



Lovejoy® ROSTA® Tensioner - Power Plant's Driving Force

New Lovejoy ROSTA Heavy-Duty Tensioner Improves Coal Pulverizer Efficiency

Power has no season. Whether summer heat demands air conditioning or dusky winter evenings call for extra lights and electric blankets, consumers use electricity. In a coal-fired power plant, equipment must operate 24/7. Coal-fired power plants utilize multiple coal pulverizers to generate this electricity. Pulverizing coal results in less emissions and is more efficient use of fuel. Constellation Energy's H.A. Wagner power plant in Baltimore, MD, was experiencing costly downtime, maintenance and material expenses associated with V-belts on a coal pulverizer drive system.

The pulverizer was using a 10 groove 5V cross section banded belt drive. Normal, daily operations caused belts to lose tension over time and sheaves to wear quickly. "Due to warm ambient temperatures, wear occurs quickly and weekly tensioning of the V-belts is common," says Lovejoy's Sales Engineer. "Improper tension results in belt slippage which also wears out the large sheaves. Both are expensive and time-consuming to replace."



Multi-Groove V-Belt running on the Lovejoy ROSTA Heavy Duty Tensioner

To eliminate this problem, a Lovejoy ROSTA Heavy Duty (HD) Tensioner was installed to manage the tension on the V-belts. This tensioner was designed to address situations involving larger horsepower motors, in this case, the coal pulverizer's 300-hp belt-drive. The Lovejoy ROSTA HD Tensioner automatically self-adjusts to compensate for normal wear and to absorb shock loads. Its rubber-torsion spring principle is based on a unique engineered design that uses four, tough elastomeric inserts to isolate the tension arm while providing constant tensioning of the V-belts.

Before retrofitting to Lovejoy's ROSTA HD Tensioner, a maintenance team was required to move an enormous one-



Side view of the Lovejoy ROSTA Heavy Duty Tensioner

ton motor along slide rails just to perform belt tension maintenance, losing precious production time. The Lovejoy Tensioner does not replace the existing motorbase, but instead utilizes fabricated arms and an idler pulley between the arms to apply the correct tension to the belts.

"We were able to leave the existing sliding base intact, setting the alignment and allowing just enough room to slide the new belts over the sheaves," says Lovejoy's Sales Engineer. "Then, we applied the Lovejoy ROSTA HD Tensioner against the belts to give them proper tension."

The beauty of the Lovejoy ROSTA HD Tensioner is that it's easy to install and maintain. The motor is set so that when releasing tension, the belts can be taken off and new belts reinstalled without moving the motor.

The Lovejoy Tensioner eliminated the need for monthly maintenance except for bi-annual, lubrication of the idler ball bearings. The proper tension has reduced downtime and stopped belt slippage.

Additionally, the Lovejoy ROSTA HD Tensioner keeps the chains and belts tight, eliminating slip, vibration and preventing uneven drive surges and power loss. As an added benefit to the design, the Lovejoy Tensioner increases motor life by protecting the radial loads on the output shaft bearings. The predicted lifespan for the Lovejoy ROSTA HD Tensioner is 10 to 15 years. The elastomeric elements absorb shock loads and decreases vibration and noise levels. Which is an important OSHA® requirement.