Cost-effective Pump Repairs, with Innovative Solutions!

Case Study
Multi-Stage Radially Split, Barrel (BB5)

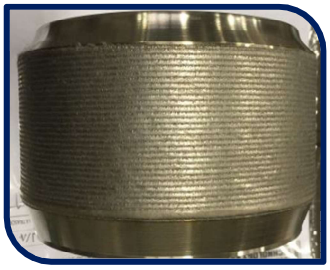
Duty & Fluid	OEM & Designation	Materials
Produced Water Re-Injection Pump Produced Water	Weir Pumps (SPXFlow) 10”/12” OK-5G-35D	Super Duplex Stainless Steel API D2

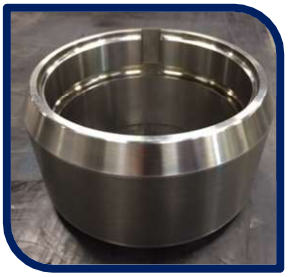
Challenge

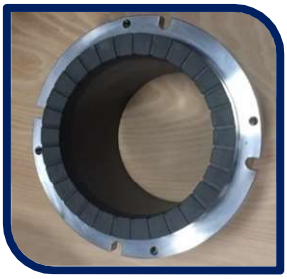
Customer was experiencing high vibration with their Produced Water Re-Injection pumps. This was caused by excessive wear to the Balance Drum Bush which in turn caused undue vibration to the Rotating Element, reducing the MTBF.

Solution

Pinnacle Re-Tec recognised the tough environment these components were being exposed to. We proposed a two-fold solution, firstly we reverse engineered and manufactured in-house the Balance Drum Bush with pressure reducing grooves and swirl breaks. To improve wear resistance the Balance Drum Bush pressure reducing grooves and swirl breaks were coated in HVOF Tungsten Carbide. Secondly, we reverse engineered and manufactured in-house the rotating sleeves and wear rings which were Tungsten Carbide coated using a Laser Clad application. This method of application offers a better wear resistant coating as it has a metallurgical bond to the parent material, ideal in aggressive wear locations.


Inter-stage Sleeve, Laser Clad


Inter-stage Sleeve, final ground


Finished Balance Drum Bush coated including swirl break


HVOF Tungsten Carbide coating to pressure break down grooves

Benefit

By reverse engineering and manufacturing new parts in-house, Pinnacle Re-Tec offered the customer a more economic parts solution compared to the OEM, whilst still offering OEM equivalent guarantees. By applying both HVOF & Laser Clad Tungsten Carbide coatings to aggressive wear locations, we are preventing excessive deterioration to critical parts thus eliminating early onset vibration of the rotating element.

Result

The customer’s Produced Water Re-Injection pump is now running more efficiently resulting in an improved MTBF and reduced cost of intervention. This has been achieved by providing the customer an enhanced and cost-effective parts solution for both static and rotating wear parts.

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