

XL Actuator Range

Full Product Range & Technical Specifications



- *High quality and economical actuator*
- *Improve plant and operator safety*
- *Reliable and flexible in process control*
- *Increase serviceability*

HYTORK 



XL Actuators

Complete solutions from HYTORK

***The highest quality,
most economical
actuator anywhere!***

***This unique combination
of high quality, modular
actuator design,
unique features,
customer benefits and
economical cost has
been achieved by
substantial engineering
and financial investment
by HYTORK.***

HYTORK has been manufacturing actuators for over 30 years. Valuable input from our customers has enabled continuous improvement, resulting in our newly updated XL range of actuators.

These heavy duty actuators have a proven track record of reliable operation in both industrial and commercial applications.

The XL actuator is modular in design, allowing many different functional features to be assembled from a series of modules at the factory or on site.

All XL actuators are field convertible from double acting to spring return (or vice versa).

XL spring return actuators are easily field modified to suit changing plant air and/or valve fail mode requirements.

Many of the XL actuators can have end cap modules added that provide a declutchable, manual override.

Hytork's unique On-Line Test module for ESD valves can be added to all XL spring return actuators.

All XL actuators feature the new "star" pinion drive, providing greater flexibility for direct or bracket mounting to an increased range of valve designs, including valves that have an ISO 5211 design with the stem turned at 45 degrees.

All Hytork XL actuators are manufactured to the latest international interface standards: ISO 5211, NAMUR and VDI/VDE. These standards assist efficient and accurate assembly of automated packages.



Additional Hytork XL features

- Extra mounting holes for top and bottom mounted accessories (including Hytork's direct mount interface for butterfly valves).
- Extra mounting holes near NAMUR solenoid valve pad to facilitate filter/regulator bracket installation.
- Hytork's unique direct mount interface for the most popular, non ISO 5211 designed butterfly valves.
- Stainless steel coupling inserts for direct mount ISO 5211 valves and other popular valve stems.
- Site proven DURASTRIP bearings protect all moving parts. Installed base has experience of actuators exceeding 1 million cycles.
- Change a solenoid or positioner, adjust a switch, alter a spring rating or install a new set of bearings and seals (never a spring set) in just minutes.
- A rugged, heavy duty body casting, patented SAFEKEY, unbreakable springs and HYTORK'S safety retractor rod system for disassembly of spring return actuators.

These and other Hytork features:

- reduce capital, assembly and installation costs
- increase personnel and plant safety
- increase plant up time
- reduce maintenance costs
- extend the package life

Complete Solutions with Hytork's XL

HYTORK products can be supplied to create customized packages, tailored to suit the individual customers' needs and plant application requirements.

In addition to the many features that the XL offers, HYTORK's Complete Solutions package can also provide the following benefits:

- Full engineering and GA drawing capability from each Valve Automation Center
- Standard, non-standard and special application equipment.
- A guaranteed rapid response to enquiries and orders with many items stocked locally to ensure a same day service if required.
- Short lead times facilitated by a global distribution network, backed up by a stock of process control equipment.





The XL Commando for aggressive corrosive environments

The XL Commando is treated with Fluoropolymers from the Hytork CG range to give maximum protection against corrosive attack. Years of field

trials have proven this durable impregnation of all body parts (inside and out) to be the answer to many corrosive environments.

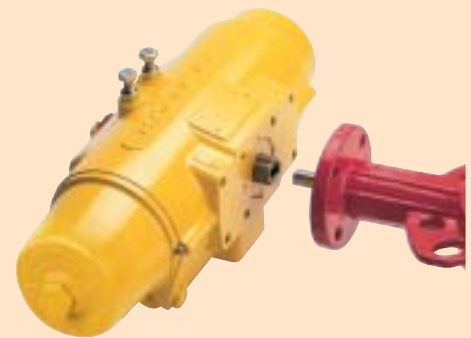
The XL manual override

A simple end cap assembly exchange provides an efficient, compact, light-weight manual override for many XL models. No modification is required to valve brackets and couplings, and torque losses are eliminated. Various handwheel designs can be fitted to suit customer requirements.



XL star drive pinions and adapters

All Hytork XL pinion drives are manufactured to ISO 5211. Hytork's "star" drive provides additional flexibility and simplicity in valve/actuator mounting. A range of pinion drive adapters allows many valves to be close mounted for a compact, low cost package.



The XL On-Line Test unit

Hytork's On-Line Test module permits testing of Emergency Shut Down (ESD) and other important valves, solenoids and switches without upsetting the process.

- Each ESD unit can have its own interlocking device to ensure only that particular tag number is tested at any one time.
- ESD units can be retrofitted to existing HYTORK actuators and to any HYTORK automated quarter turn valve.
- HYTORK can also provide On-Line Test units to replace any other manufacturers' actuator and cater for individual plant requirements or special requirements for interlocking.

XL Actuators

Materials of Construction

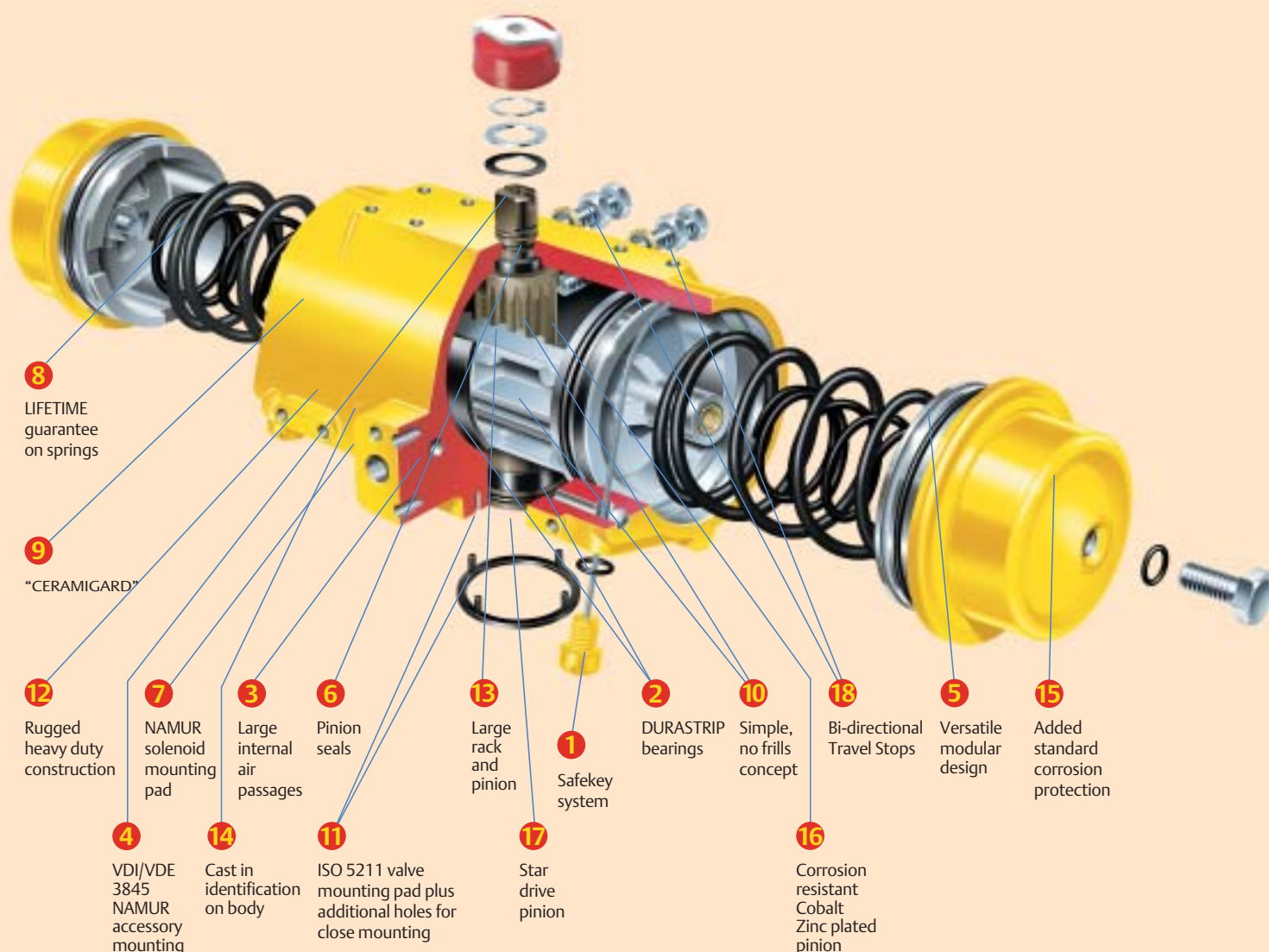
Component Description	Material	Quantity	Model Numbers
Body	Aluminium, Ceramigard Treated and Polyester Powder Coated	1	XL26 - XL4581
End Cap	Aluminium, Electrophoretic Coated and Polyester Powder Coated	2	XL26 - XL4581
Piston	Aluminium	2	XL26 - XL681
*Retractor Cap	Steel , Zinc Plated	2	XL1126, 4581
Thread Insert (Piston)	Steel , Zinc Plated	2	XL26 - XL221
Pinion	Steel , Cobalt Zinc Plated	1	XL26 - XL4581
*Springs	Spring Steel , Electrophoretic Coated	2 or 4	XL26 - XL4581
Travel Stop/Locking Nut	Stainless Steel	2	XL26 - XL1371
Thread Seal	Stainless Steel/Rubber	2	XL26 - XL221
Washer	Stainless Steel	2	XL281 - XL1371
Circlip	Spring Steel , Zinc Plated	1	XL26 - XL4581
Steel Thrust Washer	Stainless Steel	1	XL26 - XL221
	Steel , Zinc Plated and Passivated	1	XL281 - XL4581
Thrust Washer	Nylatron (MoS2 filled PA66)	1	XL26 - XL4581
Ball Plug	High Carbon Chromium Steel	2	XL26 - XL4581
SAFEKEY Head	Composite	2	XL26 - XL4581
SAFEKEY Wire	Stainless Steel	2	XL26 - XL4581
Sealing 'O' rings	Nitrile Rubber (Optional - Viton, EPDM or Silicone)	10	XL26 - XL4581
Bearings (Piston & Pinion)	Acetal M90	6	XL26 - XL4581
Position Indicator	Non-Static Polymer	1	XL26 - XL4581
Location Ring	Acetal M90	1	XL26 - XL221
Grease	Lithium based (for Nitrile Rubber)		XL26 - XL4581

**Spring Return Models Only*
 Temperature range for above mentioned parts: -20°C to +100°C/-4°F to +212°F
 Optional temperature ranges: High temperature range : -20°C to +120°C/-4°F to +248°F (see data sheet D128 for more details)
 Low temperature range: -40°C to +100°C/-40°F to +212°F (see data sheet D129 for more details)

Features

Actuator specification

- Pneumatic actuators will be double rack and pinion design with bodies manufactured of cast aluminium alloy.
- All moving parts, piston racks and pinions will be fitted with replaceable wear bearings to resist cylinder side loads, radial pinion loads and up thrust/ down thrust pinion loads.
- Actuators will have two rotational travel stops, acting on the rotating pinion, providing 10 degrees of travel adjustment in both directions of pinion rotation, and will have a minimum total rotational capability of 96°.
- Actuators will be designed to the preferred ISO mounting and drive dimensions, have ISO and VDI specification mounting pads for accessories with a NAMUR accessory drive on the pinion top and a NAMUR specification solenoid mounting pad.
- Actuators will have a ceramic like finish on all body parts and will be cerimigard treated and polyester powder coated for corrosion resistance.
- Spring return actuators will have a maximum of two springs per end cap, and will have a lifetime warranty against spring breakage, under normal operating conditions.
- End caps will be securely attached to the actuator body using a flexible, stainless steel SAFEKEY in a machined key way.
- Suggested manufacturer and model number is HYTORK XL SR series for spring return and HYTORK XL DA series for double acting.



XL Actuator

1 Safekey system

This patented Safekey method of end cap assembly to the actuator uses a flexible stainless steel key in an internal machined keyway. The Safekey is completely sealed from all external contamination. Stronger than conventional bolting, more secure than Helicoils™, the Safekey system eliminates stress concentrations caused by point loading. Safekeys cannot be removed when the XL actuator is pressurized or springs are not safely contained, eliminating potentially dangerous disassembly.

2 DURASTRIP bearings

All moving parts are protected by permanently lubricated, long lasting DURASTRIP bearings that extend the actuator's life in the most severe and demanding conditions.

3 Large internal air passages

HYTORK's extra large internal air passages permit maximum speed of operation and greatly reduce the possibility of the air passages blocking.

4 VDI/VDE 3845 NAMUR accessory mounting (an international standard)

This standard includes a slotted drive in the top of the pinion, providing a self centering, positive, no play drive for top mounted accessories. All switches, positioners, etc. manufactured to the VDI/VDE standard, can be directly driven by the actuator pinion, eliminating expensive couplings. Hytork's standard visual position

indicator, snaps on to this pinion design. This “standard” mounting pad simplifies the addition of all “state-of-the-art” top mounted accessories. Using HYTORK’s engineered “SAFEMOUNT” bracketing, ANY accessory made to the VDI/VDE standard can be mounted to the actuator or one can still connect a remote mounted solenoid. The choice is yours.

5 Versatile modular design

Customize the Hytork actuator to fit your needs. Hytork’s modular design permits shop or field changes in action (double acting or spring return), fail position, spring rating, manual override requirements, plus testing and locking devices.

6 Pinion seals

Pinion seals are positioned as close to the external surfaces as possible to minimise any crevices for maximum protection against corrosion.

7 NAMUR solenoid mounting pad (an international standard)

This permits a choice of various manufacturers’ solenoid valves to be direct mounted to the actuator. A single solenoid can be used for all double acting and spring return sizes. Hytork’s “CATS” direct mounted solenoid valve prevents aggressive ambient air from entering the spring chambers. In addition to the NAMUR holes many sizes of the XL actuator range are also provided with four additional holes to assist attaching brackets for filter regulators and solenoid valves that cannot be direct mounted.

8 LIFETIME guarantee on springs

Put the SAFE in Fail Safe! HYTORK’s springs are designed and manufactured never to break, and are then protected from corrosion using an electro-phoretic finish. Springs are rated to compensate for “spring set” for true fail safe confidence. Hytork springs are guaranteed for life under normal operating conditions and backed by a FREE complete actuator replacement. Hytork springs can be matched for any air supply pressure and valve requirement - easily and safely.

9 “CERAMIGARD”

The body has a unique surface finish of Di-aluminium Tri-oxide (Al_2O_3); a hard, corrosion resistant ceramic like surface, protecting all body parts against wear and corrosion.

10 Simple, no frills concept

Only three moving parts; one pinion, two pistons.

11 ISO 5211 valve mounting pad (an international standard) plus additional holes for close mounting

Hytork XL actuators are all provided with ISO 5211 mounting holes. Many sizes have two ISO 5211 hole patterns plus additional holes outside the ISO pattern. These two hole patterns provide flexibility in mounting to all types and makes of quarter turn valves, whether they are ISO 5211 or not. The outer mounting holes, coupled with HYTORK’s optional, low cost mounting subplates, allow the close coupling of most makes of valves that are not ISO 5211.

12 Rugged heavy duty construction

The XL body is designed and built from a heavy duty aluminium casting to provide maximum protection against dents, shock or fatigue.

13 Large rack and pinion for precision modulating control applications

The extra large, precision rack and pinion reduces “dead band” for accurate modulating control applications.

14 Cast in identification

Model numbers, port identifications and safety instructions are cast in for permanent readability. No lost identification due to weathering or paint.

15 Added standard corrosion protection

A polyester powder coated surface treatment is standard, providing extra protection against aggressive environments.

16 Excellent overall corrosion resistance

All Hytork actuator pinions are Cobalt Zinc plated. This durable pinion treatment together with our ‘ceramigard’ surface finish and standard powder coated paint shows no decline of actuator functions after 1000 hours salt spray test.

17 Star drive pinions and new stainless steel adapters

All Hytork XL pinion drives are manufactured to ISO 5211. Hytork’s new star drive provides additional flexibility and simplicity in valve/actuator mounting. Optional star drive sizes are available. A range of pinion drive adapters allows many valves to be close mounted for a compact, low cost package.

18 Bi-directional Travel Stops

XL26 - XL1371

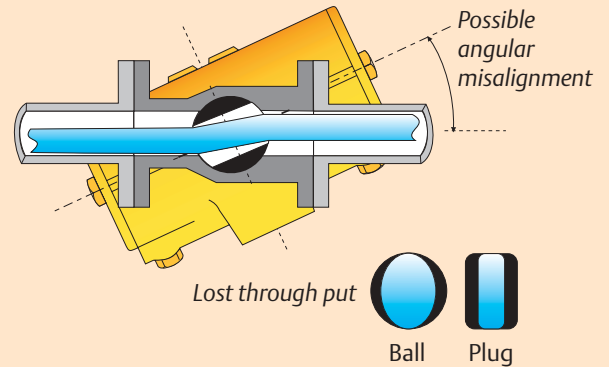
- 1 A unique, exclusive standard provides rotational adjustment on the actuator pinion, in both directions of travel.
- 2 High performance and special duty valves require precise and specific rotation limits to perform their intended function.
- 3 Metal seated and high performance butterfly valves need exact rotation stopping between 0° and 7°.
- 4 Rubber seated butterfly valves often require stopping between 0° and 7° after installation, for optimum seat life. These valves can experience premature seat failure if the disc is forced into the seat.
- 5 Full port and metal seated ball valves need exactly 0° and 90°.
- 6 All manufactured items have acceptable tolerances. When the tolerance of the components of an automated valve assembly are added, the actuator must provide compensation by being able to rotate more than 90° with overtravel in both directions, and then continually stop precisely at the required position.
- 7 Hytork actuators, with patented two way rotation travel stops, provide a minimum rotation of -3° to +93° and positive, adjustable rotation stopping (10° at each end).

- 8 This unique Hytork combination assures positive sealing, correct port alignment and long life for all valve designs.
- 9 Single end cap stops and dual end cap stops cannot limit rotation when the actuator pistons are driven together (as in all "fail" strokes) and provide no function. Actuators without sufficient overtravel, in both directions of rotation, cannot assure correct valve functioning.
- 10 Overtravel and Rotation Travel Stops are required to compensate for the accumulation of tolerances that lead to valve malfunction and damage.

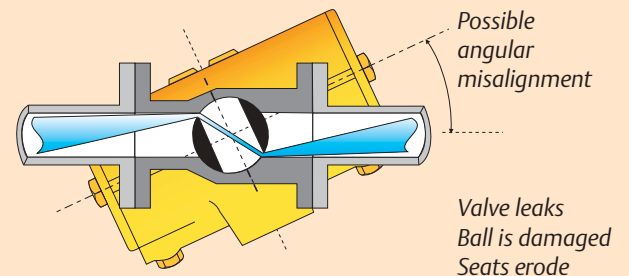
XL2586 - XL4581

On the larger sizes of Actuators the adjustment is obtained by the addition of a simple Stop Block that fits under the Actuator. The Actuator is manufactured with over travel to give -3° to +93° of movement and the bottom mounted Stop Block provides the required adjustment of 10° at each end of the travel.

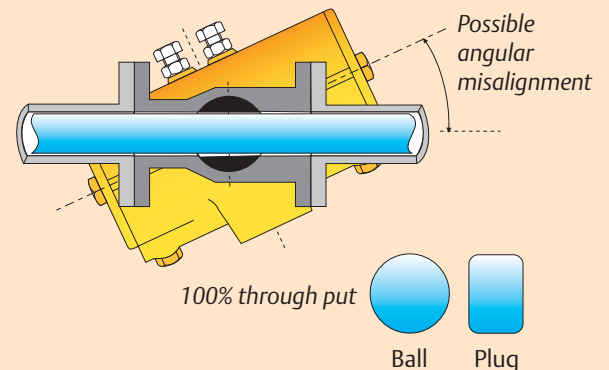
Valve Open No Travel Stops

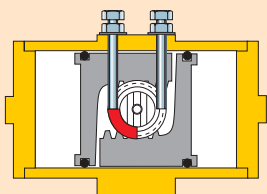
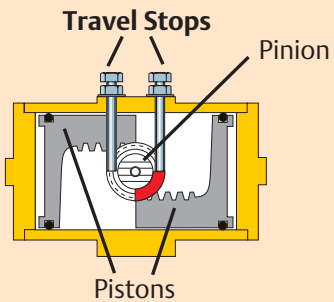


Valve Closed No Travel Stops

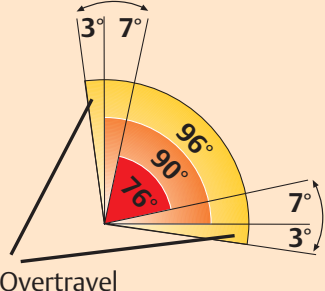


Valve Open with Travel Stops

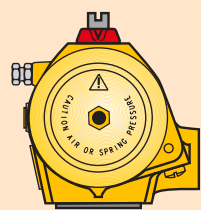
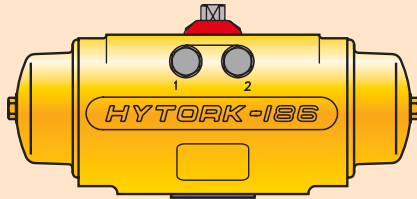




Travel adjustment



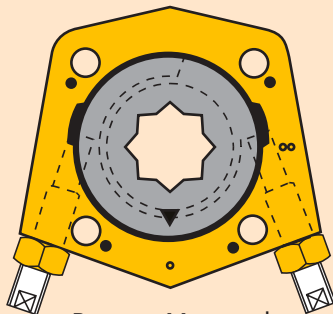
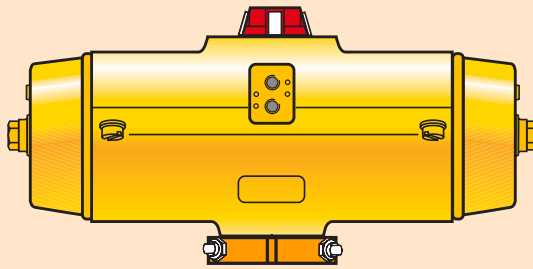
Travel adjustment



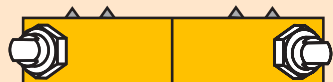
XL26 - XL1371



46mm/1.81"



Bottom Mounted Stop Block Assembly



XL2586 - XL4581

SR

(Pressures in bar(g) and torques in Nm.)

		Torque from Springs		Torques from air stroke (Nm.) at given operating air pressure (bar)															
				3.0 bar(g)		4.0 bar(g)		5.0 bar(g)		5.5 bar(g)		6.0 bar(g)		7.0 bar(g)		8.0 bar(g)			
Model	Spring Rating	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End		
XL26	S40	6	4	7	4	10	8	14	11	15	13	17	15	21	18	24	22		
	S60	9	5	5	1	8	5	12	8	14	10	15	12	19	15	22	19		
	S80	12	7	-	-	7	2	10	5	12	7	14	9	17	12	20	16		
	S1C	15	9	-	-	-	-	8	2	10	4	12	6	15	9	19	13		
XL71	S40	15	9	17	11	26	20	34	28	38	32	43	37	51	45	60	54		
	S60	22	13	12	4	21	12	30	21	34	25	38	29	47	38	55	47		
	S80	30	18	-	-	17	5	25	13	30	18	34	22	42	31	51	39		
	S1C	37	22	-	-	-	-	21	6	25	10	29	15	38	23	47	32		
XL131	S40	28	17	32	21	48	37	64	53	72	61	80	69	97	85	113	102		
	S60	42	25	23	7	40	23	56	39	64	47	72	55	88	71	104	88		
	S80	56	33	-	-	31	9	47	25	56	33	64	41	80	57	96	74		
	S1C	70	42	-	-	-	-	39	11	47	19	55	27	71	44	88	60		
XL186	S40	37	22	43	28	65	50	86	71	97	82	108	93	130	115	152	137		
	S60	56	34	32	9	53	31	75	53	86	64	97	75	119	96	140	118		
	S80	75	45	-	-	42	12	64	34	75	45	86	56	108	78	129	99		
	S1C	93	56	-	-	-	-	53	15	64	26	75	37	96	59	118	81		
XL221	S40	52	31	60	39	90	69	120	99	135	114	151	130	181	160	211	190		
	S60	78	47	44	13	74	43	105	73	120	88	135	104	165	134	196	164		
	S80	105	63	-	-	59	17	89	47	104	62	119	77	150	108	180	138		
	S1C	131	78	-	-	-	-	73	21	88	36	104	51	134	82	164	112		
XL281	S40	64	37	71	45	108	81	144	117	162	135	180	154	216	190	253	226		
	S60	96	56	-	-	89	49	125	85	143	103	161	122	198	158	234	194		
	S80	128	75	-	-	-	-	106	53	125	71	143	90	179	126	215	162		
	S1C	160	94	-	-	-	-	-	-	106	39	124	57	160	94	197	130		
XL426	S40	94	56	102	65	155	118	208	171	235	197	261	223	314	276	367	329		
	S60	141	84	-	-	127	71	180	124	206	150	233	177	286	229	339	282		
	S80	188	113	-	-	-	-	152	77	178	103	205	130	258	182	311	235		
	S1C	235	141	-	-	-	-	-	-	150	56	177	83	229	136	282	188		
XL681	S40	151	91	168	108	254	194	340	280	384	323	427	366	513	453	599	539		
	S60	227	136	123	32	209	118	295	205	338	248	381	291	468	377	554	463		
	S80	302	181	-	-	164	43	250	129	293	172	336	215	422	301	509	388		
	S1C	378	227	-	-	-	-	205	54	248	97	291	140	377	226	463	312		
XL1126	S40	247	148	285	186	429	330	574	474	646	547	718	619	862	763	1007	907		
	S60	371	222	211	62	355	206	499	351	572	423	644	495	788	639	932	784		
	S80	495	296	-	-	281	83	425	227	497	299	570	371	714	516	858	660		
	S1C	618	371	-	-	-	-	351	103	423	176	495	248	640	392	784	537		
XL1371	S40	304	183	346	225	523	401	699	577	787	665	875	753	1052	930	1228	1106		
	S60	457	274	255	72	431	249	608	425	696	513	784	601	960	778	1137	954		
	S80	609	365	-	-	340	96	516	273	605	361	693	449	869	625	1045	802		
	S1C	761	456	-	-	-	-	425	120	513	209	601	297	778	473	954	649		
XL2586	S40	574	345	654	425	987	758	1320	1091	1487	1257	1654	1424	1987	1757	2320	2090		
	S60	862	517	482	137	815	470	1148	803	1315	970	1481	1137	1814	1470	2147	1803		
	S80	1149	689	-	-	643	183	976	516	1142	683	1309	849	1642	1182	1975	1515		
	S1C	1436	862	-	-	-	-	803	229	970	396	1136	562	1470	895	1803	1228		
XL4581	S40	1017	610	1153	747	1741	1334	2329	1922	2623	2216	2916	2510	3504	3097				
	S60	1525	915	848	238	1436	826	2024	1414	2318	1708	2611	2001	3199	2589				
	S80	2033	1220	-	-	1131	318	1719	905	2013	1199	2306	1493	2894	2081				
	S1C	2541	1525	-	-	-	-	1414	397	1708	691	2001	985	2589	1573				

Note:
Actuator torques are guaranteed minimum torque values. Hytork recommends that the valve manufacturer supply the maximum required torque values (including any adjustments or suggested safety factors for valve service conditions or application). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (Counter Clock Wise or Clock Wise) these maximum requirements occur.

Maximum working pressure:
Models **XL 26 - 2856** 8 bar(g)
XL 4581 7 bar(g)

Hytork XL Spring return actuators can be equipped with the additional spring sets S50, S70 and S90 for more accurate sizing. Please download data sheet D66 from www.Hytork.com for the torque data, belonging to these additional spring sets.

S1C Spring Return
For all fail closed butterfly valves and other spring return applications where 7 bar air is available, Hytork's optional S1C Spring Modules will often permit the selection of a smaller Hytork Actuator. Both space and cost savings can be achieved.

Double Acting Actuators Torque Data
(Pressures in bar(g) and torques in Nm.)

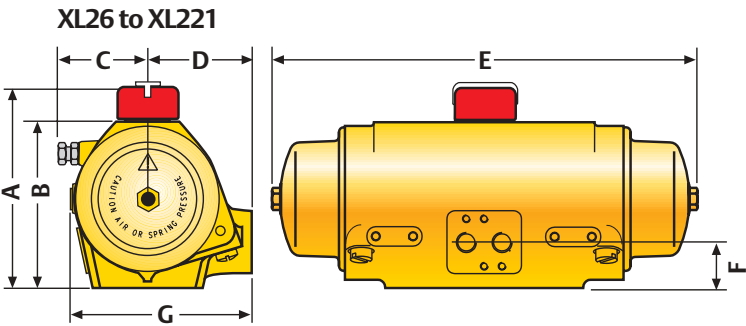
Torques from air stroke (Nm.) at given operating air pressure bar(g)

Model	3.0 bar(g)	4.0 bar(g)	5.0 bar(g)	5.5 bar(g)	6.0 bar(g)	7.0 bar(g)	8.0 bar(g)
XL26	10	14	17	19	21	24	28
XL71	26	34	43	47	52	60	69
XL131	49	65	81	89	97	113	129
XL186	65	87	109	120	131	152	174
XL221	91	121	152	167	182	212	243
XL281	109	145	181	200	218	254	290
XL426	159	212	264	291	317	370	423
XL681	259	345	431	474	517	604	690
XL1126	433	577	722	794	866	1010	1155
XL1371	529	705	882	970	1058	1234	1411
XL2586	999	1332	1665	1832	1998	2331	2664
XL4581	1763	2351	2939	3232	3526	4114	

Note:
Actuator torques are guaranteed minimum torque values. Hytork recommends that the valve manufacturer supply the maximum required torque values (including any adjustments or suggested safety factors for valve service conditions or application). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (Counter Clock Wise or Clock Wise) these maximum requirements occur.

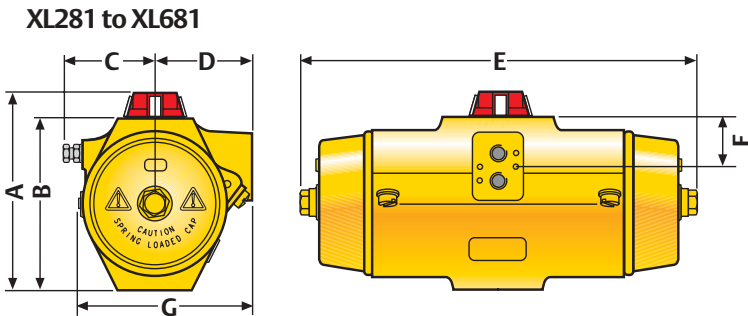
Envelope Dimensions XL26 to XL221
Spring Return and Double Acting Units

Model	XL26	XL71	XL131	XL186	XL221
Dim in mm. A	97	115	131	137	153
B	77	95	111	117	133
C	45	57	64	71	78
D	52	60	70	72	81
E	165	222	293	332	350
F	29	29	30	30	33
G	86	102	121	126	141



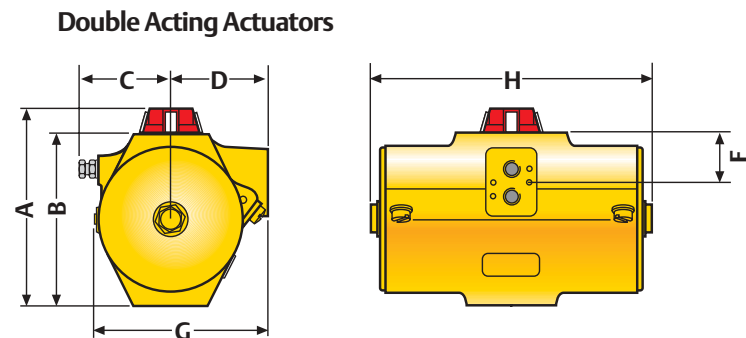
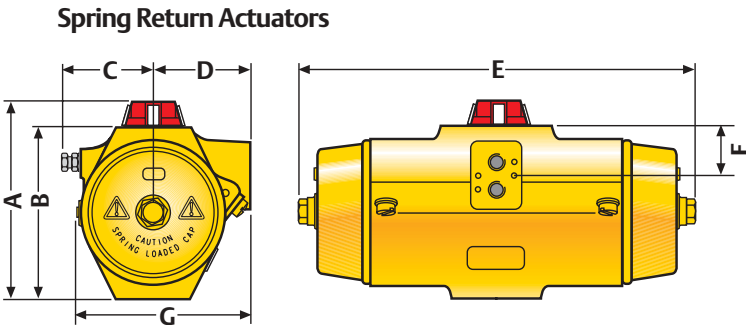
Envelope Dimensions XL281 to XL681
Spring Return and Double Acting Actuators

Model	XL281	XL426	XL681
Dim in mm. A	176	169	204
B	152	147	180
C	81	86	94
D	86	88	96
E	348	462	582
F	44	42	52
G	153	157	174



Envelope Dimensions XL1126 to XL4581
Spring Return and Double Acting Actuators

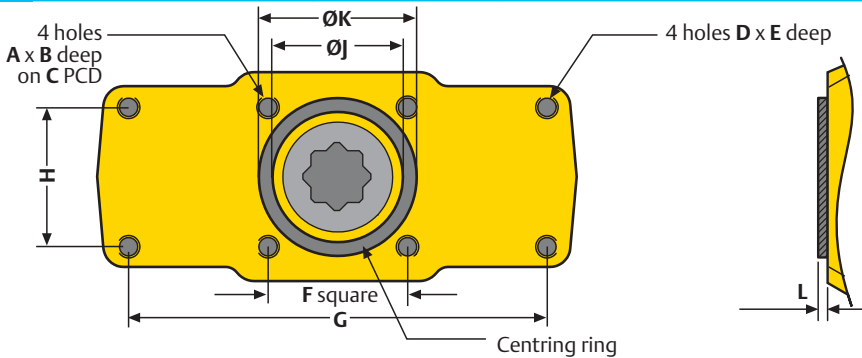
Model	XL1126	XL1371	XL2586	XL4581
Dim in mm. A	234	247	292	388
B	200	215	260	356
C	132	129	N/A	N/A
D	108	116	131	160
E	648	669	862	884
F	56	50	49	76
G	199	216	253	321
H	396	407	467	515



ISO 5211 Standard Drive & Bottom Mounting Details XL26 to XL4581

ISO 5211 Bottom Mounting Details

Model	ISO	A	B	C	D	E	F	G	H	ØJ	ØK	L
XL26	F05	M6	9.0	50.0	M6	9.0	35.35	90.0	35.35	27.8	34.97/34.94	3.0
XL71	F07	M8	12.0	70.0	M8	12.0	49.5	114.0	49.5	46.0	54.97/54.92	3.0
XL131	F07	M8	12.0	70.0	M8	12.0	49.5	114.0	49.5	46.0	54.97/54.92	3.0
XL186	F07	M8	12.0	70.0	M8	12.0	49.5	114.0	49.5	46.0	54.97/54.92	3.0
XL221	F07	M8	12.0	70.0	M8	12.0	49.5	114.0	49.5	46.0	54.97/54.92	3.0

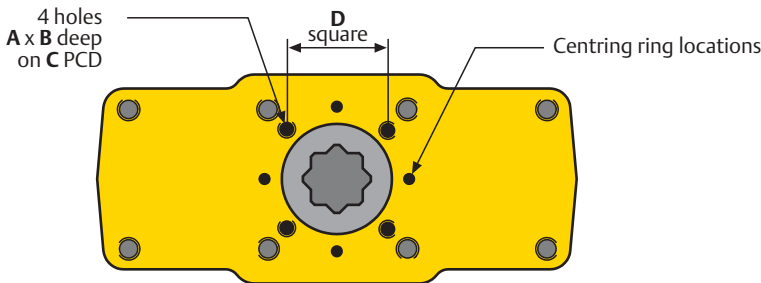


Models shown with optional Centring Ring fitted

Models with additional ISO 5211 Bottom Mounting Details

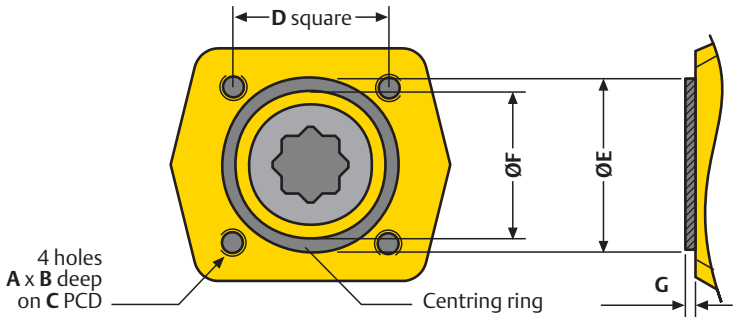
Model	ISO	A	B	C	D
XL26	F03	M5	8.0	36.0	25.46
XL71	F05	M6	9.0	50.0	35.35
XL131	F05	M6	9.0	50.0	35.35

Models shown with optional Centring Ring removed to reveal additional ISO mounting holes



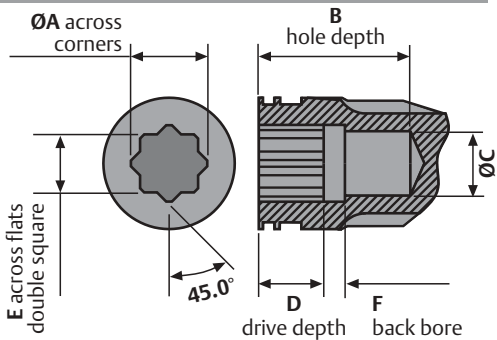
ISO 5211 Bottom Mounting Details

Model	ISO	A	B	C	D	ØE	ØF	G
XL281	F07	M8	12.0	70.0	49.5	54.97/54.92	45.0	3.0
XL426	F10	M10	15.0	102.0	72.1	69.97/69.92	65.0	3.0
XL681	F10	M10	15.0	102.0	72.1	69.97/69.92	65.0	3.0
XL1126	F12	M12	18.0	125.0	88.4	84.96/84.91	75.0	3.0
XL1371	F12	M12	18.0	125.0	88.4	84.96/84.91	75.0	3.0
XL2586	F16	M20	20.0	165.0	116.7	129.95/129.89	115.0	5.0
XL4581	F16	M20	25.0	165.0	116.7	129.95/129.89	115.0	5.0



ISO 5211 Standard Drive Details

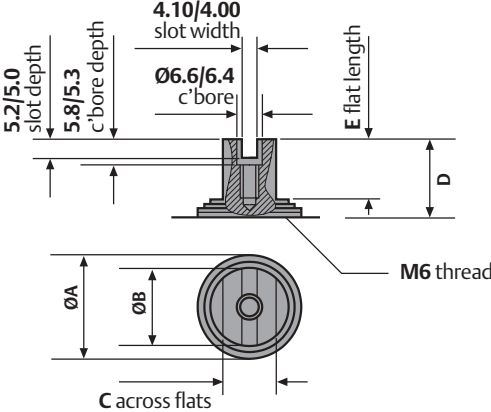
Model	ISO	A	B	C	D	E	F
XL26	F05	18.1	28.0	14.7	16.0	14.00/14.11	2.3
XL71	F07	22.2	45.0	17.9	19.0	17.00/17.11	2.3
XL131	F07	22.2	45.0	17.9	19.0	17.00/17.11	2.3
XL186	F07	22.2	45.0	17.9	19.0	17.00/17.11	2.3
XL221	F07	22.2	45.0	17.9	19.0	17.00/17.11	2.3
XL281	F07	22.2	45.0	17.9	19.0	17.00/17.11	2.3
XL426	F10	28.2	60.0	23.1	24.0	22.00/22.13	30.0
XL681	F10	28.2	60.0	23.1	24.0	22.00/22.13	30.0
XL1126	F12	36.2	72.0	28.4	29.0	27.00/27.13	25.0
XL1371	F12	36.2	72.0	28.4	29.0	27.00/27.13	25.0
XL2586	F16	60.2	100.0	48.5	48.0	46.00/46.16	35.0
XL4581	F16	60.2	100.0	48.5	48.0	46.00/46.16	35.0



XL26 to XL4581 Metric Actuators

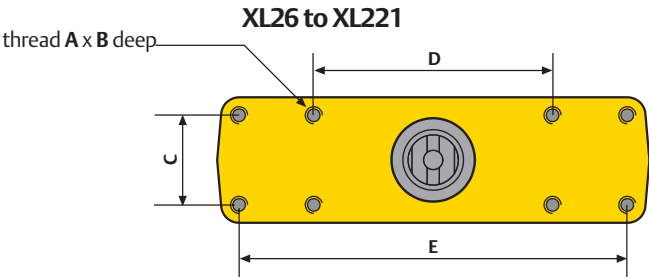
VDI/VDE Pinion Top Details

Model	ØA	ØB	C	D	E
XL26	24.6/24.5	16.6/16.5	14.00/13.85	20.1/19.9	16.4/16.0
XL71	24.6/24.5	16.6/16.5	14.00/13.85	20.1/19.9	16.4/16.0
XL131	24.6/24.5	16.6/16.5	14.00/13.85	20.1/19.9	16.4/16.0
XL186	30.5/30.0	16.6/16.5	14.00/13.85	20.1/19.9	13.7/13.3
XL221	30.5/30.0	16.6/16.5	14.00/13.85	20.1/19.9	13.7/13.3
XL281	44.5/44.0	23.5/23.3	17.00/16.85	20.1/19.9	12.6/12.4
XL426	64.5/64.0	43.5/43.3	22.00/21.85	20.1/19.9	12.6/12.4
XL681	69.5/69.0	43.5/43.3	22.00/21.85	20.1/19.9	12.6/12.4
XL1126	90.5/90.0	67.1/66.9	36.00/35.85	30.1/29.9	18.1/17.9
XL1371	90.5/90.0	67.1/66.9	36.00/35.85	30.1/29.9	18.1/17.9
XL2586	95.5/95.0	71.5/71.3	40.00/39.85	30.1/29.9	18.1/17.9
XL4581	95.5/95.0	71.5/71.3	40.00/39.85	30.1/29.9	18.1/17.9

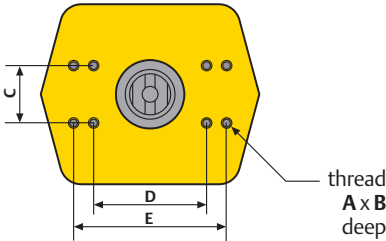


VDI/VDE Top Mounting Details

Model	A	B	C	D	E
XL26	M5	6,25	30,0	80,0	-
XL71	M5	6,25	30,0	80,0	-
XL131	M5	6,25	30,0	80,0	130,0
XL186	M5	6,25	30,0	80,0	130,0
XL221	M5	6,25	30,0	80,0	130,0
XL281	M5	8,0	30,0	80,0	130,0
XL426	M5	8,0	30,0	80,0	130,0
XL681	M5	8,0	30,0	80,0	130,0
XL1126	M5	8,0	30,0	130,0	-
XL1371	M5	8,0	30,0	130,0	-
XL2586	M5	8,0	30,0	130,0	-
XL4581	M5	8,0	30,0	130,0	-

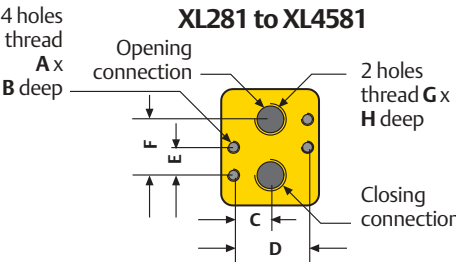
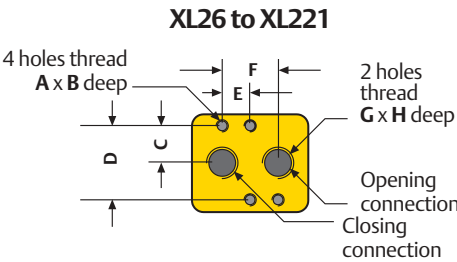


XL281 to XL4581

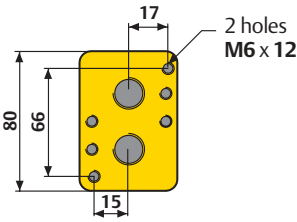


Namur Solenoid Mounting Details

Model	A	B	C	D	E	F	G	H
XL26 to XL4581	M5	8.0	16.0	32.0	12.0	24.0	1/4" BSP	12.0

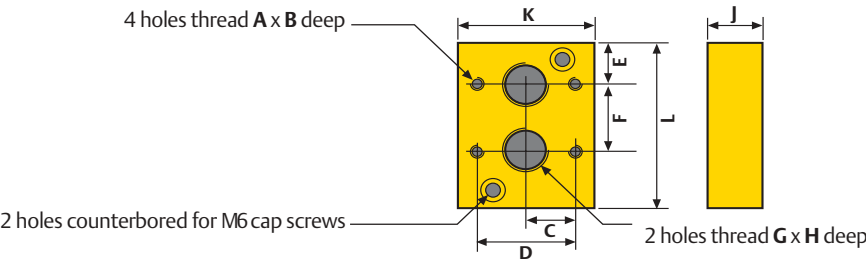


Additional dimensions
XL2586 and XL4581



Option for overporting 1/2" BSP

Model	A	B	C	D	E	F	G	H	J	K	L
XL2586 to XL4581	M6	8.0	23.0	46.0	20.5	33.0	1/2" BSP	18.0	25.4	63.5	82.0



Air Consumption XL26 to XL4581							
Model	OUTWARD stroke Consumption per stroke (cm³)/pressure in bar(g)						
	3.0 bar(g)	4.0 bar(g)	5.0 bar(g)	5.5 bar(g)	6.0 bar(g)	7.0 bar(g)	8.0 bar(g)
XL26	317	402	487	530	573	658	744
XL71	797	1012	1228	1335	1443	1658	1874
XL131	1529	1942	2356	2563	2769	3183	3596
XL186	2031	2581	3132	3407	3682	4232	4782
XL221	2744	3491	4239	4612	4986	5733	6481
XL281	3621	4618	5615	6113	6612	7608	8605
XL426	5076	6452	7828	8516	9203	10579	11955
XL681	7969	10118	12266	13340	14414	16562	18710
XL1126	13391	17009	20627	22436	24245	27863	31481
XL1371	16123	20473	24823	26998	29173	33523	37873
XL2586	28947	36662	44378	48236	52093	59809	67524
XL4581	51773	65609	79446	86364	93283	107119	

Model	INWARD stroke Consumption per stroke (cm³)/pressure in bar(g)						
	3.0 bar(g)	4.0 bar(g)	5.0 bar(g)	5.5 bar(g)	6.0 bar(g)	7.0 bar(g)	8.0 bar(g)
XL26	455	586	717	783	849	980	1112
XL71	1226	1584	1943	2122	2301	2659	3018
XL131	2465	3190	3916	4279	4641	5367	6092
XL186	3222	4169	5117	5590	6064	7011	7958
XL221	4391	5687	6984	7632	8280	9576	10873
XL281	5502	7126	8750	9562	10374	11997	13621
XL426	8145	10544	12943	14142	15341	17740	20139
XL681	14767	19182	23596	25803	28010	32424	36838
XL1126	12875	16321	19767	21490	23213	26659	30105
XL1371	15469	19601	23733	25799	27865	31997	36129
XL2586	27756	35074	42393	46052	49711	57030	64348
XL4581	50867	64401	77936	84703	91471	105005	

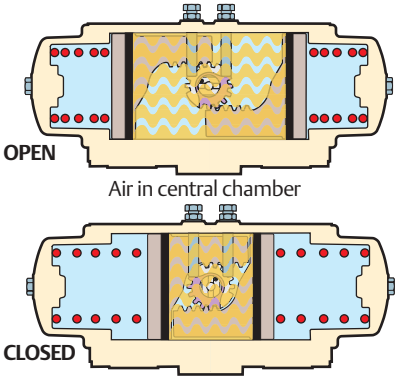
Actuator Weights XL26 to XL4581				
	Double Acting		Spring Return with S80 Springs	
	Kg	Lbs	Kg	Lbs
XL26	1.39	3.06	1.53	3.37
XL71	2.39	5.27	2.78	6.13
XL131	3.90	8.60	4.76	10.49
XL186	4.77	10.52	5.45	12.02
XL221	6.19	13.65	7.76	17.11
XL281	7.02	15.47	9.90	21.83
XL426	7.30	16.10	12.50	27.56
XL681	8.80	19.40	22.50	49.60
XL1126	22.00	48.50	36.00	79.37
XL1371	27.00	59.52	46.60	102.73
XL2586	46.00	101.41	79.00	174.16
XL4581	83.00	182.98	142.00	313.05



(Time in seconds)	Actuator Operating Speeds XL26 to XL4581 (Operating Pressure = 80PSI)			
	Double Acting		Spring Return with S80 Springs	
Model	Opening Stroke	Closing Stroke	Opening Stroke	Closing Stroke
XL26	0.01	0.01	0.05	0.02
XL71	0.03	0.03	0.09	0.05
XL131	0.03	0.04	0.15	0.09
XL186	0.05	0.06	0.19	0.12
XL221	0.06	0.08	0.24	0.15
XL281	0.20	0.10	0.10	0.20
XL426	0.20	0.30	0.30	0.50
XL681	0.40	0.60	0.40	1.20
XL1126	0.70	0.60	0.50	0.70
XL1371	0.80	0.70	0.70	1.00
XL2586	1.50	1.20	1.20	1.50
XL4581	2.00	2.90	2.20	3.90

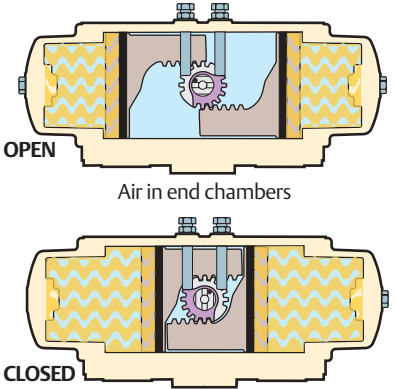
Free Air Volume at Atmospheric Pressure XL26 to XL4581			
Model	Double AND Single Acting		
	Open	Closed	Displaced
XL26	85	25	60
XL71	215	65	150
XL131	413	125	288
XL186	550	170	380
XL221	747	245	502
XL281	997	367	630
XL426	1376	427	949
XL681	2148	623	1525
XL1126	3618	1081	2537
XL1371	4350	1277	3073
XL2586	7715	1915	5800
XL4581	13837	3574	10263

Spring Return & Double Acting Actuators



Model	Double Acting ONLY End Cap Chamber Volumes (cm³)		
	Open	Closed	Displaced
XL26	71	131	60
XL71	208	358	150
XL131	437	725	288
XL186	567	947	380
XL221	794	1296	502
XL281	994	1624	630
XL426	1450	2399	949
XL681	2889	4414	1525
XL1126	909	3446	2537
XL1371	1059	4132	3073
XL2586	1518	7318	5800
XL4581	3272	13535	10263

Double Acting Actuators



Spring Return Actuators Torque Data (Pressures in psig and torques in inch pounds.)

Torque from Springs

Torques from air stroke (ins. lbs.) @ given operating air pressure (psig)

Model	Spring Rating	40		50		60		70		80		90		100		120	
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
XL26	S40	53	32	52	31	73	52	94	73	115	94	135	114	156	135	177	156
	S60	79	47	-	-	57	26	78	46	99	67	120	88	141	109	161	130
	S80	105	63	-	-	-	-	62	20	83	41	104	62	125	83	146	104
	S1C	131	79	-	-	-	-	-	-	-	-	88	36	109	57	130	77
XL71	S40	131	79	130	77	182	130	234	182	286	234	338	286	391	338	443	390
	S60	197	118	-	-	143	64	195	116	247	168	299	220	351	273	403	325
	S80	263	158	-	-	-	-	155	50	208	103	260	155	312	207	364	259
	S1C	328	197	-	-	-	-	-	-	-	-	220	89	273	141	325	193
XL131	S40	247	148	244	146	342	244	440	342	539	440	637	538	735	636	833	734
	S60	370	222	-	-	268	120	366	218	465	316	563	414	661	513	759	611
	S80	494	296	-	-	-	-	292	95	390	193	489	291	587	389	685	487
	S1C	617	370	-	-	-	-	-	-	-	-	414	168	513	266	611	364
XL186	S40	331	198	329	197	461	329	593	461	725	593	857	725	989	857	1121	989
	S60	495	298	-	-	362	164	494	296	626	428	757	560	889	692	1021	824
	S80	661	397	-	-	-	-	395	130	527	262	659	394	791	526	923	658
	S1C	827	495	-	-	-	-	-	-	-	-	560	229	692	361	824	492
XL221	S40	463	278	458	273	641	456	825	640	1009	824	1193	1008	1377	1192	1560	1375
	S60	694	416	-	-	503	225	686	409	870	593	1054	777	1238	960	1422	1144
	S80	925	555	-	-	-	-	548	178	731	361	915	545	1099	729	1283	913
	S1C	1156	694	-	-	-	-	-	-	-	-	777	314	960	498	1144	682
XL281	S40	567	331	548	313	768	532	988	752	1208	972	1428	1192	1648	1412	1867	1632
	S60	850	497	-	-	602	249	822	469	1042	689	1262	909	1482	1129	1702	1348
	S80	1134	663	-	-	-	-	657	185	877	405	1096	625	1316	845	1536	1065
	S1C	1417	828	-	-	-	-	-	-	-	-	931	342	1151	562	1370	782
XL426	S40	831	498	784	452	1105	772	1425	1093	1746	1413	2067	1734	2387	2055	2708	2375
	S60	1246	748	-	-	855	357	1176	677	1497	998	1817	1319	2138	1639	2459	1960
	S80	1662	997	-	-	-	-	927	262	1247	583	1568	903	1889	1224	2209	1544
	S1C	2077	1246	-	-	-	-	-	-	-	-	1319	488	1639	808	1960	1129
XL681 SR	S40	1337	802	1289	754	1811	1277	2334	1799	2856	2322	3379	2844	3902	3367	4424	3890
	S60	2005	1203	-	-	1410	608	1933	1131	2455	1654	2978	2176	3501	2699	4023	3221
	S80	2673	1604	-	-	-	-	1532	463	2055	985	2577	1508	3100	2031	3622	2553
	S1C	3341	2005	-	-	-	-	-	-	-	-	2176	840	2699	1362	3221	1885
XL1126	S40	2189	1312	2188	1311	3063	2186	3938	3061	4813	3936	5688	4811	6563	5686	7438	6561
	S60	3283	1968	-	-	2407	1092	3282	1967	4157	2842	5032	3717	5907	4592	6782	5467
	S80	4377	2624	-	-	-	-	2626	873	3501	1748	4376	2623	5251	3498	6126	4373
	S1C	5472	3280	-	-	-	-	-	-	-	-	3720	1528	4595	2403	5470	3278
XL1371	S40	2694	1616	2659	1581	3728	2649	4797	3718	5865	4787	6934	5856	8003	6924	9072	7993
	S60	4041	2424	-	-	2920	1302	3989	2371	5057	3440	6126	4509	7195	5577	8264	6646
	S80	5389	3232	-	-	-	-	3181	1024	4249	2093	5318	3161	6387	4230	7456	5299
	S1C	6736	4040	-	-	-	-	-	-	-	-	4510	1814	5579	2883	6648	3952
XL2586	S40	5084	3051	5024	2991	7043	5010	9062	7028	11081	9047	13099	11066	15118	13085	17137	15103
	S60	7626	4576	-	-	5518	2468	7537	4486	9555	6505	11574	8524	13593	10543	15612	12561
	S80	10168	6101	-	-	-	-	6011	1944	8030	3963	10049	5982	12068	8001	14086	10019
	S1C	12710	7626	-	-	-	-	-	-	-	-	8524	3440	10542	5459	12561	7477
XL4581	S40	8996	5398	8852	5254	12415	8816	15977	12379	19540	15941	23102	19504	26665	23066	30227	26629
	S60	13495	8097	-	-	9716	4318	13278	7880	16841	11443	20403	15005	23966	18568	27528	22130
	S80	17993	10795	-	-	-	-	10580	3382	14142	6945	17705	10507	21267	14070	24830	17632
	S1C	22491	13494	-	-	-	-	-	-	-	-	15006	6009	18568	9571	22131	13134

Note: Actuator torques are guaranteed minimum torque values. Hytork recommends that the valve manufacturer supply the maximum required torque values (Including any adjustments or suggested safety factors for valve service conditions or application). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (Counter Clock Wise or Clock Wise) these maximum requirements occur.

Maximum working pressure:
Models **XL 26 - 2856 120 psig**
XL 4581 100 psig

Hytork XL Spring return actuators can be equipped with the additional spring sets S50, S70 and S90 for more accurate sizing. Please download data sheet D67 from www.Hytork.com for the torque data, belonging to these additional spring sets.

S1C Spring Return

For all fail closed butterfly valves and other spring return applications where 100 psig air is available, Hytork's optional S1C Spring Modules will often permit the selection of a smaller Hytork Actuator. Both space and cost savings can be achieved.

DA

Double Acting Actuators Torque Data (Pressures in psig and torques in inch. pounds.)

Torques from air stroke (ins. lbs.) @ given operating air pressure (psig)

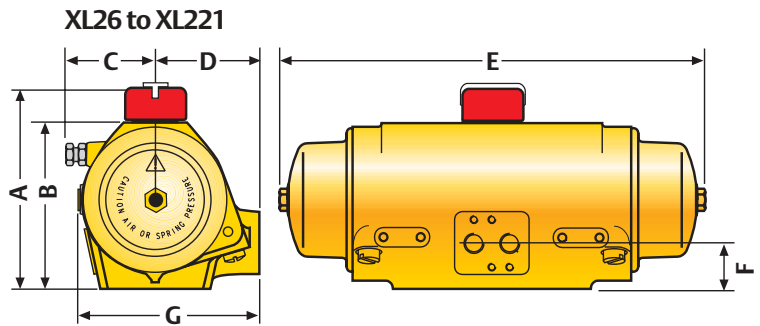
Model	40 Psi	50 Psi	60 Psi	70 Psi	80 Psi	90 Psi	100 Psi	120 Psi
XL26	83	104	125	146	167	188	209	250
XL71	209	261	313	365	417	469	521	626
XL131	392	490	589	687	785	883	981	1177
XL186	528	660	791	923	1055	1187	1319	1583
XL221	735	919	1103	1286	1470	1654	1838	2205
XL281	879	1099	1319	1539	1759	1979	2199	2638
XL426	1282	1603	1924	2244	2565	2886	3206	3847
XL681	2090	2613	3136	3658	4181	4704	5226	6271
XL1126	3500	4375	5250	6125	7000	7875	8750	10500
XL1371	4275	5344	6412	7481	8550	9619	10687	12825
XL2586	8075	10094	12112	14131	16150	18169	20188	24225
XL4581	14250	17812	21375	24938	28500	32063	35625	

Actuator torques are guaranteed minimum torque values. Hytork recommends that the valve manufacturer supply the maximum required torque values (including any adjustments or suggested safety factors for valve service conditions or application). Additionally, the valve manufacturer must identify at which position(s) and direction(s) of rotation (Counter Clock Wise or Clock Wise) these maximum requirements occur.

Envelope Dimensions XL26 to XL221

Spring Return and Double Acting Units

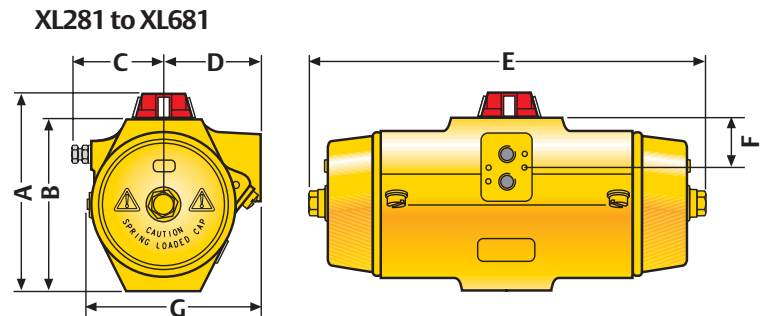
Model	XL26	XL71	XL131	XL186	XL221
Dim in inches. A	3.82"	4.53"	5.16"	5.39"	6.01"
B	3.03"	3.74"	4.37"	4.61"	5.24"
C	1.77"	2.24"	2.52"	2.80"	3.07"
D	2.05"	2.36"	2.76"	2.83"	3.19"
E	6.50"	8.73"	11.54"	13.06"	13.77"
F	1.14"	1.14"	1.18"	1.18"	1.30"
G	3.39"	4.02"	4.76"	4.96"	5.55"



Envelope Dimensions XL281 to XL681

Spring Return and Double Acting Actuators

Model	XL281	XL426	XL681
Dim in inches. A	6.93"	6.65"	8.03"
B	5.98"	5.79"	7.09"
C	3.19"	3.39"	3.70"
D	3.39"	3.46"	3.78"
E	13.70"	18.19"	22.91"
F	1.73"	1.65"	2.05"
G	6.02"	6.18"	6.85"

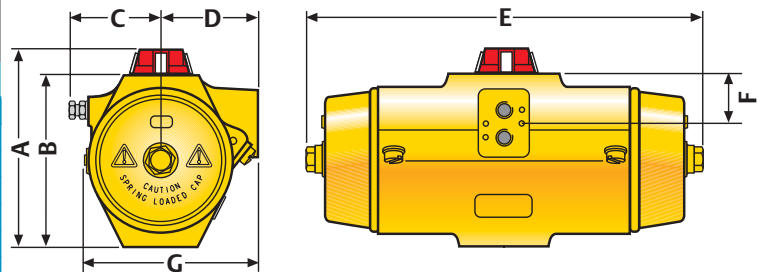


Envelope Dimensions XL1126 to XL4581

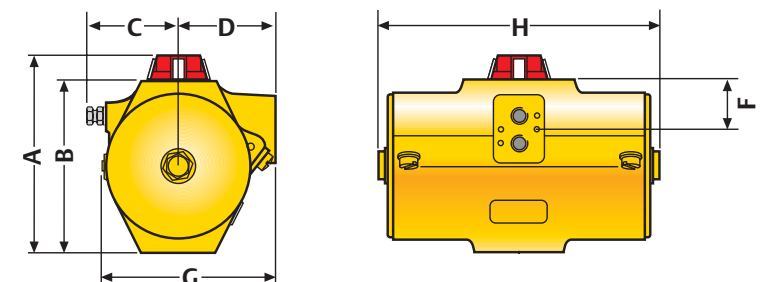
Spring Return and Double Acting Actuators

Model	XL1126	XL1371	XL2586	XL4581
Dim in inches. A	9.21"	9.72"	11.50"	15.28"
B	7.87"	8.46"	10.24"	14.02"
C	5.20"	5.08"	N/A	N/A
D	4.25"	4.57"	5.16"	6.30"
E	25.51"	26.34"	33.94"	34.80"
F	2.20"	1.97"	1.93"	2.99"
G	7.83"	8.50"	9.96"	12.64"
H	15.59"	16.02"	18.39"	20.28"

Spring Return Actuators

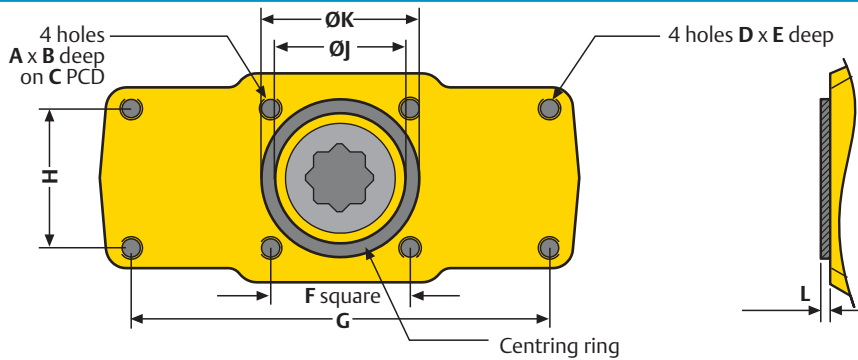


Double Acting Actuators



ISO 5211 Standard Drive & Bottom Mounting Details XL26 to XL4581
ISO 5211 Bottom Mounting Details

Model	ISO	A unc	B	C	D unc	E	F	G	H	ØJ	ØK	L
XL26	F05	1/4"	0.35"	1.97"	1/4"	0.35"	1.39"	3.54"	1.39"	1.09"	1.376/1.375"	0.12"
XL71	F07	5/16"	0.47"	2.76"	5/16"	0.47"	1.95"	4.49"	1.95"	1.81"	2.164/2.162"	0.12"
XL131	F07	5/16"	0.47"	2.76"	5/16"	0.47"	1.95"	4.49"	1.95"	1.81"	2.164/2.162"	0.12"
XL186	F07	5/16"	0.47"	2.76"	5/16"	0.47"	1.95"	4.49"	1.95"	1.81"	2.164/2.162"	0.12"
XL221	F07	5/16"	0.47"	2.76"	5/16"	0.47"	1.95"	4.49"	1.95"	1.81"	2.164/2.162"	0.12"

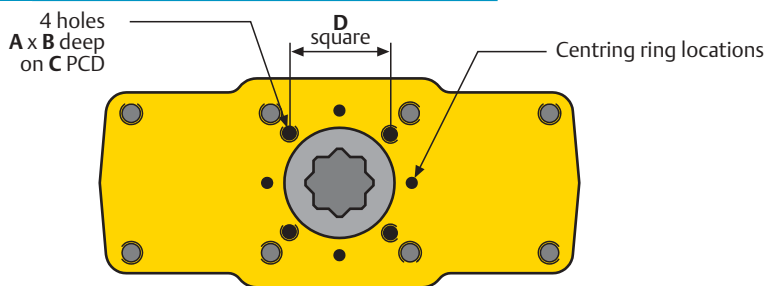


Models shown with optional Centring Ring fitted

Models with additional ISO 5211 Bottom Mounting Details

Model	ISO	A unc	B	C	D
XL26	F03	No 10 x 24	0.32"	1.42"	1.00"
XL71	F05	1/4"	0.35"	1.97"	1.39"
XL131	F05	1/4"	0.35"	1.97"	1.39"

Models shown with optional Centring Ring removed to reveal additional ISO mounting holes

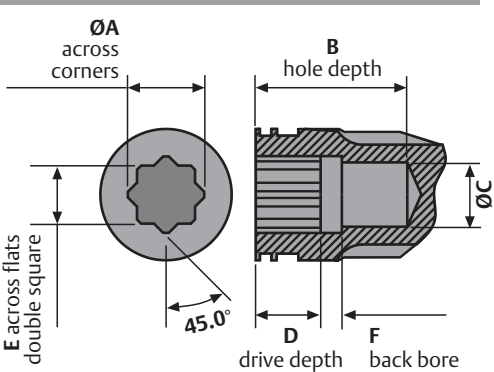


ISO 5211 Bottom Mounting Details

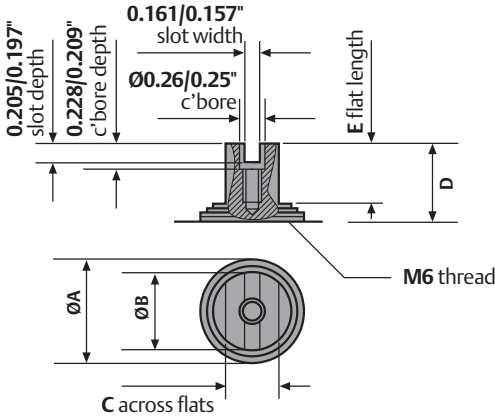
Model	ISO	A unc	B	C	D
XL281	F07	5/16"	0.47"	2.76"	1.95"
XL426	F10	3/8"	0.59"	4.02"	2.84"
XL681	F10	3/8"	0.59"	4.02"	2.84"
XL1126	F12	1/2"	0.71"	4.92"	3.48"
XL1371	F12	1/2"	0.71"	4.92"	3.48"
XL2586	F16	3/4"	0.79"	6.50"	4.59"
XL4581	F16	3/4"	0.98"	6.50"	4.59"

ISO 5211 Standard Drive Details

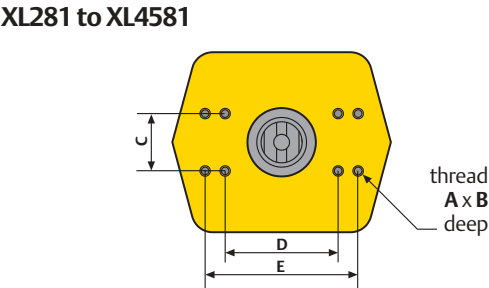
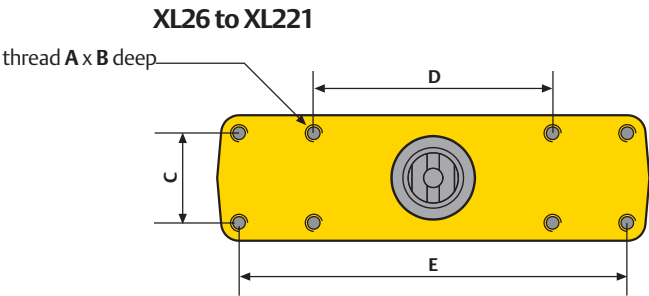
Model	ISO	A	B	ØC	D	E	F
XL26	F05	0.71"	1.1"	0.6"	0.630"	0.551/0.555"	0.09"
XL71	F07	0.87"	1.8"	0.7"	0.748"	0.669/0.673"	0.09"
XL131	F07	0.87"	1.8"	0.7"	0.748"	0.669/0.673"	0.09"
XL186	F07	0.87"	1.8"	0.7"	0.748"	0.669/0.673"	0.09"
XL221	F07	0.87"	1.8"	0.7"	0.748"	0.669/0.673"	0.09"
XL281	F07	0.87"	1.8"	0.7"	0.748"	0.669/0.673"	0.09"
XL426	F10	1.11"	2.3"	0.9"	0.945"	0.866/0.871"	1.18"
XL681	F10	1.11"	2.3"	0.9"	0.945"	0.866/0.871"	1.18"
XL1126	F12	1.43"	2.8"	1.1"	1.142"	1.063/1.068"	1.00"
XL1371	F12	1.43"	2.8"	1.1"	1.142"	1.063/1.068"	1.00"
XL2586	F16	2.37"	3.9"	1.9"	1.890"	1.811/1.817"	1.38"
XL4581	F16	2.37"	3.9"	1.9"	1.890"	1.811/1.817"	1.38"



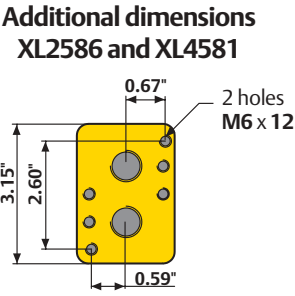
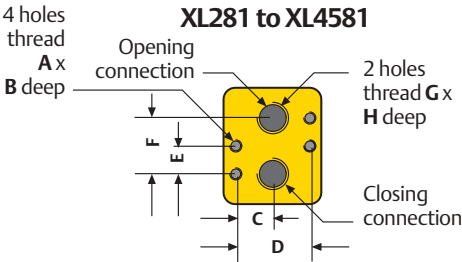
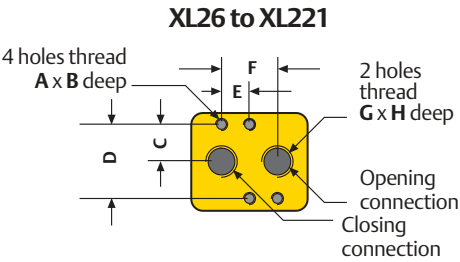
VDI/VDE Pinion Top Details					
Model	ØA	ØB	C	D	E
XL26	0.969/0.965"	0.653/0.650"	0.551/0.545"	0.79/0.78"	0.645/0.630"
XL71	0.969/0.965"	0.653/0.650"	0.551/0.545"	0.79/0.78"	0.645/0.630"
XL131	0.969/0.965"	0.653/0.650"	0.551/0.545"	0.79/0.78"	0.645/0.630"
XL186	1.20/1.18"	0.653/0.650"	0.551/0.545"	0.79/0.78"	0.540/0.523"
XL221	1.20/1.18"	0.653/0.650"	0.551/0.545"	0.79/0.78"	0.540/0.523"
XL281	1.75/1.73"	0.925/0.917"	0.670/0.663"	0.79/0.78"	0.496/0.489"
XL426	2.54/2.52"	1.713/1.705"	0.866/0.860"	0.79/0.78"	0.496/0.489"
XL681	2.54/2.52"	1.713/1.705"	0.866/0.860"	0.79/0.78"	0.496/0.489"
XL1126	3.56/3.54"	2.642/2.634"	1.417/1.411"	1.185/1.177"	0.712/0.705"
XL1371	3.56/3.54"	2.642/2.634"	1.417/1.411"	1.185/1.177"	0.712/0.705"
XL2586	3.76/3.74"	2.815/2.807"	1.575/1.569"	1.185/1.177"	0.712/0.705"
XL4581	3.76/3.74"	2.815/2.807"	1.575/1.569"	1.185/1.177"	0.712/0.705"



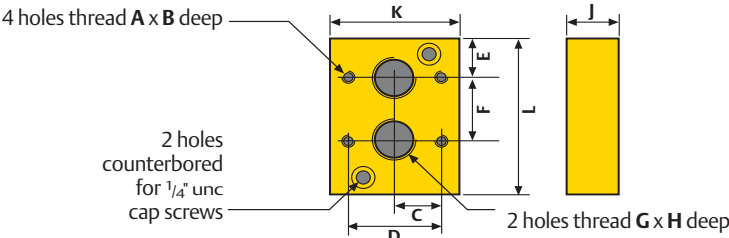
VDI/VDE Top Mounting Details					
Model	A unc	B	C	D	E
XL26	No10 x 24	0.24"	1.18"	3.15"	-
XL71	No10 x 24	0.24"	1.18"	3.15"	-
XL131	No10 x 24	0.24"	1.18"	3.15"	5.12"
XL186	No10 x 24	0.24"	1.18"	3.15"	5.12"
XL221	No10 x 24	0.24"	1.18"	3.15"	5.12"
XL281	No10 x 24	0.315"	1.18"	3.15"	5.12"
XL 426	No10 x 24	0.315"	1.18"	3.15"	5.12"
XL 681	No10 x 24	0.315"	1.18"	3.15"	5.12"
XL 1126	No10 x 24	0.315"	1.18"	5.12"	-
XL 1371	No10 x 24	0.315"	1.18"	5.12"	-
XL 2586	No10 x 24	0.315"	1.18"	5.12"	-
XL 4581	No10 x 24	0.315"	1.18"	5.12"	-



Namur Solenoid Mounting Details								
Model	A unc	B	C	D	E	F	G	H
XL26 to XL4581	No10 x 24	0.315"	0.63"	1.26"	0.47"	0.94"	1/4" NPT	0.47"



Option for overporting 1/2" NPT											
Model	A unc	B	C	D	E	F	G	H	J	K	L
XL2586 to XL4581	1/4"	0.315"	0.90"	1.80"	0.80"	1.30"	1/2" NPT	0.55"	1.0"	2.5"	3.25"



Air Consumption XL26 to XL4581								
OUTWARD stroke Consumption per stroke (in ³)/pressure in PSI								
Model	40	50	60	70	80	90	100	120
XL26	262	314	366	418	470	522	574	678
XL71	659	790	921	1052	1183	1314	1445	1707
XL131	1264	1515	1767	2018	2269	2521	2772	3275
XL186	1679	2013	2348	2682	3017	3351	3686	4355
XL221	2267	2721	3175	3629	4083	4537	4992	5900
XL281	2804	3363	3923	4483	5043	5602	6162	7281
XL426	3981	4764	5546	6329	7111	7894	8677	10242
XL681	6288	7518	8748	9978	11208	12438	13669	16129
XL1126	10494	12549	14604	16659	18713	20768	22823	26932
XL1371	12746	15243	17740	20238	22735	25233	27730	32725
XL2586	23288	27810	32331	36853	41375	45896	50418	59461
XL4581	39278	46796	54315	61834	69352	76871	84389	

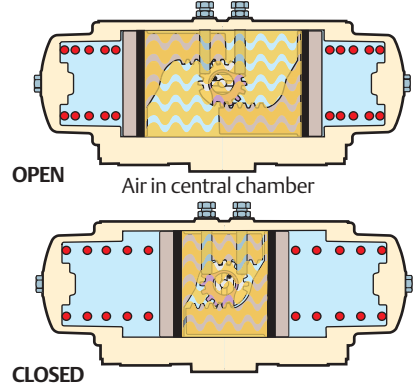
INWARD stroke Consumption per stroke (in ³)/pressure in PSI								
Model	40	50	60	70	80	90	100	120
XL26	373	453	532	612	691	771	851	1010
XL71	1003	1220	1437	1655	1872	2089	2306	2740
XL131	2016	2455	2894	3333	3773	4212	4651	5530
XL186	2635	3209	3782	4356	4930	5503	6077	7224
XL221	3590	4374	5159	5944	6729	7514	8299	9868
XL281	2903	3487	4071	4656	5240	5825	6409	7578
XL426	3805	4544	5282	6021	6759	7498	8237	9714
XL681	6526	7816	9106	10395	11685	12975	14265	16844
XL1126	10463	12510	14557	16604	18651	20698	22745	26839
XL1371	12608	15071	17535	19998	22461	24924	27387	32313
XL2582	22348	26635	30921	35208	39495	43781	48068	56641
XL4581	42266	50531	58797	67063	75328	83594	91859	

Actuator Weights XL26 to XL4581			
Double Acting		Spring Return with S80 Springs	
	Kg	Lbs	
XL26	1.39	3.06	1.53
XL71	2.39	5.27	2.78
XL131	3.90	8.60	4.76
XL186	4.77	10.52	5.45
XL221	6.19	13.65	7.76
XL281	7.02	15.47	9.90
XL426	7.30	16.10	12.50
XL681	8.80	19.40	22.50
XL1126	22.00	48.50	36.00
XL1371	27.00	59.52	46.60
XL2586	46.00	101.41	79.00
XL4581	83.00	182.98	142.00



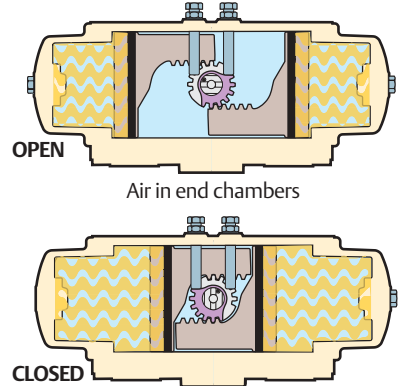
Free Air Volume at Atmospheric Pressure XL26 to XL4581			
Double AND Single Acting			
Central Chamber Volumes (in ³)			
Model	Open	Closed	Displaced
XL26	5.2	1.51	3.69
XL71	13.1	3.92	9.18
XL131	25.13	7.53	17.6
XL186	33.45	10.24	23.21
XL221	45.41	14.76	30.65
XL281	55.97	17.53	38.44
XL426	78.26	20.36	57.9
XL681	123.01	29.94	93.07
XL1126	205.48	50.66	154.82
XL1371	249.74	62.22	187.52
XL2586	452.16	98.19	353.97
XL4581	751.86	125.59	626.27

Spring Return & Double Acting Actuators



Double Acting ONLY			
End Cap Chamber Volumes (in ³)			
Model	Open	Closed	Displaced
XL26	4.28	7.97	3.69
XL71	12.53	21.71	9.18
XL131	26.32	43.92	17.6
XL186	34.15	57.36	23.21
XL221	47.83	78.48	30.65
XL281	20	58.44	38.44
XL426	15.96	73.86	57.9
XL681	35.9	128.97	93.07
XL1126	49.88	204.7	154.82
XL1371	58.79	246.31	187.52
XL2586	74.69	428.66	353.97
XL4581	200.29	826.56	626.27

Double Acting Actuators



(Time in seconds)

Actuator Operating Speeds XL26 to XL4581 (Operating Pressure = 80PSI)

Model	Double Acting		Spring Return with S80 Springs	
	Opening Stroke	Closing Stroke	Opening Stroke	Closing Stroke
XL26	0.01	0.01	0.05	0.02
XL71	0.03	0.03	0.09	0.05
XL131	0.03	0.04	0.15	0.09
XL186	0.05	0.06	0.19	0.12
XL221	0.06	0.08	0.24	0.15
XL281	0.20	0.10	0.10	0.20
XL426	0.20	0.30	0.30	0.50
XL681	0.40	0.60	0.40	1.20
XL1126	0.70	0.60	0.50	0.70
XL1371	0.80	0.70	0.70	1.00
XL2586	1.50	1.20	1.20	1.50
XL4581	2.00	2.90	2.20	3.90



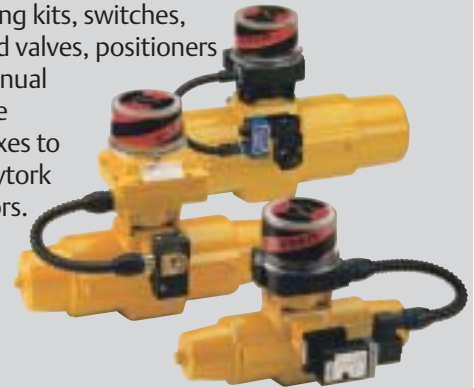
HYTORK products and services

In addition to the XL actuator range Hytork can also offer valve sizing, valve package assembly and engineered solutions to suit all your quarter turn valve automation requirements, available at our Valve Automation Centers.

For details on any of these products and other services please contact HYTORK or your local distributor, or visit our website.



Hytork also manufacture a range of accessories including VDI/VDE engineered accessory mounting kits, switches, solenoid valves, positioners and manual override gearboxes to fit all Hytork actuators.



The XL Series of rack and pinion actuators has twelve (12) sizes in Double acting and Spring return versions with torque outputs up to 35,000 inch.lbs Double acting.



SAFEMOUNT

Mounting kits for all types and makes of quarter turn valves are also designed and manufactured by HYTORK.

Emerson Process Management Valve Automation Division Hytork

6 Bracken Hill
Southwest Industrial Estate
Peterlee, Co. Durham
SR8 2LS
United Kingdom
T: [+44] (0191) 518 00 20
F: [+44] (0191) 518 00 32
E: info.Hytork@EmersonProcess.com

www.hytork.com

Emerson Process Management Valve Automation Division Hytork

9009 King Palm Drive
Tampa
Florida
33619
United States of America
T: [+1] (813) 630 22 55
F: [+1] (813) 630 94 49
E: info.Hytork.USA@EmersonProcess.com

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