

Industry: Forest Products
Application: Reduced Labor/Installation/Downtime by Replacing Bearings
Solution: DODGE® Imperial® Bearings

DOCUMENTED SAVINGS CASE STUDY NO. 12

The Challenge

An Engineered Wood Products (EWP) manufacturing facility was having problems with their combustion blower, which is a critical part of the wood chip's drying process. The facility's maintenance team was replacing the blower's existing spherical roller bearings an average of eight times per year. Due to damage from the setscrews, shafting was also replaced an average of four times per year. The combustion blower has only a 1:1 belt reduction, and ran very close to the motor's base speed. It was believed that the shaft's speeds and inherent vibration were causing the setscrews to work loose, ultimately causing the bearing failures.

The Baldor Solution

The local distributor's account manager and Baldor's sales engineer worked together on the solution. The obvious choice became the Dodge Imperial® spherical roller bearing. The Imperial bearing's one of a kind adapter mounting system reduces vibration in the bearing, adheres to the shaft with greater gripping force, and saves the shaft from fretting corrosion and setscrew damage. The Dodge Imperial bearings are still running today, problem free, after three years of operation.

The Savings

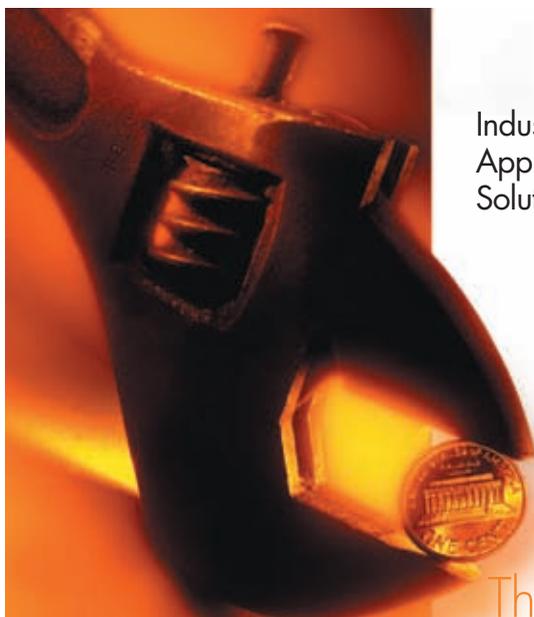
The combustion blower is critical to operation, but does not shut the mill down completely. Without the combustion blower, the facility can only operate at 65% capacity. This greatly reduces the amount of EWP board that can be produced and sold in a very high demand market. Savings were also realized with the fact that the facility is no longer replacing combustion blower bearings on a continual basis. The cost of shafting material cannot be overlooked, particularly with the rising prices of steel.

Savings Plus:

The figures yielded in the case study were based on one year. It should be noted that solutions like this create a year over year savings. The impact becomes even greater when you also consider the higher demands and the rising market price of EWP.

The Conclusion

The Dodge Imperial bearings continue to come through for customers in the toughest of applications. The opportunities for savings are endless. With the experience and education of our distributor partners, we will continue to serve customers in reducing their Total Cost of Ownership (TCO).



Step 1 —

For each product that was analyzed, Baldor asked the following questions:

- The amount of time required to perform the bearing replacements
- Labor rate and number of employees required for each activity
- Cost of materials for each activity
- The replacement frequency of each component
- Reduction in production capacity due to equipment downtime
- Production capability of the facility
- Market price (revenue) of the facility's product

Step 2 —

We calculated annual material cost (bearings and shafting) savings due to replacement of the bearings:

Material Cost Savings = Replacement Frequency x Material Cost Difference

RESULTS:

Shafting

\$ 2,000.00

Bearings

+ \$ 7,349.38

MATERIAL COST SAVINGS

\$ 9,348.38

Step 3 —

We calculated annual production cost savings for the bearing solution using specific formulas:

Production Cost Savings = Current Market Revenue Price (\$/board feet) x Reduction in Production Capacity (%) x Production Rate (board feet/unit time) x Time Spent on Activity x Replacement Frequency

RESULTS:

PRODUCTION COST SAVINGS

\$ 49,350.00

Step 4 —

We calculated annual labor savings for the bearing solution using specific formulas:

Labor Savings = Labor Rate x Time Spent on Activity x Replacement Frequency

RESULTS:

LABOR SAVINGS

\$ 480.00

Step 5 —

We calculated the total annual savings for the bearing solution with specific formulas:

TOTAL ANNUAL SAVINGS = Material Cost Savings + Production Cost Savings + Labor Savings

RESULTS:

TOTAL ANNUAL SAVINGS

\$ 59,179.38



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