

# WEDGEROCK

WORM GEARS

When Performance and Quality Matter



PRODUCTION

TRANSMISSION

WATER

POWER

MILITARY



Challenge **WEDGEROCK** with your application...we haven't found a torque, thrust or environment we can't handle.

**WEDGEROCK, INC.**  
ENGINEERED SOLUTIONS

wedgerock.com | info@wedgerock.com

## Input Orientation

- Parallel or perpendicular to valve stem
- motorized or manual inputs

## Operation

- Multi-turn electric actuator
- Handwheel

## Certification

- ATEX certified option available

## Self Locking Input

- Patented PolyLock anti-backdrive clutch

## Mechanical Release Clutch

- Patented design allowing fail safe operation with low release force
- No valve creep from leaking pistons or temperature swings

## Configurable

- Multiple ratios available to size input
- Fail-Close or Fail-Open (CW/CCW)
- Hardware material
- Seal material
- Valve mounting

## Release Mechanism

Options:

### Electric Linear Solenoid

- 24VDC standard
- Other voltages optional

### Line Pressure Operated

- Hi/Lo Pressure Pilot, 10-10,000 psi

## Spring Can

- Helical compression spring design for proven reliability
- Design Safety: does not allow uncontrolled release of springs if disassembled

## Scalable Design

Quarter-turn spring end torque range:  
<750 in-lbs [85 Nm] to >1,500,000 in-lbs [170,000 Nm]

## Sealing

- Fully sealed spring can
- Mechanical seals at ingress points
- Double seals at dynamic interfaces
- IP68 standard

## Indication

- Standard Namur mounting

## Pressure Relief Vent

- Avoid pressure build up due to valve stem leakage

## End Stops

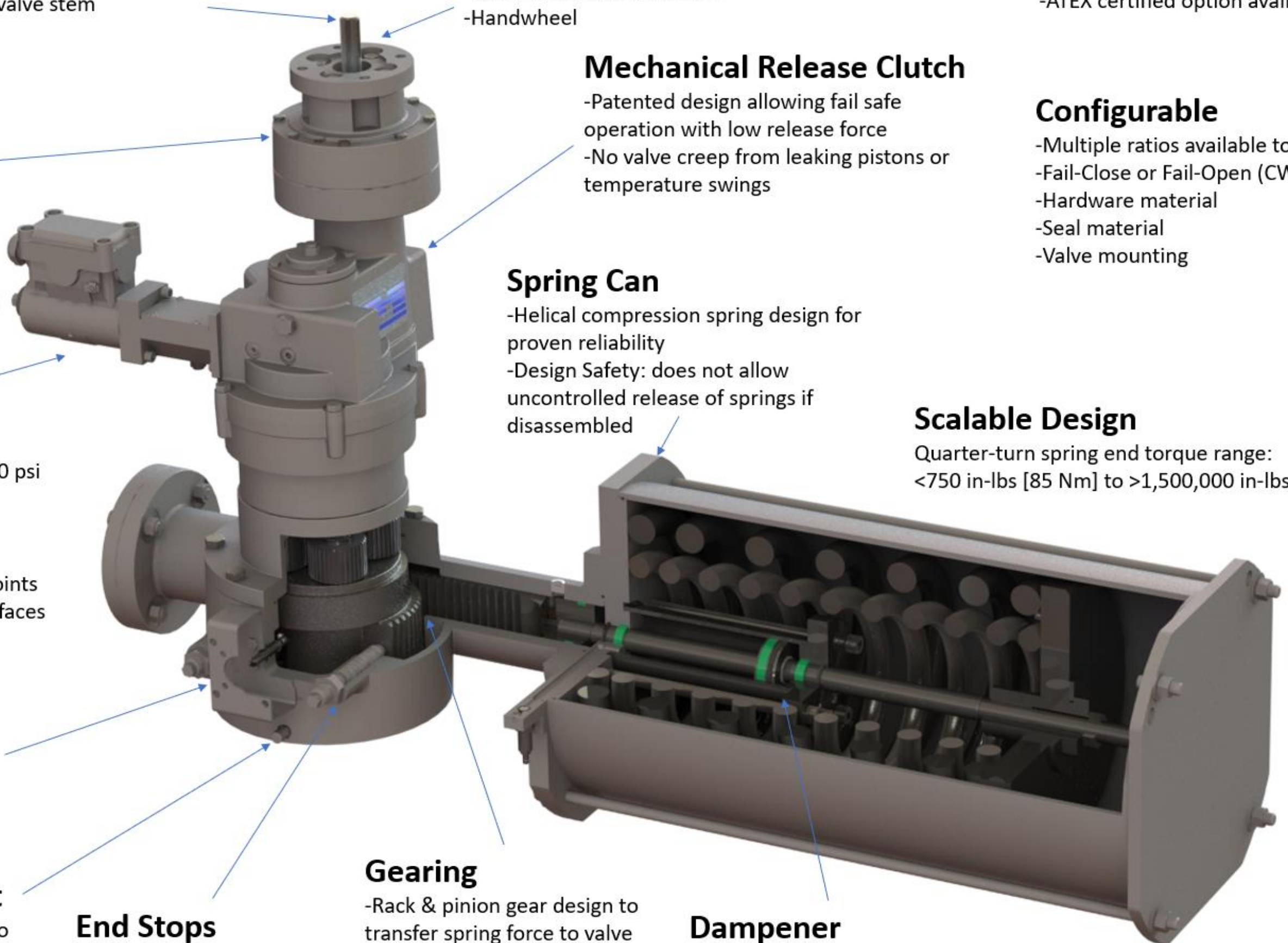
- Adjustable end stops allow  $\pm 5^\circ$  of travel at each stop.

## Gearing

- Rack & pinion gear design to transfer spring force to valve
- Planetary gears to provide configurable ratio

## Dampener

- Adjustable speed of fail-safe operation



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Sawtooth Caverns is the largest underground salt cavern storage terminal of its kind in the Western United States. The facility provides storage for a wide range of products from pressurized NGL to refinery feedstocks. The high-altitude flatlands of Utah prove a challenging environment for hydraulic and pneumatic spring return actuators, that can creep due to leaking pistons and thermal expansion and contraction. Operation concerns over resources to maintain and monitor these systems along with longer-term concerns of asset management, brought the valve automation company to WedgeRock for a better solution.

WedgeRock's RS: The WedgeRock solution was an electric actuator driven mechanical spring return operator. Based on industry accepted rack and pinion frame, planetary stacks to provide required mechanical advantage from input, and helical compression springs, we added our patented mechanical clutches for hold and release, and patented PolyLock to protect actuator from back-driving. The RS passively holds spring force and valve in normal position until a failed condition signal releases spring energy, which acts on the rack, moving the valve to the fail position – speed controlled by an adjustable damper.

Simple...

