



## John Crane Diamond®

# Next-generation face technology that extends mechanical seal life

### John Crane Diamond:

The seal face treatment solution that uses the qualities of nature's hardest substance to increase pump reliability and productivity.

### What it is:

Ultrananocrystalline diamond (UNCD®) technology is a diamond material grown through a chemical vapour deposition process. This process, proven across more than 40,000 components, supports production capabilities for our customers.

### What it does:

John Crane Diamond seal face technology stands up to difficult applications involving poor lubricating fluids, liquids above their atmospheric boiling point and abrasive slurries. Its low coefficient of friction reduces heat generation and energy consumption. This diamond-tough face technology also addresses intermittent dry running conditions to improve the reliability of rotating equipment.



## Why you need it:

John Crane Diamond delivers essential benefits:

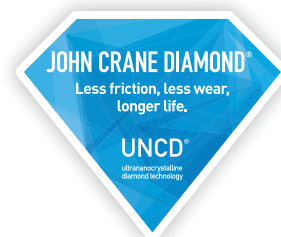
**Increased durability:** This pure diamond film delivers the hardness and chemical stability needed to help increase seal durability and longevity.

**Enhanced reliability:** Enhances mechanical seal performance in demanding applications, helping increase uptime and extend asset life.

**Reduced costs:** The low coefficient of friction results in cooler running faces, reduced power use and lower lifecycle costs.

**Greater productivity:** Mission-critical equipment remains in operation for longer, helping you achieve production goals.





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### Energy and cooling water savings

| Model results for 3.25" Type 48V seal |         |            |               |             | Analysis of savings due to migrating from material pair to another |          |         |                                  |          |          |
|---------------------------------------|---------|------------|---------------|-------------|--------------------------------------------------------------------|----------|---------|----------------------------------|----------|----------|
|                                       |         |            |               |             | (SiC vs SiC) to (SiC vs UNCD)                                      |          |         | (Carbon vs SiC) to (SiC vs UNCD) |          |          |
| Metric                                | Units   | SiC vs SiC | Carbon vs SiC | SiC vs UNCD | Value                                                              | Units    | Payback | Value                            | Units    | Payback  |
| Power consumption                     | HP      | 3.9        | 2.44          | 0.44        |                                                                    |          |         |                                  |          |          |
| Heat generation                       | Watts   | 2,908      | 1,820         | 328         | 31,391                                                             | kW-hr/yr | < 6 mo. | 18,145                           | kW-hr/yr | < 12 mo. |
| Cooling flow rate                     | gal/min | 3.257      | 2.036         | 0.366       | 1,519,510                                                          | gal/yr   |         | 877,752                          | gal/yr   |          |

#### Product availability:

John Crane Diamond is available as an enhancement to many of our most widely used seal families, including:

- Type 5600 universal cartridge seal family
- Type 5800 slurry seal family
- Other high-performance sealing solutions

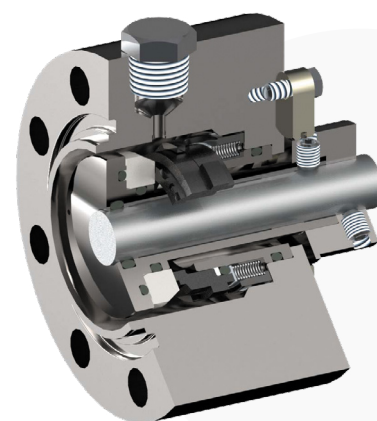
#### Where it's used:

Nearly every industry can use John Crane Diamond to improve reliability and performance of mechanical seals, pumps and other components:

- Chemical
- Food and beverage
- Pharmaceutical
- Power generation
- Mining/materials
- Oil and gas
- Pulp and paper
- Water/Wastewater

#### Learn more:

Partner with a global leader focused on your long-term success. Ask us today about John Crane Diamond for your application.



#### North America

United States of America  
Tel: 1-847-967-2400

#### Europe

United Kingdom  
Tel: 44-1753-224002

#### Latin America

Brazil  
Tel: 55-11-3371-2500

#### Middle East & Africa

United Arab Emirates  
Tel: 971-481-27800

#### Asia Pacific

Singapore  
Tel: 65-6518-1800

**smiths**

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated. ISO 9001 and ISO14001 Certified, details available on request.

[johncrane.com](http://johncrane.com)



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