

Breathing New Life into Old Equipment, with Innovative Solutions!

Vacuum Pump



Duty & Fluid

OEM & Designation

Materials

Vapour Vacuum Pump
Fuel Vapour

Edwards
SHR22500

Cast Iron

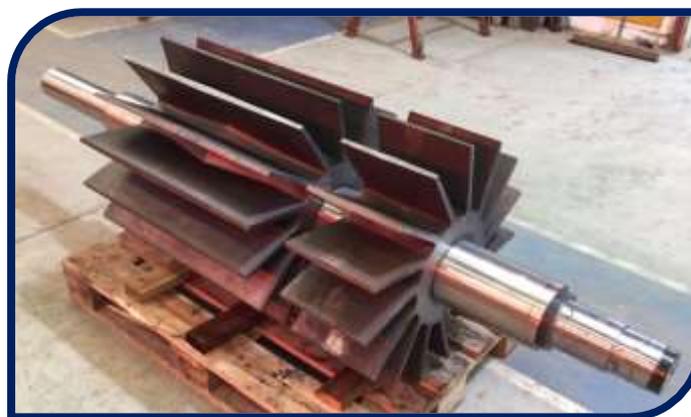
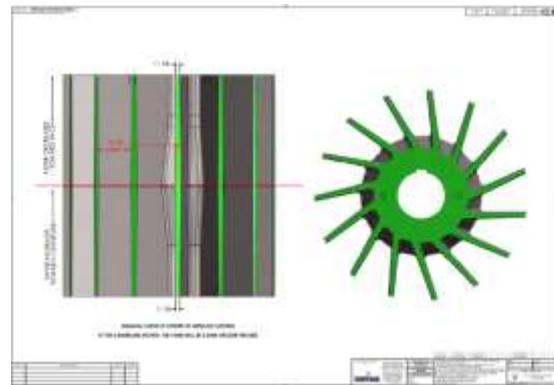
Challenge

Vacuum pump suffered catastrophic failure on a large UK refinery, a high HPI incident as pumped medium is fuel vapour. Client wanted a workable solution to prevent future failures that could be rolled out to other Vacuum pumps on site. Client also advised mechanical seal sleeve issues with these pumps also.



Solution

Route cause of failure, identified as poorly cast impellers causing huge imbalance within pump, with multiple counter weights fitted. Sample impellers were reverse engineered and manufactured by Pinnacle Re-Tec to a much tighter casting tolerance ISO 8062 CT11-14. Additional material was also cast to centre of impeller hub to act as vane support.



To see how Pinnacle Re-Tec can help you with cost effective pump repairs and innovative solutions to increase MTBF please call us on 01207 588 731 or email info@pinnacle-re-tec.co.uk

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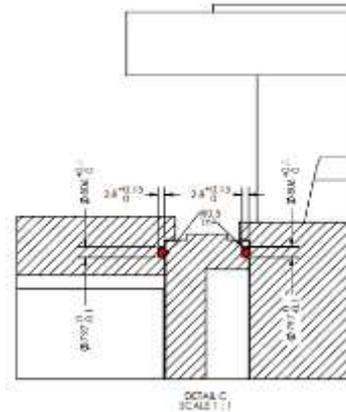
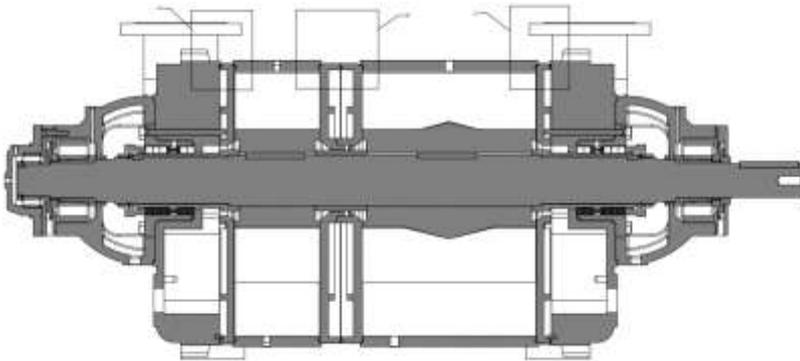
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Solution cont/d

O-ring grooves were machined into casing sections as additional **'preventative'** measure to prevent fuel vapour leak.



To improve sealing arrangement of the mechanical seal sleeve, a new key way was machined in shaft. A new mechanical seal sleeve was reverse engineered and manufactured to incorporate an o-ring groove in front of new key way location.



Benefit & Result

Pinnacle Re-Tec has provided our refinery client with a **'one-stop-shop'** pump repair, incorporating reverse engineering and in-house manufacturing of all required parts, including upgrades to impeller design, mechanical seal sleeve and pump casing. Client has incorporated these pump design upgrades into other Vapour Vac pumps on refinery, thus reducing HSE risk.



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