

**Breathing New Life into Old Equipment, with Innovative Solutions!**

## Case Study Multi-Stage Split Cartridge, Barrel (BB5)



Duty & Fluid	OEM & Designation	Materials
Boiler Feed Pump. Water	Flowserve 6 stg type 8WNC136 Boiler Feed Pump	Carbon Steel Hydraulic components, Stainless Steel shaft.

### Challenge

Customer required overhaul of 2 off 6-stage ring section cartridges for their Boiler Feed Pumps at Cairo West Power Station. We inspected the disassembled parts on site and found that both pumps had suffered from a collision of the rotor, one more than the other. Some of the casing parts had major damage and most of the rotating parts were beyond repair. The customer was also able to provide 2 transport jigs for the cartridges to minimise the risk of damage during transport and an assembly jig for the vertical assembly. Our team was then able to assist with the assembly of the old pump parts and transfer the cartridges into the transport jigs.

Based on this assessment, we were able to determine the requirement of new parts and refurbishment. While most casing parts were repairable, many new parts were also required. Shafts, impellers, bearings and wear rings as well as spring reinforced stage seals had to be replaced.



### Solution

Pinnacle Re-Tec reverse organised the transport back to our facility in the UK where we reverse engineered and manufactured the required spare parts in-house. The damaged parts were weld repaired by 3<sup>rd</sup> party with full weld procedures in place, then machined to finish size in -house at Pinnacle Re-Tec. It was agreed with the customer to change the bearing locations on the shaft from chrome oxide coating to full chrome for a longer lasting result in combination with the thin shell bearings. All consumables were also drawn up and sourced from specialist suppliers.

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](mailto:info@pinnacle-re-tec.co.uk)

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New shaft, stack with seals and complete cartridge assembly with new rotor

### **Benefit**

Reverse engineering and manufacturing inhouse ensured that not only did our client benefit from a cost-effective pump repair solution, but the pump was repaired in line with very tight time deadline.

### **Result**

The refurbished cartridge was transported back to site in Egypt and fitted by our team to the pump casing. Despite not being stored properly on site, both cartridges were checked by our team and found to be in good order. They were fitted to the pump barrel and put into operation. The project was concluded within the 22-week allowed time. Pinnacle Re-Tec provided client with an improved, faster, and cheaper pump repair compared to the OEM, whilst still offering OEM equivalent guarantees.



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