

PROBLEM SOLVER GUIDE



FCCU CATALYST LOCKHOPPER VALVE REFINERY APPLICATION CASE STUDY



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THE CHALLENGE

A refinery in the US operated a lockhopper bottom valve in a dynamic air dense-phase conveyor supplying fresh catalyst to a UOP licensed Fluid Catalytic Cracker Unit (FCCU). The application handled abrasive alumina-silica catalyst and air at approximately 30 tons/day, creating a severe cycling and wear environment.

Key points about the application:

- Prior metal-seated ball valve service life was documented at approximately 5 weeks
- Abrasive catalyst caused rapid wear in the isolation valve position
- The valve cycled approximately every 5 minutes, exceeding 35,000 cycles per year



OUR SOLUTION

Everlasting supplied a pneumatic, reverse-flow rotating disc valve engineered for abrasive catalyst service. The self-lapping disc design allowed the sealing surfaces to wear in rather than out, providing reliable isolation in a high-cycle lockhopper duty where conventional metal-seated ball valves failed quickly.



Results delivered:

- 4-inch, Class 150 carbon steel valve construction
- Stellite #6 disc and seats for abrasion resistance
- Pneumatic actuation at 80 psi for repeatable, automated cycling
- Over 10+ years of documented service with no maintenance required

TOTAL COST OF OWNERSHIP (TCO)

Competitor Performance

- 5-week service life in abrasive catalyst duty
- Frequent removal and replacement
- Higher maintenance labor and outage exposure
- Increased risk of process disruption



EV PRO Series Valves

- Self-lapping disc design maintains reliable shutoff
- No maintenance required during documented service period
- Handled high-cycle catalyst transfer duty
- Lower lifecycle cost despite severe abrasion investment

TCO Result

The Everlasting valve converted a frequent replacement point into a long-life isolation solution, reducing maintenance, downtime exposure, and total lifecycle cost.

DECADES OF FIELD PROVEN SERVICE COVERING APPLICATIONS WORLDWIDE



Our industrial valves operate longer, perform better, and outlast every other severe-service valve on the market. But performance is only the beginning. We are far more than a typical industrial valve manufacturer—when you engage with us, you gain a partner committed to helping you achieve safer, more efficient, and more reliable plant operations. We take the time to understand your specific process conditions, operational challenges, and performance goals, whether they involve improving production efficiency, reducing downtime, or lowering maintenance costs.

Engineered for unmatched durability, reliability, and total lifecycle value, our boiler blowdown valves, diverter valves, bulk-material valves, and process valves routinely replace traditional knife-gate, pinch, ball, and globe valves in the most demanding environments. Around the world, Everlasting Valve continues to set the standard as the trusted choice for severe-service applications where performance and longevity matter most.

Everlasting Valve Company — Wears In, Not Out®.

Severe-service valve solutions for refinery, chemical, power generation, cement, mining, and bulk material handling applications.

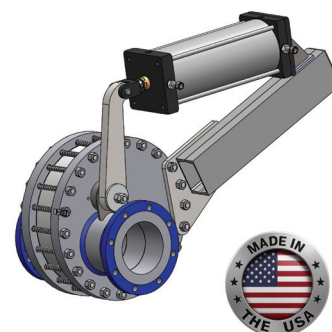


VALUE DELIVERED

Value Delivered:

- Extended valve performance from weeks to years in severe catalyst service
- Eliminated documented maintenance during the installed service period
- Reduced replacement labor and out-age exposure
- Improved reliability for fresh catalyst conveying to FCCU operations
- Lowered total lifecycle cost in abra-sive lockhopper service

PRO Series



Specifications	Description
Industry	Refinery
Application	Lockhopper Bottom Valve
Process Media	Alumina-silica catalyst & air
Valve Type	Everlasting PRO Series Class 150, Rotating Disc Valve, Single static disc, reverse flow, carbon steel
Size	4-inch, 8 units
Pressure Rating	35 PSIG
Actuation	Pneumatic
Cycle Rate	1 cycle / 5 minutes (>35,000/yr)

Contact us today if your catalyst conveying or lockhopper process is consuming valves, Everlasting provides a proven, abrasion-resistant severe-service solution.



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