

## CASE STUDY

A refinery in Germany required more hydrogen for the desulphurisation process.

**Increased capacity through installation of HydroCOM and monitoring system**

### Compressor manufacturer: DRESSER-RAND

Type	BDCB 12	Gas	H <sub>2</sub> mix
Power	1,080 kW (1468 hp)	Suction pressure	22 bar (319 psi)
Speed	371 rpm	Discharge pressure	47 bar (681 psi)
Lubrication	no		



One of the three hydrogen compressors

### Customer requirements

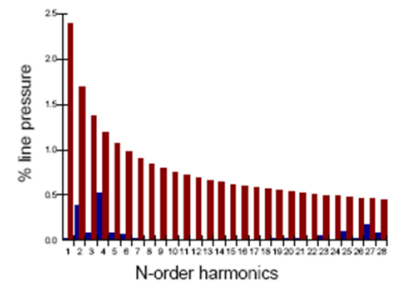
- Increase the throughput of the three single-stage compressors by 9.1–9.8 t/h to meet an increased need for hydrogen for desulfurization

### Solution applied

- Compressor audit and simulation
- Evaluation of possible capacity increase
- Capacity increase achieved by combining slightly bigger cylinder diameter with reduced clearance volume
- Pulsation calculation
- New HOERBIGER valves and piston rings
- Installation of HydroCOM system for continuous control
- Change pistons from a single-piece to a two-piece design
- Documentation and CE marking

### Results

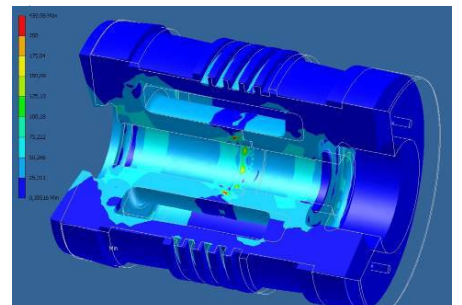
- Economical investment compared to six new cylinders
- Capacity increased by 8%
- Fast and accurate control has improved operability of the hydrogenation process and extended the catalyst lifetime



Pulsation calculation



New dummy valves for reduced



New FEA-optimised pistons