

# XL Pneumatic Actuators

High on Quality... High on Reliability... High on Service



**HYTORK™**

  
**EMERSON™**



## Hytork –High on Quality

The XL actuator range of actuators is the result of Hytork's 30-plus years of field-proven experience. The actuators have numerous features that add reliability. Its rugged heavy duty body is made from a high strength LM25 aluminium casting designed to prevent damage from dents, shock or fatigue. The XL is modular in design and is field convertible from double-acting to spring-return configurations and vice versa.

### 1 NAMUR Mounting

This mounting configuration allows standardization of mounting hardware for a wide range of accessories.

### 2 CERAMIGARD

The spring chambers of spring return actuators often have an open connection to the environment. To protect the bore and other internals against wear and corrosion, all XL actuator bodies have a hard corrosion resistant ceramic-like finish of Di-Aluminium Tri-oxide ( $Al_2O_3$ ).

### 3 Large Internal Air Passages

This feature maximizes valve operating speeds and adds reliability by reducing potential blockage.

### 4 DURASTRIP Bearings

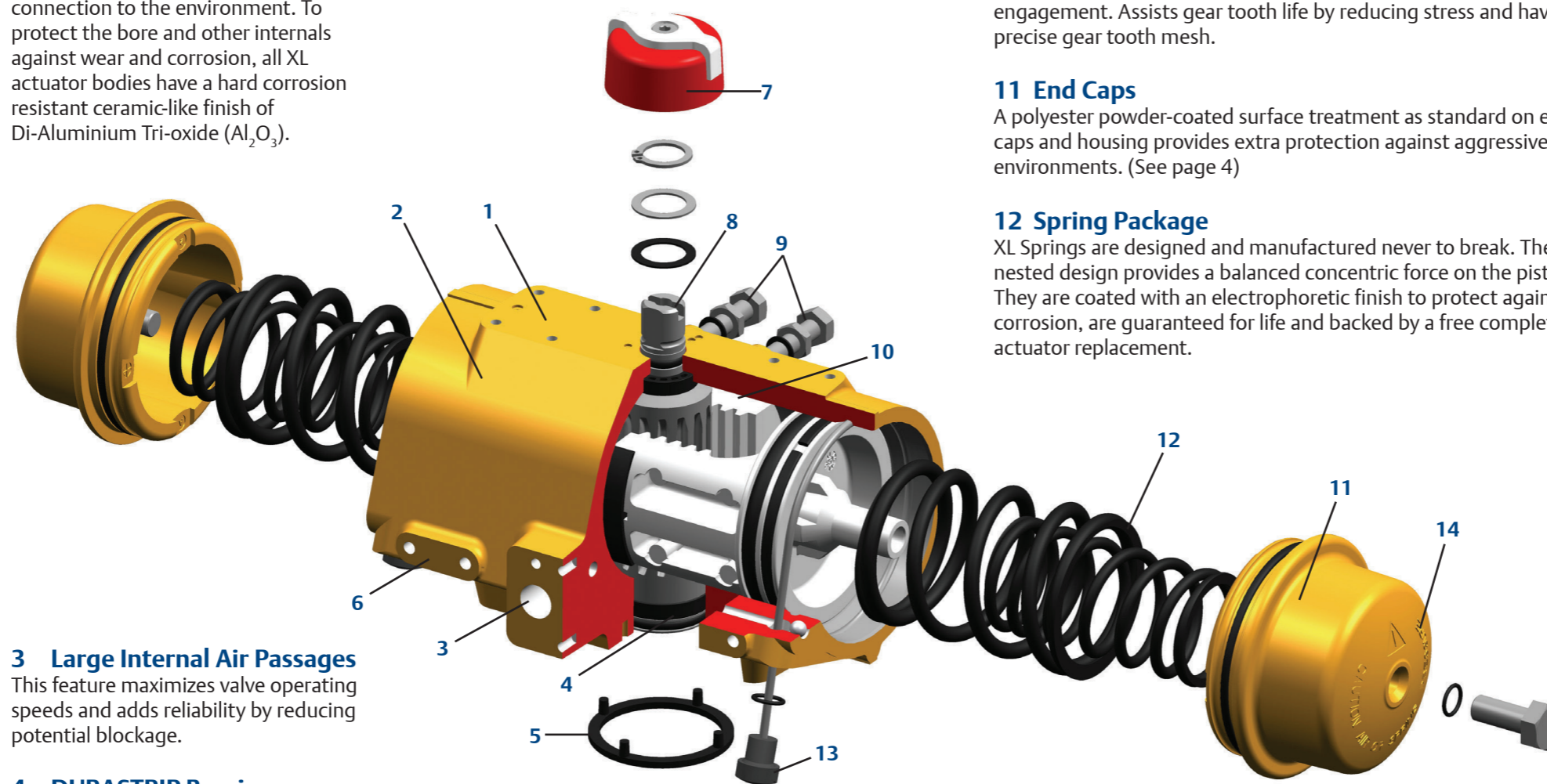
All moving parts are protected by permanently lubricated and long-lasting DURASTRIP bearings. It reduces friction and leads to longer life.

### 5 ISO 5211 Mounting Pad

Hytork XL actuator pinion drives are manufactured to ISO 5211 with a star drive to provide extra flexibility and simplicity for direct mounting to a valve.

### 6 Accessory Mounting Holes

On the smaller sizes there are extra mounting holes near NAMUR solenoid pad to facilitate filter/regulator bracket installation.



## Hytork –High on Reliability

### 7 Visual Position Indicator

The visual position indicator is designed for indication at a glance and can easily be converted from across-line to in-line indication.

### 8 Corrosion Resistant Pinion

Plated with cobalt zinc, the steel pinion is protected from corrosion. Actuator has experienced a salt spray test up to 1,000 hours. The pinion also features a unique stop design.

### 9 Bi-Directional Travel Stops

XL actuators have two travel stops. (See page 4)

### 10 Rack and Pinion Design

Extra large rack and pinion tooth design promotes full tooth engagement. Assists gear tooth life by reducing stress and having precise gear tooth mesh.

### 11 End Caps

A polyester powder-coated surface treatment as standard on end caps and housing provides extra protection against aggressive environments. (See page 4)

### 12 Spring Package

XL Springs are designed and manufactured never to break. The nested design provides a balanced concentric force on the pistons. They are coated with an electrophoretic finish to protect against corrosion, are guaranteed for life and backed by a free complete actuator replacement.

### 13 SAFEKEY System

The patented SAFEKEY method of end cap assembly to the actuator eliminates dangerous disassembly. (See page 4)

### 14 Cast-in identification

The unique cast body and end caps allow cast-in identification model numbers, port identifications and safety instructions and are therefore permanently readable. No lost identification due to weathering or paint.

## Superior design and construction

The XL series is engineered and manufactured to the highest quality and tolerance standards. Site proven DURASTRIP bearings protect all moving parts for guaranteed high cycle life. Unbreakable Springs, with a unique lifetime warranty, assure Fail Safe action when it is needed. **Increase process safety and plant uptime.**

## Easy maintenance

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. **Lower maintenance costs.**

## Safety first

Hytork XL actuators comply to the Hytork XL actuators comply to the European safety and health requirements as required by the ATEX, PED and Machine Directives. Rugged, heavy duty body casting, patented SAFEKEY, unbreakable springs and HYTORK'S safety retractor rod system for disassembly of spring return actuators. All these features provide **increased personnel and plant safety.** Hytork XL actuators are only intended for use in large-scale fixed installations excluded from the scope of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2).

## Wide torque range

Hytork's 12 actuator sizes cover a wide torque range (19 to 3232 Nm @ 5.5 Barg; 167 to 28500 in/.lbs @ 80 PSIG). With up to 7 spring sets per actuator size, this allows the correct selection of the actuator size you need, all to **reduce procurement costs.**

## Additional Hytork XL features

All the Hytork XL features provide:

**Reduced capital cost**

**Reduced installation cost**

**Reduced maintenance cost**

**Reduced assembly cost**

**Increased process safety**

**Increased plant uptime**

**Increased plant and operator safety**

- Reduce capital cost
- Reduce installation cost
- Reduce maintenance cost
- Increase plant uptime
- Increased plant and operator safety

“Hytork has combined quality with reliability and economy in a single package”

“Heavy duty cast construction provides maximum protection for harsh service”

“Only three moving parts make operation highly dependable”

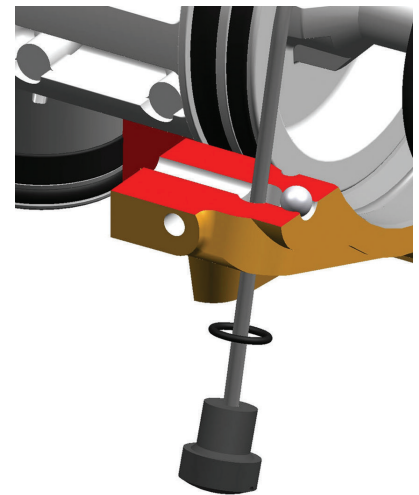


# Hytork –High on Service

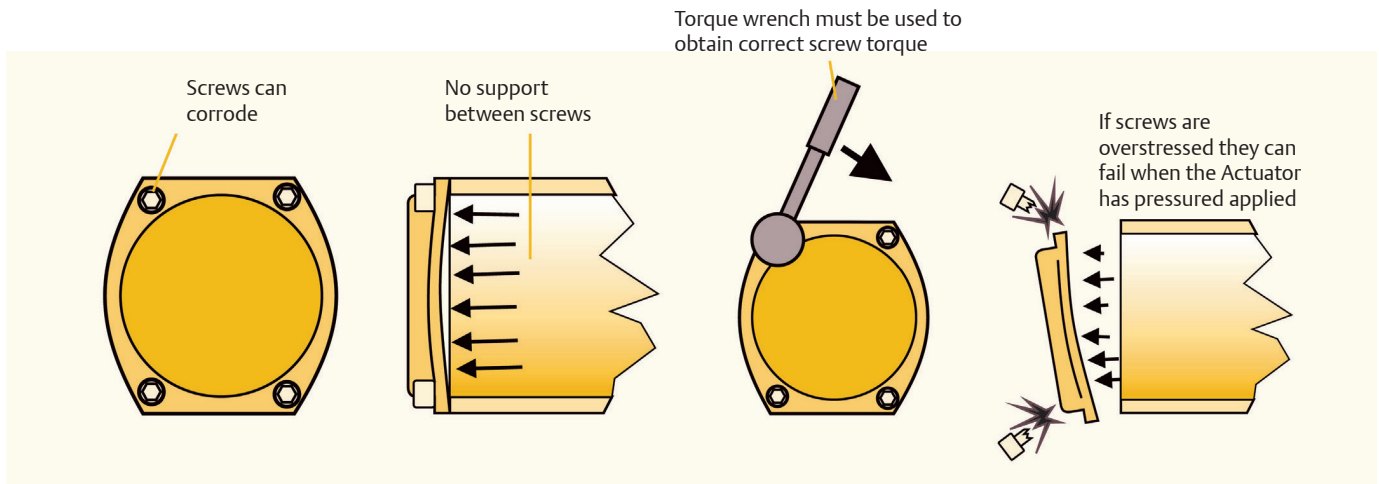
## SAFEKEY System

The SAFEKEY system (patented) uses a flexible stainless steel key in an internal machined keyway. Completely sealed with o-rings to prevent external contamination, the SAFEKEY system eliminates stress concentrations caused by point loading. It is stronger than conventional bolting and is impossible to remove when pressurized or with springs under tension. It is a proven means of eliminating potentially dangerous disassembly.

With the SAFEKEY method, cap screws are not needed to retain the end caps to the actuator body. With other methods, galling can occur and fasteners can break. Competitor models often use Helicoils™ that can turnout or rip out if over-torqued. SAFEKEY is yet another Hytork advantage.

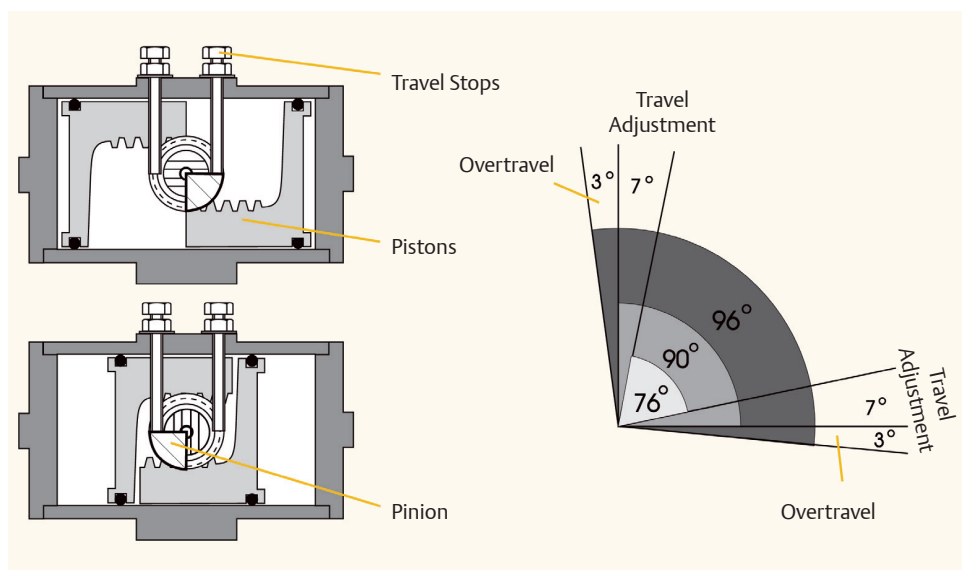


### SAFEKEY System eliminates conventional screws and tierods.



## Bi-Directional Travel Stops

Hytork XL actuators are provided with bi-directional travel stops. This feature provides rotational adjustment on the actuator in both travel directions. The stops provide precise travel control. This is particularly important when used with special duty, high precision valves, such as metal seated or high performance butterfly valves needing exact rotation stopping. Models XL2586 and XL4581 have a bottom mounted travel stop plate.







## Valvetop T-Series

- **Rugged enclosures for demanding environments**
  - NEMA 4, 4X/IP66/67
  - UL Certification C1 Div 1 Grps C,D
  - TVA, Composite Resin
  - TXP, Aluminium
  - TXS, Stainless Steel
- **Stainless Steel Shaft & Fasteners**
- **Variety of integral pilot valves available**
  - Low-Power Solenoid
  - Single Coil
  - High flow rate of 1.0 Cv
  - Integrally mounted for extra protection
- **Low-profile impact resistant poly carbonate visual display, available with intuitive colors and customizable to your application**
- **Suitable for extreme operating temperatures from -50°C to 80°C (-58°F to 176°F)**

## Valvetop D-Series

- **Rugged enclosures for demanding environments**
  - NEMA Type 4, 4X, 7 plus IP66/67
  - DXP, Tropicalized Aluminium
  - DXS, 316L Stainless Steel
  - DXR, Composite Resin
- **Stainless Steel Shaft & Fasteners**
- **Variety of integral pilot valves available**
  - Aluminium, 304, 316 Stainless Steel
  - Low-Power Solenoid or Ultra-Low Power Piezo
  - Single or Dual Coil
  - High flow rates of 1.2 Cv or 3.0 Cv
- **Impact resistant poly carbonate visual display, available with intuitive colors and customizable to your application**
- **Suitable for extreme operating temperatures from -50°C to 80°C (-58°F to 176°F)**

## Value-Added Accessories

### HYTORK XL with Valvetop™ Discrete Valve Controllers

Valvetop Discrete Valve Controllers from TopWorx™ are engineered to provide superior performance in the most demanding conditions. With a variety of bus networking and sensor options such as FOUNDATION™ fieldbus, DeviceNet, AS-interface, Profibus, HART, GO Switch, and inductive proximity and mechanical switches, Valvetop is flexible enough for any valve application.

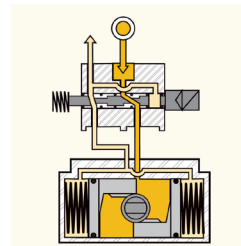
Each Valvetop model carries global certifications such as IECEX, ATEX, UL, CSA, NEPSI, KOSHA, InMetro, and GOST, allowing them to be used anywhere in the world.

### CATS System on Hytork Solenoid Valves

Hytork's solenoid valve with CATS system (Clean Air To Springs) prevents potentially contaminated and corrosive ambient air from entering the spring cylinders of a spring-return unit during the spring stroke. This feature maximizes actuator life and reduces maintenance costs.

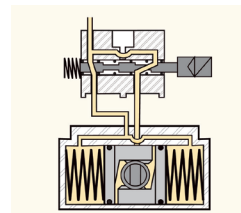
#### *“CATS” Directional Control Valve fitted to a Spring Return Actuator*

Pistons are pushed apart by air pressure forcing air from the spring chambers to exhaust to the atmosphere.



**Coil Energized**

Exhausting air from between the pistons is forced into the spring chambers preventing the atmospheric air from entering the actuator.



**Coil de-energized**



# XL Commando for Corrosion Resistance



The XL Commando range solves aggressive corrosion problems. It works where stainless doesn't. A proprietary heat treatment with CG941 fluoropolymer impregnates the body making it impervious to corrosion. The steel pinion is also fluoropolymer coated. Field service has shown that the Commando actuators outperform other actuators in corrosive environments.

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