



TITAN[®] HP VALVES

For Superior Vessel Isolation Service in High Pressure, Dense Phase Pneumatic Conveying Applications

Plant Challenge: Dome-type valve with inflatable seals continually fail in high pressure fly ash system

An Eastern US coal-fired power plant experienced excessive inflatable seal failures on the dome-type valves installed in a high pressure, dense-phase fly ash system. The system was comprised of 48 dome-type valves on two branchlines exposed to high temperatures and highly-abrasive ash, causing the inflatable seals to wear prematurely.



Worn inflatable seal required valve to be pulled out of service

In operation, coarse ash particles wedge between the spherical dome and inflatable rubber seal causing material build-up and excessive wear. The precip ash and high pressure differential across the seat and disc causes the elastomeric seal to dry out, wear and ultimately fail. This forced the plant to routinely bypass the affected branchline and run at half capacity. The average life span of the inflatable rubber seals were only 4 - 6 months before replacement was needed. The frequent replacement of the inflatable rubber seals significantly increased operating and maintenance costs, causing considerable downtime for the plant.

UCC Solution: TITAN[®] HP Valve

UCC replaced two of the dome-type valves with TITAN HP swing disc valves specifically designed for vessel isolation in high pressure pneumatic applications. The TITAN HP valve operates on a simplified system that does not require inflatable seal components such as solenoid valves, logic, and water cooling requirements. TITAN HP's have a metal-to-metal (DURITE H[®]) seat and disc, therefore eliminating the risk of premature failure caused by rubber components. A self-adjusting, spring-mounted pivot ball and sharp-edged seat prevents misalignment and provides full perimeter contact between the disc, cutting through material build-up and

ensuring a pressure-tight seal. A large access port allows inspection of the seat and disc and maintenance to be performed without removing the valve from service.



UCC metal-to-metal seating dramatically extends service life

Results:

Now operating for over 18 months, the TITAN HP valves required zero maintenance. Other UCC valves utilizing the same swing disc technology typically show a seat and disc service life that is 5 times longer than the inflatable rubber seal. This illustrates the durability of TITAN HP wear components over inflatable seal technology.



UCC TITAN HP seat shows little wear after a year in service

The superior wear resistance and prolonged service life of the TITAN HP valves contributed to significant cost savings for the plant. A conservative estimate of 250 man hours per year were saved on maintenance. This installation demonstrates the overall value of a UCC TITAN HP swing-disc valve.

For decades, UCC has engineered isolation valves specifically designed for harsh ash handling applications. Our continuous development and testing provides innovative solutions for ash conveying challenges experienced by customers. With thousands in service, UCC high performing valves are considered the industry standard for utility and industrial power plants worldwide.



UCC TITAN HP Valve installed and in service with no failures for over 18 months. This valve has not required any maintenance since its original installation.