

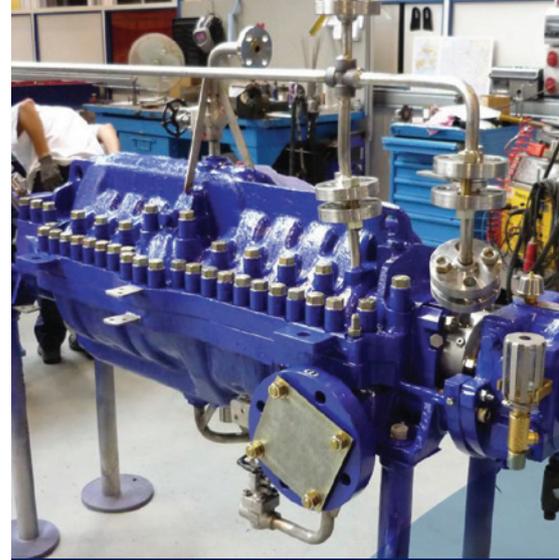
CASE STUDY

PUMP OVERHAUL PREVENTS DOWNTIME AT AMINE PLANT

- No loss of production
- Pump characteristics restored
- Energy consumption and maintenance costs reduced

CHALLENGE

The customer operates 2 DVMX pumps for a Diethyl Amine (DEA) pumping process. The DEA process is very aggressive towards steel materials and the pump currently in operation was showing worrying signs of wear (collapse of characteristic and efficiency). The spare pump was out of service. Following several failed attempts at overhauling the unit by a competitor, the customer asked ClydeUnion Pumps, a Celeros Flow Technology brand, to overhaul the spare pump in the shortest time possible, so it could be re-installed to avoid any loss of production.



CLYDEUNION®
PUMPS

Industry: Oil + Gas - petrochemical

Region: Europe

Territory: France

Category: Service center overhaul

API Type: BB3



Pump casing

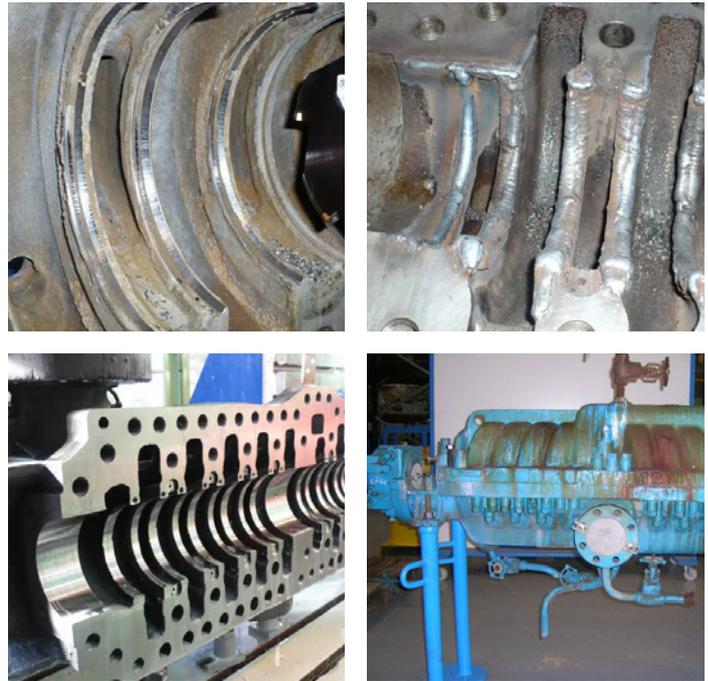
SOLUTION

The pump casing was sent to our Service Center in Annecy, France without the rotor, because the rotor parts were too damaged to be repaired. The pump casing showed high erosion/corrosion marks, leading to loss of material: particularly around the casing wear ring landings and volute tongues.

Our solution was to carry out weld repairs on all the damaged parts of the pump casing and to supply a new rotor. This was not straightforward, due to the limited accessibility of certain parts and the need for perfect control of intensity and temperature during the welding. A non-controlled weld procedure can lead to a change in metal properties, and increase stress and strain on the casing.

The following tasks were undertaken as part of our comprehensive service:

- Cleaning and full dimensional inspection of all returned components
- Machining of eroded parts (Figure 1)
- Refurbishment of parts by weld deposition, heat treatment and re-machining of pump casing (Figure 2 and 3)
- Grounding plates added
- Re-assembly with a new rotor
- Hydrostatic and performance tests
- Clean down and paint



DVMX 3.4.9 10 stages pump before repair

OUTCOMES

The repair was completed on time and within budget. The customer avoided any loss of production that might have resulted from a total shutdown of the desulphurisation unit due to pump failure.

The pump was returned to its original performance characteristics and exhibited very low vibration levels. The improvement in pump efficiency delivered electrical consumption savings and the decrease in vibrations levels led to lower routine maintenance costs.

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