

CASE STUDY

Operators of an LDPE plant in Serbia, were facing high levels of compressor vibration, with many unexpected shutdowns.

Reliability and troubleshooting project resulted in pulsation / vibration reduction

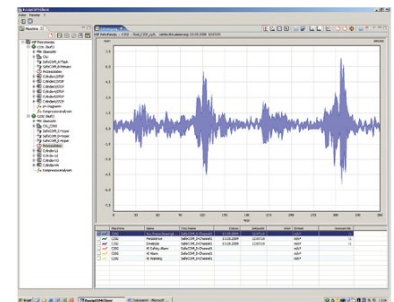
Compressor manufacturer: INGERSOLL RAND			
Type	6HHE3-2/4HHE2	Gas	C ₂ H ₄
Power	933/ 6000 kW (1269/8158 hp)	Suction pressure	0.1/ 250 bar (1.5/3626 psi)
Speed	375/ 250 rpm	Discharge pressure	250/2400 bar (3626/34810 psi)
Lubrication	yes		



Booster and primary compressors



Hypercompressor



Phased angle vibration measurement

Customer requirements

- Improve valve reliability on booster and primary compressors
- Reduce vibration to avoid pipe cracks
- Install monitoring and protection system for booster, primary and hypercompressors

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