



Proven Precision Dry Lubrication

# DICRONITE®



## Valve Torque Reduction

### Situation:

- A major valve manufacturer wanted to reduce torque in the rotating components and mating surfaces, while still maintaining sealing capability at the mating surfaces. The manufacturer provides a range of valve types to a variety of industries and wanted a solution that could work across different environmental conditions.

### Key operating requirements included:

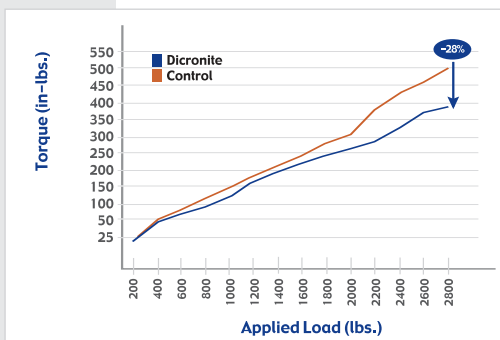
- Ability to operate across cryogenic to high temperatures
- Chemical resistance - fluid and gas; radiation resistance
- Compatibility (non-explosive) with liquid and gaseous oxygen, rocket propellant and other explosive materials
- Compatibility with valve seating materials (elastomers, plastics, etc.)
- Diconite dry lubrication was introduced resulting in lower torque, and less wear and maintenance without compromising seal integrity.

### Testing:

- To demonstrate Diconite dry lubrication's benefit, a test fixture was constructed and a series of tests were run comparing the current situation (unlubricated steel rotating against unlubricated steel) with Diconite dry lubricated surface rotating against unlubricated steel.
- The load on the fixture was progressively increased while measuring the torque required to rotate the stem.

### Results:

- As shown below, the addition of Diconite dry lubrication to the rotating surface decreased the required torque by more than 25%. This resulted in increased valve life and decreased valve wear.



- In addition, Diconite dry lubrication met the manufacturer's other operating requirements with its:
  - Operating range from -188°C to +538°C (-306°F to +1000°F)
  - Chemical resistance, radiation resistance
  - Compatibility with liquid/gaseous oxygen and rocket propellants
  - Compatibility with all metallic substrates, plastics and elastomers

- Diconite dry lubrication is widely used in the moving (stems, actuators, balls, etc) and mating (seats, discs, seals, etc) valve components.

Diconite is available throughout the world. For more information visit us at: [www.diconite.com](http://www.diconite.com) or contact Lubrication Sciences International at 800.874.4319 • 408.834.7442 • [inquiries@diconite.com](mailto:inquiries@diconite.com)