



SUCCESS STORY

OPTIMIZED ENERGY EFFICIENCY AND FEWER EMISSIONS AFTER COMPRESSOR REVAMP

Our customer, a global chemicals company, operates two vertical Process Gas Compressors in their petrochemical plant. High leakages, reduced gas flow, temperature issues and a very short lifetime of wear parts led to frequent compressor shutdowns and wasteful energy consumption. A detailed system integrity analysis by Burckhardt Compression identified inappropriate tribology material and design as the root cause of all problems.

CUSTOMER CHALLENGES

- The two compressors were operated in parallel, without any standby compressors as back-up
- Unexpected compressor shutdowns and decreasing output
- High maintenance costs, due to constant replacement of wear and capital parts
- Challenging dry-running application
- High leakages
- Reduced gas flow and temperature issues

APPLICATION DESCRIPTION

Dry-running ethylene application

Type	Process Gas Compressor	Gas	Ethylene
Power	700 kW / 940 hp	Suction pressure Discharge pressure	10 bara / 145 psia 35 bara / 507 psia
Speed	424 rpm	Lubrication	Dry running

BURCKHARDT COMPRESSION SOLUTION

- Profound compressor system integrity analysis carried out by our experts onsite
- Analysis showed that the cylinder liner was damaged due to inappropriate piston ring material
- Recommendations made based on the analysis
- Upgrade of piston/packing rings to Persisto® 850, a material that has been specially developed for sealing applications in dry-running reciprocating compressors
- Repair of piston rod, applying proper coating material and roughness
- Refurbishment of packing and all other components at our local Service Center

CUSTOMER BENEFITS

- No safety incidents
- Elimination of bad actors
- Energy savings by avoiding internal losses
- Reduction of emissions
- Internal leakage was eliminated and nominal gas flow restored
- Substantially increased wear parts' lifetime and reduction of maintenance costs
- Local expert team for immediate support



Proper surfaces roughness is critical. Thorough analyses showed that the surface of the cylinder liner was too smooth.



Piston and packing rings were upgraded to Persisto® 850, a material specially developed for dry-running applications.

What our customer says:

"We were struggling with the short lifetimes of the piston rod and packing rings. Burckhardt Compression's solution with the right selection of material helped us to increase compressor availability significantly. Thanks to their analysis, we now better understand the component failure modes. Our second compressor, which was plagued by the same issues, is now being revamped by Burckhardt Compression, too."

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