



Diamond Soot Blower Modification Delivers Savings that Electrify Power Gen Customer

PROBLEM ▼

A coal-fired power plant in the upper Midwest was constantly repairing its Diamond IR-3Z design soot blowers, with 40-50 units out of service at any given time. BDI determined that the root causes of those failures were focused on the bearings, which allowed the unit to retract, and on the bronze bushings, which support the unit's drive shaft. The bearing-related failures were due to high temperatures and lubrication frequency; specifically, grease lubrication would liquefy and run

out of the bearing at peak temperature, and the frequency of manual re-lubrication was insufficient to correct the problem. Limitations in the bronze bushing were caused by the shaft not being fully supported, leading to premature wear, and ultimately, complete failure. Regardless of the failure mode, the units had to be removed from service and transported to the maintenance shop, where they were disassembled, repaired or replaced. The process took eight hours on average.



THE SOLUTION:

BDI proposed using Lubriplate SynExtreme grease and a Perma Vario LM402-424 single-point lubricator to address the bearing issue. With input from the customer, a mounting plate was designed to mate with a Dodge P2B-SC-012 ball bearing pillow block bearing to support the shaft causing the bushing failure.



SUCCESS MADE EASIER:

The initial test units were installed in July of 2009 and are still operational. Since that time, savings generated for the customer total \$158,236 (representing combined bearing and reallocated labor costs).

According to the customer, who happily signed a BDI Cost Savings document, the problem "went from being one of our biggest headaches to one that doesn't exist!" Additional savings are now being explored, based on enhanced plant output that has resulted from having 100% of soot blowers in operation rather than 70%.

Contact your local BDI branch for more information on application analysis and other BDI Solutions.