

CASE STUDY

PUMP OVERHAUL PREVENTS CATASTROPHIC FAILURE

- Third party installation errors corrected
- Pump performance optimized
- Downtime due to pump failure averted

CHALLENGE

A refinery in Montana, USA, was experiencing a drop in capacity and high vibration on their main oil booster (MOB) pump upon start-up. The Celeros Aftermarket Technical Services team was engaged to investigate the cause and rectify the problem.

SOLUTION

The CUP-BB3 pump was taken to one of our dedicated service centres and stripped down by experienced engineers from ClydeUnion Pumps, a Celeros Flow Technology brand. Several areas of concern were found, such as excessive wear on the 1st stage piece/1st stage sleeve and mechanical damage to the shaft between the mechanical seal and impeller suction eye. We also found a large piece of Vespel® ring lodged into the suction eye of the impeller. This was identified as the cause of the excessive vibration and lower than expected output capacity of the pump.

It was determined that the Vespel® insert in the 1st stage piece had been installed incorrectly by a third party. This had caused the non-metallic material to “separate” – making it weak and likely to fail catastrophically.

We used our inhouse engineering experience to rectify the third party assembly errors.



CLYDEUNION®
PUMPS

Industry: Oil + Gas - refinery
Region: Americas
Territory: USA
Category: Mechanical upgrade
API Type: BB3



MOB 3 X 4 - 5 stage pump



Finished stage piece



Finished stage piece

OUTCOMES

The CUP-BB3 pump is now reinstalled and working at full capacity, with no vibration on start-up. The customer has the reassurance that the equipment has been correctly assembled and that the potential for catastrophic failure – with associated loss of production – has been averted.



Deposit in impeller

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