	376	441	-	-	-	-
058U-S040	Start	211	Start	211	295	378	461	-	-	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Min	102	Min	102	186	269	352	-	-	-	-	-				
	End	114	End	114	197	280	364	-	-	-	-	-				
058U-S050	Start	254	Start	-	254	338	421	504	-	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Min	122	Min	-	122	205	289	372	-	-	-	-				
	End	136	End	-	136	219	302	386	-	-	-	-				
058U-S060	Start	295	Start	-	-	295	379	462	545	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Min	143	Min	-	-	143	227	310	393	-	-	-				
	End	159	End	-	-	159	243	326	409	-	-	-				
058U-S070	Start	339	Start	-	-	256	339	422	506	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Min	163	Min	-	-	79	163	246	329	-	-	-				
	End	181	End	-	-	97	181	264	347	-	-	-				
059U-S080	Start	397	Start	-	-	-	-	397	480	563	647	730	Maximum Operating Pressure 8.3 Bar g			
	Min	192	Min	-	-	-	-	192	276	359	442	525				
	End	214	End	-	-	-	-	214	297	380	464	547				
059U-S090	Start	463	Start	-	-	-	-	-	463	546	629	713	Maximum Operating Pressure 8.3 Bar g			
	Min	224	Min	-	-	-	-	-	224	308	391	474				
	End	249	End	-	-	-	-	-	249	332	416	499				
059U-S100	Start	531	Start	-	-	-	-	-	-	531	614	698	Maximum Operating Pressure 8.3 Bar g			
	Min	254	Min	-	-	-	-	-	-	254	338	421				
	End	282	End	-	-	-	-	-	-	282	366	449				

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring torques N-m		Torque at	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-S040	Start	264	Start	264	376	488	600	712	824	936			Maximum Operating Pressure 6.9 Bar g			
	Min	128	Min	128	240	352	464	576	687	799						
	End	142	End	142	254	366	478	590	702	813						
072U-S050	Start	330	Start	-	330	442	554	666	778	890			Maximum Operating Pressure 6.9 Bar g			
	Min	160	Min	-	160	272	384	496	608	719						
	End	178	End	-	178	290	402	514	625	737						
072U-S060	Start	397	Start	-	-	397	508	620	732	844			Maximum Operating Pressure 6.9 Bar g			
	Min	192	Min	-	-	192	304	416	528	640						
	End	214	End	-	-	214	325	437	549	661						
072U-S070	Start	463	Start	-	-	351	463	575	686	798			Maximum Operating Pressure 6.9 Bar g			
	Min	224	Min	-	-	112	224	336	448	560						
	End	249	End	-	-	137	249	361	473	585						
072U-S080	Start	531	Start	-	-	-	419	531	643	755			Maximum Operating Pressure 6.9 Bar g			
	Min	254	Min	-	-	-	142	254	366	478						
	End	282	End	-	-	-	171	282	394	506						
100U-S040	Start	367	Start	367	508	650	791	932	1073	1215			Maximum Operating Pressure 6.9 Bar g			
	Min	178	Min	178	319	460	602	743	884	1025						
	End	198	End	198	339	480	621	763	904	1045						
100U-S050	Start	459	Start	-	459	600	741	882	1024	1165			Maximum Operating Pressure 6.9 Bar g			
	Min	223	Min	-	223	364	505	646	788	929						
	End	247	End	-	247	389	530	671	812	954						
100U-S060	Start	551	Start	-	-	551	693	834	975	1116			Maximum Operating Pressure 6.9 Bar g			
	Min	266	Min	-	-	266	408	549	690	831						
	End	296	End	-	-	296	437	578	720	861						
100U-S070	Start	643	Start	-	-	502	643	784	925	1067			Maximum Operating Pressure 6.9 Bar g			
	Min	311	Min	-	-	170	311	452	594	735						
	End	346	End	-	-	205	346	487	628	769						
100U-S080	Start	734	Start	-	-	-	593	734	876	1017			Maximum Operating Pressure 6.9 Bar g			
	Min	356	Min	-	-	-	215	356	497	638						
	End	395	End	-	-	-	254	395	537	678						
135U-S040	Start	496	Start	496	696	897	1097	1297	1497	1698	1898	2098	2298	2499	2699	2899
	Min	289	Min	289	489	689	889	1090	1290	1490	1690	1891	2091	2291	2491	2692
	End	321	End	321	521	721	921	1122	1322	1522	1722	1923	2123	2323	2523	2724
135U-S050	Start	620	Start	-	620	820	1020	1220	1421	1621	1821	2022	2222	2422	2622	2823
	Min	360	Min	-	360	560	760	961	1161	1361	1561	1762	1962	2162	2363	2563
	End	400	End	-	400	600	800	1001	1201	1401	1601	1802	2002	2202	2403	2603
135U-S060	Start	743	Start	-	-	743	944	1144	1344	1544	1745	1945	2145	2345	2546	2746
	Min	433	Min	-	-	433	633	833	1033	1234	1434	1634	1834	2035	2235	2435
	End	481	End	-	-	481	681	881	1081	1282	1482	1682	1882	2083	2283	2483
135U-S070	Start	868	Start	-	-	667	868	1068	1268	1468	1669	1869	2069	2270	2470	2670
	Min	505	Min	-	-	304	505	705	905	1105	1306	1506	1706	1906	2107	2307
	End	561	End	-	-	360	561	761	961	1161	1362	1562	1762	1962	2163	2363
135U-S080	Start	991	Start	-	-	-	791	991	1192	1392	1592	1792	1993	2193	2393	2593
	Min	577	Min	-	-	-	376	577	777	977	1177	1378	1578	1778	1978	2179
	End	641	End	-	-	-	440	641	841	1041	1241	1442	1642	1842	2042	2243
135U-S090	Start	1116	Start	-	-	-	-	915	1116	1316	1516	1716	1917	2117	2317	2518
	Min	649	Min	-	-	-	-	448	649	849	1049	1249	1450	1650	1850	2050
	End	721	End	-	-	-	-	520	721	921	1121	1321	1522	1722	1922	2122
135U-S100	Start	1239	Start	-	-	-	-	-	1039	1239	1440	1640	1840	2040	2241	2441
	Min	721	Min	-	-	-	-	-	520	721	921	1121	1321	1522	1722	1922
	End	801	End	-	-	-	-	-	600	801	1001	1201	1401	1602	1802	2002
135U-S120	Start	1487	Start	-	-	-	-	-	-	-	1287	1487	1687	1887	2088	2288
	Min	865	Min	-	-	-	-	-	-	-	667	867	1067	1268	1468	1668
	End	961	End	-	-	-	-	-	-	-	761	961	1162	1362	1562	1762

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring torques N-m**		**Torque at**	**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**
135U-S140	Start	1735	Start	-	-	-	-	-	-	-	-	-	1535	1735	1935	2135
	Min	1009	Min	-	-	-	-	-	-	-	-	-	809	1009	1209	1410
	End	1121	End	-	-	-	-	-	-	-	-	-	921	1121	1322	1522
135U-S160	Start	1983	Start	-	-	-	-	-	-	-	-	-	-	-	1783	1983
	Min	1153	Min	-	-	-	-	-	-	-	-	-	-	-	953	1153
	End	1281	End	-	-	-	-	-	-	-	-	-	-	-	1081	1281
210U-S040	Start	771	Start	771	1097	1424	1750	2076	2402	2729	3055	3381	3707	4034	4360	4686
	Min	411	Min	411	737	1064	1390	1716	2042	2369	2695	3021	3347	3674	4000	4326
	End	457	End	457	783	1109	1436	1762	2088	2414	2741	3067	3393	3719	4045	4372
210U-S050	Start	964	Start	-	964	1290	1616	1942	2269	2595	2921	3247	3574	3900	4226	4552
	Min	513	Min	-	513	840	1166	1492	1818	2145	2471	2797	3123	3450	3776	4102
	End	570	End	-	570	897	1223	1549	1875	2202	2528	2854	3180	3507	3833	4159
210U-S060	Start	1157	Start	-	-	1157	1483	1809	2136	2462	2788	3114	3441	3767	4093	4419
	Min	616	Min	-	-	616	943	1269	1595	1921	2248	2574	2900	3226	3553	3879
	End	685	End	-	-	685	1011	1337	1664	1990	2316	2642	2969	3295	3621	3947
210U-S070	Start	1349	Start	-	-	1023	1349	1675	2002	2328	2654	2980	3307	3633	3959	4285
	Min	719	Min	-	-	393	719	1046	1372	1698	2024	2350	2677	3003	3329	3655
	End	799	End	-	-	473	799	1125	1452	1778	2104	2430	2757	3083	3409	3735
210U-S080	Start	1542	Start	-	-	-	1216	1542	1868	2195	2521	2847	3173	3500	3826	4152
	Min	699	Min	-	-	-	373	699	1025	1351	1677	2004	2330	2656	2982	3308
	End	913	End	-	-	-	587	913	1240	1566	1892	2218	2545	2871	3197	3523
210U-S090	Start	1734	Start	-	-	-	-	1408	1734	2061	2387	2713	3039	3366	3692	4018
	Min	925	Min	-	-	-	-	599	925	1251	1577	1904	2230	2556	2882	3209
	End	1028	End	-	-	-	-	702	1028	1354	1680	2007	2333	2659	2985	3312
210U-S100	Start	1928	Start	-	-	-	-	-	1601	1928	2254	2580	2906	3232	3559	3885
	Min	1028	Min	-	-	-	-	-	702	1028	1354	1680	2007	2333	2659	2985
	End	1142	End	-	-	-	-	-	816	1142	1468	1795	2121	2447	2773	3100
210U-S120	Start	2313	Start	-	-	-	-	-	-	-	1987	2313	2640	2966	3292	3618
	Min	1233	Min	-	-	-	-	-	-	-	907	1233	1559	1886	2212	2538
	End	1370	End	-	-	-	-	-	-	-	1044	1370	1697	2023	2349	2675
210U-S140	Start	2699	Start	-	-	-	-	-	-	-	-	-	2373	2699	3025	3352
	Min	1438	Min	-	-	-	-	-	-	-	-	-	1112	1438	1765	2091
	End	1598	End	-	-	-	-	-	-	-	-	-	1272	1598	1925	2251
210U-S160	Start	3084	Start	-	-	-	-	-	-	-	-	-	-	-	2758	3084
	Min	1644	Min	-	-	-	-	-	-	-	-	-	-	-	1318	1644
	End	1827	End	-	-	-	-	-	-	-	-	-	-	-	1501	1827
270U-S040	Start	992	Start	992	1392	1793	2193	2594	2994	3394	3795	4195	Maximum Operating Pressure			
	Min	529	Min	529	930	1330	1730	2131	2531	2931	3332	3732	11 Bar g (Series S / Max Shell			
	End	588	End	588	988	1389	1789	2189	2590	2990	3391	3791	Pressure 8.3 Bar g)			
270U-S050	Start	1239	Start	-	1239	1640	2040	2441	2841	3241	3642	4042	Maximum Operating Pressure			
	Min	661	Min	-	661	1061	1461	1862	2262	2662	3063	3463	11 Bar g (Series S / Max Shell			
	End	734	End	-	734	1134	1535	1935	2336	2736	3136	3537	Pressure 8.3 Bar g)			
270U-S060	Start	1487	Start	-	-	1487	1887	2288	2688	3088	3489	3889	Maximum Operating Pressure			
	Min	793	Min	-	-	793	1193	1594	1994	2395	2795	3195	11 Bar g (Series S / Max Shell			
	End	881	End	-	-	881	1282	1682	2082	2483	2883	3284	Pressure 8.3 Bar g)			
270U-S070	Start	1735	Start	-	-	1334	1735	2135	2536	2936	3336	3737	Maximum Operating Pressure			
	Min	925	Min	-	-	525	925	1325	1726	2126	2527	2927	11 Bar g (Series S / Max Shell			
	End	1028	End	-	-	627	1028	1428	1829	2229	2629	3030	Pressure 8.3 Bar g)			
270U-S080	Start	1983	Start	-	-	-	1582	1983	2383	2784	3184	3584	Maximum Operating Pressure			
	Min	1057	Min	-	-	-	657	1057	1457	1858	2258	2659	11 Bar g (Series S / Max Shell			
	End	1174	End	-	-	-	774	1174	1575	1975	2376	2776	Pressure 8.3 Bar g)			
270U-S090	Start	2231	Start	-	-	-	-	1831	2231	2631	3032	3432	Maximum Operating Pressure			
	Min	1189	Min	-	-	-	-	789	1189	1589	1990	2390	11 Bar g (Series S / Max Shell			
	End	1321	End	-	-	-	-	921	1321	1722	2122	2522	Pressure 8.3 Bar g)			
270U-S100	Start	2479	Start	-	-	-	-	-	2078	2479	2879	3280	Maximum Operating Pressure			
	Min	1321	Min	-	-	-	-	-	921	1321	1722	2122	11 Bar g (Series S / Max Shell			
	End	1468	End	-	-	-	-	-	1068	1468	1868	2269	Pressure 8.3 Bar g)			

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring torques N-m		Torque at	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
344U-S040	Start	1239	Start	1239	1751	2263	2774	3286	3797	4309	4821	5332	Maximum Operating Pressure 8.3 Bar g			
	Min	642	Min	642	1154	1666	2177	2689	3200	3712	4224	4735				
	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 Operating Pressure 8.3 Bar g			
	Min	771	Min	-	771	1283	1795	2306	2818	3329	3841	4353				
	End	857	End	-	857	1369	1880	2392	2904	3415	3927	4438				
344U-S060	Start	1735	Start	-	-	1735	2246	2758	3270	3781	4293	4805	Maximum Operating Pressure 8.3 Bar g			
	Min	900	Min	-	-	900	1411	1923	2435	2946	3458	3969				
	End	1000	End	-	-	1000	1511	2023	2535	3046	3558	4069				
344U-S070	Start	2231	Start	-	-	1719	2231	2743	3254	3766	4277	4789	Maximum Operating Pressure 8.3 Bar g			
	Min	1157	Min	-	-	645	1157	1668	2180	2691	3203	3715				
	End	1285	End	-	-	773	1285	1797	2308	2820	3331	3843				
344U-S080	Start	2479	Start	-	-	-	1967	2479	2990	3502	4014	4525	Maximum Operating Pressure 8.3 Bar g			
	Min	1285	Min	-	-	-	773	1285	1797	2308	2820	3331				
	End	1428	End	-	-	-	916	1428	1939	2451	2963	3474				
345U-S090	Start	2699	Start	-	-	-	-	2188	2699	3211	3722	4234	Maximum Operating Pressure 8.3 Bar g			
	Min	1399	Min	-	-	-	-	888	1399	1911	2422	2934				
	End	1555	End	-	-	-	-	1043	1555	2066	2578	3089				
345U-S100	Start	3084	Start	-	-	-	-	-	2573	3084	3596	4108	Maximum Operating Pressure 8.3 Bar g			
	Min	1599	Min	-	-	-	-	-	1088	1599	2111	2623				
	End	1777	End	-	-	-	-	-	1266	1777	2289	2800				
345U-S110	Start	3469	Start	-	-	-	-	-	-	2958	3469	3981	Maximum Operating Pressure 8.3 Bar g			
	Min	1800	Min	-	-	-	-	-	-	1288	1800	2311				
	End	2000	End	-	-	-	-	-	-	1488	2000	2511				
345U-S120	Start	3469	Start	-	-	-	-	-	-	2958	3469	3981	Maximum Operating Pressure 8.3 Bar g			
	Min	1800	Min	-	-	-	-	-	-	1288	1800	2311				
	End	2000	End	-	-	-	-	-	-	1488	2000	2511				
345U-S130	Start	3855	Start	-	-	-	-	-	-	-	-	3343	Maximum Operating Pressure 8.3 Bar g			
	Min	2000	Min	-	-	-	-	-	-	-	-	1488				
	End	2222	End	-	-	-	-	-	-	-	-	1710				
370U-S040	Start	1359	Start	1359	1918	2477	3036	3595	4154	4713	5273	5832	6391	6950	7509	8068
	Min	757	Min	757	1316	1875	2435	2994	3553	4112	4671	5230	5789	6349	6908	7467
	End	841	End	841	1400	1960	2519	3078	3637	4196	4755	5314	5874	6433	6992	7551
370U-S050	Start	1698	Start	-	1698	2257	2816	3376	3935	4494	5053	5612	6171	6730	7290	7849
	Min	1062	Min	-	1062	1622	2181	2740	3299	3858	4417	4976	5536	6095	6654	7213
	End	1180	End	-	1180	1740	2299	2858	3417	3976	4535	5094	5654	6213	6772	7331
370U-S060	Start	2038	Start	-	-	2038	2597	3157	3716	4275	4834	5393	5952	6511	7070	7630
	Min	1135	Min	-	-	1135	1695	2254	2813	3372	3931	4490	5049	5609	6168	6727
	End	1262	End	-	-	1262	1821	2380	2939	3498	4057	4617	5176	5735	6294	6853
370U-S070	Start	2378	Start	-	-	1819	2378	2937	3496	4055	4614	5173	5733	6292	6851	7410
	Min	1325	Min	-	-	766	1325	1884	2443	3002	3562	4121	4680	5239	5798	6357
	End	1472	End	-	-	913	1472	2031	2590	3150	3709	4268	4827	5386	5945	6504
370U-S080	Start	2717	Start	-	-	-	2158	2717	3276	3836	4395	4954	5513	6072	6631	7190
	Min	1514	Min	-	-	-	955	1514	2074	2633	3192	3751	4310	4869	5428	5988
	End	1683	End	-	-	-	1124	1683	2242	2801	3360	3919	4478	5038	5597	6156
370U-S090	Start	3057	Start	-	-	-	-	2498	3057	3616	4175	4734	5293	5852	6412	6971
	Min	1704	Min	-	-	-	-	1145	1704	2263	2822	3381	3940	4500	5059	5618
	End	1893	End	-	-	-	-	1334	1893	2452	3011	3571	4130	4689	5248	5807
370U-S100	Start	3396	Start	-	-	-	-	-	2837	3396	3955	4515	5074	5633	6192	6751
	Min	1893	Min	-	-	-	-	-	1334	1893	2452	3012	3571	4130	4689	5248
	End	2104	End	-	-	-	-	-	1545	2104	2663	3222	3781	4340	4899	5458
370U-S120	Start	4076	Start	-	-	-	-	-	-	-	3517	4076	4635	5194	5753	6312
	Min	2272	Min	-	-	-	-	-	-	-	1712	2272	2831	3390	3949	4508
	End	2524	End	-	-	-	-	-	-	-	1965	2524	3083	3642	4201	4761
370U-S140	Start	4756	Start	-	-	-	-	-	-	-	-	-	4196	4756	5315	5874
	Min	2650	Min	-	-	-	-	-	-	-	-	-	2091	2650	3209	3768
	End	2944	End	-	-	-	-	-	-	-	-	-	2385	2944	3503	4063
370U-S160	Start	5435	Start	-	-	-	-	-	-	-	-	-	-	-	4875	5435
	Min	3029	Min	-	-	-	-	-	-	-	-	-	-	-	2470	3029
	End	3365	End	-	-	-	-	-	-	-	-	-	-	-	2806	3365

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring torques N-m**		**Torque at**	**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**
420U-S040	Start	1542	Start	1542	2195	2847	3500	4152	4805	-	-	-	-	-	-	-
	Min	785	Min	785	1437	2090	2742	3395	4047	-	-	-	-	-	-	-
	End	872	End	872	1525	2177	2829	3482	4134	-	-	-	-	-	-	-
420U-S050	Start	1928	Start	-	1928	2580	3232	3885	4537	-	-	-	-	-	-	-
	Min	981	Min	-	981	1634	2286	2939	3591	-	-	-	-	-	-	-
	End	1090	End	-	1090	1743	2395	3048	3700	-	-	-	-	-	-	-
420U-S060	Start	2313	Start	-	-	2313	2966	3618	4271	4923	-	-	-	-	-	-
	Min	1177	Min	-	-	1177	1830	2482	3135	3787	-	-	-	-	-	-
	End	1308	End	-	-	1308	1960	2613	3265	3918	-	-	-	-	-	-
420U-S070	Start	2699	Start	-	-	2047	2699	3352	4004	4657	-	-	-	-	-	-
	Min	1373	Min	-	-	721	1373	2026	2678	3331	-	-	-	-	-	-
	End	1526	End	-	-	873	1526	2178	2831	3483	-	-	-	-	-	-
420U-S080	Start	3084	Start	-	-	-	2432	3084	3737	4389	-	-	-	-	-	-
	Min	1570	Min	-	-	-	917	1570	2222	2875	-	-	-	-	-	-
	End	1744	End	-	-	-	1091	1744	2396	3049	-	-	-	-	-	-
420U-S090	Start	3469	Start	-	-	-	-	2817	3469	4122	4774	-	-	-	-	-
	Min	1766	Min	-	-	-	-	1113	1766	2418	3071	-	-	-	-	-
	End	1962	End	-	-	-	-	1310	1962	2615	3267	-	-	-	-	-
420U-S100	Start	3855	Start	-	-	-	-	-	3203	3855	4508	-	-	-	-	-
	Min	1962	Min	-	-	-	-	-	1310	1962	2615	-	-	-	-	-
	End	2180	End	-	-	-	-	-	1528	2180	2833	-	-	-	-	-
575U-S040	Start	2112	Start	2112	3013	3914	4816	5717	6619	7520	8422	9323	10224	11126	12027	12929
	Min	1074	Min	1074	1976	2877	3778	4680	5581	6483	7384	8285	9187	10088	10990	11891
	End	1193	End	1193	2095	2996	3898	4799	5700	6602	7503	8405	9306	10207	11109	12010
575U-S050	Start	2639	Start	-	2639	3541	4442	5344	6245	7146	8048	8949	9851	10752	11653	12555
	Min	1343	Min	-	1343	2245	3146	4047	4949	5850	6752	7653	8554	9456	10357	11259
	End	1492	End	-	1492	2394	3295	4197	5098	5999	6901	7802	8704	9605	10506	11408
575U-S060	Start	3167	Start	-	-	3167	4068	4970	5871	6773	7674	8575	9477	10378	11280	12181
	Min	1611	Min	-	-	1611	2513	3414	4315	5217	6118	7020	7921	8823	9724	10625
	End	1790	End	-	-	1790	2692	3593	4494	5396	6297	7199	8100	9001	9903	10804
575U-S070	Start	3695	Start	-	-	2793	3695	4596	5497	6399	7300	8202	9103	10004	10906	11807
	Min	1880	Min	-	-	979	1880	2782	3683	4585	5486	6387	7289	8190	9092	9993
	End	2089	End	-	-	1188	2089	2991	3892	4793	5695	6596	7498	8399	9300	10202
575U-S080	Start	4223	Start	-	-	-	3321	4223	5124	6026	6927	7828	8730	9631	10533	11434
	Min	2149	Min	-	-	-	1247	2149	3050	3952	4853	5754	6656	7557	8459	9360
	End	2387	End	-	-	-	1486	2387	3289	4190	5092	5993	6895	7796	8697	9599
575U-S090	Start	4750	Start	-	-	-	-	3849	4750	5652	6553	7455	8356	9257	10159	11060
	Min	2417	Min	-	-	-	-	1515	2417	3318	4220	5121	6022	6924	7825	8727
	End	2685	End	-	-	-	-	1784	2685	3587	4488	5390	6291	7192	8094	8995
575U-S100	Start	5279	Start	-	-	-	-	-	4377	5279	6180	7081	7983	8884	9786	10687
	Min	2685	Min	-	-	-	-	-	1784	2685	3587	4488	5390	6291	7192	8094
	End	2984	End	-	-	-	-	-	2082	2984	3885	4787	5688	6589	7491	8392
575U-S120	Start	6334	Start	-	-	-	-	-	-	-	5433	6334	7235	8137	9038	9940
	Min	3223	Min	-	-	-	-	-	-	-	2322	3223	4125	5026	5928	6829
	End	3582	End	-	-	-	-	-	-	-	2680	3582	4483	5384	6286	7187
575U-S140	Start	7389	Start	-	-	-	-	-	-	-	-	-	6488	7389	8291	9192
	Min	3760	Min	-	-	-	-	-	-	-	-	-	2859	3760	4662	5563
	End	4178	End	-	-	-	-	-	-	-	-	-	3277	4178	5080	5981
575U-S160	Start	8446	Start	-	-	-	-	-	-	-	-	-	-	-	7544	8446
	Min	4298	Min	-	-	-	-	-	-	-	-	-	-	-	3396	4298
	End	4775	End	-	-	-	-	-	-	-	-	-	-	-	3874	4775

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring torques N-m		Torque at	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
740U-S040	Start	2717	Start	2717	3815	4912	6009	7107	8204	9301	10399	11496	Maximum Operating Pressure 8.3 bar g			
	Min	1514	Min	1514	2612	3709	4807	5904	7001	8099	9196	10293				
	End	1683	End	1683	2780	3877	4975	6072	7170	8267	9364	10462				
740U-S050	Start	3396	Start	-	3396	4494	5591	6688	7786	8883	9981	11078	Maximum Operating Pressure 8.3 bar g			
	Min	1893	Min	-	1893	2991	4088	5185	6283	7380	8477	9575				
	End	2104	End	-	2104	3201	4298	5396	6493	7590	8688	9785				
740U-S060	Start	4076	Start	-	-	4076	5173	6271	7368	8465	9563	10660	Maximum Operating Pressure 8.3 bar g			
	Min	2272	Min	-	-	2272	3369	4466	5564	6661	7758	8856				
	End	2524	End	-	-	2524	3621	4719	5816	6913	8011	9108				
740U-S070	Start	4756	Start	-	-	3658	4756	5853	6950	8048	9145	10242	Maximum Operating Pressure 8.3 bar g			
	Min	2650	Min	-	-	1552	2650	3747	4845	5942	7039	8137				
	End	2944	End	-	-	1847	2944	4042	5139	6236	7334	8431				
740U-S080	Start	5435	Start	-	-	-	4337	5435	6532	7629	8727	9824	Maximum Operating Pressure 8.3 bar g			
	Min	3029	Min	-	-	-	1931	3029	4126	5224	6321	7418				
	End	3365	End	-	-	-	2268	3365	4463	5560	6657	7755				
740U-S090	Start	6113	Start	-	-	-	-	5016	6113	7211	8308	9405	Maximum Operating Pressure 8.3 bar g			
	Min	3408	Min	-	-	-	-	2311	3408	4505	5603	6700				
	End	3787	End	-	-	-	-	2689	3787	4884	5981	7079				
740U-S100	Start	6793	Start	-	-	-	-	-	5695	6793	7890	8987	Maximum Operating Pressure 8.3 bar g			
	Min	3787	Min	-	-	-	-	-	2689	3787	4884	5981				
	End	4207	End	-	-	-	-	-	3110	4207	5305	6402				
944U-S040	Start	3396	Start	3396	4824	6252	7681	9109	10537	11965	13393	-	Maximum Operating Pressure 8.3 bar g			
	Min	1762	Min	1762	3190	4618	6046	7474	8902	10330	11758	-				
	End	1957	End	1957	3385	4813	6241	7669	9098	10526	11954	-				
944U-S050	Start	4076	Start	-	4076	5504	6932	8360	9788	11216	12644	-	Maximum Operating Pressure 8.3 bar g			
	Min	2114	Min	-	2114	3542	4970	6398	7826	9254	10682	-				
	End	2348	End	-	2348	3776	5205	6633	8061	9489	10917	-				
944U-S060	Start	4756	Start	-	-	4756	6184	7612	9040	10468	11896	13324	Maximum Operating Pressure 8.3 bar g			
	Min	2465	Min	-	-	2465	3893	5321	6749	8178	9606	11034				
	End	2739	End	-	-	2739	4167	5596	7024	8452	9880	11308				
944U-S070	Start	5435	Start	-	-	4007	5435	6863	8291	9719	11147	12575	Maximum Operating Pressure 8.3 bar g			
	Min	2818	Min	-	-	1390	2818	4246	5674	7102	8530	9958				
	End	3131	End	-	-	1703	3131	4559	5987	7415	8843	10271				
945U-S080	Start	6334	Start	-	-	-	4906	6334	7762	9190	10618	12046	Maximum Operating Pressure 8.3 bar g			
	Min	3285	Min	-	-	-	2000	3285	4713	6141	7569	8997				
	End	3650	End	-	-	-	2222	3650	5078	6506	7934	9362				
945U-S090	Start	7389	Start	-	-	-	-	5961	7389	8817	10245	11673	Maximum Operating Pressure 8.3 bar g			
	Min	3832	Min	-	-	-	-	2404	3832	5260	6688	8116				
	End	4258	End	-	-	-	-	2830	4258	5686	7114	8542				
945U-S100	Start	8446	Start	-	-	-	-	-	7018	8446	9874	11302	Maximum Operating Pressure 8.3 bar g			
	Min	4379	Min	-	-	-	-	-	2951	4379	5807	7236				
	End	4866	End	-	-	-	-	-	3438	4866	6294	7722				
945U-S110	Start	9501	Start	-	-	-	-	-	-	8073	9501	10929	Maximum Operating Pressure 8.3 bar g			
	Min	4927	Min	-	-	-	-	-	-	3499	4927	6355				
	End	5474	End	-	-	-	-	-	-	4046	5474	6902				
945U-S120	Start	9501	Start	-	-	-	-	-	-	8073	9501	10929	Maximum Operating Pressure 8.3 bar g			
	Min	4927	Min	-	-	-	-	-	-	3499	4927	6355				
	End	5474	End	-	-	-	-	-	-	4046	5474	6902				
945U-S130	Start	10557	Start	-	-	-	-	-	-	-	-	9129	Maximum Operating Pressure 8.3 bar g			
	Min	5777	Min	-	-	-	-	-	-	-	-	4349				
	End	6081	End	-	-	-	-	-	-	-	-	4653				
1150U-S040	Start	4223	Start	4223	6026	7828	9631	11434	13237	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	2149	Min	2149	3952	5754	7557	9360	11163	-	-	-				
	End	2387	End	2387	4190	5993	7796	9599	11402	-	-	-				
1150U-S050	Start	5279	Start	-	5279	7081	8884	10687	12490	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	2685	Min	-	2685	4488	6291	8094	9897	-	-	-				
	End	2984	End	-	2984	4787	6589	8392	10195	-	-	-				

OUTPUT TORQUES (NM) - SPRING RETURN, SYMMETRIC YOKE DESIGN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring torques N-m		Torque at	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
1150U-S060	Start	6334	Start	-	-	6334	8137	9940	11742	13545	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	3223	Min	-	-	3223	5026	6829	8632	10435	-	-				
	End	3582	End	-	-	3582	5384	7187	8990	10793	-	-				
1150U-S070	Start	7389	Start	-	-	5586	7389	9192	10995	12798	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	3760	Min	-	-	1958	3760	5563	7366	9169	-	-				
	End	4178	End	-	-	2375	4178	5981	7784	9587	-	-				
1150U-S080	Start	8446	Start	-	-	-	6643	8446	10248	12051	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	4298	Min	-	-	-	2495	4298	6100	7903	-	-				
	End	4775	End	-	-	-	2972	4775	6578	8381	-	-				
1150U-S090	Start	9501	Start	-	-	-	-	7698	9501	11304	13107	-	Maximum Operating Pressure 8.3 bar g			
	Min	4835	Min	-	-	-	-	3032	4835	6637	8440	-				
	End	5372	End	-	-	-	-	3569	5372	7175	8977	-				
1150U-S100	Start	10557	Start	-	-	-	-	-	8754	10557	12360	-	Maximum Operating Pressure 8.3 bar g			
	Min	5371	Min	-	-	-	-	-	3568	5371	7173	-				
	End	5967	End	-	-	-	-	-	4164	5967	7770	-				
1480U-S040	Start	5435	Start	5435	7525	9615	11705	13795	15886	17976	20066	22156	Maximum Operating Pressure 8.3 bar g			
	Min	2634	Min	2634	4724	6814	8904	10995	13085	15175	17265	19355				
	End	2926	End	2926	5017	7107	9197	11287	13377	15468	17558	19648				
1480U-S050	Start	6793	Start	-	6793	8883	10974	13064	15154	17244	19335	21425	Maximum Operating Pressure 8.3 bar g			
	Min	3292	Min	-	3292	5382	7473	9563	11653	13743	15833	17924				
	End	3658	End	-	3658	5748	7838	9929	12019	14109	16199	18289				
1480U-S060	Start	8152	Start	-	-	8152	10242	12332	14423	16513	18603	20693	Maximum Operating Pressure 8.3 bar g			
	Min	3951	Min	-	-	3951	6041	8131	10221	12311	14402	16492				
	End	4389	End	-	-	4389	6480	8570	10660	12750	14841	16931				
1480U-S070	Start	9510	Start	-	-	7420	9510	11601	13691	15781	17871	19962	Maximum Operating Pressure 8.3 bar g			
	Min	4600	Min	-	-	2510	4600	6690	8780	10870	12961	15051				
	End	5111	End	-	-	3021	5111	7201	9291	11382	13472	15562				
1480U-S080	Start	10869	Start	-	-	-	8779	10869	12959	15050	17140	19230	Maximum Operating Pressure 8.3 bar g			
	Min	5267	Min	-	-	-	3177	5267	7358	9448	11538	13628				
	End	5853	End	-	-	-	3762	5853	7943	10033	12123	14213				
1480U-S090	Start	12228	Start	-	-	-	-	10138	12228	14318	16408	18498	Maximum Operating Pressure 8.3 bar g			
	Min	5926	Min	-	-	-	-	3836	5926	8016	10106	12196				
	End	6584	End	-	-	-	-	4494	6584	8674	10765	12855				
1480U-S100	Start	13586	Start	-	-	-	-	-	11496	13586	15677	17767	Maximum Operating Pressure 8.3 bar g			
	Min	6859	Min	-	-	-	-	-	4769	6859	8949	11039				
	End	7621	End	-	-	-	-	-	5531	7621	9711	11801				
2380U-S040	Start	8739	Start	8739	12101	15462	18823	22185	25546	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	4235	Min	4235	7597	10958	14319	17680	21042	-	-	-				
	End	4706	End	4706	8067	11428	14790	18151	21512	-	-	-				
2380U-S050	Start	10924	Start	-	10924	14286	17647	21008	24369	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	5294	Min	-	5294	8655	12017	15378	18739	-	-	-				
	End	5882	End	-	5882	9244	12605	15966	19328	-	-	-				
2380U-S060	Start	13109	Start	-	-	13109	16470	19832	23193	26554	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	6353	Min	-	-	6353	9714	13076	16437	19798	-	-				
	End	7059	End	-	-	7059	10420	13781	17143	20504	-	-				
2380U-S070	Start	15294	Start	-	-	11933	15294	18655	22017	25378	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	7412	Min	-	-	4050	7412	10773	14134	17496	-	-				
	End	8235	End	-	-	4874	8235	11597	14958	18319	-	-				
2380U-S080	Start	17479	Start	-	-	-	14117	17479	20840	24201	-	-	Maximum Operating Pressure 8.3 bar g			
	Min	8470	Min	-	-	-	5109	8470	11832	15193	-	-				
	End	9412	End	-	-	-	6050	9412	12773	16134	-	-				
2380U-S090	Start	19664	Start	-	-	-	-	16302	19664	23025	26386	-	Maximum Operating Pressure 8.3 bar g			
	Min	9529	Min	-	-	-	-	6168	9529	12891	16252	-				
	End	10588	End	-	-	-	-	7227	10588	13949	17311	-				
2380U-S100	Start	21848	Start	-	-	-	-	-	18487	21848	25210	-	Maximum Operating Pressure 8.3 bar g			
	Min	10588	Min	-	-	-	-	-	7227	10588	13949	-				
	End	11765	End	-	-	-	-	-	8403	11765	15126	-				

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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	Start	78	Start	95	139	183	227	271	314	358	402	446	490	534	577	621
	Mid	31	Mid	31	57	83	109	135	161	187	213	239	265	291	317	343
	SET	63	End	31	57	83	109	135	161	187	213	239	265	291	317	343
023UC-S050	Start	98	Start	-	120	164	208	251	295	339	383	427	471	515	558	602
	Mid	40	Mid	-	40	66	92	118	144	170	196	222	248	274	300	326
	SET	81	End	-	40	66	92	118	144	170	196	222	248	274	300	326
023UC-S060	Start	116	Start	-	-	143	187	230	274	318	362	406	450	493	537	581
	Mid	47	Mid	-	-	47	73	99	125	151	177	203	229	255	281	307
	SET	95	End	-	-	47	73	99	125	151	177	203	229	255	281	307
023UC-S070	Start	135	Start	-	-	-	166	209	253	297	341	385	429	473	516	560
	Mid	55	Mid	-	-	-	55	81	107	133	159	185	211	237	263	289
	SET	112	End	-	-	-	55	81	107	133	159	185	211	237	263	289
023UC-S080	Start	155	Start	-	-	-	-	190	234	278	322	366	410	453	497	541
	Mid	62	Mid	-	-	-	-	62	88	114	140	166	192	218	244	270
	SET	127	End	-	-	-	-	62	88	114	140	166	192	218	244	270
023UC-S090	Start	174	Start	-	-	-	-	-	213	257	301	345	389	432	476	520
	Mid	71	Mid	-	-	-	-	-	71	96	122	148	174	200	226	252
	SET	143	End	-	-	-	-	-	71	96	122	148	174	200	226	252
023UC-S100	Start	194	Start	-	-	-	-	-	-	237	281	325	369	413	457	500
	Mid	78	Mid	-	-	-	-	-	-	78	104	130	156	182	208	234
	SET	159	End	-	-	-	-	-	-	78	104	130	156	182	208	234
023UC-S120	Start	233	Start	-	-	-	-	-	-	-	-	286	329	373	417	461
	Mid	94	Mid	-	-	-	-	-	-	-	-	94	120	146	172	197
	SET	190	End	-	-	-	-	-	-	-	-	94	120	146	172	197
023UC-S140	Start	271	Start	-	-	-	-	-	-	-	-	-	-	332	376	420
	Mid	110	Mid	-	-	-	-	-	-	-	-	-	-	110	136	162
	SET	223	End	-	-	-	-	-	-	-	-	-	-	110	136	162
023UC-S160	Start	310	Start	-	-	-	-	-	-	-	-	-	-	-	-	381
	Mid	125	Mid	-	-	-	-	-	-	-	-	-	-	-	-	125
	SET	253	End	-	-	-	-	-	-	-	-	-	-	-	-	125
036UC-S040	Start	121	Start	148	224	299	375	450	526	602	677	753	828	904	979	1055
	Mid	49	Mid	49	94	139	183	228	273	318	362	407	452	497	541	586
	SET	100	End	49	94	139	183	228	273	318	362	407	452	497	541	586
036UC-S050	Start	151	Start	-	185	261	336	412	487	563	638	714	789	865	940	1016
	Mid	62	Mid	-	62	106	151	196	241	285	330	375	420	464	509	554
	SET	125	End	-	62	106	151	196	241	285	330	375	420	464	509	554
036UC-S060	Start	182	Start	-	-	223	298	374	449	525	600	676	751	827	902	978
	Mid	74	Mid	-	-	74	119	164	208	253	298	343	387	432	477	522
	SET	150	End	-	-	74	119	164	208	253	298	343	387	432	477	522
036UC-S070	Start	212	Start	-	-	-	260	336	411	487	562	638	713	789	864	940
	Mid	86	Mid	-	-	-	86	130	175	220	265	309	354	399	444	488
	SET	174	End	-	-	-	86	130	175	220	265	309	354	399	444	488
036UC-S080	Start	242	Start	-	-	-	-	297	372	448	523	599	674	750	825	901
	Mid	98	Mid	-	-	-	-	98	143	188	232	277	322	367	411	456
	SET	199	End	-	-	-	-	98	143	188	232	277	322	367	411	456
036UC-S090	Start	272	Start	-	-	-	-	-	334	409	485	560	636	711	787	862
	Mid	110	Mid	-	-	-	-	-	110	155	200	244	289	334	379	423
	SET	224	End	-	-	-	-	-	110	155	200	244	289	334	379	423
036UC-S100	Start	303	Start	-	-	-	-	-	-	371	447	522	598	673	749	824
	Mid	123	Mid	-	-	-	-	-	-	123	168	212	257	302	347	391
	SET	249	End	-	-	-	-	-	-	123	168	212	257	302	347	391
036UC-S120	Start	363	Start	-	-	-	-	-	-	-	-	445	521	596	672	747
	Mid	147	Mid	-	-	-	-	-	-	-	-	147	192	237	282	326
	SET	299	End	-	-	-	-	-	-	-	-	147	192	237	282	326
036UC-S140	Start	424	Start	-	-	-	-	-	-	-	-	-	-	520	595	671
	Mid	172	Mid	-	-	-	-	-	-	-	-	-	-	172	217	261
	SET	349	End	-	-	-	-	-	-	-	-	-	-	172	217	261
036UC-S160	Start	486	Start	-	-	-	-	-	-	-	-	-	-	-	-	596
	Mid	195	Mid	-	-	-	-	-	-	-	-	-	-	-	-	195
	SET	395	End	-	-	-	-	-	-	-	-	-	-	-	-	195

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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**
046UC-S040	Start	155	Start	190	278	366	453	541	629	716	804	892	979	1067	1155	-
	Mid	62	Mid	62	114	166	218	270	322	374	426	478	530	582	634	-
	SET	127	End	62	114	166	218	270	322	374	426	478	530	582	634	-
046UC-S050	Start	194	Start	-	237	325	413	500	588	676	763	851	939	1026	1114	-
	Mid	78	Mid	-	78	130	182	234	286	338	390	442	494	546	598	-
	SET	159	End	-	78	130	182	234	286	338	390	442	494	546	598	-
046UC-S060	Start	233	Start	-	-	286	373	461	549	636	724	812	899	987	1075	1162
	Mid	94	Mid	-	-	94	146	197	249	301	353	405	457	509	561	613
	SET	190	End	-	-	94	146	197	249	301	353	405	457	509	561	613
046UC-S070	Start	271	Start	-	-	-	332	420	507	595	683	770	858	946	1033	1121
	Mid	110	Mid	-	-	-	110	162	214	266	318	370	422	474	526	578
	SET	223	End	-	-	-	110	162	214	266	318	370	422	474	526	578
046UC-S080	Start	289	Start	-	-	-	-	381	468	556	644	731	819	907	994	1082
	Mid	125	Mid	-	-	-	-	125	177	229	281	333	385	437	489	541
	SET	235	End	-	-	-	-	125	177	229	281	333	385	437	489	541
058UC-S040	Start	194	Start	237	350	462	575	687	800	912	1025	1137	Maximum Operating Pressure 8.3 Bar g			
	Mid	78	Mid	78	145	212	278	345	412	478	545	612				
	SET	159	End	78	145	212	278	345	412	478	545	612				
058UC-S050	Start	233	Start	-	286	398	510	623	735	848	960	1073	Maximum Operating Pressure 8.3 Bar g			
	Mid	94	Mid	-	94	160	227	294	360	427	494	560				
	SET	190	End	-	94	160	227	294	360	427	494	560				
058UC-S060	Start	271	Start	-	-	332	444	557	669	782	894	1007	Maximum Operating Pressure 8.3 Bar g			
	Mid	110	Mid	-	-	110	177	243	310	377	443	510				
	SET	223	End	-	-	973	177	243	310	377	443	510				
058UC-S070	Start	310	Start	-	-	-	381	493	606	718	831	943	Maximum Operating Pressure 8.3 Bar g			
	Mid	125	Mid	-	-	-	125	191	258	325	391	458				
	SET	253	End	-	-	-	125	191	258	325	391	458				
059UC-S080	Start	363	Start	-	-	-	-	445	558	670	783	895	Maximum Operating Pressure 8.3 Bar g			
	Mid	147	Mid	-	-	-	-	147	214	281	347	414				
	SET	299	End	-	-	-	-	147	214	281	347	414				
059UC-S090	Start	424	Start	-	-	-	-	-	520	632	745	857	Maximum Operating Pressure 8.3 Bar g			
	Mid	172	Mid	-	-	-	-	-	172	239	305	372				
	SET	349	End	-	-	-	-	-	172	239	305	372				
059UC-S100	Start	486	Start	-	-	-	-	-	-	596	709	821	Maximum Operating Pressure 8.3 Bar g			
	Mid	195	Mid	-	-	-	-	-	-	195	262	328				
	SET	395	End	-	-	-	-	-	-	195	262	328				
072UC-S040	Start	242	Start	297	448	599	750	901	1052	-	-	-	Maximum Operating Pressure 6.9 Bar g			
	Mid	98	Mid	98	188	277	367	456	546	-	-	-				
	SET	199	End	98	188	277	367	456	546	-	-	-				
072UC-S050	Start	303	Start	-	371	522	673	824	975	1126	-	-	Maximum Operating Pressure 6.9 Bar g			
	Mid	123	Mid	-	123	212	302	391	481	570	-	-				
	SET	249	End	-	123	212	302	391	481	570	-	-				
072UC-S060	Start	363	Start	-	-	445	596	747	898	1049	-	-	Maximum Operating Pressure 6.9 Bar g			
	Mid	147	Mid	-	-	147	237	326	416	505	-	-				
	SET	299	End	-	-	147	237	326	416	505	-	-				
072UC-S070	Start	424	Start	-	-	-	520	671	822	973	-	-	Maximum Operating Pressure 6.9 Bar g			
	Mid	172	Mid	-	-	-	172	261	351	440	-	-				
	SET	349	End	-	-	-	172	261	351	440	-	-				
072UC-S080	Start	486	Start	-	-	-	-	596	747	898	-	-	Maximum Operating Pressure 6.9 Bar g			
	Mid	195	Mid	-	-	-	-	195	284	374	-	-				
	SET	395	End	-	-	-	-	195	284	374	-	-				

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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-S040	Start	336	Start	412	603	794	984	-	-	-	-	-	Maximum Operating Pressure 6.9 bar g			
	Mid	136	Mid	136	249	362	475	-	-	-	-	-				
	SET	277	End	136	249	362	475	-	-	-	-	-				
100UC-S050	Start	420	Start	-	515	706	896	1087	-	-	-	-	Maximum Operating Pressure 6.9 bar g			
	Mid	171	Mid	-	171	284	397	510	-	-	-	-				
	SET	346	End	-	171	284	397	510	-	-	-	-				
100UC-S060	Start	505	Start	-	-	619	810	1000	-	-	-	-	Maximum Operating Pressure 6.9 bar g			
	Mid	204	Mid	-	-	204	317	430	-	-	-	-				
	SET	414	End	-	-	204	317	430	-	-	-	-				
100UC-S070	Start	589	Start	-	-	-	722	913	1103	-	-	-	Maximum Operating Pressure 6.9 bar g			
	Mid	239	Mid	-	-	-	239	351	464	-	-	-				
	SET	484	End	-	-	-	239	351	464	-	-	-				
100UC-S080	Start	673	Start	-	-	-	-	825	1015	-	-	-	Maximum Operating Pressure 6.9 bar g			
	Mid	273	Mid	-	-	-	-	273	386	-	-	-				
	SET	554	End	-	-	-	-	273	386	-	-	-				
135UC-S040	Start	454	Start	557	827	1098	1368	1639	1909	2179	2450	2720	2990	3261	3531	3801
	Mid	221	Mid	221	381	542	702	862	1022	1182	1343	1503	1663	1823	1984	2144
	SET	449	End	221	381	542	702	862	1022	1182	1343	1503	1663	1823	1984	2144
135UC-S050	Start	568	Start	-	696	966	1237	1507	1777	2048	2318	2589	2859	3129	3400	3670
	Mid	276	Mid	-	276	436	596	757	917	1077	1237	1398	1558	1718	1878	2038
	SET	560	End	-	276	436	596	757	917	1077	1237	1398	1558	1718	1878	2038
135UC-S060	Start	681	Start	-	-	835	1105	1376	1646	1916	2187	2457	2727	2998	3268	3539
	Mid	332	Mid	-	-	332	492	652	812	972	1133	1293	1453	1613	1774	1934
	SET	673	End	-	-	332	492	652	812	972	1133	1293	1453	1613	1774	1934
135UC-S070	Start	795	Start	-	-	704	974	1245	1515	1786	2056	2326	2597	2867	3137	3408
	Mid	387	Mid	-	-	227	387	547	707	867	1028	1188	1348	1508	1669	1829
	SET	785	End	-	-	227	387	547	707	867	1028	1188	1348	1508	1669	1829
135UC-S080	Start	908	Start	-	-	-	843	1113	1384	1654	1924	2195	2465	2736	3006	3276
	Mid	442	Mid	-	-	-	282	442	602	762	923	1083	1243	1403	1563	1724
	SET	897	End	-	-	-	282	442	602	762	923	1083	1243	1403	1563	1724
135UC-S090	Start	1022	Start	-	-	-	-	983	1253	1523	1794	2064	2334	2605	2875	3146
	Mid	497	Mid	-	-	-	-	337	497	657	818	978	1138	1298	1459	1619
	SET	1009	End	-	-	-	-	337	497	657	818	978	1138	1298	1459	1619
135UC-S100	Start	1135	Start	-	-	-	-	-	1121	1392	1662	1933	2203	2473	2744	3014
	Mid	552	Mid	-	-	-	-	-	392	552	713	873	1033	1193	1353	1514
	SET	1121	End	-	-	-	-	-	392	552	713	873	1033	1193	1353	1514
135UC-S120	Start	1362	Start	-	-	-	-	-	-	-	1399	1670	1940	2211	2481	2751
	Mid	663	Mid	-	-	-	-	-	-	-	503	663	824	984	1144	1304
	SET	1346	End	-	-	-	-	-	-	-	503	663	824	984	1144	1304
135UC-S140	Start	1589	Start	-	-	-	-	-	-	-	-	-	1678	1948	2219	2489
	Mid	774	Mid	-	-	-	-	-	-	-	-	-	614	774	934	1094
	SET	1570	End	-	-	-	-	-	-	-	-	-	614	774	934	1094
135UC-S160	Start	1816	Start	-	-	-	-	-	-	-	-	-	-	-	1956	2227
	Mid	884	Mid	-	-	-	-	-	-	-	-	-	-	-	724	884
	SET	1794	End	-	-	-	-	-	-	-	-	-	-	-	724	884
210UC-S040	Start	706	Start	866	1306	1747	2187	2628	3068	3508	3949	4389	4830	-	-	-
	Mid	315	Mid	315	576	837	1098	1359	1620	1881	2142	2403	2664	-	-	-
	SET	639	End	315	576	837	1098	1359	1620	1881	2142	2403	2664	-	-	-
210UC-S050	Start	883	Start	-	1082	1523	1963	2404	2844	3284	3725	4165	4606	-	-	-
	Mid	394	Mid	-	394	655	916	1177	1438	1699	1960	2221	2482	-	-	-
	SET	799	End	-	394	655	916	1177	1438	1699	1960	2221	2482	-	-	-
210UC-S060	Start	1060	Start	-	-	1299	1740	2180	2621	3061	3501	3942	4382	4823	-	-
	Mid	473	Mid	-	-	473	733	994	1255	1516	1777	2038	2299	2560	-	-
	SET	959	End	-	-	473	733	994	1255	1516	1777	2038	2299	2560	-	-

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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-S070	Start	1236	Start	-	-	1075	1515	1955	2396	2836	3277	3717	4158	4598	-	-
	Mid	551	Mid	-	-	290	551	812	1073	1334	1595	1856	2117	2378	-	-
	SET	1119	End	-	-	290	551	812	1073	1334	1595	1856	2117	2378	-	-
210UC-S080	Start	1413	Start	-	-	-	1292	1732	2172	2613	3053	3494	3934	4374	4815	-
	Mid	630	Mid	-	-	-	369	630	891	1152	1413	1674	1935	2196	2457	-
	SET	1279	End	-	-	-	369	630	891	1152	1413	1674	1935	2196	2457	-
210UC-S090	Start	1589	Start	-	-	-	-	1507	1948	2388	2828	3269	3709	4150	4590	-
	Mid	709	Mid	-	-	-	-	448	709	970	1231	1492	1753	2014	2275	-
	SET	1439	End	-	-	-	-	448	709	970	1231	1492	1753	2014	2275	-
210UC-S100	Start	1766	Start	-	-	-	-	-	1724	2165	2605	3045	3486	3926	4367	4807
	Mid	788	Mid	-	-	-	-	-	527	788	1049	1310	1571	1832	2093	2354
	SET	1599	End	-	-	-	-	-	527	788	1049	1310	1571	1832	2093	2354
210UC-S120	Start	2119	Start	-	-	-	-	-	-	-	2157	2598	3038	3479	3919	4360
	Mid	945	Mid	-	-	-	-	-	-	-	684	945	1206	1467	1728	1989
	SET	1918	End	-	-	-	-	-	-	-	684	945	1206	1467	1728	1989
210UC-S140	Start	2472	Start	-	-	-	-	-	-	-	-	-	2591	3031	3472	3912
	Mid	1103	Mid	-	-	-	-	-	-	-	-	-	842	1103	1364	1625
	SET	2238	End	-	-	-	-	-	-	-	-	-	842	1103	1364	1625
210UC-S160	Start	2825	Start	-	-	-	-	-	-	-	-	-	-	-	3023	3464
	Mid	1261	Mid	-	-	-	-	-	-	-	-	-	-	-	1000	1261
	SET	2558	End	-	-	-	-	-	-	-	-	-	-	-	1000	1261
270UC-S040	Start	909	Start	1114	1655	2195	2736	3276	3817	4357	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	406	Mid	406	726	1046	1367	1687	2007	2327	-	-				
	SET	823	End	406	726	1046	1367	1687	2007	2327	-	-				
270UC-S050	Start	1135	Start	-	1392	1932	2473	3013	3554	4094	4635	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	506	Mid	-	506	827	1147	1467	1788	2108	2428	-				
	SET	1027	End	-	506	827	1147	1467	1788	2108	2428	-				
270UC-S060	Start	1362	Start	-	-	1670	2210	2751	3291	3832	4372	4913	Maximum Operating Pressure 8.3 Bar g			
	Mid	608	Mid	-	-	608	928	1249	1569	1889	2210	2530				
	SET	1234	End	-	-	608	928	1249	1569	1889	2210	2530				
270UC-S070	Start	1589	Start	-	-	1408	1948	2489	3029	3570	4110	4651	Maximum Operating Pressure 8.3 Bar g			
	Mid	709	Mid	-	-	389	709	1030	1350	1670	1990	2311				
	SET	1439	End	-	-	389	709	1030	1350	1670	1990	2311				
270UC-S080	Start	1816	Start	-	-	-	1686	2227	2767	3308	3848	4389	Maximum Operating Pressure 8.3 Bar g			
	Mid	810	Mid	-	-	-	490	810	1131	1451	1771	2092				
	SET	1644	End	-	-	-	490	810	1131	1451	1771	2092				
270UC-S090	Start	2044	Start	-	-	-	-	1965	2505	3046	3586	4127	Maximum Operating Pressure 8.3 Bar g			
	Mid	912	Mid	-	-	-	-	591	912	1232	1552	1872				
	SET	1850	End	-	-	-	-	591	912	1232	1552	1872				
270UC-S100	Start	2271	Start	-	-	-	-	-	2243	2784	3324	3865	Maximum Operating Pressure 8.3 Bar g			
	Mid	1013	Mid	-	-	-	-	-	692	1013	1333	1653				
	SET	2055	End	-	-	-	-	-	692	1013	1333	1653				
344UC-S040	Start	1135	Start	1392	2083	2773	3464	4155	4845	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	493	Mid	493	902	1311	1721	2130	2539	-	-	-				
	SET	999	End	493	902	1311	1721	2130	2539	-	-	-				
344UC-S050	Start	1362	Start	-	1670	2360	3051	3742	4433	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	591	Mid	-	591	1001	1410	1819	2229	-	-	-				
	SET	1200	End	-	591	1001	1410	1819	2229	-	-	-				
344UC-S060	Start	1589	Start	-	-	1948	2639	3330	4020	4711	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	690	Mid	-	-	690	1099	1509	1918	2327	-	-				
	SET	1400	End	-	-	690	1099	1509	1918	2327	-	-				
344UC-S070	Start	2044	Start	-	-	1815	2505	3196	3887	4577	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	887	Mid	-	-	477	887	1296	1705	2115	-	-				
	SET	1799	End	-	-	477	887	1296	1705	2115	-	-				

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring Torques	N-m	Torque at	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
344UC-S080	Start	2271	Start	-	-	-	2093	2784	3475	4165	4856	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	985	Mid	-	-	-	576	985	1395	1804	2213	-				
	SET	1999	End	-	-	-	576	985	1395	1804	2213	-				
345UC-S090	Start	2472	Start	-	-	-	-	2340	3031	3722	4413	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	1073	Mid	-	-	-	-	663	1073	1482	1891	-				
	SET	2177	End	-	-	-	-	663	1073	1482	1891	-				
345UC-S100	Start	2825	Start	-	-	-	-	-	2773	3464	4155	4845	Maximum Operating Pressure 8.3 Bar g			
	Mid	1226	Mid	-	-	-	-	-	817	1226	1636	2045				
	SET	2488	End	-	-	-	-	-	817	1226	1636	2045				
345UC-S110	Start	3178	Start	-	-	-	-	-	-	3205	3896	4587	Maximum Operating Pressure 8.3 Bar g			
	Mid	1380	Mid	-	-	-	-	-	-	970	1380	1789				
	SET	2799	End	-	-	-	-	-	-	970	1380	1789				
345UC-S120	Start	3178	Start	-	-	-	-	-	-	3205	3896	4587	Maximum Operating Pressure 8.3 Bar g			
	Mid	1380	Mid	-	-	-	-	-	-	970	1380	1789				
	SET	2799	End	-	-	-	-	-	-	970	1380	1789				
370UC-S040	Start	1245	Start	1526	2281	3035	3790	4545	5300	6055	6810	7565	8319	9074	9829	10584
	Mid	581	Mid	581	1028	1475	1922	2370	2817	3264	3712	4159	4606	5054	5501	5948
	SET	1178	End	581	1028	1475	1922	2370	2817	3264	3712	4159	4606	5054	5501	5948
370UC-S050	Start	1555	Start	-	1907	2662	3417	4172	4926	5681	6436	7191	7946	8701	9456	10210
	Mid	815	Mid	-	815	1262	1709	2156	2604	3051	3498	3946	4393	4840	5288	5735
	SET	1473	End	-	815	1262	1709	2156	2604	3051	3498	3946	4393	4840	5288	5735
370UC-S060	Start	1867	Start	-	-	2289	3044	3799	4554	5308	6063	6818	7573	8328	9083	9837
	Mid	871	Mid	-	-	871	1318	1765	2212	2660	3107	3554	4002	4449	4896	5344
	SET	1766	End	-	-	871	1318	1765	2212	2660	3107	3554	4002	4449	4896	5344
370UC-S070	Start	2178	Start	-	-	1915	2670	3425	4180	4935	5690	6445	7199	7954	8709	9464
	Mid	1016	Mid	-	-	569	1016	1463	1910	2358	2805	3252	3700	4147	4594	5042
	SET	2061	End	-	-	569	1016	1463	1910	2358	2805	3252	3700	4147	4594	5042
370UC-S080	Start	2489	Start	-	-	-	2297	3051	3806	4561	5316	6071	6826	7581	8335	9090
	Mid	1161	Mid	-	-	-	714	1161	1608	2056	2503	2950	3398	3845	4292	4739
	SET	2356	End	-	-	-	714	1161	1608	2056	2503	2950	3398	3845	4292	4739
370UC-S090	Start	2800	Start	-	-	-	-	2678	3433	4188	4943	5697	6452	7207	7962	8717
	Mid	1306	Mid	-	-	-	-	859	1306	1754	2201	2648	3096	3543	3990	4437
	SET	2650	End	-	-	-	-	859	1306	1754	2201	2648	3096	3543	3990	4437
370UC-S100	Start	3111	Start	-	-	-	-	-	3059	3814	4569	5324	6079	6833	7588	8343
	Mid	1452	Mid	-	-	-	-	-	1004	1452	1899	2346	2793	3241	3688	4135
	SET	2945	End	-	-	-	-	-	1004	1452	1899	2346	2793	3241	3688	4135
370UC-S120	Start	3734	Start	-	-	-	-	-	-	-	3822	4577	5332	6087	6842	7597
	Mid	1742	Mid	-	-	-	-	-	-	-	1294	1742	2189	2636	3083	3531
	SET	3534	End	-	-	-	-	-	-	-	1294	1742	2189	2636	3083	3531
370UC-S140	Start	4356	Start	-	-	-	-	-	-	-	-	-	4586	5340	6095	6850
	Mid	2032	Mid	-	-	-	-	-	-	-	-	-	1584	2032	2479	2926
	SET	4122	End	-	-	-	-	-	-	-	-	-	1584	2032	2479	2926
370UC-S160	Start	4978	Start	-	-	-	-	-	-	-	-	-	-	-	5348	6103
	Mid	2322	Mid	-	-	-	-	-	-	-	-	-	-	-	1875	2322
	SET	4711	End	-	-	-	-	-	-	-	-	-	-	-	1875	2322
420UC-S040	Start	1413	Start	1732	2533	3334	4134	4935	-	-	-	-	-	-	-	-
	Mid	602	Mid	602	1076	1551	2025	2500	-	-	-	-	-	-	-	-
	SET	1221	End	602	1076	1551	2025	2500	-	-	-	-	-	-	-	-
420UC-S050	Start	1766	Start	-	2165	2965	3766	4567	-	-	-	-	-	-	-	-
	Mid	752	Mid	-	752	1227	1701	2176	-	-	-	-	-	-	-	-
	SET	1526	End	-	752	1227	1701	2176	-	-	-	-	-	-	-	-
420UC-S060	Start	2119	Start	-	-	2598	3399	4200	5000	-	-	-	-	-	-	-
	Mid	902	Mid	-	-	902	1377	1851	2326	-	-	-	-	-	-	-
	SET	1831	End	-	-	902	1377	1851	2326	-	-	-	-	-	-	-
420UC-S070	Start	2472	Start	-	-	2230	3031	3832	4633	-	-	-	-	-	-	-
	Mid	1053	Mid	-	-	578	1053	1527	2002	-	-	-	-	-	-	-
	SET	2136	End	-	-	578	1053	1527	2002	-	-	-	-	-	-	-

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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**
420UC-S080	Start	2825	Start	-	-	-	2663	3464	4265	-	-	-	-	-	-	-
	Mid	1203	Mid	-	-	-	729	1203	1678	-	-	-	-	-	-	-
	SET	2441	End	-	-	-	729	1203	1678	-	-	-	-	-	-	-
420UC-S090	Start	3178	Start	-	-	-	-	3095	3896	4697	-	-	-	-	-	-
	Mid	1354	Mid	-	-	-	-	879	1354	1828	-	-	-	-	-	-
	SET	2747	End	-	-	-	-	879	1354	1828	-	-	-	-	-	-
420UC-S100	Start	3531	Start	-	-	-	-	-	3528	4329	5130	-	-	-	-	-
	Mid	1505	Mid	-	-	-	-	-	1030	1505	1979	-	-	-	-	-
	SET	3053	End	-	-	-	-	-	1030	1505	1979	-	-	-	-	-
575UC-S040	Start	1934	Start	2371	3588	4805	6022	7239	8456	9673	10889	12106	13323	-	-	-
	Mid	823	Mid	823	1545	2266	2987	3708	4429	5151	5872	6593	7314	-	-	-
	SET	1671	End	823	1545	2266	2987	3708	4429	5151	5872	6593	7314	-	-	-
575UC-S050	Start	2418	Start	-	2964	4181	5398	6614	7831	9048	10265	11482	12699	-	-	-
	Mid	1030	Mid	-	1030	1751	2472	3193	3914	4636	5357	6078	6799	-	-	-
	SET	2089	End	-	1030	1751	2472	3193	3914	4636	5357	6078	6799	-	-	-
575UC-S060	Start	2901	Start	-	-	3557	4773	5990	7207	8424	9641	10858	12074	13291	-	-
	Mid	1235	Mid	-	-	1235	1956	2678	3399	4120	4841	5562	6284	7005	-	-
	SET	2506	End	-	-	1235	1956	2678	3399	4120	4841	5562	6284	7005	-	-
575UC-S070	Start	3384	Start	-	-	2932	4149	5366	6583	7800	9016	10233	11450	12667	-	-
	Mid	1442	Mid	-	-	720	1442	2163	2884	3605	4326	5047	5769	6490	-	-
	SET	2925	End	-	-	720	1442	2163	2884	3605	4326	5047	5769	6490	-	-
575UC-S080	Start	3597	Start	-	-	-	3525	4742	5959	7176	8393	9610	10826	12043	13260	-
	Mid	1647	Mid	-	-	-	926	1647	2369	3090	3811	4532	5253	5974	6696	-
	SET	3108	End	-	-	-	926	1647	2369	3090	3811	4532	5253	5974	6696	-
575UC-S090	Start	4351	Start	-	-	-	-	4118	5335	6552	7768	8985	10202	11419	12636	-
	Mid	1853	Mid	-	-	-	-	1132	1853	2574	3295	4016	4738	5459	6180	-
	SET	3759	End	-	-	-	-	1132	1853	2574	3295	4016	4738	5459	6180	-
575UC-S100	Start	4835	Start	-	-	-	-	-	4711	5928	7145	8362	9579	10795	12012	13229
	Mid	2059	Mid	-	-	-	-	-	1338	2059	2780	3501	4222	4944	5665	6386
	SET	4177	End	-	-	-	-	-	1338	2059	2780	3501	4222	4944	5665	6386
575UC-S120	Start	5802	Start	-	-	-	-	-	-	-	5896	7113	8330	9547	10763	11980
	Mid	2471	Mid	-	-	-	-	-	-	-	1750	2471	3192	3914	4635	5356
	SET	5014	End	-	-	-	-	-	-	-	1750	2471	3192	3914	4635	5356
575UC-S140	Start	6768	Start	-	-	-	-	-	-	-	-	-	7081	8298	9515	10732
	Mid	2883	Mid	-	-	-	-	-	-	-	-	-	2162	2883	3604	4325
	SET	5850	End	-	-	-	-	-	-	-	-	-	2162	2883	3604	4325
575UC-S160	Start	7736	Start	-	-	-	-	-	-	-	-	-	-	-	8268	9484
	Mid	3295	Mid	-	-	-	-	-	-	-	-	-	-	-	2574	3295
	SET	6685	End	-	-	-	-	-	-	-	-	-	-	-	2574	3295
740UC-S040	Start	2489	Start	3051	4533	6014	7496	8977	10459	11940	13422	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1161	Mid	1161	2039	2917	3795	4673	5550	6428	7306	-				
	SET	2356	End	1161	2039	2917	3795	4673	5550	6428	7306	-				
740UC-S050	Start	3111	Start	-	3814	5295	6777	8258	9740	11221	12703	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1452	Mid	-	1452	2329	3207	4085	4963	5841	6719	-				
	SET	2945	End	-	1452	2329	3207	4085	4963	5841	6719	-				
740UC-S060	Start	3734	Start	-	-	4577	6059	7540	9022	10503	11985	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1742	Mid	-	-	1742	2619	3497	4375	5253	6131	-				
	SET	3534	End	-	-	1742	2619	3497	4375	5253	6131	-				
740UC-S070	Start	4356	Start	-	-	3859	5340	6822	8303	9785	11266	12748	Maximum Operating Pressure 8.3 bar g			
	Mid	2032	Mid	-	-	1154	2032	2909	3787	4665	5543	6421				
	SET	4122	End	-	-	1154	2032	2909	3787	4665	5543	6421				
740UC-S080	Start	4978	Start	-	-	-	4622	6103	7584	9066	10547	12029	Maximum Operating Pressure 8.3 bar g			
	Mid	2322	Mid	-	-	-	1444	2322	3200	4078	4956	5834				
	SET	4711	End	-	-	-	1444	2322	3200	4078	4956	5834				
740UC-S090	Start	5600	Start	-	-	-	-	5384	6865	8347	9828	11310	Maximum Operating Pressure 8.3 bar g			
	Mid	2613	Mid	-	-	-	-	1735	2613	3491	4369	5246				
	SET	5301	End	-	-	-	-	1735	2613	3491	4369	5246				
740UC-S100	Start	6222	Start	-	-	-	-	-	6147	7628	9110	10591	Maximum Operating Pressure 8.3 bar g			
	Mid	2903	Mid	-	-	-	-	-	2025	2903	3781	4659				
	SET	5890	End	-	-	-	-	-	2025	2903	3781	4659				

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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**
944UC-S040	Start	3111	Start	3814	5742	7670	9598	11525	13453	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1351	Mid	1351	2493	3636	4778	5921	7063	-	-	-				
	SET	2740	End	1351	2493	3636	4778	5921	7063	-	-	-				
944UC-S050	Start	3734	Start	-	4577	6505	8433	10361	12289	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1620	Mid	-	1620	2763	3905	5048	6190	-	-	-				
	SET	3288	End	-	1620	2763	3905	5048	6190	-	-	-				
944UC-S060	Start	4356	Start	-	-	5340	7268	9196	11124	13052	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1890	Mid	-	-	1890	3033	4175	5318	6460	-	-				
	SET	3835	End	-	-	1890	3033	4175	5318	6460	-	-				
944UC-S070	Start	4978	Start	-	-	4175	6103	8031	9959	11887	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2160	Mid	-	-	1018	2160	3303	4445	5588	-	-				
	SET	4384	End	-	-	1018	2160	3303	4445	5588	-	-				
945UC-S080	Start	5802	Start	-	-	-	5185	7113	9041	10969	12897	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2518	Mid	-	-	-	1376	2518	3661	4803	5946	-				
	SET	5110	End	-	-	-	1376	2518	3661	4803	5946	-				
945UC-S090	Start	6768	Start	-	-	-	-	6370	8298	10226	12154	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2938	Mid	-	-	-	-	1795	2938	4080	5223	-				
	SET	5961	End	-	-	-	-	1795	2938	4080	5223	-				
945UC-S100	Start	7736	Start	-	-	-	-	-	7557	9484	11412	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3358	Mid	-	-	-	-	-	2215	3358	4500	-				
	SET	6812	End	-	-	-	-	-	2215	3358	4500	-				
945UC-S110	Start	8703	Start	-	-	-	-	-	-	8742	10669	12597	Maximum Operating Pressure 8.3 bar g			
	Mid	3777	Mid	-	-	-	-	-	-	2635	3777	4920				
	SET	7664	End	-	-	-	-	-	-	2635	3777	4920				
945UC-S120	Start	8703	Start	-	-	-	-	-	-	8742	10669	12597	Maximum Operating Pressure 8.3 bar g			
	Mid	3777	Mid	-	-	-	-	-	-	2635	3777	4920				
	SET	7664	End	-	-	-	-	-	-	2635	3777	4920				
1150UC-S040	Start	3868	Start	4742	7044	9347	11649	-	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1647	Mid	1647	3012	4376	5740	-	-	-	-	-				
	SET	3342	End	1647	3012	4376	5740	-	-	-	-	-				
1150UC-S050	Start	4835	Start	-	5928	8230	10533	12835	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2059	Mid	-	2059	3423	4787	6152	-	-	-	-				
	SET	4177	End	-	2059	3423	4787	6152	-	-	-	-				
1150UC-S060	Start	5802	Start	-	-	7113	9415	11718	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2471	Mid	-	-	2471	3836	5200	-	-	-	-				
	SET	5014	End	-	-	2471	3836	5200	-	-	-	-				
1150UC-S070	Start	6768	Start	-	-	5996	8298	10600	12903	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2883	Mid	-	-	1519	2883	4247	5612	-	-	-				
	SET	5850	End	-	-	1519	2883	4247	5612	-	-	-				
1150UC-S080	Start	7736	Start	-	-	-	7182	9484	11787	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3295	Mid	-	-	-	1930	3295	4659	-	-	-				
	SET	6685	End	-	-	-	1930	3295	4659	-	-	-				
1150UC-S090	Start	8703	Start	-	-	-	-	8367	10669	12972	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3706	Mid	-	-	-	-	2342	3706	5071	-	-				
	SET	7520	End	-	-	-	-	2342	3706	5071	-	-				
1150UC-S100	Start	9670	Start	-	-	-	-	-	9554	11856	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	4117	Mid	-	-	-	-	-	2753	4117	-	-				
	SET	8354	End	-	-	-	-	-	2753	4117	-	-				
1480UC-S040	Start	4978	Start	6103	8925	11747	14568	17390	20212	23034	25856	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2019	Mid	2019	3691	5364	7036	8708	10380	12052	13724	-				
	SET	4097	End	2019	3691	5364	7036	8708	10380	12052	13724	-				
1480UC-S050	Start	6223	Start	-	7629	10451	13272	16094	18916	21738	24560	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2524	Mid	-	2524	4196	5868	7540	9213	10885	12557	-				
	SET	5121	End	-	2524	4196	5868	7540	9213	10885	12557	-				

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO CLOSE (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring Torques	N-m	Torque at	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
1480UC-S060	Start	7467	Start	-	-	9154	11976	14798	17620	20442	23263	26085	Maximum Operating Pressure 8.3 bar g			
	Mid	3029	Mid	-	-	3029	4701	6373	8045	9717	11390	13062				
	SET	6145	End	-	-	3029	4701	6373	8045	9717	11390	13062				
1480UC-S070	Start	8712	Start	-	-	7859	10680	13502	16324	19146	21968	24789	Maximum Operating Pressure 8.3 bar g			
	Mid	3526	Mid	-	-	1854	3526	5199	6871	8543	10215	11887				
	SET	7155	End	-	-	1854	3526	5199	6871	8543	10215	11887				
1480UC-S080	Start	9956	Start	-	-	-	9384	12206	15028	17850	20671	23493	Maximum Operating Pressure 8.3 bar g			
	Mid	4038	Mid	-	-	-	2366	4038	5710	7383	9055	10727				
	SET	8194	End	-	-	-	2366	4038	5710	7383	9055	10727				
1480UC-S090	Start	11201	Start	-	-	-	-	10910	13732	16554	19375	22197	Maximum Operating Pressure 8.3 bar g			
	Mid	4543	Mid	-	-	-	-	2871	4543	6215	7887	9560				
	SET	9218	End	-	-	-	-	2871	4543	6215	7887	9560				
1480UC-S100	Start	12445	Start	-	-	-	-	-	12436	15258	18079	20901	Maximum Operating Pressure 8.3 bar g			
	Mid	5048	Mid	-	-	-	-	-	3376	5048	6720	8392				
	SET	10242	End	-	-	-	-	-	3376	5048	6720	8392				
2380UC-S040	Start	8005	Start	9814	14352	18890	23428	-	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3247	Mid	3247	5936	8625	11314	-	-	-	-	-				
	SET	6588	End	3247	5936	8625	11314	-	-	-	-	-				
2380UC-S050	Start	10007	Start	-	12268	16806	21344	25881	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	4059	Mid	-	4059	6748	9437	12126	-	-	-	-				
	SET	8235	End	-	4059	6748	9437	12126	-	-	-	-				
2380UC-S060	Start	12008	Start	-	-	14721	19259	23797	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	4871	Mid	-	-	4871	7560	10249	-	-	-	-				
	SET	9882	End	-	-	4871	7560	10249	-	-	-	-				
2380UC-S070	Start	14009	Start	-	-	12637	17175	21713	26251	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	5682	Mid	-	-	2993	5682	8371	11060	-	-	-				
	SET	11529	End	-	-	2993	5682	8371	11060	-	-	-				
2380UC-S080	Start	16011	Start	-	-	-	15091	19629	24166	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	6494	Mid	-	-	-	3805	6494	9183	-	-	-				
	SET	13176	End	-	-	-	3805	6494	9183	-	-	-				
2380UC-S090	Start	18012	Start	-	-	-	-	17545	22082	26620	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	7306	Mid	-	-	-	-	4617	7306	9995	-	-				
	SET	14823	End	-	-	-	-	4617	7306	9995	-	-				
2380UC-S100	Start	20013	Start	-	-	-	-	-	19998	24536	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	8118	Mid	-	-	-	-	-	5428	8118	-	-				
	SET	16470	End	-	-	-	-	-	5428	8118	-	-				

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring Torques	N-m	Torque at	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	Start	95	Start	78	104	131	158	184	211	237	264	291	317	344	371	397
	Mid	31	Mid	31	73	116	158	200	242	285	327	369	411	454	496	538
	End	31	End	63	106	148	190	232	274	317	359	401	443	486	528	570
023UC-S051	Start	120	Start	-	98	124	151	178	204	231	258	284	311	338	364	391
	Mid	40	Mid	-	40	82	124	166	209	251	293	335	378	420	462	504
	End	40	End	-	714	123	165	207	250	292	334	376	419	461	503	545
023UC-S061	Start	143	Start	-	-	116	143	170	196	223	250	276	303	330	356	383
	Mid	47	Mid	-	-	47	89	131	173	216	258	300	342	385	427	469
	End	47	End	-	-	95	137	179	222	264	306	348	391	433	475	517
023UC-S071	Start	166	Start	-	-	-	135	162	188	215	242	268	295	322	348	375
	Mid	55	Mid	-	-	-	55	97	139	182	224	266	308	351	393	435
	End	55	End	-	-	-	112	154	196	238	280	323	365	407	449	492
023UC-S081	Start	190	Start	-	-	-	-	155	182	209	235	262	288	315	342	368
	Mid	62	Mid	-	-	-	-	62	105	147	189	231	274	316	358	400
	End	62	End	-	-	-	-	127	169	211	253	295	338	380	422	464

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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-S091	Start	213	Start	-	-	-	-	-	174	201	227	254	280	307	334	360
	Mid	71	Mid	-	-	-	-	-	71	113	155	197	239	282	324	366
	End	71	End	-	-	-	-	-	143	185	228	270	312	354	397	439
023UC-S101	Start	237	Start	-	-	-	-	-	-	194	220	247	273	300	327	353
	Mid	78	Mid	-	-	-	-	-	-	78	121	163	205	247	289	332
	End	78	End	-	-	-	-	-	-	159	201	243	286	328	370	412
023UC-S121	Start	286	Start	-	-	-	-	-	-	-	-	233	260	286	313	339
	Mid	94	Mid	-	-	-	-	-	-	-	-	94	136	178	220	262
	End	94	End	-	-	-	-	-	-	-	-	190	232	274	317	359
023UC-S141	Start	332	Start	-	-	-	-	-	-	-	-	-	-	271	297	324
	Mid	110	Mid	-	-	-	-	-	-	-	-	-	-	110	152	194
	End	110	End	-	-	-	-	-	-	-	-	-	-	223	265	307
023UC-S161	Start	381	Start	-	-	-	-	-	-	-	-	-	-	-	-	310
	Mid	125	Mid	-	-	-	-	-	-	-	-	-	-	-	-	125
	End	125	End	-	-	-	-	-	-	-	-	-	-	-	-	253
036UC-S041	Start	148	Start	121	167	213	259	305	350	396	442	488	534	580	626	671
	Mid	49	Mid	49	122	195	267	340	413	485	558	631	703	776	849	922
	End	49	End	100	172	245	318	390	463	536	609	681	754	827	899	972
036UC-S051	Start	185	Start	-	151	197	243	289	335	380	426	472	518	564	610	656
	Mid	62	Mid	-	62	134	207	280	352	425	498	571	643	716	789	861
	End	62	End	-	125	198	270	343	416	488	561	634	707	779	852	925
036UC-S061	Start	223	Start	-	-	182	228	273	319	365	411	457	503	549	594	640
	Mid	74	Mid	-	-	74	147	220	292	365	438	510	583	656	728	801
	End	74	End	-	-	150	223	296	368	441	514	587	659	732	805	877
036UC-S071	Start	260	Start	-	-	-	212	258	304	350	396	441	487	533	579	625
	Mid	86	Mid	-	-	-	86	158	231	304	377	449	522	595	667	740
	End	86	End	-	-	-	174	247	319	392	465	538	610	683	756	828
036UC-S081	Start	297	Start	-	-	-	-	242	288	334	380	426	471	517	563	609
	Mid	98	Mid	-	-	-	-	98	171	244	316	389	462	534	607	680
	End	98	End	-	-	-	-	199	272	345	417	490	563	636	708	781
036UC-S091	Start	334	Start	-	-	-	-	-	272	318	364	410	456	501	547	593
	Mid	110	Mid	-	-	-	-	-	110	183	256	328	401	474	547	619
	End	110	End	-	-	-	-	-	224	297	369	442	515	587	660	733
036UC-S101	Start	371	Start	-	-	-	-	-	-	303	349	394	440	486	532	578
	Mid	123	Mid	-	-	-	-	-	-	123	196	268	341	414	486	559
	End	123	End	-	-	-	-	-	-	249	322	395	467	540	613	685
036UC-S121	Start	445	Start	-	-	-	-	-	-	-	-	363	409	455	501	547
	Mid	147	Mid	-	-	-	-	-	-	-	-	147	220	293	365	438
	End	147	End	-	-	-	-	-	-	-	-	299	372	444	517	590
036UC-S141	Start	520	Start	-	-	-	-	-	-	-	-	-	-	424	470	516
	Mid	172	Mid	-	-	-	-	-	-	-	-	-	-	172	245	317
	End	172	End	-	-	-	-	-	-	-	-	-	-	349	421	494
036UC-S161	Start	596	Start	-	-	-	-	-	-	-	-	-	-	-	-	486
	Mid	195	Mid	-	-	-	-	-	-	-	-	-	-	-	-	195
	End	195	End	-	-	-	-	-	-	-	-	-	-	-	-	395
046UC-S041	Start	190	Start	155	209	262	315	368	422	475	528	582	635	688	741	795
	Mid	62	Mid	62	147	231	316	400	485	569	654	738	823	907	992	1076
	End	62	End	127	211	295	380	464	549	633	718	802	887	971	1056	1140
046UC-S051	Start	237	Start	-	194	247	300	353	407	460	513	567	620	673	726	780
	Mid	78	Mid	-	78	163	247	332	416	501	585	670	754	839	923	1007
	End	78	End	-	159	243	328	412	497	581	666	750	835	919	1004	1088
046UC-S061	Start	286	Start	-	-	233	286	339	393	446	499	553	606	659	712	766
	Mid	94	Mid	-	-	94	178	262	347	431	516	600	685	769	854	938
	End	94	End	-	-	190	274	359	443	528	612	697	781	866	950	1034
046UC-S071	Start	332	Start	-	-	-	271	324	377	430	484	537	590	644	697	750
	Mid	110	Mid	-	-	-	110	194	279	363	448	532	617	701	786	870
	End	110	End	-	-	-	223	307	392	476	561	645	730	814	899	983

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring Torques	N-m	Torque at	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
046UC-S081	Start	381	Start	-	-	-	-	310	364	417	470	524	577	630	683	737
	Mid	125	Mid	-	-	-	-	125	209	294	378	463	547	632	716	800
	End	125	End	-	-	-	-	253	338	422	506	591	675	760	844	929
058UC-S041	Start	237	Start	194	262	330	399	467	535	604	672	740	Maximum Operating Pressure 8.3 Bar g			
	Mid	78	Mid	78	187	295	403	512	620	728	837	945				
	End	78	End	159	267	376	484	592	701	809	917	1026				
058UC-S051	Start	286	Start	-	233	301	370	438	506	575	643	711	Maximum Operating Pressure 8.3 Bar g			
	Mid	94	Mid	-	94	202	310	419	527	635	744	852				
	End	94	End	-	190	298	406	515	623	731	840	948				
058UC-S061	Start	332	Start	-	-	271	339	407	476	544	612	681	Maximum Operating Pressure 8.3 Bar g			
	Mid	110	Mid	-	-	110	218	327	435	543	652	760				
	End	110	End	-	-	223	331	440	548	656	765	873				
058UC-S071	Start	381	Start	-	-	-	310	379	447	515	584	652	Maximum Operating Pressure 8.3 Bar g			
	Mid	125	Mid	-	-	-	125	233	341	450	558	666				
	End	125	End	-	-	-	253	361	470	578	686	795				
059UC-S081	Start	445	Start	-	-	-	-	363	432	500	568	637	Maximum Operating Pressure 8.3 Bar g			
	Mid	147	Mid	-	-	-	-	147	256	364	472	581				
	End	147	End	-	-	-	-	299	407	516	624	732				
059UC-S091	Start	520	Start	-	-	-	-	-	424	492	560	629	Maximum Operating Pressure 8.3 Bar g			
	Mid	172	Mid	-	-	-	-	-	172	280	389	497				
	End	172	End	-	-	-	-	-	349	457	565	674				
059UC-S101	Start	596	Start	-	-	-	-	-	-	486	555	623	Maximum Operating Pressure 8.3 Bar g			
	Mid	195	Mid	-	-	-	-	-	-	195	303	412				
	End	195	End	-	-	-	-	-	-	395	504	612				
072UC-S041	Start	297	Start	242	334	426	517	609	701	792			Maximum Operating Pressure 6.9 Bar g			
	Mid	98	Mid	98	244	389	534	680	825	971						
	End	98	End	199	345	490	636	781	926	1072						
072UC-S051	Start	371	Start	-	303	394	486	578	670	761			Maximum Operating Pressure 6.9 Bar g			
	Mid	123	Mid	-	123	268	414	559	704	850						
	End	123	End	-	249	395	540	685	831	976						
072UC-S061	Start	445	Start	-	-	363	455	547	638	730			Maximum Operating Pressure 6.9 Bar g			
	Mid	147	Mid	-	-	147	293	438	584	729						
	End	147	End	-	-	299	444	590	735	881						
072UC-S071	Start	520	Start	-	-	-	424	516	607	699			Maximum Operating Pressure 6.9 Bar g			
	Mid	172	Mid	-	-	-	172	317	463	608						
	End	172	End	-	-	-	349	494	640	785						
072UC-S081	Start	596	Start	-	-	-	-	486	578	670			Maximum Operating Pressure 6.9 Bar g			
	Mid	195	Mid	-	-	-	-	195	340	486						
	End	195	End	-	-	-	-	395	541	686						
100UC-S041	Start	412	Start	336	452	568	684	800	915	-			Maximum Operating Pressure 6.9 Bar g			
	Mid	136	Mid	136	320	504	687	871	1054	-						
	End	136	End	277	460	644	828	1011	1195	-						
100UC-S051	Start	515	Start	-	420	536	652	768	883	-			Maximum Operating Pressure 6.9 Bar g			
	Mid	171	Mid	-	171	354	538	722	905	-						
	End	171	End	-	346	530	714	897	1081	-						
100UC-S061	Start	619	Start	-	-	505	621	737	852	968			Maximum Operating Pressure 6.9 Bar g			
	Mid	204	Mid	-	-	204	388	571	755	939						
	End	204	End	-	-	414	598	782	965	1149						
100UC-S071	Start	722	Start	-	-	-	589	705	820	936			Maximum Operating Pressure 6.9 Bar g			
	Mid	239	Mid	-	-	-	239	422	606	789						
	End	239	End	-	-	-	484	668	851	1035						
100UC-S081	Start	825	Start	-	-	-	-	673	789	904			Maximum Operating Pressure 6.9 Bar g			
	Mid	273	Mid	-	-	-	-	273	456	640						
	End	273	End	-	-	-	-	554	737	921						

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring Torques	N-m	Torque at	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
135UC-S041	Start	557	Start	454	619	783	947	1111	1275	1440	1604	1768	1932	2096	2261	2425
	Mid	221	Mid	221	370	518	666	814	963	1111	1259	1408	1556	1704	1852	2001
	End	221	End	449	709	970	1230	1490	1751	2011	2271	2532	2792	3052	3312	3573
135UC-S051	Start	696	Start	-	568	732	896	1060	1224	1389	1553	1717	1881	2046	2210	2374
	Mid	276	Mid	-	276	424	573	721	869	1017	1166	1314	1462	1611	1759	1907
	End	276	End	-	560	820	1081	1341	1601	1862	2122	2382	2643	2903	3163	3424
135UC-S061	Start	835	Start	-	-	681	845	1009	1174	1338	1502	1666	1830	1995	2159	2323
	Mid	332	Mid	-	-	332	480	628	776	925	1073	1221	1370	1518	1666	1815
	End	332	End	-	-	673	933	1194	1454	1714	1975	2235	2495	2756	3016	3276
135UC-S071	Start	974	Start	-	-	631	795	959	1123	1287	1452	1616	1780	1944	2109	2273
	Mid	387	Mid	-	-	239	387	535	683	832	980	1128	1277	1425	1573	1721
	End	387	End	-	-	525	785	1045	1306	1566	1826	2087	2347	2607	2868	3128
135UC-S081	Start	1113	Start	-	-	-	744	908	1072	1237	1401	1565	1729	1893	2058	2222
	Mid	442	Mid	-	-	-	294	442	590	739	887	1035	1183	1332	1480	1628
	End	442	End	-	-	-	637	897	1157	1418	1678	1938	2199	2459	2719	2979
135UC-S091	Start	1253	Start	-	-	-	-	858	1022	1186	1350	1515	1679	1843	2007	2172
	Mid	497	Mid	-	-	-	-	349	497	646	794	942	1090	1239	1387	1535
	End	497	End	-	-	-	-	749	1009	1269	1529	1790	2050	2310	2571	2831
135UC-S101	Start	1392	Start	-	-	-	-	-	971	1135	1300	1464	1628	1792	1956	2121
	Mid	552	Mid	-	-	-	-	-	404	552	701	849	997	1146	1294	1442
	End	552	End	-	-	-	-	-	860	1121	1381	1641	1902	2162	2422	2683
135UC-S121	Start	1670	Start	-	-	-	-	-	-	-	1198	1362	1526	1690	1855	2019
	Mid	663	Mid	-	-	-	-	-	-	-	515	663	812	960	1108	1257
	End	663	End	-	-	-	-	-	-	-	1085	1346	1606	1866	2127	2387
135UC-S141	Start	1948	Start	-	-	-	-	-	-	-	-	-	1425	1589	1753	1918
	Mid	774	Mid	-	-	-	-	-	-	-	-	-	625	774	922	1070
	End	774	End	-	-	-	-	-	-	-	-	-	1309	1570	1830	2090
135UC-S161	Start	2227	Start	-	-	-	-	-	-	-	-	-	-	-	1652	1816
	Mid	884	Mid	-	-	-	-	-	-	-	-	-	-	-	736	884
	End	884	End	-	-	-	-	-	-	-	-	-	-	-	1533	1794
210UC-S041	Start	866	Start	706	974	1241	1509	1776	2044	2312	2579	2847	3114	-	-	-
	Mid	315	Mid	315	546	776	1007	1237	1468	1698	1929	2159	2390	-	-	-
	End	315	End	639	1064	1488	1912	2336	2760	3184	3608	4032	4457	-	-	-
210UC-S051	Start	1082	Start	-	883	1150	1418	1685	1953	2220	2488	2755	3023	-	-	-
	Mid	394	Mid	-	394	624	855	1085	1316	1546	1777	2007	2238	-	-	-
	End	394	End	-	799	1223	1647	2071	2495	2919	3343	3768	4192	-	-	-
210UC-S061	Start	1299	Start	-	-	1060	1327	1595	1862	2130	2397	2665	2932	3200	-	-
	Mid	473	Mid	-	-	473	703	933	1164	1394	1625	1855	2086	2316	-	-
	End	473	End	-	-	959	1383	1807	2231	2655	3079	3503	3928	4352	-	-
210UC-S071	Start	1515	Start	-	-	968	1236	1503	1771	2038	2306	2573	2841	3108	-	-
	Mid	551	Mid	-	-	321	551	782	1012	1243	1473	1704	1934	2165	-	-
	End	551	End	-	-	695	1119	1543	1967	2391	2815	3239	3664	4088	-	-
210UC-S081	Start	1732	Start	-	-	-	1145	1413	1680	1948	2215	2483	2750	3018	3285	-
	Mid	630	Mid	-	-	-	400	630	861	1091	1322	1552	1783	2013	2244	-
	End	630	End	-	-	-	855	1279	1703	2127	2551	2975	3399	3824	4248	-
210UC-S091	Start	1948	Start	-	-	-	-	1321	1589	1856	2124	2391	2659	2926	3194	-
	Mid	709	Mid	-	-	-	-	479	709	940	1170	1401	1631	1862	2092	-
	End	709	End	-	-	-	-	1015	1439	1863	2287	2711	3135	3560	3984	-
210UC-S101	Start	2165	Start	-	-	-	-	-	1498	1766	2033	2301	2568	2836	3103	3371
	Mid	788	Mid	-	-	-	-	-	558	788	1019	1249	1480	1710	1941	2171
	End	788	End	-	-	-	-	-	1175	1599	2023	2447	2871	3296	3720	4144
210UC-S121	Start	2598	Start	-	-	-	-	-	-	-	1852	2119	2387	2654	2922	3189
	Mid	945	Mid	-	-	-	-	-	-	-	715	945	1176	1406	1637	1867
	End	945	End	-	-	-	-	-	-	-	1494	1918	2342	2767	3191	3615
210UC-S141	Start	3031	Start	-	-	-	-	-	-	-	-	-	2205	2472	2740	3007
	Mid	1103	Mid	-	-	-	-	-	-	-	-	-	872	1103	1333	1564
	End	1103	End	-	-	-	-	-	-	-	-	-	1813	2238	2662	3086
210UC-S161	Start	3464	Start	-	-	-	-	-	-	-	-	-	-	-	2558	2825
	Mid	1261	Mid	-	-	-	-	-	-	-	-	-	-	-	1030	1261
	End	1261	End	-	-	-	-	-	-	-	-	-	-	-	2134	2558

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring Torques	N-m	Torque at	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
270UC-S041	Start	1114	Start	909	1237	1565	1894	2222	2550	2879	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	406	Mid	406	702	999	1295	1592	1889	2185	-	-				
	End	406	End	823	1344	1864	2385	2905	3426	3946	-	-				
270UC-S051	Start	1392	Start	-	1135	1464	1792	2120	2449	2777	3105	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	506	Mid	-	506	803	1100	1396	1693	1989	2286	-				
	End	506	End	-	1027	1548	2069	2589	3110	3630	4151	-				
270UC-S061	Start	1670	Start	-	-	1362	1690	2019	2347	2675	3004	3332	Maximum Operating Pressure 8.3 Bar g			
	Mid	608	Mid	-	-	608	905	1201	1498	1794	2091	2387				
	End	608	End	-	-	1234	1754	2275	2795	3316	3836	4357				
270UC-S071	Start	1948	Start	-	-	1261	1589	1917	2246	2574	2902	3231	Maximum Operating Pressure 8.3 Bar g			
	Mid	709	Mid	-	-	413	709	1006	1302	1599	1896	2192				
	End	709	End	-	-	918	1439	1959	2480	3001	3521	4042				
270UC-S081	Start	2227	Start	-	-	-	1488	1816	2145	2473	2801	3130	Maximum Operating Pressure 8.3 Bar g			
	Mid	810	Mid	-	-	-	514	810	1107	1404	1700	1997				
	End	810	End	-	-	-	1124	1644	2165	2685	3206	3726				
270UC-S091	Start	2505	Start	-	-	-	-	1715	2044	2372	2700	3029	Maximum Operating Pressure 8.3 Bar g			
	Mid	912	Mid	-	-	-	-	615	912	1208	1505	1801				
	End	912	End	-	-	-	-	1329	1850	2370	2891	3411				
270UC-S101	Start	2784	Start	-	-	-	-	-	1942	2271	2599	2927	Maximum Operating Pressure 8.3 Bar g			
	Mid	1013	Mid	-	-	-	-	-	716	1013	1309	1606				
	End	1013	End	-	-	-	-	-	1535	2055	2576	3096				
344UC-S041	Start	1392	Start	1135	1555	1974	2394	2814	3233	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	493	Mid	493	871	1250	1629	2008	2387	-	-	-				
	End	493	End	999	1664	2330	2995	3660	4325	-	-	-				
344UC-S051	Start	1670	Start	-	1362	1782	2201	2621	3040	-	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	591	Mid	-	591	970	1349	1728	2107	-	-	-				
	End	591	End	-	1200	1865	2530	3195	3860	-	-	-				
344UC-S061	Start	1948	Start	-	-	1589	2009	2428	2848	3267	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	690	Mid	-	-	690	1069	1448	1827	2206	-	-				
	End	690	End	-	-	1400	2065	2730	3395	4060	-	-				
344UC-S071	Start	2505	Start	-	-	1624	2044	2463	2883	3302	-	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	887	Mid	-	-	508	887	1266	1644	2023	-	-				
	End	887	End	-	-	1134	1799	2464	3129	3794	-	-				
344UC-S081	Start	2784	Start	-	-	-	1851	2271	2690	3110	3529	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	985	Mid	-	-	-	606	985	1364	1743	2122	-				
	End	985	End	-	-	-	1334	1999	2664	3329	3994	-				
345UC-S091	Start	3031	Start	-	-	-	-	2053	2472	2892	3312	-	Maximum Operating Pressure 8.3 Bar g			
	Mid	1073	Mid	-	-	-	-	694	1073	1452	1831	-				
	End	1073	End	-	-	-	-	1511	2177	2842	3507	-				
345UC-S101	Start	3464	Start	-	-	-	-	-	2406	2825	3245	3664	Maximum Operating Pressure 8.3 Bar g			
	Mid	1226	Mid	-	-	-	-	-	847	1226	1605	1984				
	End	1226	End	-	-	-	-	-	1823	2488	3153	3818				
345UC-S111	Start	3896	Start	-	-	-	-	-	-	2758	3178	3597	Maximum Operating Pressure 8.3 Bar g			
	Mid	1380	Mid	-	-	-	-	-	-	1001	1380	1759				
	End	1380	End	-	-	-	-	-	-	2134	2799	3465				
345UC-S121	Start	3896	Start	-	-	-	-	-	-	2758	3178	3597	Maximum Operating Pressure 8.3 Bar g			
	Mid	1380	Mid	-	-	-	-	-	-	1001	1380	1759				
	End	1380	End	-	-	-	-	-	-	2134	2799	3465				
370UC-S041	Start	1526	Start	1245	1703	2162	2620	3078	3537	3995	4454	4912	5371	5829	6288	6746
	Mid	581	Mid	581	950	1319	1689	2058	2428	2797	3167	3536	3906	4275	4645	5014
	End	581	End	1178	1905	2632	3358	4085	4812	5539	6266	6993	7720	8447	9173	9900
370UC-S051	Start	1907	Start	-	1555	2014	2472	2931	3389	3848	4306	4765	5223	5682	6140	6599
	Mid	815	Mid	-	815	1184	1553	1923	2292	2662	3031	3401	3770	4140	4509	4879
	End	815	End	-	1473	2380	3106	3833	4560	5287	6014	6741	7468	8195	8921	9648
370UC-S061	Start	2289	Start	-	-	1867	2326	2784	3243	3701	4160	4618	5077	5535	5994	6452
	Mid	871	Mid	-	-	871	1240	1609	1979	2348	2718	3087	3457	3826	4196	4565
	End	871	End	-	-	1766	2493	3220	3947	4674	5401	6128	6855	7581	8308	9035
370UC-S071	Start	2670	Start	-	-	1720	2178	2637	3095	3553	4012	4470	4929	5387	5846	6304
	Mid	1016	Mid	-	-	646	1016	1385	1755	2124	2494	2863	3233	3602	3972	4341
	End	1016	End	-	-	1334	2061	2788	3515	4242	4969	5695	6422	7149	7876	8603

OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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**
370UC-S081	Start	3051	Start	-	-	-	2031	2489	2948	3406	3865	4323	4782	5240	5699	6157
	Mid	1161	Mid	-	-	-	792	1161	1530	1900	2269	2639	3008	3378	3747	4117
	End	1161	End	-	-	-	1629	2356	3083	3809	4536	5263	5990	6717	7444	8171
370UC-S091	Start	3433	Start	-	-	-	-	2341	2800	3258	3717	4175	4634	5092	5551	6009
	Mid	1306	Mid	-	-	-	-	937	1306	1676	2045	2415	2784	3154	3523	3893
	End	1306	End	-	-	-	-	1924	2650	3377	4104	4831	5558	6285	7012	7739
370UC-S101	Start	3814	Start	-	-	-	-	-	2653	3111	3570	4028	4487	4945	5403	5862
	Mid	1452	Mid	-	-	-	-	-	1082	1452	1821	2190	2560	2929	3299	3668
	End	1452	End	-	-	-	-	-	2218	2945	3672	4399	5126	5853	6580	7306
370UC-S121	Start	4577	Start	-	-	-	-	-	-	-	3275	3734	4192	4651	5109	5568
	Mid	1742	Mid	-	-	-	-	-	-	-	1372	1742	2111	2480	2850	3219
	End	1742	End	-	-	-	-	-	-	-	2807	3534	4260	4987	5714	6441
370UC-S141	Start	5340	Start	-	-	-	-	-	-	-	-	-	3898	4356	4815	5273
	Mid	2032	Mid	-	-	-	-	-	-	-	-	-	1662	2032	2401	2771
	End	2032	End	-	-	-	-	-	-	-	-	-	3395	4122	4849	5576
370UC-S161	Start	6103	Start	-	-	-	-	-	-	-	-	-	-	-	4520	4978
	Mid	2322	Mid	-	-	-	-	-	-	-	-	-	-	-	1953	2322
	End	2322	End	-	-	-	-	-	-	-	-	-	-	-	3984	4711
420UC-S041	Start	1732	Start	1413	1899	2385	2872	3358	3845	-	-	-	-	-	-	-
	Mid	602	Mid	602	1063	1524	1985	2446	2907	-	-	-	-	-	-	-
	End	602	End	1221	1992	2763	3534	4305	5076	-	-	-	-	-	-	-
420UC-S051	Start	2165	Start	-	1766	2252	2738	3225	3711	-	-	-	-	-	-	-
	Mid	752	Mid	-	752	1213	1674	2135	2596	-	-	-	-	-	-	-
	End	752	End	-	1526	2298	3069	3840	4611	-	-	-	-	-	-	-
420UC-S061	Start	2598	Start	-	-	2119	2605	3092	3578	-	-	-	-	-	-	-
	Mid	902	Mid	-	-	902	1363	1824	2285	-	-	-	-	-	-	-
	End	902	End	-	-	1831	2602	3373	4144	-	-	-	-	-	-	-
420UC-S071	Start	3031	Start	-	-	1986	2472	2959	3445	-	-	-	-	-	-	-
	Mid	1053	Mid	-	-	592	1053	1514	1975	-	-	-	-	-	-	-
	End	1053	End	-	-	1365	2136	2907	3678	-	-	-	-	-	-	-
420UC-S081	Start	3464	Start	-	-	-	2339	2825	3312	-	-	-	-	-	-	-
	Mid	1203	Mid	-	-	-	742	1203	1664	-	-	-	-	-	-	-
	End	1203	End	-	-	-	1670	2441	3213	-	-	-	-	-	-	-
420UC-S091	Start	3896	Start	-	-	-	-	2691	3178	3664	-	-	-	-	-	-
	Mid	1354	Mid	-	-	-	-	893	1354	1815	-	-	-	-	-	-
	End	1354	End	-	-	-	-	1976	2747	3518	-	-	-	-	-	-
420UC-S101	Start	4329	Start	-	-	-	-	-	3045	3531	4018	-	-	-	-	-
	Mid	1505	Mid	-	-	-	-	-	1044	1505	1965	-	-	-	-	-
	End	1505	End	-	-	-	-	-	2282	3053	3824	-	-	-	-	-
575UC-S041	Start	2371	Start	1934	2673	3413	4152	4891	5630	6369	7108	7847	8587	-	-	-
	Mid	823	Mid	823	1457	2091	2725	3359	3993	4627	5260	5894	6528	-	-	-
	End	823	End	1671	2843	4014	5186	6358	7530	8702	9874	11045	12217	-	-	-
575UC-S051	Start	2964	Start	-	2418	3157	3896	4635	5374	6113	6853	7592	8331	-	-	-
	Mid	1030	Mid	-	1030	1664	2297	2931	3565	4199	4833	5467	6101	-	-	-
	End	1030	End	-	2089	3261	4433	5605	6777	7949	9120	10292	11464	-	-	-
575UC-S061	Start	3557	Start	-	-	2901	3640	4379	5118	5857	6597	7336	8075	8814	-	-
	Mid	1235	Mid	-	-	1235	1869	2503	3137	3771	4404	5038	5672	6306	-	-
	End	1235	End	-	-	2506	3678	4850	6022	7194	8365	9537	10709	11881	-	-
575UC-S071	Start	4149	Start	-	-	2645	3384	4123	4863	5602	6341	7080	7819	8558	-	-
	Mid	1442	Mid	-	-	808	1442	2075	2709	3343	3977	4611	5245	5878	-	-
	End	1442	End	-	-	1753	2925	4097	5268	6440	7612	8784	9956	11128	-	-
575UC-S081	Start	4742	Start	-	-	-	3129	3868	4607	5346	6086	6825	7564	8303	9042	-
	Mid	1647	Mid	-	-	-	1013	1647	2281	2915	3549	4183	4817	5450	6084	-
	End	1647	End	-	-	-	2171	3342	4514	5686	6858	8030	9202	10373	11545	-
575UC-S091	Start	5335	Start	-	-	-	-	3612	4351	5091	5830	6569	7308	8047	8786	9525
	Mid	1853	Mid	-	-	-	-	1219	1853	2487	3121	3754	4388	5022	5656	6290
	End	1853	End	-	-	-	-	2588	3759	4931	6103	7275	8447	9619	10790	11962
575UC-S101	Start	5928	Start	-	-	-	-	-	4096	4835	5574	6314	7053	7792	8531	9270
	Mid	2059	Mid	-	-	-	-	-	1425	2059	2693	3326	3960	4594	5228	5862
	End	2059	End	-	-	-	-	-	3005	4177	5349	6521	7693	8864	10036	11208

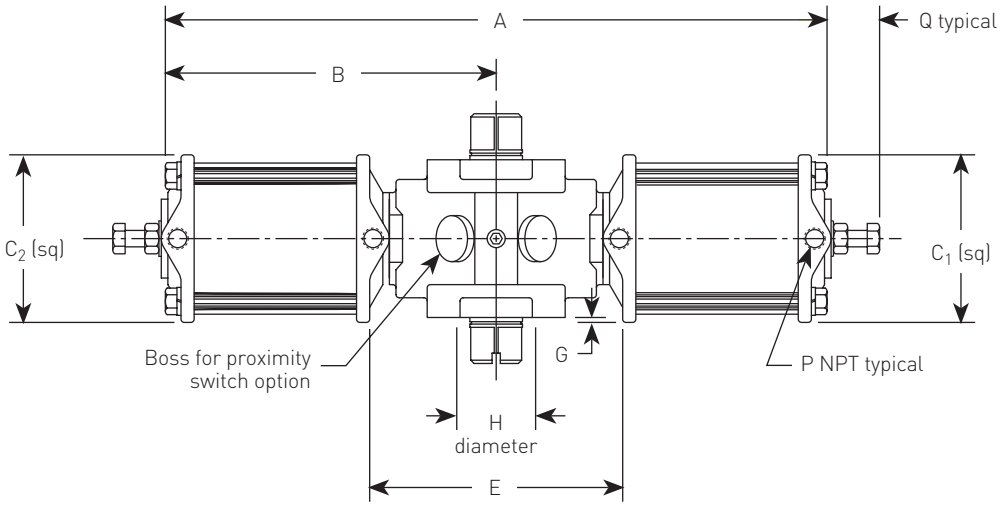
OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	**Spring Torques**	**N-m**	**Torque at**	**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**
575UC-S121	Start	7113	Start	-	-	-	-	-	-	-	5063	5802	6541	7280	8019	8758
	Mid	2471	Mid	-	-	-	-	-	-	-	1837	2471	3105	3739	4373	5007
	End	2471	End	-	-	-	-	-	-	-	3842	5014	6186	7358	8530	9702
575UC-S141	Start	8298	Start	-	-	-	-	-	-	-	-	-	6029	6768	7508	8247
	Mid	2883	Mid	-	-	-	-	-	-	-	-	-	2249	2883	3517	4151
	End	2883	End	-	-	-	-	-	-	-	-	-	4678	5850	7021	8193
575UC-S161	Start	9484	Start	-	-	-	-	-	-	-	-	-	-	-	6997	7736
	Mid	3295	Mid	-	-	-	-	-	-	-	-	-	-	-	2661	3295
	End	3295	End	-	-	-	-	-	-	-	-	-	-	-	5513	6685
740UC-S041	Start	3051	Start	2489	3389	4289	5189	6088	6988	7888	8788	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1161	Mid	1161	1900	2639	3378	4117	4856	5595	6333	-				
	End	1161	End	2356	3782	5209	6636	8062	9489	10915	12342	-				
740UC-S051	Start	3814	Start	-	3111	4011	4911	5811	6710	7610	8510	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1452	Mid	-	1452	2190	2929	3668	4407	5146	5885	-				
	End	1452	End	-	2945	4372	5798	7225	8652	10078	11505	-				
740UC-S061	Start	4577	Start	-	-	3734	4633	5533	6433	7333	8233	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1742	Mid	-	-	1742	2480	3219	3958	4697	5436	-				
	End	1742	End	-	-	3534	4960	6387	7813	9240	10667	-				
740UC-S071	Start	5340	Start	-	-	3456	4356	5256	6156	7056	7955	8855	Maximum Operating Pressure 8.3 bar g			
	Mid	2032	Mid	-	-	1293	2032	2771	3509	4248	4987	5726				
	End	2032	End	-	-	2695	4122	5549	6975	8402	9828	11255				
740UC-S081	Start	6103	Start	-	-	-	4078	4978	5878	6778	7678	8578	Maximum Operating Pressure 8.3 bar g			
	Mid	2322	Mid	-	-	-	1583	2322	3061	3800	4539	5278				
	End	2322	End	-	-	-	3285	4711	6138	7565	8991	10418				
740UC-S091	Start	6865	Start	-	-	-	-	4700	5600	6500	7400	8299	Maximum Operating Pressure 8.3 bar g			
	Mid	2613	Mid	-	-	-	-	1874	2613	3352	4091	4830				
	End	2613	End	-	-	-	-	3875	5301	6728	8154	9581				
740UC-S101	Start	7628	Start	-	-	-	-	-	5322	6222	7122	8022	Maximum Operating Pressure 8.3 bar g			
	Mid	2903	Mid	-	-	-	-	-	2164	2903	3642	4381				
	End	2903	End	-	-	-	-	-	4464	5890	7317	8743				
944UC-S041	Start	3814	Start	3111	4282	5453	6624	7795	8966	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1351	Mid	1351	2378	3406	4434	5462	6490	-	-	-				
	End	1351	End	2740	4597	6453	8310	10166	12022	-	-	-				
944UC-S051	Start	4577	Start	-	3734	4905	6076	7247	8418	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1620	Mid	-	1620	2648	3676	4704	5732	-	-	-				
	End	1620	End	-	3288	5144	7001	8857	10714	-	-	-				
944UC-S061	Start	5340	Start	-	-	4356	5527	6698	7869	9040	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1890	Mid	-	-	1890	2918	3946	4974	6002	-	-				
	End	1890	End	-	-	3835	5692	7548	9405	11261	-	-				
944UC-S071	Start	6103	Start	-	-	3807	4978	6149	7320	8491	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2160	Mid	-	-	1133	2160	3188	4216	5244	-	-				
	End	2160	End	-	-	2527	4384	6240	8097	9953	-	-				
945UC-S081	Start	7113	Start	-	-	-	4631	5802	6973	8144	9315	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2518	Mid	-	-	-	1490	2518	3546	4574	5602	-				
	End	2518	End	-	-	-	3253	5110	6966	8823	10679	-				
945UC-S091	Start	8298	Start	-	-	-	-	5597	6768	7939	9111	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2938	Mid	-	-	-	-	1910	2938	3966	4994	-				
	End	2938	End	-	-	-	-	4104	5961	7817	9674	-				
945UC-S101	Start	9484	Start	-	-	-	-	-	6565	7736	8907	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3358	Mid	-	-	-	-	-	2330	3358	4385	-				
	End	3358	End	-	-	-	-	-	43864	60295	76726	-				
945UC-S111	Start	10669	Start	-	-	-	-	-	-	7532	8703	9874	Maximum Operating Pressure 8.3 bar g			
	Mid	3777	Mid	-	-	-	-	-	-	2749	3777	4805				
	End	3777	End	-	-	-	-	-	-	5807	7664	9520				
945UC-S121	Start	10669	Start	-	-	-	-	-	-	-	7532	8703	Maximum Operating Pressure 8.3 bar g			
	Mid	3777	Mid	-	-	-	-	-	-	-	2749	3777				
	End	3777	End	-	-	-	-	-	-	-	5807	7664				
1150UC-S041	Start	4742	Start	3868	5267	6665	8063	-	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	1647	Mid	1647	2915	4183	5450	-	-	-	-	-				
	End	1647	End	3342	5559	7776	9993	-	-	-	-	-				

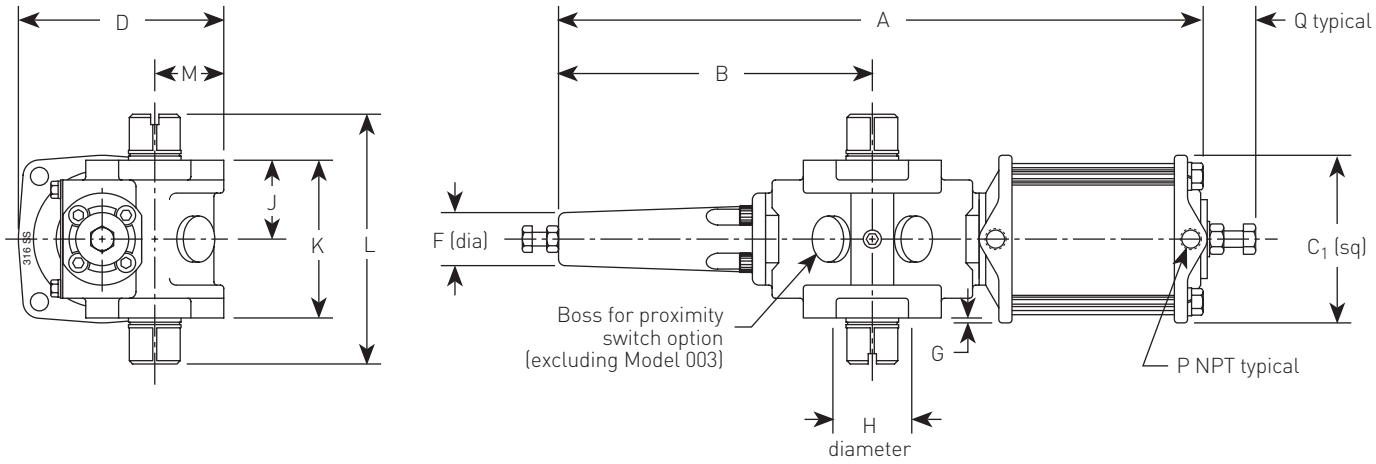
OUTPUT TORQUES (NM) - SPRING RETURN, CANTED YOKE DESIGN, SPRING TO OPEN (Continued)

				Air torques N-m												
				Supply Pressure bar g												
Model number	Spring Torques	N-m	Torque at	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
1150UC-S051	Start	5928	Start	-	4835	6234	7632	9031	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2059	Mid	-	2059	3326	4594	5862	-	-	-	-				
	End	2059	End	-	4177	6394	8611	10828	-	-	-	-				
1150UC-S061	Start	7113	Start	-	-	5802	7200	8599	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2471	Mid	-	-	2471	3739	5007	-	-	-	-				
	End	2471	End	-	-	5014	7231	9448	-	-	-	-				
1150UC-S071	Start	8298	Start	-	-	5370	6768	8167	9565	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2883	Mid	-	-	1615	2883	4151	5418	-	-	-				
	End	2883	End	-	-	3633	5850	8067	10284	-	-	-				
1150UC-S081	Start	9484	Start	-	-	-	6338	7736	9135	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3295	Mid	-	-	-	2027	3295	4562	-	-	-				
	End	3295	End	-	-	-	4468	6685	8902	-	-	-				
1150UC-S091	Start	10669	Start	-	-	-	-	7304	8703	10101	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3706	Mid	-	-	-	-	2439	3706	4974	-	-				
	End	3706	End	-	-	-	-	5304	7520	9737	-	-				
1150UC-S101	Start	11856	Start	-	-	-	-	-	8272	9670	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	4117	Mid	-	-	-	-	-	2850	4117	-	-				
	End	4117	End	-	-	-	-	-	6137	8354	-	-				
1480UC-S041	Start	6103	Start	4978	6692	8406	10120	11834	13548	15262	16976	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2019	Mid	2019	3336	4653	5970	7287	8603	9920	11237	-				
	End	2019	End	4097	6814	9531	12249	14966	17683	20401	23118	-				
1480UC-S051	Start	7629	Start	-	6223	7937	9651	11365	13079	14793	16507	-	Maximum Operating Pressure 8.3 bar g			
	Mid	2524	Mid	-	2524	3841	5158	6475	7791	9108	10425	-				
	End	2524	End	-	5121	7838	10556	13273	15990	18707	21425	-				
1480UC-S061	Start	9154	Start	-	-	7467	9181	10895	12609	14323	16037	17751	Maximum Operating Pressure 8.3 bar g			
	Mid	3029	Mid	-	-	3029	4346	5663	6979	8296	9613	10930				
	End	3029	End	-	-	6145	8863	11580	14297	17014	19732	22449				
1480UC-S071	Start	10680	Start	-	-	6998	8712	10426	12140	13854	15567	17281	Maximum Operating Pressure 8.3 bar g			
	Mid	3526	Mid	-	-	2210	3526	4843	6160	7477	8794	10111				
	End	3526	End	-	-	4438	7155	9872	12590	15307	18024	20742				
1480UC-S081	Start	12206	Start	-	-	-	8242	9956	11670	13384	15098	16812	Maximum Operating Pressure 8.3 bar g			
	Mid	4038	Mid	-	-	-	2721	4038	5355	6672	7989	9306				
	End	4038	End	-	-	-	5476	8194	10911	13628	16346	19063				
1480UC-S091	Start	13732	Start	-	-	-	-	9487	11201	12915	14629	16343	Maximum Operating Pressure 8.3 bar g			
	Mid	4543	Mid	-	-	-	-	3226	4543	5860	7177	8494				
	End	4543	End	-	-	-	-	6501	9218	11935	14652	17370				
1480UC-S101	Start	15258	Start	-	-	-	-	-	10731	12445	14159	15873	Maximum Operating Pressure 8.3 bar g			
	Mid	5048	Mid	-	-	-	-	-	3731	5048	6365	7682				
	End	5048	End	-	-	-	-	-	7525	10242	12959	15677				
2380UC-S041	Start	9814	Start	8005	10762	13518	16274	19030	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	3247	Mid	3247	5380	7513	9645	11778	-	-	-	-				
	End	3247	End	6588	10958	15328	19697	24067	-	-	-	-				
2380UC-S051	Start	12268	Start	-	10007	12763	15519	18275	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	4059	Mid	-	4059	6192	8324	10457	-	-	-	-				
	End	4059	End	-	8235	12605	16975	21344	-	-	-	-				
2380UC-S061	Start	14721	Start	-	-	12008	14764	17520	-	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	4871	Mid	-	-	4871	7003	9136	-	-	-	-				
	End	4871	End	-	-	9882	14252	18622	-	-	-	-				
2380UC-S071	Start	17175	Start	-	-	11253	14009	16766	19522	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	5682	Mid	-	-	3550	5682	7815	9948	-	-	-				
	End	5682	End	-	-	7160	11529	15899	20269	-	-	-				
2380UC-S081	Start	19629	Start	-	-	-	13254	16011	18767	-	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	6494	Mid	-	-	-	4361	6494	8627	-	-	-				
	End	6494	End	-	-	-	8807	13176	17546	-	-	-				
2380UC-S091	Start	22082	Start	-	-	-	-	15256	18012	20768	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	7306	Mid	-	-	-	-	5173	7306	9439	-	-				
	End	7306	End	-	-	-	-	10454	14823	19193	-	-				
2380UC-S101	Start	24536	Start	-	-	-	-	-	17257	20013	-	-	Maximum Operating Pressure 8.3 bar g			
	Mid	8118	Mid	-	-	-	-	-	5985	8118	-	-				
	End	8118	End	-	-	-	-	-	12101	16470	-	-				

MODELS 012, 046, 058, 059, 072 AND 100



MODELS 003, 006, 023, 036 AND 050



NOTES

1. Shown without pointer for clarity.
2. For mounting dimensions, refer to pages 11 and 12.

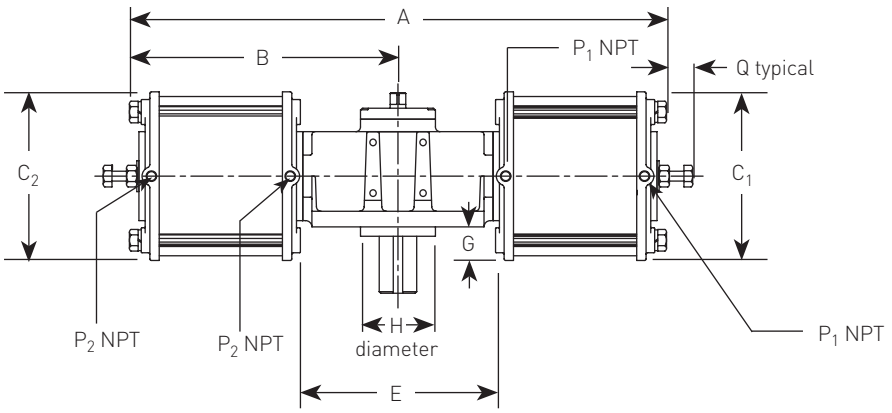
DIMENSIONS (mm) DOUBLE ACTING

Model	A	B	C_1	C_2	D	E	F	G	H	J	K	L	M	P	Q
003DA	230.1	88.9	68.3	-	77.7	-	19.1	-	25.4	34.8	69.9	82.6	25.4	⅛	15.7
006DA	313.4	151.6	80.8	-	99.3	-	25.4	2.5	35.1	38.1	76.2	120.7	33.3	⅛	25.4
012DA	323.6	161.8	80.8	80.8	99.3	122.2	-	2.5	35.1	38.1	76.2	120.7	33.3	⅛	25.4
023DA	472.4	223.8	122.2	-	146.8	-	36.3	6.4	44.5	54.9	109.5	169.9	47.8	¼	29.2
036DA	469.4	223.8	147.6	-	159.5	-	36.3	19.1	44.5	54.9	109.5	169.9	47.8	¼	31.8
050DA	469.6	223.8	181.1	-	176.3	-	36.3	35.8	44.5	54.9	109.5	169.9	47.8	¼	31.8
072DA	491.0	245.6	147.6	147.6	159.5	162.1	-	19.1	44.5	54.9	109.5	169.9	47.8	¼	21.1
100DA	491.5	245.9	180.8	180.8	176.3	162.1	-	35.8	44.5	54.9	109.5	169.9	47.8	¼	19.1

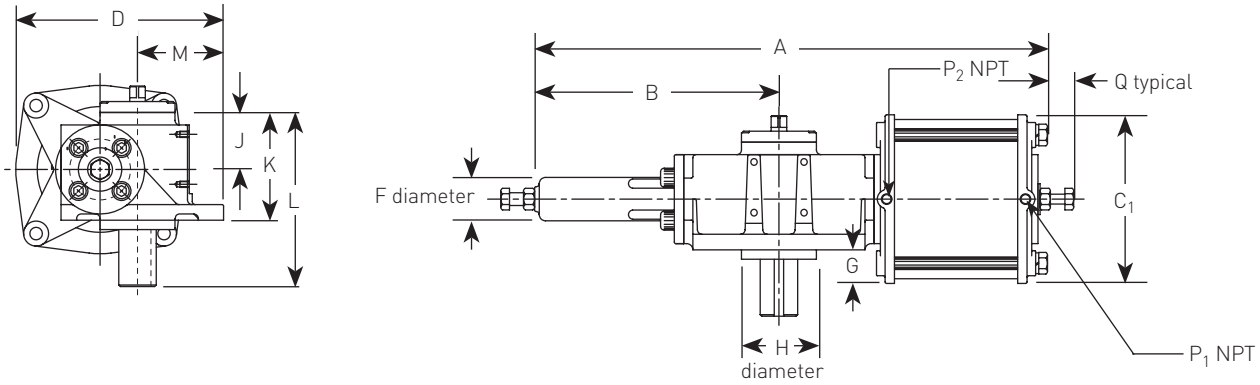
DIMENSIONS (mm) SPRING RETURN

Model	A	B	C_1	C_2	D	E	F	G	H	J	K	L	M	P	Q
003SR	230.1	88.9	68.3	-	77.7	-	19.1	-	25.4	34.8	69.9	82.6	25.4	⅛	15.7
006SR	366.8	151.6	80.8	-	99.3	-	25.4	2.5	35.1	38.1	76.2	120.7	33.3	⅛	25.4
012SR	376.9	161.8	80.8	80.8	99.3	115.6	-	2.5	35.1	38.1	76.2	120.7	33.3	⅛	25.4
023SR	554.2	223.8	122.2	-	146.8	-	36.3	6.4	44.5	54.9	109.5	169.9	47.8	¼	31.8
036SR	597.2	223.8	147.6	-	159.5	-	36.3	19.1	44.5	54.9	109.5	169.9	47.8	¼	31.8
046SR	579.1	248.7	122.2	122.2	150.6	158.5	-	6.4	44.5	54.9	109.5	169.9	47.8	¼	31.8
058SR	578.9	247.1	147.5	122.2	169.2	141.7	-	19.1	44.5	54.9	109.5	169.9	57.1	¼	31.8
059SR	620.8	245.4	122.2	147.6	169.2	138.2		19.1	44.5	54.9	109.5	169.9	57.1	¼	31.8
072SR	619.0	245.6	147.6	147.6	159.5	152.1	-	19.1	44.5	54.9	109.5	169.9	47.8	¼	31.8
100SR	619.3	245.9	180.8	180.8	176.3	152.1	-	35.8	44.5	54.9	109.5	169.9	47.8	¼	31.8

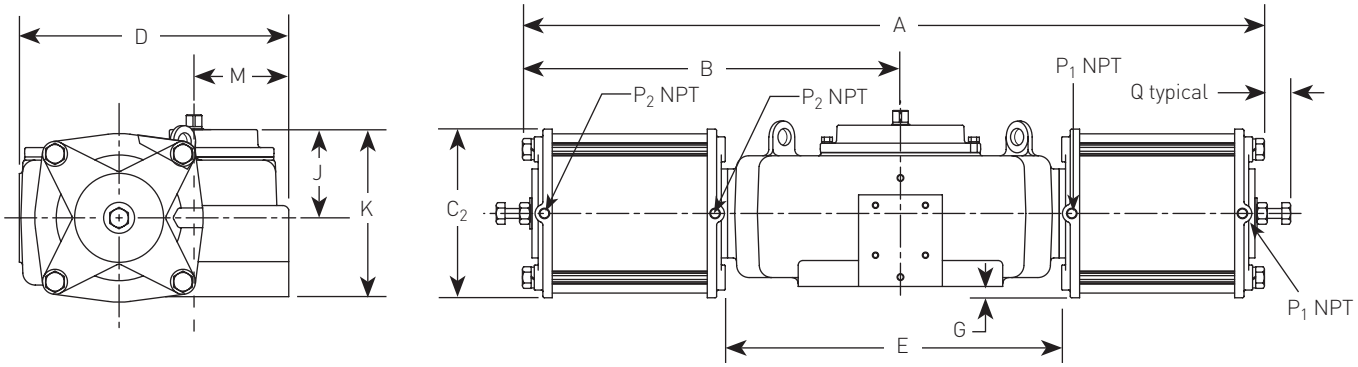
MODELS 270, 344, 345, 420, 740, 944, 945 AND 1150



MODELS 135, 210, 370 AND 575



MODELS 1480 AND 2380



NOTES

1. Shown without pointer for clarity.
2. For mounting dimensions, refer to pages 11 and 12.

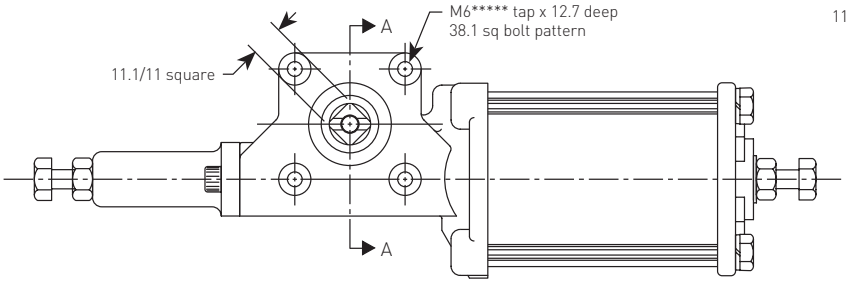
DIMENSIONS (mm) DOUBLE ACTING

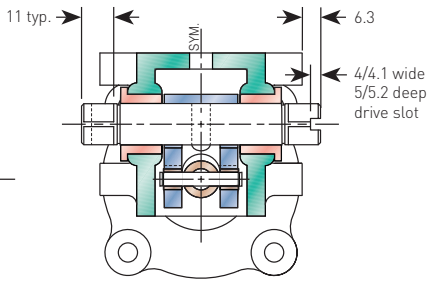
Model	A	B	C_1	C_2	D	E	F	G	H	J	K	L	M	P_1	P_2	Q
135DA	834.9	403.3	241.3	241.3	265.2	-	69.8	25.4	-	111.2	206.5	300.2	81.0	⅜	⅜	38.1
210DA	844.8	403.3	292.1	292.1	290.6	-	69.8	50.8	-	111.2	206.5	300.2	81.0	½	½	50.8
270DA	863.3	431.5	241.3	241.3	265.9	297.7	-	25.4	-	111.2	206.5	300.2	81.0	⅜	⅜	38.1
345DA	839.4	413.8	232.7	281.7	280.3	281.0	-	49.0	-	107.3	199.2	289.6	78.2	⅜	½	51.9
370DA	1057.7	501.6	342.9	342.9	425.4	-	88.9	68.3	152.4	138.2	241.3	376.2	174.7	½	½	38.1
420DA	882.6	441.4	292.1	292.1	290.6	284.9	-	50.8	-	111.2	206.5	300.2	81.0	½	½	44.4
575DA	1077.5	501.6	431.8	431.8	469.9	-	88.9	114.3	152.4	138.2	241.3	376.2	174.7	¾	¾	50.8
740DA	1121.4	509.8	342.9	342.9	425.4	393.7	-	68.3	152.4	138.2	241.3	376.2	174.7	½	½	38.1
945DA	1096.9	540.7	330.7	416.5	453.2	373.6	-	108.8	144.5	133.3	232.7	362.8	168.6	½	¾	61.2
1150DA	1152.9	576.3	431.8	431.8	469.9	377.9	-	114.3	152.4	138.2	241.3	376.2	174.7	¾	¾	46.9
1480DA	1794.5	910.6	342.9	342.9	547.9	684.3	-	11.2	-	179.3	339.8	-	192.5	½	½	54.6
2380DA	2242.5	927.3	431.8	431.8	560.8	636.5	-	55.6	-	179.3	339.8	-	192.5	¾	¾	63.5

DIMENSIONS (mm) SPRING RETURN

Model	A	B	C_1	C_2	D	E	F	G	H	J	K	L	M	P_1	P_2	Q
135SR	1002.3	403.3	241.3	241.3	265.2	-	69.8	25.4	-	111.2	206.5	300.2	81.0	⅜	⅜	44.4
210SR	1083.8	403.3	292.1	292.1	290.6	-	69.8	50.8	-	111.2	206.5	300.2	81.0	½	½	53.8
270SR	1030.5	431.5	241.3	241.3	265.2	278.1	-	25.4	-	111.2	206.5	300.2	81.0	⅜	⅜	44.4
344SR	1003.3	425.8	281.7	232.7	280.3	262.1	-	49.0	-	107.3	199.2	289.6	78.2	½	⅜	51.9
345SR	1072.9	416.3	232.7	281.7	280.3	259.9	-	49.0	-	107.3	199.2	289.6	78.2	⅜	½	51.9
370SR	1320.8	501.6	342.9	342.9	425.4	-	88.9	68.3	152.4	138.2	241.3	376.2	174.7	½	½	44.4
420SR	1121.9	441.4	292.1	292.1	290.6	263.1	-	50.8	-	111.2	206.5	300.2	81.0	½	½	53.8
575SR	1377.9	501.6	431.8	431.8	469.9	-	88.9	114.3	152.4	138.2	241.3	376.2	174.7	¾	¾	63.5
740SR	1370.6	560.6	342.9	342.9	425.4	374.6	-	68.3	152.4	138.2	241.3	376.2	174.7	½	½	53.8
944SR	1377.4	555.4	416.5	330.7	453.2	352.1	-	108.8	144.5	133.3	232.7	362.8	168.6	¾	½	61.2
945SR	1387.4	540.7	330.7	416.5	453.2	346.9	-	108.8	144.5	133.3	232.7	362.8	168.6	½	¾	61.2
1150SR	1454.1	576.3	431.8	431.8	469.9	349.2	-	112.8	152.4	138.2	241.3	376.2	174.7	¾	¾	63.5
1480SR	2209.3	910.6	342.9	342.9	547.9	668.0	-	11.2	-	179.3	339.8	-	192.5	½	½	63.5
2380SR	2242.6	927.3	431.8	431.8	560.8	637.5	-	55.6	-	179.3	339.8	-	192.5	¾	¾	63.5

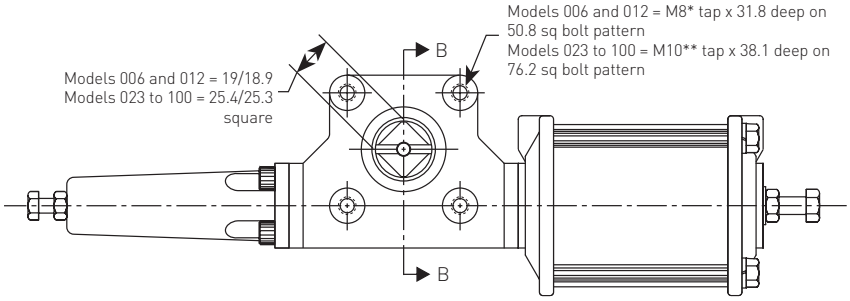
MODEL 003 - TOP AND BOTTOM OF HOUSING

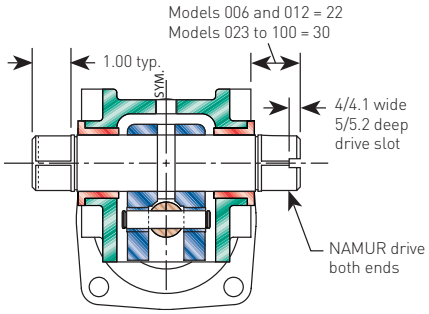




Section A - A

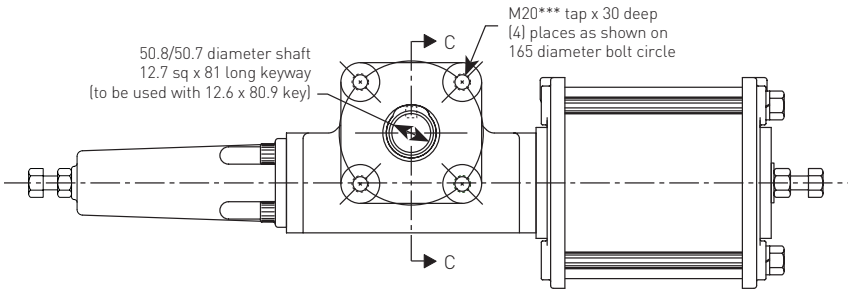
MODELS 006 TO 100 AND 144 - TOP AND BOTTOM OF HOUSING

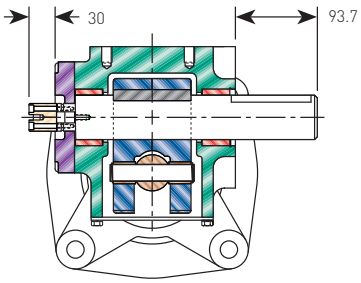




Section B - B

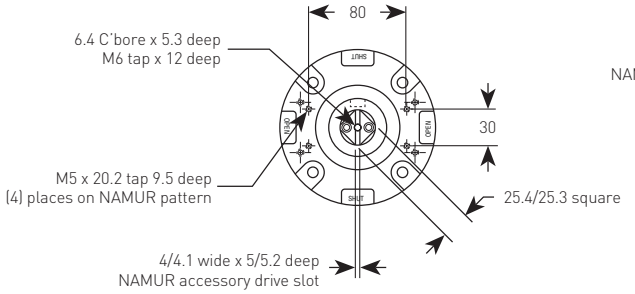
MODELS 135, 210, 270, 344, 345 AND 420 - BOTTOM OF HOUSING ISO 5211-F16

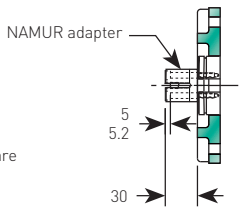




Section C - C

MODELS 135, 210, 270, 344, 345 AND 420 - TOP OF HOUSING - MOUNTING DETAILS



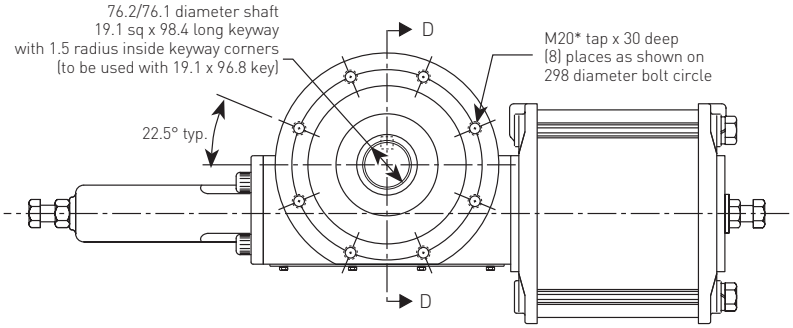


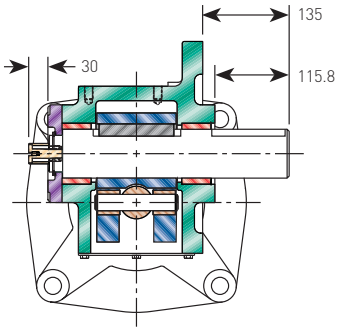
IMPERIAL THREAD OPTION

Standard tap		Model number
*	5/16 - 18 UNC	006 and 012
**	3/8 - 16 UNC	023 to 100
***	3/4 - 10 UNC	135 to 1150
*****	1/4 - 20 UNC	003

Replace 'M' with 'U' in order number designation (refer to page 13).

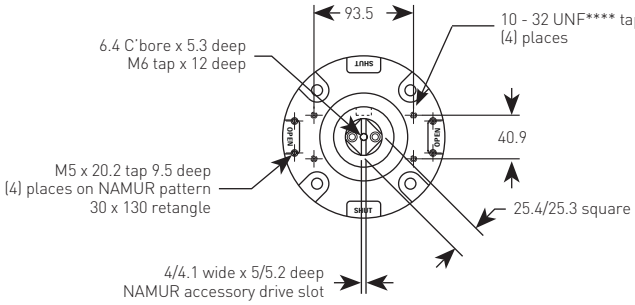
MODELS 370, 575, 740, 944, 945 AND 1150 - BOTTOM OF HOUSING ISO 5211-F30

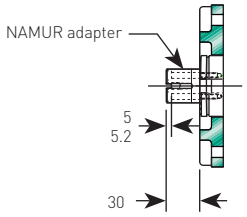




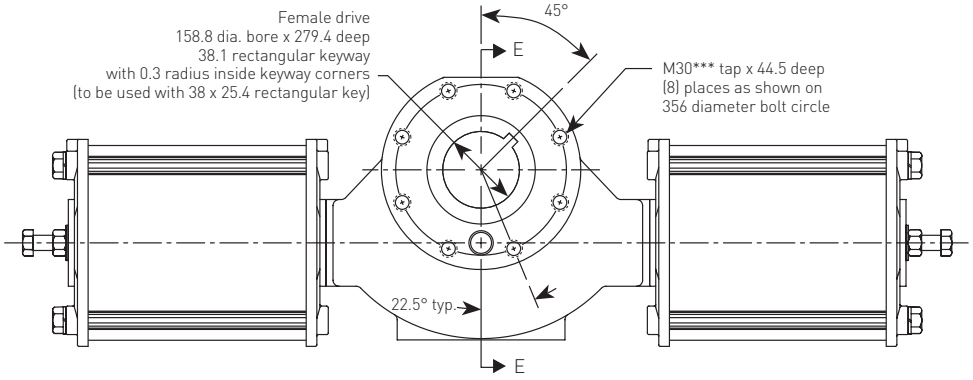
Section D - D

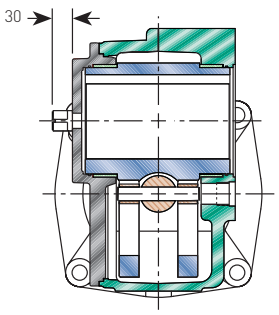
MODELS 370, 575, 740, 944, 945 AND 1150 - TOP OF HOUSING - MOUNTING DETAILS





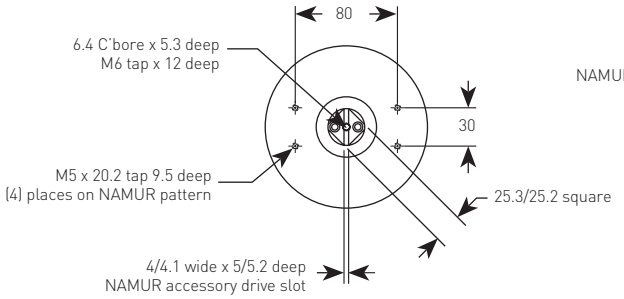
MODELS 1480 AND 2380 - BOTTOM OF HOUSING ISO 5211-F35

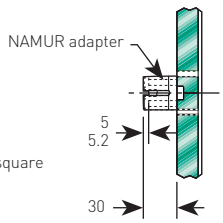




Section E - E

MODELS 1480 AND 2380 - TOP OF HOUSING - MOUNTING DETAILS





IMPERIAL THREAD OPTION

Standard tap	Model number
* ¾ - 10 UNC	370 and 575 to 1150
*** 1 - 8 UNC	1480 and 2380

Replace 'M' with 'U' in order number designation (refer to page 13).

SELECTION GUIDE

Actuator model

S- Stainless steel

Actuator size Model code based on approximate torque of symmetrical double acting at 5.5 barg

270	**003**	**058**	**344**	**945**
	006	**059**	**345**	**1150**
	012	**072**	**370**	**1480**
	023	**100**	**420**	**2380**
	036	**135**	**575**	
	046	**210**	**740**	
	050	**270**	**944**	

Interface bolting

U – UNC mounting threads
M – Metric mounting threads

Yoke design

(blank) – Symmetrical yoke
C – Canted yoke

Function

D – Double acting
S – Spring return

Spring code

00 **00** – No spring - Double acting
04 – 40 pound spring
05 – 50 pound spring
06 – 60 pound spring
Etc. see Morin Torque Book for available springs

Spring return failure rotation

0 – No spring (double acting OR actuator rotates clockwise on loss of air)
1 – Actuator rotates counterclockwise on loss of air

Option

(blank) – No options (standard configuration)
See complete modules code listing
Note: Some codes can be used in combination. Indicate by "stacking" separated by "-".
Consult factory for possible combinations combinations.

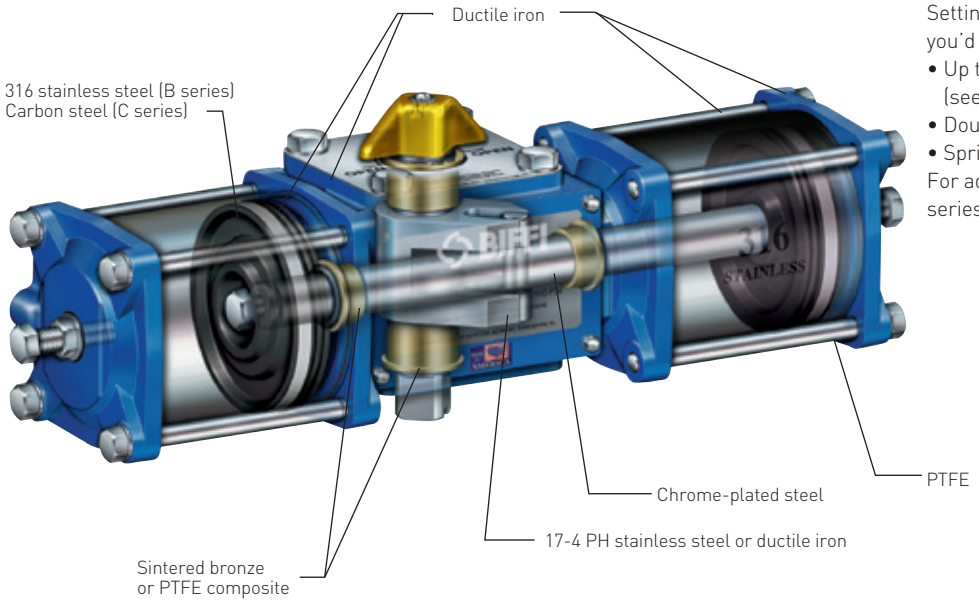
S-	270	U	C	-	D	00	0	-	JSO	= Model number **S-270UC-D000-JSO**

HOW TO ORDER

1. Double acting example		**2. Spring return example**		**3. For all spring return models**
Air supply: 5.5 barg		Air supply: 5.5 barg		Use air pressure to determine spring set
Break torque: 813.6 Nm		Ending torque: 1463.4 Nm		All spring sets ending with "0" fail clockwise (40, 50, 60, etc.)
		Fail rotation: clockwise		All spring sets ending with "1" fail counterclockwise (41, 51, 61, etc.)
S-072U-D000		**S-370U-S080**		
S	Series	**S**	Series	
072	Model number	**370**	Model number	
U	UNC mounting threads	**U**	UNC mounting threads	
D000	Double acting	**S080**	Spring set	

BIFFI MORIN S SERIES ACTUATORS
ALSO AVAILABLE

THE B AND C SERIES ACTUATORS



Setting a new standard in actuation at a price you'd expect from a commodity product.
- Up to 11 barg operating pressure (see torque chart).
- Double acting break torques to 158200 Nm.
- Spring end torques to 65903 Nm.

For additional information, refer to B and C series data sheet.

THE HP SERIES ACTUATOR

High pressure actuation with Xylan® coated carbon steel cylinders for superior corrosion resistance.
- Up to 155 bar operating pressure (see torque chart).
- Double acting torques to 90400 Nm.
- Spring end torques to 45200 Nm.

For additional information, refer to HP Series data sheet.

BIFFI

Biffi reserves the the right to change product designs and specifications without notice.

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