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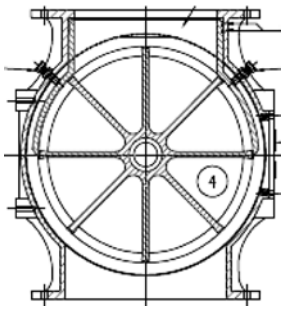
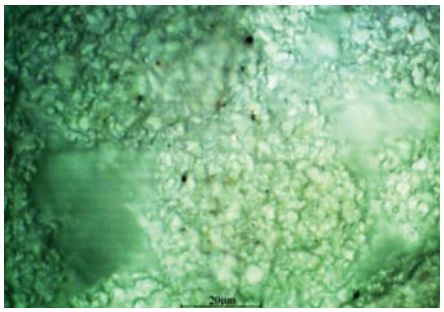
valves pvt ltd

University tests give thumbs up to Anval valves

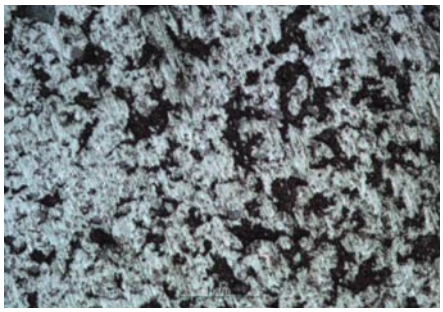
The School of Mechanical Engineering at the University of Western Australia (UWA) and Anval recently concluded a series of rigorous wear tests on the latter's Rotary Floating Shoe (RFS) valve range.



Cut-away of an Anval Rotary Floating Shoe (RFS) valve



Ceramic tip prior to alumina wear test



Ceramic tip after alumina wear test

The wear tests were conducted over a period of months by UWA under-graduate and graduate mechanical engineers with the assistance of the Anval engineering team.

The RFS range of rotary airlocks and feeders has been around for over ten years and was initially produced by Anval's sister company, Ansac. However, in order to conclusively prove the durability of the valve range, Anval decided that an objective third party would be invited to conduct the wear tests and author the final technical paper on the results. While the final wear trials occurred in June 2010, completion of the peer review process has only just concluded.

The testing focused on the ceramic and cast iron interface that is unique to the RFS range of valves. The ceramic 'tipped' rotors have been designed to always maintain contact with the cast iron floating shoe to ensure an adequate seal between the inlet and outlet flange. This interface is obviously subjected to wear as the rotor rotates through normal operation. The amount of wear and the rate of the interface wear has then been microscopically analysed by the combined team of engineers from UWA and Anval.

After extensive testing of the interface and subjecting it to many types of materials flowing through the valve, Anval was able to establish accurate data in order to confirm the low wearing properties of the material selection utilising ceramics and cast iron as a dynamic seal face. Utilising UWA's tribology laboratory, the engineering team was able to microscopically view the self lubricating nature of the interface and intended purpose of the sacrificial cast iron floating shoe.

"The final report has proven that the ceramic tipped rotor in contact with the hardened cast iron shoe allows the rotary feeder to efficiently traverse all manner of materials with a minimum of wear" explained Brian Ging, Sales Representative for Ansac and Anval within Australia. "Therefore, the RFS can be used to transport even the most aggressive product and still have a lifecycle of years instead of months.

"The results are as we predicted. We always knew the RFS was a far more durable unit than a standard rotary valve, and now we have the data and report to prove it."

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As featured in the Australian Bulk Handling Review: September/October 2010