

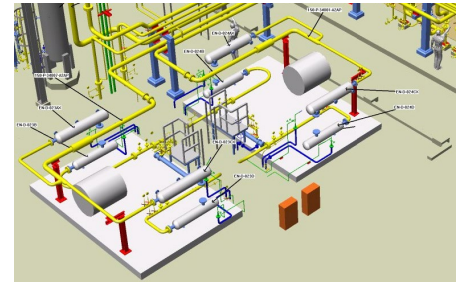
## CASE STUDY

A leading refining company in UK wants to revamp their 40+ years old compressors to include them in a new process plant.

**Increased capacity under new process conditions through compressor upgrade**

### Compressor manufacturer: DRESSER-RAND

Type	10" 2HHE-1	Gas	H <sub>2</sub> -mix
Power	287 kW (390 hp)	Suction pressure	15 bar (218 psi)
Speed	495 rpm	Discharge pressure	61 bar (885 psi)
Lubrication	yes		



Compressor location in the plant

### Customer requirements

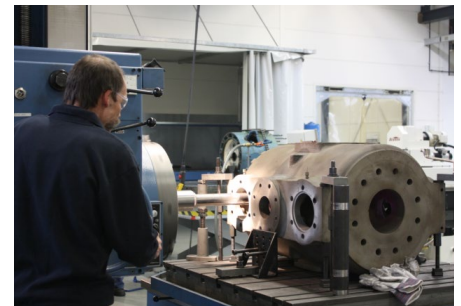
- Remove the compressor cylinders and moving parts from the crankcase and transport to the service shop for upgrade or refurbishment.
- Revamp the compressor, with new HOERBIGER core products (valves, rings and packing's)
- Convert and overhaul to meet new process requirements
- Capacity increase, change of gas mix
- Pulsation and mechanical response analysis (Approach 3 conforming API618)

### Solution applied

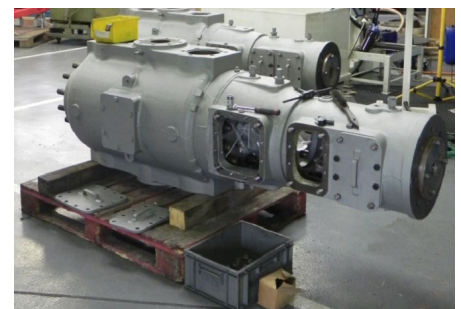
- Data gathering and measurement of critical cylinder dimensions for compressor simulation.
- Calculation and verifying of data according new requirements.
- Calculation of volume flow and driver power at different regulation cases.
- Replacing of all wear parts with HOERBIGER solutions.
- Modification of piston and cylinder head and liner for new performance requirement and to improve gas flow.
- New valve cover and valve chair design to eliminate valve centre bolts
- Project management and documentation

### Results

- The two revamped compressors meet all the new process requirements.
- Recommendations made for revisions to process piping design to make certain that pulsation and vibration levels are within customer limits.



Cylinder refurbishment



Refurbished cylinder