

## Case Study: Cryogenic ball valve seat seal

### Problem

Customer had been using standard PCTFE energised lip seals but was experiencing inconsistency in performance leading to a 50% failure rate with their valves under testing. This was a huge issue causing late deliveries of valves to their customers and also carrying large cost implications due to the need to strip down valves, replace seals and repeat testing after each failure.

## 50% failure rate of existing solution

### Application

#### 3" Class 600 ball valve seat seal

- Temperature: -196°C to ambient
- Pressure: 22 bar
- Media: Nitrogen
- Groove: OD 73.17 mm, ID 62.27 mm, LG 6.25 mm
- Intermittent dynamic movement

### Existing solution

PCTFE lip seals

### James Walker solution

An asymmetrical Unilion<sup>®</sup> J01 lip seal configuration was recommended and installed to counteract performance inconsistency for this critical service. This was provided in our Fluolion<sup>®</sup> 22 modified PTFE jacket sealing material, along with double heat-treated cobalt chromium alloy helicoil springs to ensure seal force was optimised.



### Results and benefits

The Unilion<sup>®</sup> seal was installed and successfully passed testing during the customers trials. This field-proven and tested configuration has provided outstanding reliability and consistent performance allowing valve projects now to be supplied on time and within budgeted cost.

## Provided outstanding reliability and consistent performance



Significant reduction of internal costs caused by failed testing



Improved operational performance and consistency



Improved product reliability and reputation



Reduced project lead time delivery

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