

XOMOX®



NEW!

**ENHANCED SAFETY AND COMPLIANCE
THE BETTER AUTOMATION SOLUTION**

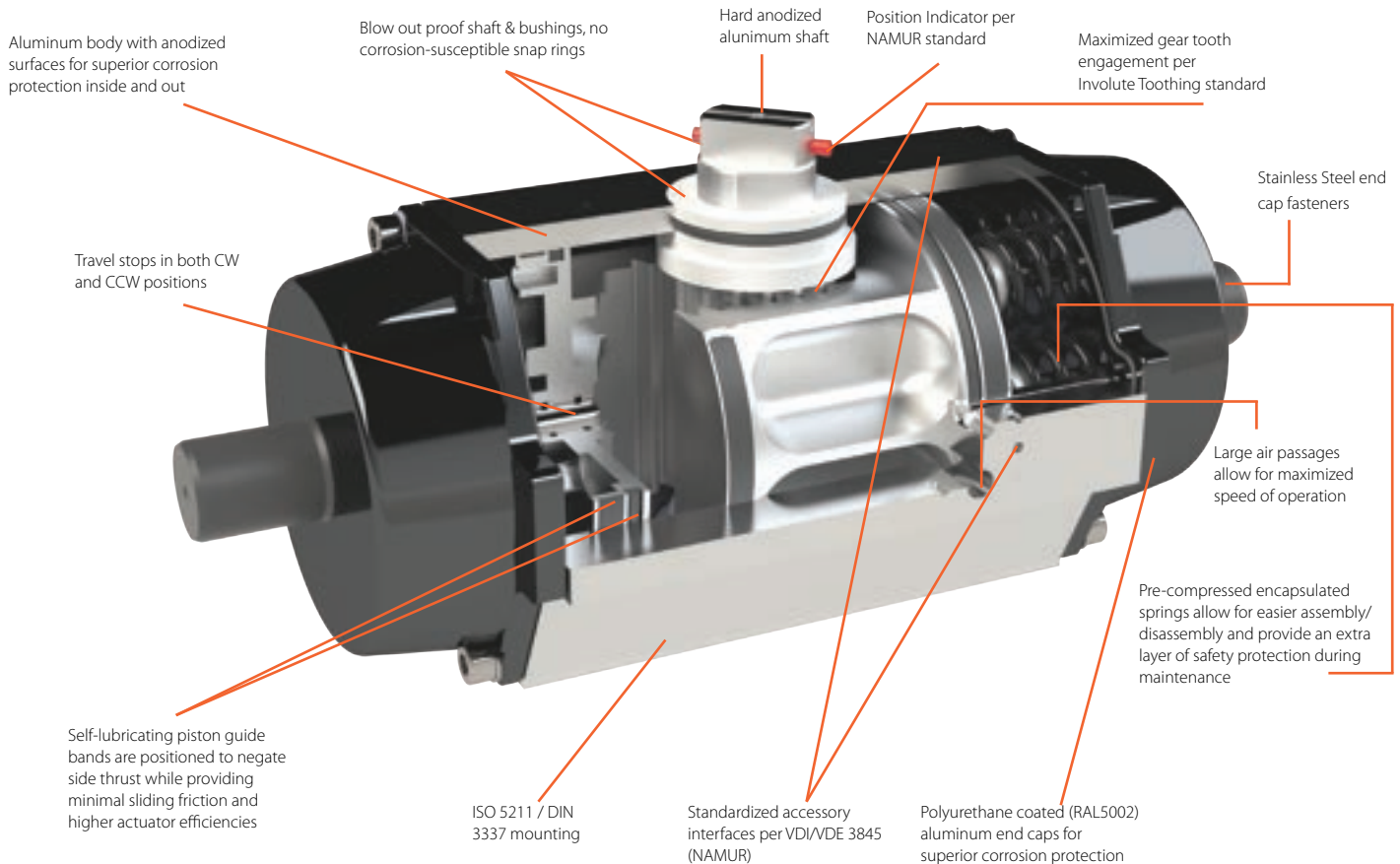
XOMOX®

Pneumatic Rack and Pinion Actuators
XRP and XRP Upgrade

CRANE

v in www.cranecpe.com

Design Features & Benefits



BENEFITS

- **Regulatory compliance to EN15714-3***
- **Simplified maintenance**
- **Expanded static supply pressure range upto 10 bar***
- **Ensuring hazardous area safety with ATEX IIC**
- **Tailored performance with enhanced safety**
- **Versatile application**

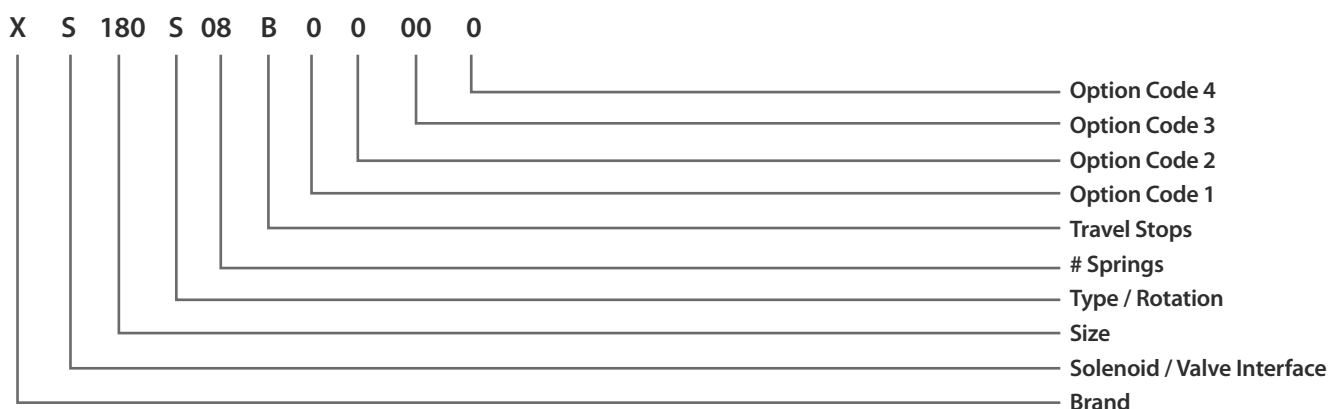
UNIQUE DESIGN FEATURES

- Pre-compressed encapsulated springs allow for easier assembly/disassembly and provide an extra layer of safety protection during maintenance*.
- Compliance with international interface standards:-

EN15714-3:2022*	EC Machinery Directive 2006/42/EC
VDE/VDI 3845 (NAMUR)	SIL2 & 3 acc. IEC 61508-1, table 2 and IEC 61508-2, 7.4.4.2
ISO 5211	NAMUR NE14
ATEX - IIC	NAMUR NE19
- Patented pressure balanced shaft prevents axial forces acting on the bearings. This results in high reliability, long life and low wear.
- Shaft and bearing bushings mounted from inside, are of blow-out safe design with no need for external circlips or snap rings providing high operational safety and better corrosion resistance.
- Robust anodized aluminum bodies ensure even expansion under thermal influences, no jamming of the piston and a high level of corrosion protection.
- Self-lubricating piston guide bands made of graphite infused teflon prevents piston tilt under load, provide longer service life due to low friction, with no maintenance required.
- Simple retrofitting of accessories, such as solenoid valves, limit switch, positioners, etc.
- Compact design allows extensive direct mounting orientations.

**Encapsulated springs, EN Standard Compliance are only applicable for XRP Upgrade Series. (Size ranging from Size 012 to 180)*

Product Configuration Code



Brand	
Xomox	X
XOMOX XRP Upgrade*	XU*
*Only Available in Sizes 012-180	

Solenoid / Valve Interface	
Imperial - 1/4" NPT Air Connection (VDI/VDE 3845 NAMUR)	S
Standard ISO 5211 Interface square (0° offset)	
Metric - G 1/4" BSP Air Connection (VDI/VDE 3845 NAMUR)	D
Standard ISO 5211 / DIN 3337 interface Diamond (45° offset)	

Sizes	
Model Sizes: 002, 006, 012, 025, 050, 090, 30, 180, 205, 380, 630, 960, H15	XXX

Type / Rotation	
Double Acting (No Springs)	D
Spring Return, Spring to Close (FCW)	S
Spring Return, Spring to Open (FCCW)	A

# Springs	
Double Acting, No Springs	OO
Spring Return- 01 through 18 (even combinations standard, odd combinations optional)	XX

Travel Stops	
No limit or travel stops (excepted 001-006 with limit stop to open as standard)	A
Dual Travel Stops with -4/+4 degrees of travel adjustment (Sizes 012 to 180)	B
Optional external Dual Travel Stops (Sizes 205 to H15)	C

Option Code 1 - Temperature	
Standard -20° to 80°C (-4° to 176°F)	0
Low Temperature -40° to 80°C (-40° to 176°F)	1
High Temperature -20° to 140°C (-4° to 284°F)	2

Option Code 2 - Finish	
Anodized Body & Polyurethane finish (RAL 5002) End Caps	0
Consult Factory for Other Options	X

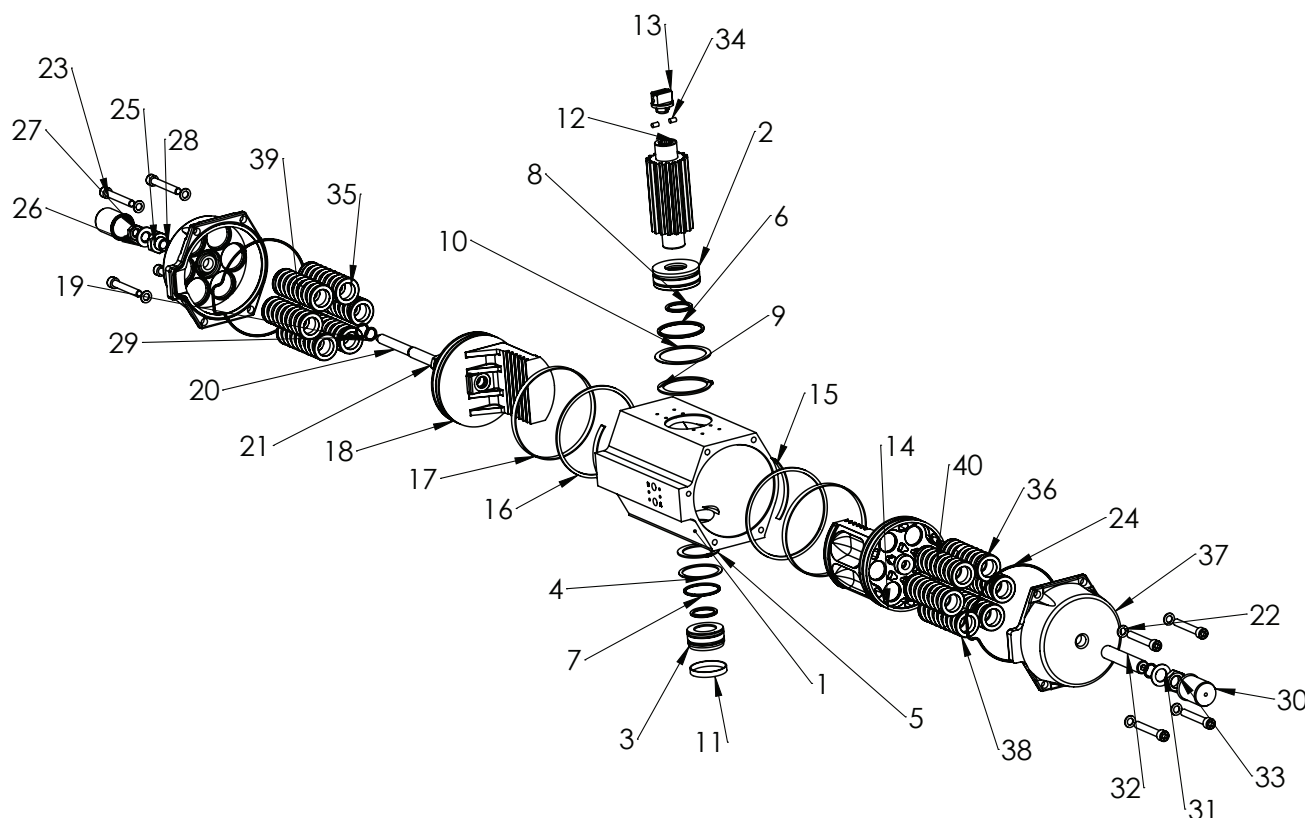
Option Code 3 - Shaft / Springs	
Standard Anodized Aluminum Pinion	0
Consult Factory for Other Options	X

Option Code 4 - Mounting Configuration	
Standard ISO F Pattern for Each Body Size	OO
Consult Factory for Optional Mounting Configurations	X

Example: - In order to select the XRP Upgraded-EU version - Series 6 -Size 090, Single acting fail close spring return actuator, with 12 springs, Standard Temperature, finish & ISO Mounting

Code will Be - XUD090S12B00000

Materials of Construction



Pos	Qty	Description	Material
1	1	Body	Anodized Aluminum
2	1	Bearing - Top	POM
3	1	Bearing - Bottom	POM
4	1	Slip Ring	POM
5	1	Circlip	Spring Steel
6	1	O-Ring	NBR
7	1	O-Ring	NBR
8	2	O-Ring - Shaft	NBR
9	1	Circlip	Spring Steel
10	1	Slip Ring	POM
11	1	Centering Ring	Aluminum
12	1	Shaft	Aluminum / Anodized
13	1	Shaft head	Aluminum / Anodized
14	1	Piston	Aluminum
15	2	Piston Guiding Tape	PTFE, 25% Carbon Filled
16	2	O-Ring - Piston	NBR
17	2	Piston Guiding Tape	PTFE, 25% Carbon Filled
18	1	Piston	Aluminum
19	2	O-Ring	NBR
20	1	Pull Rod	Nickel Plated Steel

Pos	Qty	Description	Material
21	1	Pull Rod Nut	Stainless Steel
22	8	Washer	Stainless Steel
23	8	End Cap Screws	Stainless Steel
24	2	O-Ring	NBR
25	1	Threaded Bushing	Nickel Plated Steel
26	1	Washer	POM
27	1	Flat Hexagon Nut	Stainless Steel
28	1	O-Ring	NBR
29	2	O-Ring	NBR
30	2	Cap	Polyethelene
31	2	Washer	POM
32	1	End Stop	Nickel Plated Steel
33	1	Flat Hexagon Nut	Stainless Steel
34	2	Indicator	Polyamid
35	6	Springs	CrSi Alloy With Coating
36	6	Springs	CrSi Alloy With Coating
37	2	Spring Cover	Aluminum Painted
38	24	Spring Cup*	Nylon / Anodized Aluminium
39	12	Rivet*	Steel With Coating
40	12	Washer*	Stainless Steel

*Only for Upgraded XRP Versions

General Specifications

Torque Range

Double Acting: 66 in-lbs to 107531 in-lbs (8.1 Nm to 11752 Nm)

Spring Return: 42 in-lbs to 103199 in-lbs (4.5 Nm to 11263 Nm)

Product Range

Actuator Size	XRP Series	XRP Upgrade Series
001, 002, 006	7 Bar (100 psi) Max Static Pressure	NA
	7 Bar (100 psi) Max Dynamic Pressure	
012, 025, 050, 090, 130, 180	8 Bar (120 psi) Max Static Pressure	10 Bar (145 psi) Max Static Pressure
	8 Bar (120 psi) Max Dynamic Pressure	8 Bar (120 psi) Max Dynamic Pressure
205, 380, 630, 960, H15	8 Bar (120 psi) Max Static Pressure	NA
	8 Bar (120 psi) Max Dynamic Pressure	

Finish

- Body: Anodized Aluminum Alloy
- End Caps: Polyurethane coated RAL9005 shades (60-80 µm)
- Shaft: Silver Anodized Aluminum Alloy
- Fasteners: Stainless Steel
- Bearings: POM

Lubrication

- KIÜBER BEM 41-132 (for Standard Temperature cases)

Temperature Range

- Standard: Nitrile seals (Buna-N rubber): -4°F to 176°F (-20°C to 80°C)
- Low temperature option: -40°F to 176°F (-40°C to 80°C)
- High temperature option: -4°F to 284°F (-20°C to 140°C)

Angle of Rotation

- Factory set at 0° to 90°

Double Acting 30 to 120 psig (2.0 to 8 bar)

Spring Return 65 to 120 psig (4.5 to 8 bar), with maximum spring set

40 to 120 psig and (2.5 to 8 bar), with reduced spring quantity

Pressure Media

- Air, dry or lubricated and inert gases
- For sub-zero applications, take appropriate measures
- Mentioned pressure levels are "gauge pressures".

Gauge pressure is equal to absolute pressure minus atmospheric pressure.



Spring Return & Single Acting Actuators

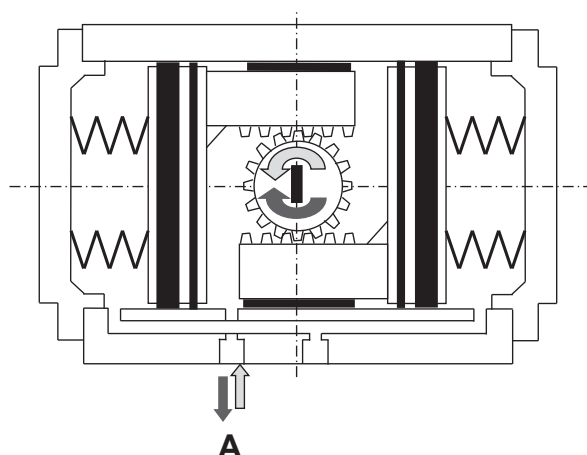
Spring Return Actuators

1. Standard (Opening) – Air at “A” causes counter clock-wise (CCW) rotation – Positive “Fail Safe” Close on air failure.

1= Central air chamber pressurized

2. Standard (Closing) – Air exhausted from “A” causes clock-wise (CW) rotation Reverse – Pinion can be changed so that Positive “Fail Safe” Open on loss of air.

2= Spring stroke



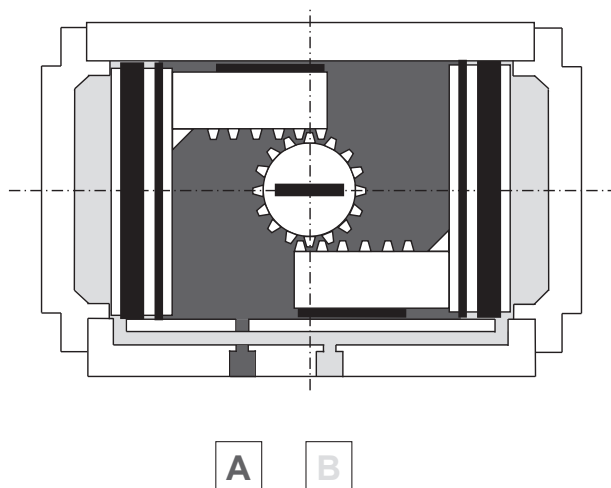
Double Acting Actuators

1. Standard (Closing) – Air at “B” causes clock-wise (CW) rotation.

1= Central air chamber pressurized

2. Reverse (opening) - Air at “A” causes counter clock-wise (CCW) rotation.

2= Spring stroke



NOTE: Views are from above

XRP Single Acting Torques - Imperial Units

Torque in Pound-Inch; Pressure in psig

XS 002	Spring Quantity	Spring		40 psig		60 psig		80 psig		100 psig		120 psig	
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
	02	16	8	58	50	91	83	124	116	157	149	N/A	N/A
	04	32	16	50	34	83	67	116	100	149	133	N/A	N/A
	06	48	24	42	18	75	51	108	84	141	117	N/A	N/A
	08	64	32			67	35	100	68	133	101	N/A	N/A
	10	80	40			59	19	92	52	125	85	N/A	N/A
	12	96	48					84	36	117	69	N/A	N/A

XS 006	02	36	18	133	115	209	190	284	266	360	342	N/A	N/A
	04	73	36	115	78	190	154	266	230	342	305	N/A	N/A
	06	109	55	97	42	172	118	248	193	324	269	N/A	N/A
	08	146	73			154	81	230	157	305	232	N/A	N/A
	10	182	91			136	45	211	120	287	196	N/A	N/A
	12	219	109					193	84	269	159	N/A	N/A

XS /XUS012	02	73	36	265	228	415	379	565	529	716	680	866	830
	04	145	73	228	156	379	306	529	457	680	607	830	757
	06	218	109	192	83	342	234	493	384	643	534	794	685
	08	290	145			306	161	457	311	607	462	757	612
	10	363	181			207	88	420	239	571	389	721	540
	12	435	218					384	166	534	317	685	467

XS /XUS025	02	142	71	515	444	808	737	1100	1030	1393	1322	1686	1615
	04	283	142	444	302	737	595	1030	888	1322	1181	1615	1474
	06	425	212	373	161	666	454	959	746	1252	1039	1544	1332
	08	566	283			595	312	888	605	1181	898	1474	1190
	10	708	354			524	170	817	463	1110	756	1403	1049
	12	850	425					746	322	1039	614	1332	907

XS/XUS 050	02	259	130	952	822	1493	1363	2034	1904	2574	2445	3115	2985
	04	519	259	822	563	1363	1104	1904	1644	2445	2185	2985	2726
	06	778	389	692	303	1233	844	1774	1385	2315	1926	2856	2467
	08	1038	519			1104	585	1644	1125	2185	1666	2726	2207
	10	1297	649			974	325	1515	866	2055	1407	2596	1948
	12	1557	778					1385	606	1926	1147	2467	1688

XS/XUS 090	02	474	237	1820	1583	2849	2612	3878	3641	4907	4670	5936	5699
	04	949	474	1583	1109	2612	2138	3641	3167	4670	4195	5699	5224
	06	1423	712	1346	635	2375	1663	3404	2692	4433	3721	5461	4750
	08	1897	949			2138	1189	3167	2218	4195	3247	5224	4276
	10	2372	1186			1901	715	2929	1744	3958	2772	4987	3801
	12	2846	1423					2692	1269	3721	2298	4750	3327

XS /XUS130	02	719	359	2772	2413	4338	3978	5903	5544	7469	7110	9034	8675
	04	1437	719	2413	1694	3978	3260	5544	4825	7110	6391	8675	7957
	06	2156	1078	2053	975	3619	2541	5185	4107	6750	5672	8316	7238
	08	2847	1437			3260	1822	4825	3388	6391	4954	7957	6519
	10	3593	1797			2900	1104	4466	2669	6032	4235	7597	5801
	12	4312	2156					4107	1951	5672	3516	7238	5082

NOTES:

- All torque values are inch-pounds for pressure supply listed.
- Torque values are same for both Spring Fail Clockwise, FCW (XRP style S) & Counterclockwise, FCCW, (XRP style A).
- Actuator size 012 to 180 are available in both XRP & XRP Upgrade

XRP Spring Return Torques - Imperial Units

Torque in Pound-Inch; Pressure in psig

	Spring Quantity	Spring		40 psig		60 psig		80 psig		100 psig		120 psig	
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
XS/XUS 180	02	945	473	3643	3170	5701	5228	7759	7286	9816	9344	11874	11401
	04	1890	945	3170	2225	5228	4283	7286	6341	9344	8399	11401	10456
	06	2836	1418	2698	1280	4756	3338	6813	5396	8871	7453	10929	9511
	08	3781	1890			4283	2393	6341	4450	8399	6508	10456	8566
	10	4726	2363			3810	1447	5868	3505	7926	5563	9984	7621
	12	5671	2836					5396	2560	7453	4618	9511	6676
XS 205	02	1490	745	5422	4677	8505	7760	11589	10844	14673	13927	17756	17011
	04	2981	1490	4677	3186	7760	6270	10844	9354	13927	12437	17011	15521
	06	4471	2236	3932	1696	7015	4780	10099	7863	13182	10947	16266	14030
	08	5961	2981			6270	3289	9354	6373	12437	9456	15521	12540
	10	7452	3726			5525	1799	8608	4883	11692	7966	14775	11050
	12	8942	4471					7863	3392	10947	6476	14030	9559
XS 380	02	2237	1119	8137	7018	12765	11646	17393	16274	22020	20902	26648	25530
	04	4475	2237	7018	4781	11646	9409	16274	14037	20902	18665	25530	23292
	06	6712	3356	5900	2544	10528	7172	15155	11799	19783	16427	24411	21055
	08	8949	4475			9409	4934	14037	9562	18665	14190	23292	18818
	10	11186	5593			8290	2697	12918	7325	17546	11953	22174	16581
	12	13424	6712					11799	5088	16427	9715	21055	14343
XS 630	02	3728	1864	13554	11690	21263	19400	28972	27109	36681	34818	44391	42527
	04	7455	3728	11690	7963	19400	15672	27109	23381	34818	31090	42527	38799
	06	11183	5591	9827	4235	17536	11944	25245	19653	32954	27362	40663	35071
	08	14910	7455			15672	8217	23381	15926	31090	23635	38799	31344
	10	18638	9319			13808	4489	21517	12198	29226	19907	36935	27616
	12	22366	11183					19653	8471	27362	16180	35071	23889
XS 960	03	5591	2796	20620	17825	32328	29532	44036	41240	55744	52948	67452	64656
	06	11183	5591	17825	12233	29532	23941	41240	35649	52948	47357	64656	59065
	09	16774	8387	15029	6642	26737	18350	38445	30058	50153	41766	61861	53474
	12	22366	11183			23941	12758	35649	24466	47357	36174	59065	47882
	15	27957	13979			21145	7167	32853	18875	44561	30583	56269	42291
	18	33549	16774					30058	13283	41766	24991	53474	36699
XS H15	02	8663	4331	31512	27181	49434	45103	67356	63024	85278	80946	103199	98868
	04	17325	8663	27181	18518	45103	36440	63024	54362	80946	72284	98868	90205
	06	25988	12994	22849	9855	40771	27777	58693	45699	76615	63621	94537	81543
	08	34651	17325			36440	19114	54362	37036	72284	54958	90205	72880
	10	43314	21657			32109	10452	50030	28374	67952	46295	85874	64217
	12	51976	25988					45699	19711	63621	37633	81543	55554

NOTES:

- All torque values are inch-pounds for pressure supply listed.
- Torque values are same for both Spring Fail Clockwise, FCW (XRP style S) & Counterclockwise, FCCW, (XRP style A).
- Actuator size 012 to 180 are available in both XRP & XRP Upgrade.

XRP Spring Return Torques - Metric Units

Torque in Nm; Pressure in Bar

XS 002	Spring	Spring		3 Bar		3.5 Bar		4 Bar		4.5 Bar		5 Bar		5.5 Bar		6 Bar		6.5 Bar		7 Bar		7.5 Bar		8 Bar	
	Quantity	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
	02	1,8	0,9	7,2	6,3	8,6	7,7	9,9	9	11,3	10,4	12,6	11,7	14	13,1	15,3	14,4	16,7	15,8	18	17,1	N/A	N/A	N/A	N/A
	04	3,6	1,8	6,3	4,5	7,7	5,9	9	7,2	10,4	8,6	11,7	9,9	13,1	11,3	14,4	12,6	15,8	14	17,1	15,3	N/A	N/A	N/A	N/A
	06	5,4	2,7	5,4	2,7	6,8	4,1	8,1	5,4	9,5	6,8	10,8	8,1	12,2	9,5	13,5	10,8	14,9	12,2	16,2	13,5	N/A	N/A	N/A	N/A
	08	7,2	3,6	4,5	0,9	5,9	2,3	7,2	3,6	8,6	5	9,9	6,3	11,3	7,7	12,6	9	14	10,4	15,3	11,7	N/A	N/A	N/A	N/A
	10	8	4,5					6,3	2,8	7,7	3,2	9	5,5	10,4	5,9	11,7	8,2	13,1	8,6	14,4	10,9	N/A	N/A	N/A	N/A
	12	10,8	5,4									8,1	2,7	9,5	4,1	10,8	5,4	12,2	6,8	13,5	8,1	N/A	N/A	N/A	N/A

XS 006	02	4	2	16,6	14,6	19,6	17,7	22,6	20,8	25,9	23,9	29	27	32,1	30,1	35,2	33,2	38,3	36,3	41,4	39,4	N/A	N/A	N/A	N/A
	04	8,2	4,1	14,5	10,4	17,6	13,5	20,7	16,6	23,8	19,7	26,9	22,8	30	25,9	33,1	29	36,2	32,1	39,3	35,2	N/A	N/A	N/A	N/A
	06	12,2	6,1	12,5	6,4	15,6	9,5	18,7	12,6	21,8	15,7	24,9	18,8	28	21,9	31,1	25	34,2	28,1	37,3	31,2	N/A	N/A	N/A	N/A
	08	16,4	8,2	10,4	2,2	13,5	5,3	16,6	8,4	19,7	11,5	22,8	14,6	25,9	17,7	29	20,8	32,1	23,9	35,2	27	N/A	N/A	N/A	N/A
	10	20,6	10,3					14,5	4,2	17,6	7,3	20,7	10,4	23,8	13,5	26,9	16,6	30	19,7	33,1	22,8	N/A	N/A	N/A	N/A
	12	24,6	12,3									18,7	6,4	21,8	9,5	24,9	12,6	28	15,7	31,1	18,8	N/A	N/A	N/A	N/A

XS/XUS 012	2	8,3	4,1	32,9	28,7	39,1	34,9	45,2	41	51,4	47,3	57,5	53,3	63,7	59,6	69,9	65,7	76	71,9	82,2	78	88,4	84,3	94,5	90,3
	4	16,6	8,2	28,8	20,4	35	26,6	41,1	32,7	47,3	39,1	53,4	45	59,6	51,4	65,8	57,4	71,9	63,7	78,1	69,7	84,3	76,1	90,4	82
	6	24,9	12,3	24,7	12,1	30,9	18,3	37	24,4	43,2	30,9	49,3	36,7	55,5	43,2	61,7	49,1	67,8	55,5	74	61,4	80,2	67,9	86,3	73,7
	8	33,2	16,4	20,6	3,8	26,8	10	32,9	16,1	39,1	22,7	45,2	28,4	51,4	35	57,6	40,8	63,7	47,3	69,9	53,1	76,1	59,7	82,2	65,4
	10	41,5	20,5					28,8	7,8	35	14,5	41,1	20,1	47,3	26,8	53,5	32,5	59,6	39,1	65,8	44,8	72	51,5	78,1	57,1
	12	49,8	24,6									37	11,8	43,2	18,6	49,4	24,2	55,5	30,9	61,7	36,5	67,9	43,3	74	48,8

XS/XUS 025	2	16	8	64	56	76	68	87	79	100	92	111	103	124	116	135	127	148	140	159	151	172	164	183	175
	4	32	16	56	40	68	52	79	63	92	76	103	87	116	100	127	111	140	124	151	135	164	148	175	159
	6	48	24	48	24	60	36	71	47	84	60	95	71	108	84	119	95	132	108	143	119	156	132	167	143
	8	64	32	40	8	52	20	63	31	76	44	87	55	100	68	111	79	124	92	135	103	148	116	159	127
	10	80	40					55	15	68	28	79	39	92	52	103	63	116	76	127	87	140	100	151	111
	12	96	48									71	23	84	36	95	47	108	60	119	71	132	84	143	95

XS/XUS 050	2	30	15	118	103	140	125	162	147	185	170	207	192	230	215	251	236	274	259	295	280	318	303	349	334
	4	59	29	104	74	126	96	148	118	170	140	193	163	215	185	237	207	259	229	281	251	303	273	335	305
	6	89	44	89	44	111	66	133	88	155	111	178	133	200	156	222	177	244	200	266	221	288	244	320	275
	8	118	58	75	15	97	37	119	59	141	82	164	104	186	127	208	148	230	171	252	192	274	215	306	246
	10	148	73					104	29	126	52	149	74	171	97	193	118	215	141	237	162	259	185	291	216
	12	178	88									134	44	156	68	178	88	200	112	222	132	244	156	276	186

XS/XUS 090	2	56	27	226	197	268	239	310	281	352	325	394	365	437	410	478	449	521	494	562	533	605	578	646	617
	4	112	53	200	141	242	183	284	225	326	272	368	309	411	357	452	393	495	441	536	477	579	525	602	561
	6	168	80	173	85	215	127	257	169	299	218	341	253	384	303	425	337	468	387	509	421	552	471	593	505
	8	224	107	146	29	188	71	230	113	272	165	314	197	357	250	398	281	441	334	482	365	525	418	566	449
	10	280	134					203	57	245	111	287	141	330	196	371	225	414	280	455	309	498	364	539	393
	12	336	160									261	85	303	142	345	169	387	226	429	253	471	310	513	337

XS/XUS 130	2	84	41	344	301	408	365	472	429	537	496	601	558	666	625	729	686	794	753	857	814	922	881	985	942
	4	169	81	304	216	368	280	432	344	496	415	561	473	625	544	689	601	753	672	817	729	881	800	945	857
	6	253	122	263	132	327	196	391	260	455	333	520	389	584	462	648	517	712	590	776	645	840	718	904	773
	8	337	162	223	48	287	112	351	176	415	252	480	305	544	381	608	433	672	509	736	561	800	637	864	689
	10	422	203					310	91	374	171	439	220	503	300	567	348	631	428	695	476	759	556	823	604
	12	506	244									398	136	463	219	526	264	591	347	654	392	719	475	782	520

NOTES:

- All torque values are Newton-meters for pressure supply listed.
- Torque values are same for both Spring Fail Clockwise, FCW (XRP style S) & Counterclockwise, FCCW, (XRP style A).
- Actuator size 012 to 180 are available in both XRP & XRP Upgrade

XRP Spring Return Torques - Metric Units

Torque in Nm; Pressure in Bar

	Spring Quantity	Spring		3 Bar		3.5 Bar		4 Bar		4.5 Bar		5 Bar		5.5 Bar		6 Bar		6.5 Bar		7 Bar		7.5 Bar		8 Bar	
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
XS/XUS 180	02	111	53	453	395	538	480	622	564	706	652	790	732	875	821	959	901	1.043	989	1.128	1.070	1.212	1.158	1.297	1.239
	04	222	107	399	284	484	369	568	453	652	545	736	621	821	714	905	790	989	882	1.074	959	1.158	1.051	1.243	1.128
	06	332	160	346	174	431	259	515	343	599	439	683	511	768	608	852	680	936	776	1.021	849	1.105	945	1.190	1.018
	08	443	213	293	63	378	148	462	232	546	332	630	400	715	501	799	569	883	669	968	738	1.052	838	1.137	907
	10	554	267					408	121	492	225	576	289	661	394	745	458	829	562	914	627	998	731	1.083	796
	12	665	320									523	178	608	287	692	347	776	455	861	516	945	624	1.030	685

XS 205	02	169	84	674	589	801	716	927	842	1.053	969	1.180	1.095	1.306	1.222	1.433	1.348	1.559	1.475	1.686	1.601	1.812	1.728	1.939	1.854
	04	337	169	589	421	716	548	842	674	969	800	1.095	927	1.222	1.053	1.348	1.180	1.475	1.306	1.601	1.433	1.728	1.559	1.854	1.686
	06	506	253	505	252	632	379	758	505	885	632	1.011	758	1.138	885	1.264	1.011	1.391	1.138	1.517	1.264	1.644	1.391	1.770	1.517
	08	674	337	421	84	548	211	674	337	800	463	927	590	1.053	716	1.180	843	1.306	969	1.433	1.096	1.559	1.222	1.686	1.349
	10	843	421					590	168	716	295	843	421	969	548	1.096	674	1.222	801	1.349	927	1.475	1.054	1.602	1.180
	12	1.011	506									758	253	885	380	1.011	506	1.138	633	1.264	759	1.391	886	1.517	1.012

XS 380	02	253	126	1.012	885	1.202	1.075	1.391	1.264	1.581	1.454	1.770	1.643	1.960	1.833	2.149	2.022	2.340	2.213	2.528	2.401	2.719	2.592	2.907	2.780
	04	506	253	885	632	1.075	822	1.264	1.011	1.454	1.201	1.643	1.390	1.833	1.580	2.022	1.769	2.213	1.960	2.401	2.148	2.592	2.339	2.780	2.527
	06	756	379	759	382	949	572	1.138	761	1.328	949	1.517	1.140	1.707	1.328	1.896	1.519	2.087	1.708	2.275	1.898	2.466	2.087	2.654	2.277
	08	1.011	506	632	127	822	317	1.011	506	1.202	696	1.390	885	1.581	1.075	1.796	1.264	1.961	1.455	2.148	1.643	2.340	1.834	2.527	2.022
	10	1.264	632					885	253	1.075	443	1.264	632	1.454	822	1.643	1.011	1.834	1.202	2.022	1.390	2.213	1.581	2.401	1.769
	12	1.517	758									1.138	379	1.328	569	1.517	758	1.708	949	1.896	1.137	2.087	1.328	2.275	1.516

XS 630	02	421	211	1.685	1.475	2.001	1.791	2.317	2.107	2.634	2.423	2.948	2.738	3.266	3.055	3.580	3.370	3.898	3.687	4.212	4.002	4.530	4.319	4.844	4.634
	04	843	421	1.475	1.053	1.791	1.369	2.107	1.685	2.423	2.002	2.738	2.316	3.055	2.634	3.370	2.948	3.687	3.266	4.002	3.580	4.319	3.898	4.634	4.212
	06	1.264	632	1.264	632	1.580	948	1.896	1.264	2.212	1.580	2.527	1.895	2.844	2.212	3.159	2.527	3.476	2.844	3.791	3.159	4.108	3.476	4.423	3.791
	08	1.685	843	1.053	211	1.369	527	1.685	843	2.002	1.159	2.316	1.474	2.634	1.791	2.948	2.106	3.266	2.423	3.580	2.738	3.898	3.055	4.212	3.370
	10	2.107	1.053					1.475	421	1.791	738	2.106	1.052	2.423	1.370	2.738	1.684	3.055	2.002	3.370	2.316	3.687	2.634	4.002	2.948
	12	2.528	1.264									1.895	631	2.213	949	2.527	1.263	2.845	1.581	3.159	1.895	3.477	2.213	3.791	2.527

XS 960	02	632	316	2.563	2.247	3.043	2.727	3.523	3.207	4.003	3.687	4.482	4.166	4.962	4.646	5.442	5.126	5.922	5.606	6.402	6.086	6.882	6.566	7.361	7.045
	04	1.264	632	2.247	1.615	2.727	2.095	3.207	2.575	3.687	3.055	4.166	3.534	4.646	4.014	5.126	4.494	5.606	4.974	6.086	5.454	6.566	5.934	7.045	6.413
	06	1.896	948	1.932	984	2.412	1.464	2.892	1.944	3.372	2.424	3.851	2.903	4.331	3.383	4.811	3.863	5.291	4.343	5.771	4.823	6.251	5.303	6.730	5.782
	08	2.528	1.264	1.616	352	2.096	832	2.576	1.312	3.056	1.792	3.535	2.271	4.015	2.751	4.495	3.231	4.975	3.711	5.455	4.191	5.935	4.671	6.414	5.150
	10	3.160	1.580					2.260	680	2.740	1.160	3.219	1.639	3.699	2.119	4.179	2.599	4.659	3.079	5.139	3.559	5.619	4.039	6.098	4.518
	12	3.792	1.896									2.903	1.007	3.383	1.487	3.863	1.967	4.343	2.447	4.823	2.927	5.303	3.407	5.782	3.886

XS H15	02	979	489	3.918	3.428	4.653	4.163	5.387	4.897	6.122	5.632	6.856	6.366	7.591	7.101	8.325	7.835	9.060	8.570	9.794	9.304	10.529	10.039	11.263	10.773
	04	1.958	979	3.428	2.449	4.163	3.184	4.897	3.918	5.632	4.653	6.366	5.387	7.101	6.122	7.835	6.856	8.570	7.591	9.304	8.325	10.039	9.060	10.773	9.794
	06	2.937	1.468	2.939	1.470	3.674	2.205	4.408	2.939	5.143	3.675	5.877	4.408	6.612	5.144	7.346	5.877	8.081	6.613	8.815	7.346	9.550	8.082	10.284	8.815
	08	3.616	1.958	2.449	791	3.184	1.526	3.918	2.260	4.654	2.696	5.387	3.729	6.123	4.165	6.856	5.198	7.592	5.634	8.325	6.667	9.061	7.103	9.794	8.136
	10	4.894	2.447					3.429	982	4.164	1.717	4.898	2.451	5.633	3.186	6.367	3.920	7.102	4.655	7.836	5.389	8.571	6.124	9.305	6.858
	12	5.873	2.937									4.408	1.472	5.144	2.207	5.877	2.941	6.613	3.676	7.346	4.410	8.082	5.145	8.815	5.879

NOTES:

- All torque values are Newton-meters for pressure supply listed.
- Torque values are same for both Spring Fail Clockwise, FCW (XRP style S) & Counterclockwise, FCCW, (XRP style A).
- Actuator size 012 to 180 are available in both XRP & XRP Upgrade

XRP Double Acting Torques

XOMOX XRP Double Acting Torque (in-lbs)

Model	40 psig	60 psig	80psig	100 psig	120 psig
XS 002 D00A	66	99	132	165	N/A
XS 006 D00A	151	227	303	378	N/A
XS/XUS 012 D00B	301	451	602	752	903
XS/XUS 025 D00B	586	878	1171	1464	1757
XS/XUS 050 D00B	1082	1622	2163	2704	3245
XS/XUS 090 D00B	2058	3086	4115	5144	6173
XS/XUS 130 D00B	3131	4697	6263	7828	9394
XS/XUS 180 D00B	4116	6173	8231	10289	12347
XS 205 D00A	6167	9251	12334	15418	18501
XS 380 D00A	9256	13883	18511	23139	27767
XS 630 D00A	15418	23127	30836	38545	46254
XS 960 D00A	23416	35124	46832	58540	70248
XS H15 D00A	35844	53765	71687	89609	107531

NOTES:

· All torque values are inch-pounds for pressure supply listed.

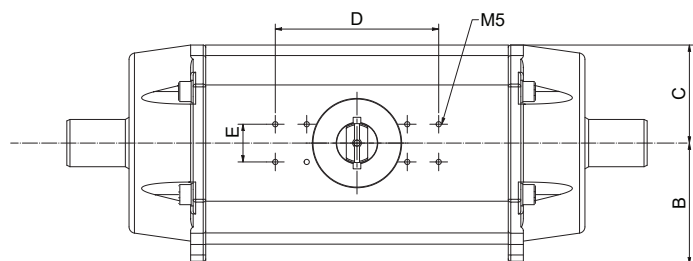
XOMOX XRP Double Acting Torque (Nm)

Model	3 Bar	3.5 Bar	4 Bar	4.5 Bar	5 Bar	5.5 Bar	6 Bar	6.5 Bar	7 Bar	7.5 Bar	8 Bar
XS 002 D00A	8.1	9.5	10.8	12.2	13.5	14.9	16.2	17.6	18.9	25.3	N/A
XS 006 D00A	18.6	21.7	24.8	27.9	31	34.1	37.2	40.3	43.4	46.5	N/A
XS/XUS 012 D00B	37	43	49	55.5	62	67.8	74	80.1	86	96.5	99
XS/XUS 025 D00B	72	83.5	95	108	119	132	143	156	167	180	191
XS/XUS 050 D00B	133	155	177	199	222	244	266	288	310	332	364
XS/XUS 090 D00B	253	295	337	379	421	464	505	548	589	632	673
XS/XUS 130 D00B	385	449	513	577	642	706	770	834	898	962	1026
XS/XUS 180 D00B	506	590	675	759	843	928	1012	1096	1181	1265	1350
XS 205 D00A	758	884.5	1011	1137	1264	1390	1517	1643	1770	1896	2023
XS 380 D00A	1138	1327.5	1517	1707	1896	2086	2275	2466	2654	2845	3033
XS 630 D00A	1896	2212	2528	2844	3159	3476	3791	4108	4423	4740	5055
XS 960 D00A	2879	3359	3839	4319	4799	5278	5758	6238	6718	7198	7677
XS H15 D00A	4407	5141.5	5876	6611	7345	8080	8814	9549	10283	11018	11752

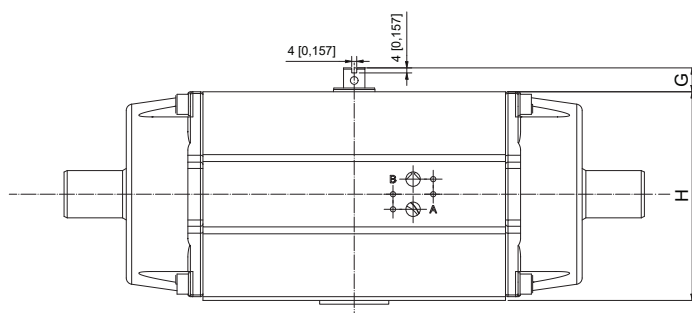
NOTES:

· All torque values are Newton-meters for pressure supply listed.
 · Actuator size 012 to 180 are available in both XRP & XRP Upgrade.

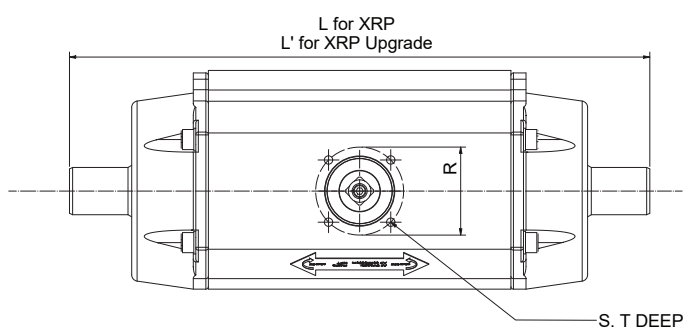
Size 001-180 Dimensions



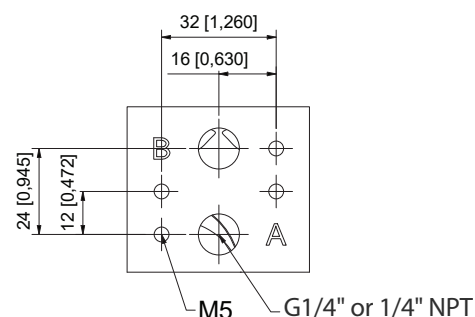
Top View



Side View



Bottom View



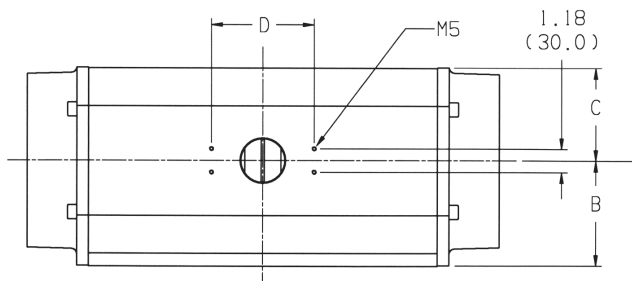
Solenoid Valve Interface

SIZE	L	L'	G	H	B	C	D	E	R	S	T	ISO	SQ
XS 001	4.53	NA	0.79	1.77	1.20	0.81	1.97	1.18	1.42	M5	0.31	F03	0.35
	115	NA	20	45	30.5	20.5	50	30	36		8		9
XS 002	6.57	NA	0.79	2.15	1.30	1.00	1.97	1.18	1.42	M5	0.31	F03	0.35
	167	NA	20	54.5	33	25.5	50	30	36		8		9
XS 006	7.87	NA	0.79	2.93	1.61	1.34	3.15	1.18	1.65	M5	0.31	F04	0.43
	200	NA	20	74.5	41	34	80	30	42		8		11
XS/XUS 012	10.43	11.95	0.79	3.58	2.66	1.61	3.15	1.18	1.97	M6	0.35	F05	0.55
	265	303.50	20	91	67.5	41	80	30	50		9		14
XS/XUS 025	11.42	12.76	0.79	4.76	3.23	2.17	3.15	1.18	1.97	M6	0.35	F05	0.55
	290	324.00	20	121	82	55	80	30	50		9		14
XS/XUS 050	14.37	15.22	0.79	5.75	3.70	2.64	3.15	1.18	2.76	M8	0.49	F07	0.67
	365	386.50	20	146	94	67	80	30	70		12.5		17
XS/XUS 90	17.72	18.11	1.18	6.54	4.29	3.07	5.12	1.18	4.02	M10	0.63	F10	0.87
	450	460.00	30	166	109	78	130	30	102		16		22
XS/XUS 130	20.67	21.06	1.18	7.56	4.53	3.54	5.12	1.18	4.92	M12	0.71	F12	1.06
	525	535.00	30	192	115	90	130	30	125		18		27
XS / XUS180	21.06	21.46	1.18	8.58	5.08	4.02	5.12	1.18	4.92	M12	0.71	F12	1.06
	535	545.00	30	218	129	102	130	30	125		18		27
	Inches												
	mm		NOTE: Dimensions are in inches and millimeters. Dimensions are nominal. For certified drawings contact factory.										

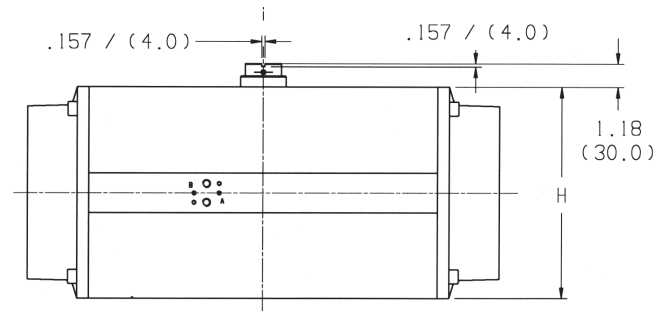
Actuator size 012 to 180 are available in both XRP & XRP Upgrade

L = For XRP & L' = For XRP Upgrade

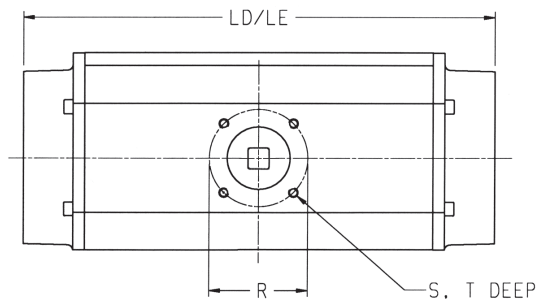
Size 205-H15 Dimensions



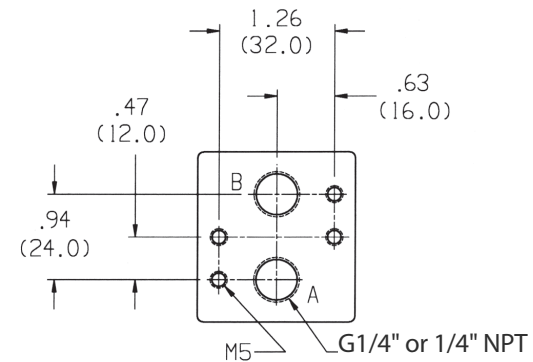
Top View



Side View



Bottom View



Solenoid Valve Interface

SIZE	LD	LE	H	B	C	D	R	S	T	ISO	SQ
XS205	15.24	19.13	10.71	5.91	4.69	5.12	5.51	M16	0.98	F14	1.42
	387	486	272	150	119	130	140		25		36
XS380	20.08	23.70	10.71	5.91	4.69	5.12	5.51	M16	0.98	F14	1.42
	510	602	272	150	119	130	140		25		36
XS630	22.09	29.17	13.54	7.36	6.77	5.12	6.50	M20	1.26	F16	1.81
	561	741	344	187	172	130	165		32		46
XS960	22.05	29.69	16.61	8.90	8.31	5.91	6.50	M20	0.35	F16*	1.81
	560	754	422	226	211	150	165		32		46
XSH15	26.34	34.61	17.72	9.45	8.86	5.91	ISO F25 Only				2.17
	669	879	450	240	225	150	See XS960/XSH15 View				55
	Inches	LD = Length of Double-acting Actuator LE = Length of Spring Return Actuator *This Model also has ISO F25 Mounting Pattern									
	mm	NOTE: Dimensions are in inches and millimeters. Dimensions are nominal. For certified drawings contact factory.									

Additional Features & Options

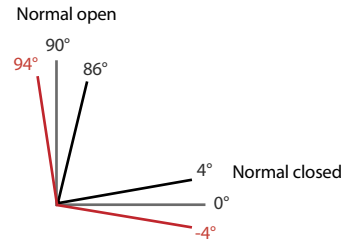
Visual Indicator

The position indicator is per the NAMUR standard providing local 90 degree indication and allows for the connection of a larger limit switch box with indicator.



Limit Stops

Adjustable limit stops for both open and closed positions provide 8 degrees of travel protection (4 degrees over-travel / 4 degrees under-travel)



Environmental Protection

Various types of coatings are available to help protect the actuator from harsh environmental conditions such as salt spray, chemicals, acids, fire, etc.

High/Low temperature kits allow the conversion of a standard actuator into either a high temperature version or low temperature version to meet extended operating temperature requirements.

The High temperature version incorporates special grease, Viton o-rings, seals, and metallic bearings suitable for operation up to 284 degrees F (140 degrees C)

The Low temperature version incorporates special grease, EPDM o-rings, and metallic bearings suitable for operation down to -40 degrees F (-40 degrees C)



Valve Interface

Shaft connections meet ISO 5211 standards and are available in square (0 degree offset), diamond (45 degree offset), and double-d for direct NAMUR mounting or bracket/coupling installation.

Shaft connection adapters allow reduction to accommodate smaller valve shafts.

Centering rings allow compliance with DIN 3337 and are available to make connection to a valve as simple as possible.



Manual Over-Rides

Allow the dis-connection of the actuator from the valve so that a manual operation can be performed.

Repair Kits

Spare parts kits are available for maintenance/repair or the conversion of a standard actuator to a different configuration.



Crane Sizing Program & Documentation

3rd Party Certification

The XOMOX Rack&Pinion (XRP) actuator's patented dual-piston, 3-point guide band suspension system provides a short, uniform, low-friction, guided stroke for optimum performance. It has been 3rd party tested and certified to operate to over 1 million full open/closed cycles without failure confirming that XRP actuators provide more consistent torque and longer service life than virtually any other actuator. The test was completed by Absorption Research, Inc an independent 3rd party who simulated real world conditions of a XRP actuator operating a Tufline HP butterfly valve. Detailed test results are available from Xomox Product Engineering Test Report Number 13-10-001.



ARI

Business Confidential

Report

Long Term Actuated Valve Test

Submitted To:
Rob Mueller
Valve-Automation-Instrumentation Territory Manager
Wolseley Industrial Group

Submitted By:
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August 16, 2013

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Summary

A long-term test evaluated the durability of pneumatically actuated spring return butterfly and ball valves. The valves completed a full cycle every 12 sec. Testing continued until the valve would no longer hold pressure, i.e., "failed" by our criteria, or the valve "passed."

Valve Name/Manufacturer	Size (Inches)	Number of Cycles
Flowtek/Wolseley	2	36,557
XOMOX/Wolseley	2	165,508
ABZ/Wolseley	6	295,534
XOMOX/Wolseley	6	1,000,001
XOMOX/Wolseley	4	1,000,001

Conclusions

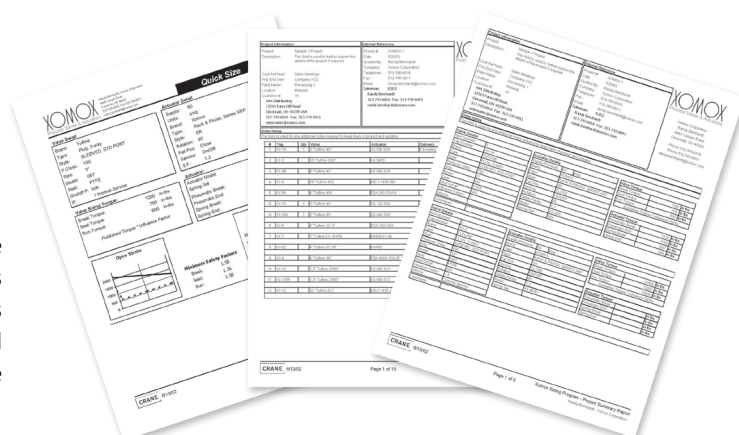
The XOMOX/Wolseley 4" and 6" butterfly valves both "passed" through 1,000,000 turns. These happen to be the same model of butterfly valves that ARI purchased for our 3 current pressure swing adsorption (PSA) based Landfill Gas Upgrading Projects.

Crane Sizing Program

The Crane Sizing Program can be used to quickly determine the proper actuator size for a valve or to work on a number of valves and actuators for a large project. The Quicksizer feature allows you to fill in individual valve information and the program will determine the actuator size/configuration required to meet the torque requirements.

The Project Worksheet feature allows all the valve and actuator data to be entered/imported into a spreadsheet format making it easy to generate project quotations. The Engineering Calculation feature allows several different common valve/actuator engineering calculations to be done:

- Actuator Torque Tables will calculate the torque output of a selected actuator range at any supply pressure
- Speed Calculation can be done by inputting the actuator and process data to determine how quickly the actuator will open/close
- Tank Sizing is used to determine the size of an air tank required to operate the actuator after loss of air (failure)
- Hot Line Calculation can help to determine what type of actuator seals should be used and the distance the actuator should be mounted away from the process/valve



The Control Valve Sizing feature provides a simplified sizing technique for valve flow sizing for gas, liquid, or steam processes, saving a great deal of manual calculation effort to achieve an acceptable level of accuracy.

All of the information generated by the Crane Sizing Program can be printed out in ISA style data sheets.



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