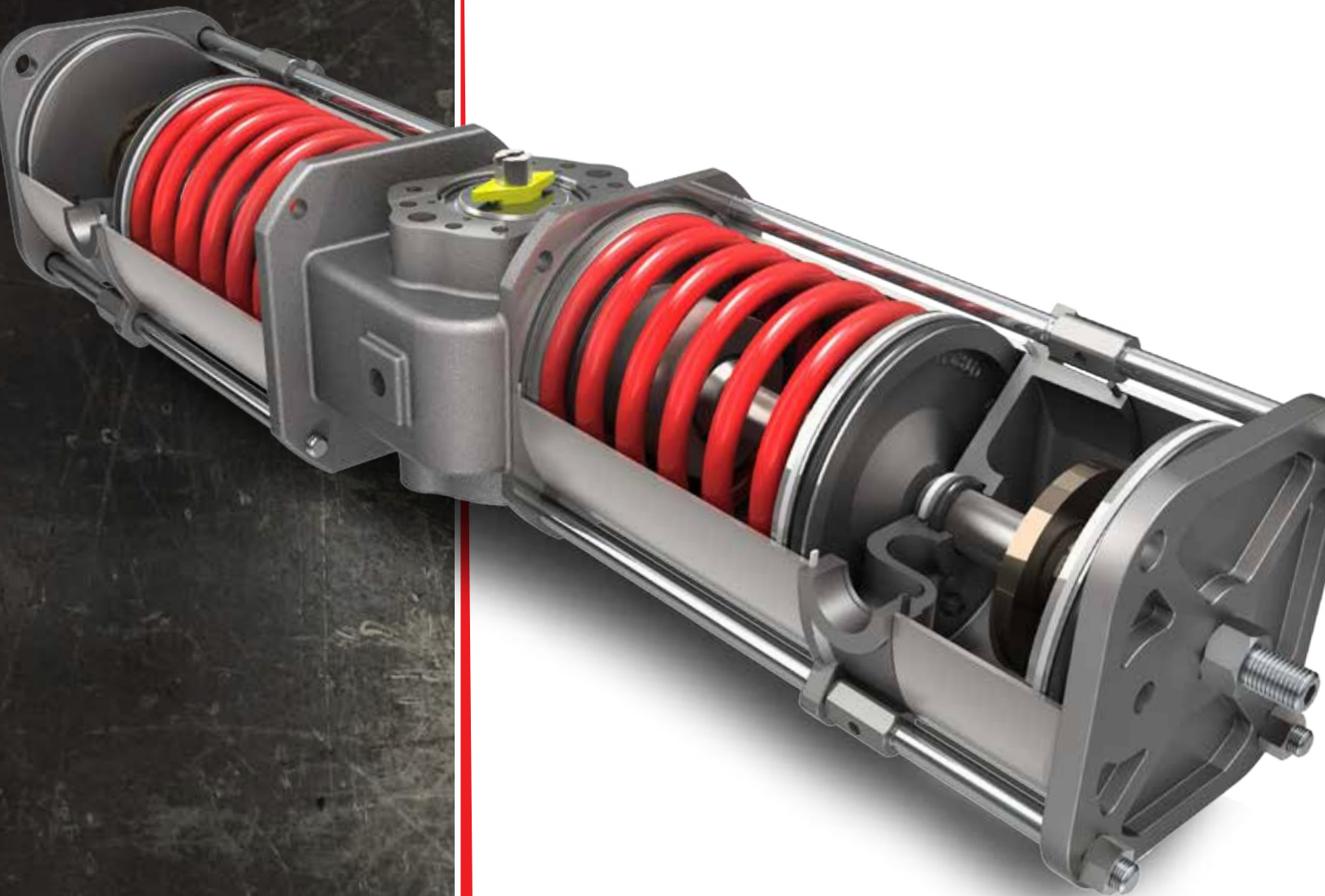


# XRCISER™ PSTD

Tandem pistons serve as pneumatically engaged travel stops on any QTRCO Rack & Gear™ or Flat Yoke™ actuator.



**The Leader in Actuator Technology**



# XRCISER™ PSTD

## PARTIAL STROKE TESTING DEVICE

Begin with any QTRCO actuator, add tandem pistons to serve as pneumatically engaged travel stops, and controls as appropriate for your application.

The standard QTRCO actuator uses a travel stop screw in the end cap to limit outward travel of the actuator piston, and therefore valve travel. In the XRCISER™ configuration the pneumatically engaged tandem pistons become the outward travel stop. By confirming tandem piston pressure and position; spurious valve travel is prevented during the partial stroke cycle.

### BENEFITS:

- No spurious valve travel
- Full actuator torque output every cycle – including partial stroke test
- Full emergency operation capability
- Local, remote or fully automated control options
- Optional diagnostic data collection
- Inherent actuator seal and solenoid valve redundancies
- Verification testing of solenoid valves
- Unlimited number and frequency of worry free partial stroke test cycles
- Reduced operator training



**Crafted without compromise to make your life easier...**

### Inadequate Methods:

**MECHANICAL** hard stop devices require a purpose built actuator with integral manually engaged travel stops or add-on type manually engaged stops mounted between the actuator and the valve.

#### BENEFITS:

- Hard travel stops to prevent spurious over-travel
- Full actuator torque output to operate a valve experiencing stiction

#### NEGATIVES:

- Requires extensive operator training and detailed procedures for both engagement and disengagement operations
- ⚠ Cannot be immediately disengaged should an emergency shutdown (ESD) occur during partial stroke testing - **compromising safety!**

**AUTOMATED** partial stroke testing devices allow local or remote control of the PST by exhausting a portion of the actuator air supply to regulate actuator travel.

#### BENEFITS:

- Reduce operator training requirements
- Automated control options
- Available diagnostic data collection
- Redundancy

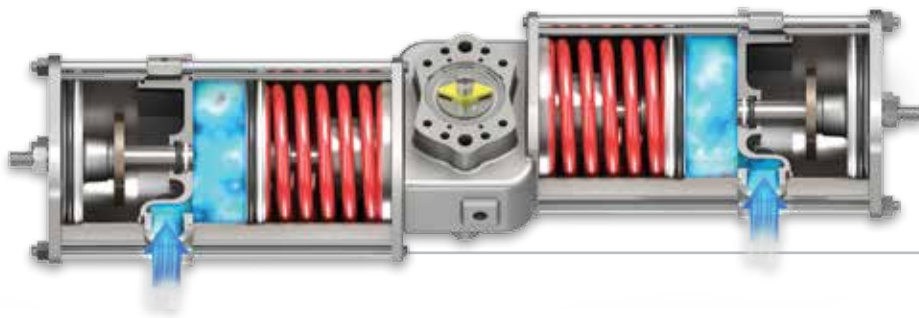
#### NEGATIVES:

- No hard travel stops
- Regulating pressure to the actuator through controlled exhaust, greatly reduces applied actuator torque
- Valves experiencing stiction may cause timed out false failures; or spurious over travel and process interruption
- ⚠ Slow release of pressure on larger assemblies greatly extends the stroke time and inhibits rapid ESD closure - **compromising safety!**



The XRCISER™ Partial Stroke Testing Device is an available option on all QTRCO actuators offering capabilities unmatched by any other PSTD such as: remote operation, assurance against over travel, compatible with small, medium and large size actuators, zero detrimental affect on actuator speed or function, custom PSTD stroke amount, 100% of actuator's output torque, diagnostics and redundancy.

## XRCISER™ PARTIAL STROKE TESTING DEVICE... **How does it work?**



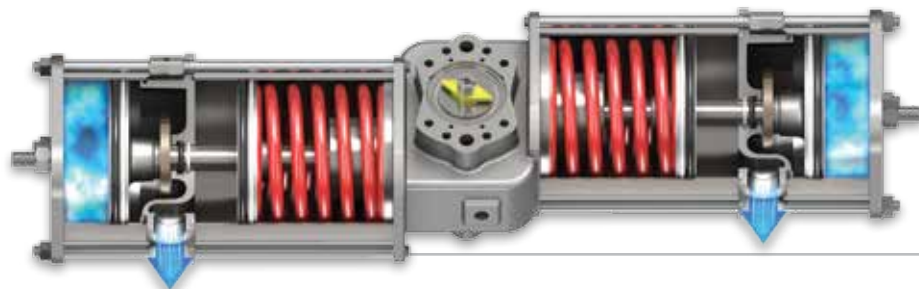
### 1. Normal Service

Primary pistons are pressurized and the valve is in the full travel position



### 2. Tandem Pistons Pressurized

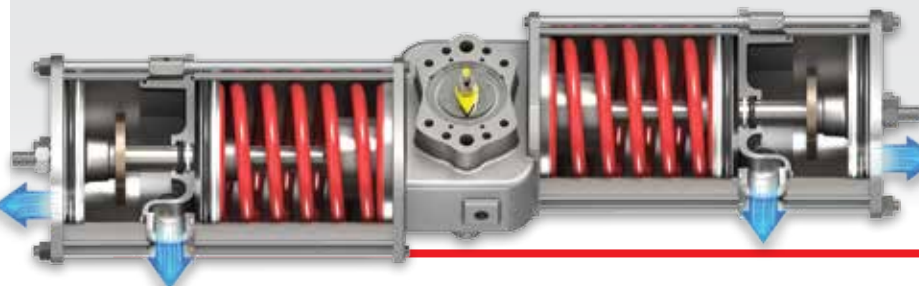
readiness is confirmed by proximity and pressure switches, the valve remains in the full travel position



### 3. Partial Stroke Test

pressure is exhausted from primary pistons and the springs push the primary piston outward, the pressurized tandem piston limits the travel to 15° (or customer specified amount), then actuator returns to normal service

**The XRCISER™ Never Compromises Safety**



### Emergency Shutdown

if in the midst of testing an emergency occurs, exhausting primary and tandem piston pressure allows immediate full valve closure



## Q SERIES - ACCESSORIES



### JACKSCREW MANUAL OVERRIDE

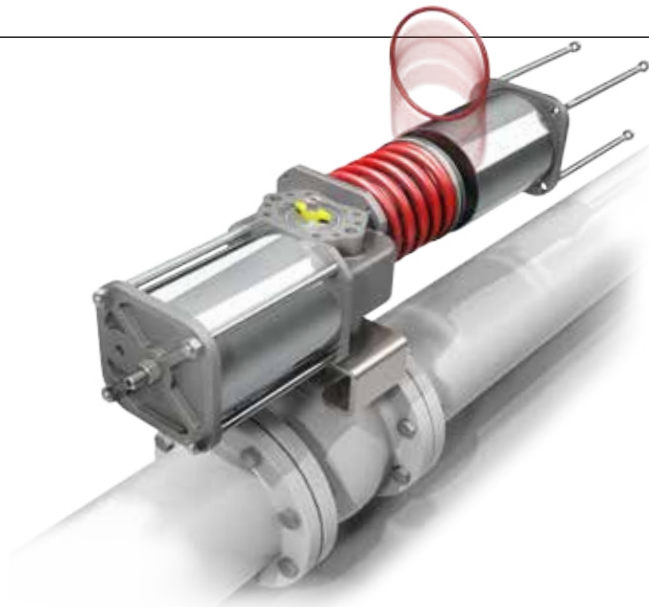
The jackscrew is a simple low cost manual override that can be fitted on any Q Series Rack & Gear™ actuator.

### 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 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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