



Three Materials in One Application

WR[®] 300/525/575 Materials Double MTBF of Boiler Circulation Pump



Challenge

The customer needed to remove asbestos bearing materials in the Hayward Tyler wet wound motor boiler feed pumps to comply with legislation. These pumps are used in a variety of power plants. In this particular application, the pump was used by a coal-fired power plant.

Solution

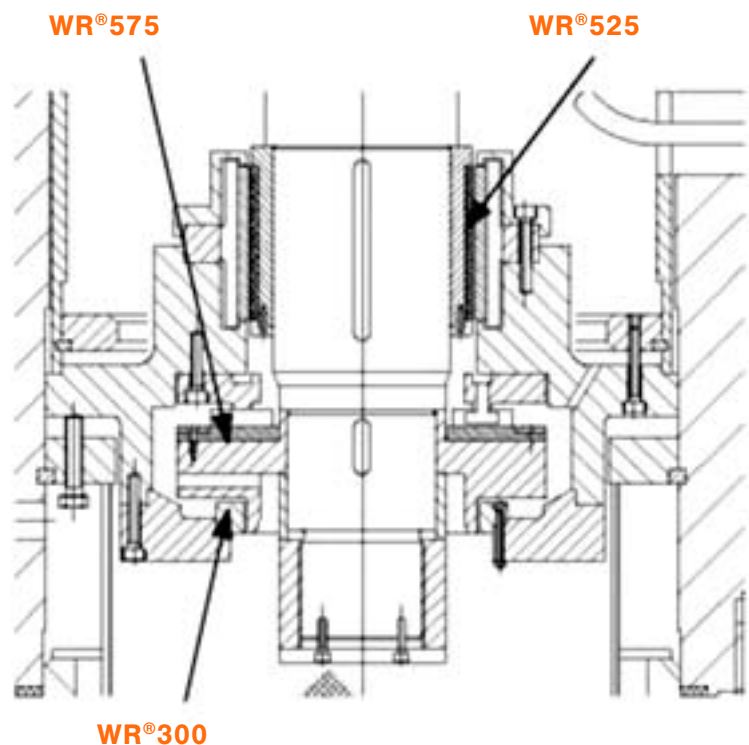
After testing several competitive bearing materials the customer decided on Greene Tweed's WR[®] materials as the new bearing and thrust material. The WR[®] material was selected because it showed negligible wear during the test cycle.

Customer Goals

Leading pump OEM in the U.K. wanted to increase MTBF (mean time between failure) over four years which was the maximum running time of the conventional bearing material so far.

Applications


This pump circulates cooling water in boiler feed applications. Boiler circulating pumps contain wet wound stator motors that traditionally used "Ferrobestos" bearings for both the journal and thrust bearings.





Technical Data	
Former Product	Conventional asbestos-based material
Pump Type	Hayward Tyler boiler circulating pump motor power: from 350 kW to 1120 kW; velocity: run at 4-pole speeds (1500 rpm)
Media	Water
Temperature	230°F (110°C)

Test Results

<p>WR[®] 525 sleeve bearing: Test included 120 starts & stops</p> <ul style="list-style-type: none"> No significant wear on the composite No damage to the 12% chrome-steel mating components 	
<p>WR[®] 300 thrust pads: Test included 120 starts & stops</p> <ul style="list-style-type: none"> No significant wear on the composite No damage to the 12% chrome-steel mating components 	
<p>WR[®] 575 thrust plate: Test included 120 starts & stops</p> <ul style="list-style-type: none"> No significant wear on the composite No damage to the 12% chrome-steel mating components 	

Benefits

- **Reliability/MTBF** - Due to the WR[®] material upgrade the pump’s MTBF (mean time between failure) increased from 4 to 9 years so run times could be more than doubled. The pump deployed 0 faults and still continues to run smoothly. The pump uses three different WR[®] materials in three different areas, showing the versatility of the WR[®] portfolio.
- Customer increased lifetime of the pump while complying with environmental regulations.
- **Dry-Run Protection** - Nongalling and nonseizing properties of WR[®] help avoid catastrophic pump failures caused by dry-run startup or excessive vibration.
- **Easy to install** - Not brittle or easily damaged during installation, like other materials, e.g., ceramics. Greene Tweed provides total engineered solutions and final machined clearances.

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Greene Tweed

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