Non-Metallic Hydraulic Wear Rings Reduce Press Cylinder Costs and Repair Time

Marine
16K Non-Metallic Hydraulic Wear Rings
Case Study 036 FP

Challenge

Background

At a large shipyard's hull manufacturing plant, the rod and piston bronze bushings of a 2000T steel plate forming press cylinder were worn. This caused excessive radial movement and metal scoring of the moving metal components.

Root Cause

The existing bronze bushings of the pistons and rods were worn by excessive lateral load on the cylinders and by the high number of press cycles. The radial movement caused mechanical damage of the hydraulic seals on the pistons and rods, leading to malfunctioning of the press cylinders.

Solution

Service

The Chesterton engineering team recommended refurbishment of the worn bushings based on failure analysis of the seals and equipment inspection.

Product

The Chesterton 16K Non-Metallic Hydraulic Wear Rings have exceptional physical properties with high bearing capacity to support heavy lateral loads. The built-in lubricants help reduce friction between mating surfaces to extend equipment and seal life. The split, cut-to-size bearing bands are snap-fitted in the grooves for easy installation. (Rod diameter 710mm (27.95"); Bore diameter 780mm (30.7").

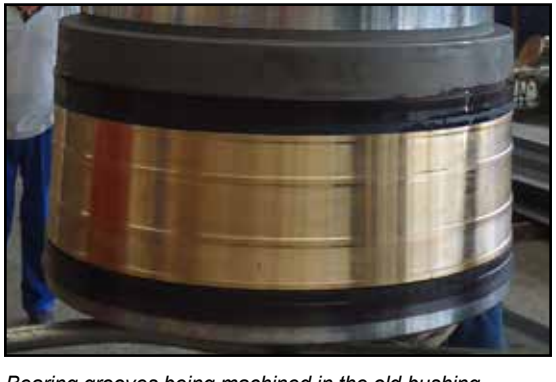
Results

The Chesterton 16K Non-Metallic Wear Rings were installed in the autumn of 2015.The main press cylinder has been in operation without malfunction for over 2 years, providing reliable and smooth operation for the 2000T steel plate forming press.

Benefits of 16K Wear Rings:

- Ease of installation
- Reduced repair budget for large diameter press cylinders
- Faster repair time

Worn, scored piston bushing.



Bearing grooves being machined in the old bushing.

Chesterton 16K cut wear rings are installed in the grooves.

A.W. Chesterton Company
860 Salem Street, Groveland, MA 01834 USA

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