

# BI-TORQ AL-SERIES PNEUMATIC ACTUATOR FEATURES

## ROTATION ADJUSTMENT

Standard adjustment is  $\pm 5^\circ$  in both the open position through easily accessible external adjustment screws.

## ACTUATOR BODY

The aluminum extrusion is hard anodized and polyester powder coated to protect against wear and corrosion while reducing piston friction to the absolute minimum. Other treatments are available as well.

## END CAPS

Epoxy coated die cast aluminum end caps provide maximum resistance against potentially corrosive elements. Optional TFE or nickel plated end caps are available.

## HEAVY DUTY SPRINGS

True-rated cartridge spring sets create absolute confidence in all fail safe spring return models. The high tensile steel springs are coated with zinc phosphate for corrosion resistance. Springs can be safely and quickly modified into sets ranging from 40 pounds to 80 pounds. Full length end cap bolts and cartridges allow for easy and safe disassembly.

## INDICATOR

A position indicator is standard on the BI-52 through BI-125 models. A high visibility open-closed dome indicator is available as an option on all BI-TORQ actuators.



## PINION

The hardened nickel alloy pinion is precision ground and then nickel plated in order to reduce friction, provide maximum wear resistance, and protect against corrosion under severe conditions. An optional stainless steel pinion is available for corrosive environments.

## PINION SEALS

NBR-70 rubber pinion seals provide trouble-free operation at standard temperature ranges. Viton® and HNBR seals are available to high or low temperature extremes.

## PISTON GUIDES

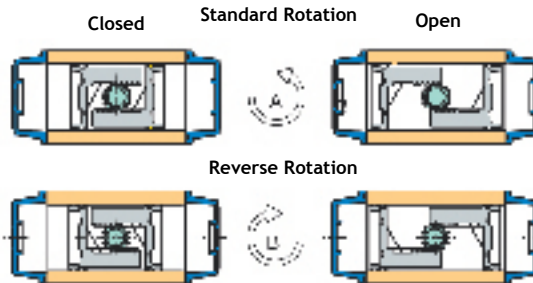
Large contact areas and self-lubricating, highly-durable materials provide high thrust stability with minimum friction.

## PISTONS

The precisely-balanced die cast aluminum pistons are fitted with high-quality rings and guides, resulting in high ratios of output torque vs. input air pressure. The twin rack and piston design creates a constant torque output on all models.

## ROTATION VARIATIONS

All BI-TORQ® actuators use a counterclockwise rotation to open and a clockwise rotation to close. The piston racks also can be rotated to achieve a fail open (counterclockwise to close) rotation.



## DESIGN STANDARDS

The BI-TORQ® AL-series pneumatic actuator is manufactured to the latest ISO5211, DIN3337 and NAMUR standards to adhere to industry-wide specifications. The actuator also can be customized to suit a wide variety of applications.

## OPTIONS FOR CORROSIVE ENVIRONMENTS

**BODY:** nickel plated or double epoxy coated bodies available upon request  
**PINION:** stainless steel  
**END CAPS:** nickel plated  
 ALL STAINLESS STEEL ACTUATORS ALSO AVAILABLE. PLEASE CONTACT OUR SALES STAFF FOR INFORMATION.

## SPRING COMBINATION OPTIONS



SPRING SET 02  
(4 SPRINGS TOTAL)



SPRING SET 03  
(6 SPRINGS TOTAL)



SPRING SET 06  
(12 SPRINGS TOTAL)



SPRING SET 04  
(8 SPRINGS TOTAL)



SPRING SET 05  
(10 SPRINGS TOTAL)

### SPRING SETS

All BI-TORQ® AL series (aluminum) pneumatic actuators come standard with a complete cartridge spring set (6 springs per side) sized for 80 PSI supply pressure unless otherwise specified. Actuators can be configured for different air supplies by removing springs from the end caps.

**IMPORTANT:** Springs must be arranged in a symmetrical manner (see arrangements to the left) so that side load does not occur between the pistons and the actuator body.

### REVERSE OPERATION

All BI-TORQ® actuators are set for a standard CW to close, CCW to open rotation. The action may be reversed by rotating the pistons 180°.

**CAUTION:** Refer to BI-TORQ® operation and maintenance instructions before disassembly and removal of springs.