

Case Study

Reliability and troubleshooting project resulted in pulsation / vibration reduction

Operators of an LDPE plant in Serbia were facing high levels of compressor vibration, with many unexpected shutdowns. Improved valve reliability on booster and primary compressors. Reduced vibration to avoid pipe cracks. Installed monitoring and protection system for booster and primary compressors and hyper compressors.

Compressor manufacturer: INGERSOLL RAND

Type	6HHE3-2/4HHE2	Gas	C2H4
Power	933/ 6000 kW (1269/8158 hp)	Suction pressure	0.1/ 250 bar (1.5/3626 psi)
Speed	375/ 250 rpm	Discharge pressure	250/2400 bar (3626/34810 psi)
Lubrication	yes		



Booster and primary compressors



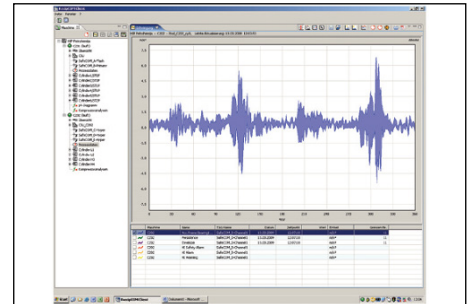
Hypercompressor

Solution applied

- Install diagnostic and monitoring system to measure pressures, temperatures, and vibration
- Carry out full pulsation/vibration analysis
- Install orifices at various points in the pipes to reduce vibration
- Replace IR valves with reliable high-efficiency HOERBIGER CE valves, with ability to monitor indicating pressure
- Overhaul compressors fully, including replacement rods, pistons and liners as required
- Project management and documentation

Results

- Piping orifices reduced vibration as predicted
- Monitoring assures safe operation
- CE valves have cut energy consumption, extended maintenance intervals, and facilitated monitoring



Phased angle vibration measurement

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