

Designed for **Control Applications**

QTRCO Rack & Gear™ actuators are designed to greatly reduce friction and to provide exceptional throttling control



The Leader in Actuator Technology

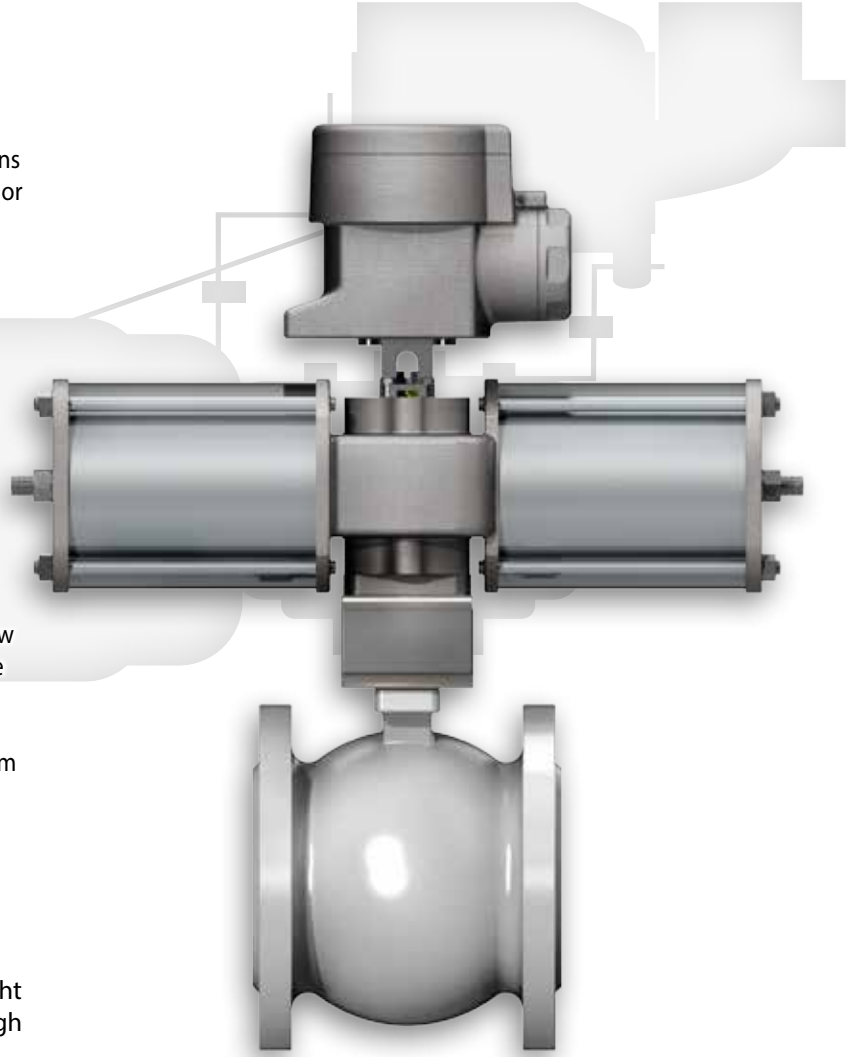
Diaphragm Actuators are excellent for control applications but are large, heavy, and are not ideally suited for high vibration or corrosive applications.

Rack and Pinion Actuators have excessive internal friction, consume excessive volumes of air and are subject to failure from corrosion and shaft seal wear, thus many users disallow rack and pinion actuators for throttling applications.

The Solution:

QTRCO Rack & Gear™ Actuators have extremely low internal friction, consume minimal air volume, are able to handle the most severe vibration and are available in stainless steel for complete protection against corrosion. Rack & Gear™ actuators provide throttling capabilities consistent with those of diaphragm actuators with a high level of reliability.

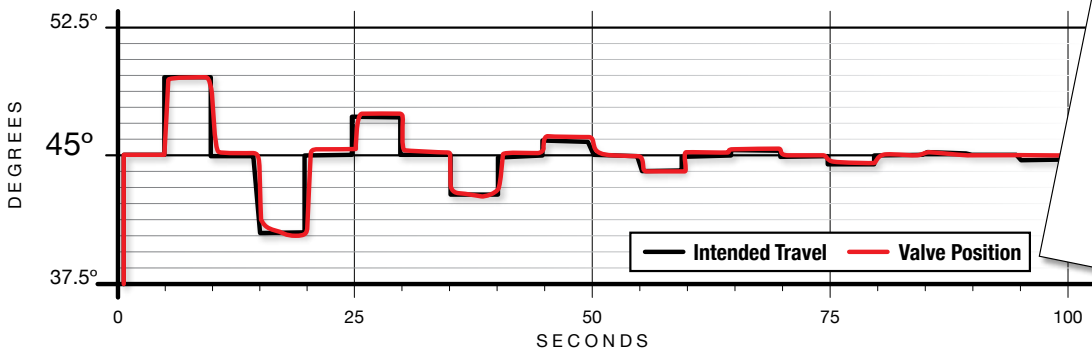
The QTRCO Rack & Gear™ thru-shaft design results in substantial space savings. These actuators have been proven to be excellent companions to quarter turn control valves including those with extended stems. Our revolutionary “Close Mount” design reduces the size, weight and cost of the assembly by passing the valve stem through the actuator shaft with no valve modifications.



Throttling Applications

Comprehensively tested for throttling applications the Rack & Gear™ actuator can accurately and reliably position your control valve. For more information please contact us at (281) 516-0277 or actu8it@qtrco.com

STEP RESOLUTION





ADAPTERS TO FIT ALL VALVE TYPES



An excellent substitute for diaphragm actuators

- Vibration & Corrosion Proof
- Proven Throttling Capabilities
- Compact Size
- Zero Side Loading of Valve Stem
- Low Fill Volume

Q SERIES - RACK & GEAR™

DOUBLE ACTING

Torques to 21,000 in-lb
Pressure to 150 psig

SPRING RETURN

Torques to 7,500 in-lb
Pressures to 150 psig

Vibration & Corrosion Proof | Excellent throttling capabilities | Compact Size

Patented Rack & Gear™ Mechanism

Offset cylinders align the piston axis with the pinion gear pitch circle diameter, eliminating the cantilever forces inherent in rack and pinion type actuators. Low friction rollers maintain correct engagement of the stainless steel gearing for exceptional cycle life. One user says "We have approximately 1,000 actuators installed on seven vessels with the earliest put into service in 2001. It is still true that there has never been a reported failure. I have asked our maintenance and field personnel on each vessel about the actuators and have never received a negative comment."



Additionally, the reduced friction enables outstanding throttling control as demonstrated in numerous 'typical diaphragm actuator' applications where corrosion or high vibration demand an alternative solution.

MATERIALS OF CONSTRUCTION

QS (STAINLESS)

Housing	CF8M Stainless Steel
Rack & Gear	CF8M Stainless Steel
Cylinders	316 Stainless Steel Optional: Amalga Composite
Pistons	CF8M Stainless Steel
Springs	Coated chrome-silicon steel, Optional: Stainless Steel
Seals	BUNA Optional: EPDM, Viton, Silicon

QD (DUCTILE)

Housing	Ductile Iron
Rack & Gear	CF8M Stainless Steel
Cylinders	Amalga Composite Optional: Aluminum or Stainless Steel
Pistons	Ductile Iron, Zinc Plated
Springs	Coated Chrome-Silicon Steel
Seals	BUNA Optional: EPDM, Viton, Silicon





Q SERIES - ACCESSORIES



JACKSCREW MANUAL OVERRIDE

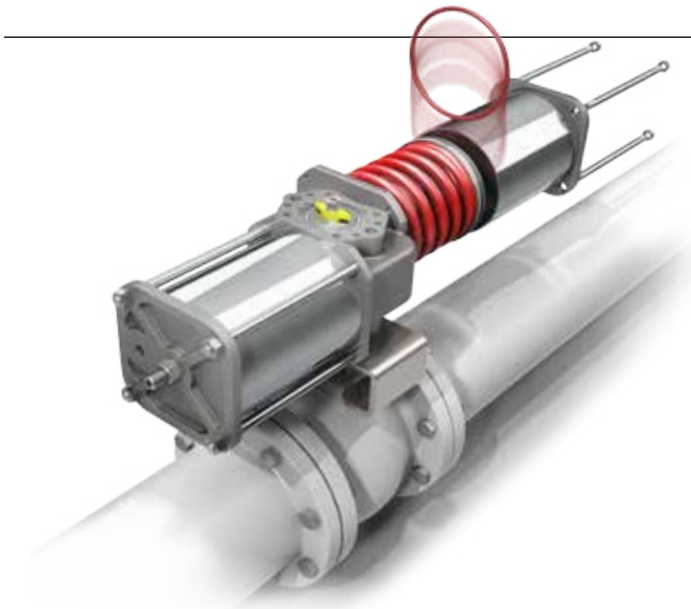
The jackscrew is a simple low cost manual override that can be fitted on any Q Series Rack & Gear™ actuator.

LOCK OUT/TAG OUT

Whether double acting or spring return, the actuator can be locked in the open or closed position, as specified.

NAMUR ACCESSORY MOUNTING

Full NAMUR accessory mounting capability is retained as shown here with the QTRCO produced NAMUR cast bracket.



IF NECESSARY...

SEAL REPLACEMENT IS DONE
IN PLACE, ON-THE-VALVE

If external contaminants damage the seal, simply remove the actuator end cap and cylinder allowing easy replacement of the piston o-rings while the actuator remains mounted on the valve and the valve remains in place. Additionally since the piston only travels a portion of the cylinder wall, should damage occur to the cylinder it can be flipped end over end and reinstalled. Captured springs assure safety and since the actuator body remains undisturbed, the attached switches or positioners need not be removed or reconfigured following piston seal replacement.

For three years we provide replacement seals free of charge regardless of the number of cycles.



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