

## VALVE TORQUE REDUCTION

Dicronite® reduced valve torque by more than 25%



### BACKGROUND

An engineer from a major valve manufacturer wanted to reduce resistance in rotating valve components while still maintaining sealing capability. The manufacturer provides a range of valve types to a variety of industries and was in search of a solution that could work across a wide range of environmental conditions. Some of the key requirements for operation included:

- Ability to operate across cryogenic to high temperatures
- Chemical resistance to fluids and gases; Radiation resistance
- Compatibility (non-explosive) with liquid and gaseous oxygen, rocket propellant, and other explosive materials
- Compatibility with valve seating materials (elastomers, plastics, etc.)

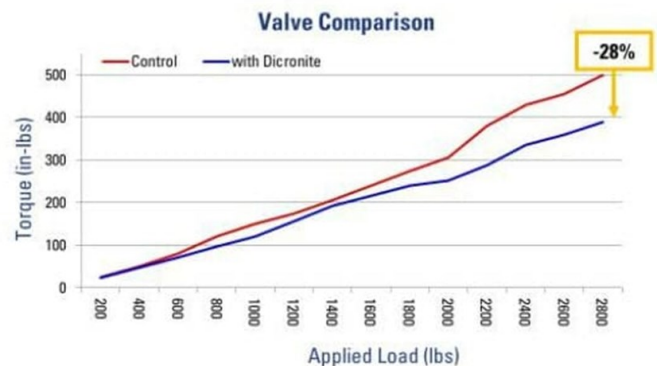
### TESTING

To validate Dicronite®'s benefit under these conditions, a test fixture was constructed to compare a control valve (steel on steel) and a valve with a Dicronite® lubricated surface rotating against steel. The load on the fixture was progressively increased while measuring the torque required to rotate the stem.

### RESULTS

The addition of Dicronite® 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 to reducing torque, Dicronite® met the manufacturers operating requirements with its wide functional temperature range, chemical resistance and radiation resistance. The coating also proved compatible with liquid/gaseous oxygen, rocket propellants, metals, plastics, and elastomer substrates.



With Dicronite®, engineers minimize wear and avoid costly replacements. Dicronite®'s lubricating properties and compatibility make it an easy solution for reducing friction in critical applications.

