Extend mechanical seal reliability and life

Seal face materials have always been challenged to provide reliable operation in low-lubricity fluids. In the past, this challenge was addressed by lubricating seal faces with a cool, clean external fluid. Although effective, this solution adds operating costs throughout the life of the seal. Alternatively, dual seals operating on clean barrier fluid offer longevity with lower operating costs, but higher initial cost for the required support system. The ideal solution is to have the mechanical seal faces lubricated by the process fluid. Pure, crystalline diamond grown onto a seal face through a rigorous treatment process, including chemical vapor deposition, enables Flowserve to offer improved reliability in poor lubricating fluids without additional controls.

Features and benefits

- The lowest friction of any seal face material provides cool-running seal faces in poor-lubricity fluids such as hot water.
- Bonding the hardest known material to the seal face’s running surface gives maximum resistance to abrasive particle damage.
- The highest chemical resistance of all seal face materials enables its use in aggressive acids, alkalines and caustics.
- High wear resistance brings forgiveness for off-design operation such as intermittent dry running.
- Fine grain diamond coatings can run against all common mating face materials, including silicon carbide, tungsten carbide and itself.

Applications

Diamond-coated seal faces offer performance benefits in a wide range of mechanical seal applications, including:

**Upstream oil and gas**
- Produced water
- Crude oil pipeline
- Multiphase pumps

**Refinery and petrochemical**
- Dirty hydrocarbons
- Light hydrocarbons
- Caustics

**Mining**
- Abrasive slurries

**Power**
- FGD slurries
- Boiler feed water
- Cooling water

**Chemical**
- Loading and unloading pumps
- Fluids with entrained gases
- Dissolved or hard solids

**General industry**
- Batch processes
- Fibrous slurries

Availability

Most Flowserve seals are available with diamond-coated seal faces, including:

- QB series
- BX series
- ISC2 series
- U series
- D series
- SLM
- HSH
- PSS 4
- SLC
- Pac-Seal®

Consult your local Flowserve representative for information on diamond coating availability in other mechanical seals.
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