

Industry: Forest Products

Application: Reduced Labor/Installation/Downtime by Replacing Bearings

Solution: Baldor•Reliance™ RPM AC® Motors

## DOCUMENTED SAVINGS CASE STUDY NO. 13

### The Challenge

A Texas-based OSB (Oriented Strand Board) manufacturing facility was challenged with considerable maintenance issues on their resin blenders' 40-HP DC motors and drive systems. The maintenance problems were causing unplanned downtime, as well as costly repairs and replacements on the DC motors. The DC drives were also an expensive repair item and had become obsolete technology.

### The Baldor Solution

The facility chose to convert the resin blenders to an AC drive system with RPM AC motors. The local distributor's account manager and Baldor sales engineer worked together on the solution. The obvious choice became the Baldor•Reliance™ RPM AC® Variable Speed AC Motor. The RPM AC offers 1000:1 constant torque speed capability and all the performance of a DC motor, without the brush and commutator maintenance. The OSB plant also chose an AC drive from Baldor as part of their solution.

### The Savings

A significant Return On Investment (ROI) savings was achieved from a multitude of areas. With the rising costs of new and repaired DC motors, the RPM AC is a lower-cost solution from a procurement standpoint. The majority of the savings, as usually seen in manufacturing, is realized in the reduction of unplanned downtime. On average, the plant was experiencing three (3) yearly unplanned downtime events, with substantial time needed to install the replacements and resolve the issues. The DC motors also contribute to the cost of spares that the facility is required to carry in their storeroom. In this application, additional spare inventory savings were achieved because the customer was able to use a Baldor AC drive that was common to another application in their mill.

### The Conclusion

The Baldor•Reliance RPM AC motor continues to give customers a maintenance-free, high-performance solution to their variable speed applications. It also confirms that AC technology yields immediate ROI on applications of all ratings, and that Baldor will continue to be a technology leader in the area of electric motors. RPM AC and other Baldor products, time and time again, display that they reduce the customer's 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 Savings due to replacement of the motors, in addition to the cost of inventory:

Replacement Cost Savings = (Replacement Frequency x Material Cost of Existing Units) - (Replacement Frequency x Material Cost of Solution Units)

Inventory Cost Savings = (Inventory Value + Carrying Costs of Existing Units) - (Inventory Value + Carrying Costs of Solution Units)

### RESULTS:

Material Replacement Cost Savings	+ \$ 1,659.00
Material Inventory Cost Savings	\$ 13,499.36
<b>Total Material Cost Savings</b>	<b>\$ 15,158.36</b>

## Step 3 –

We calculated annual **Downtime Cost Savings** for existing and proposed motor solutions using this specific formula:

Downtime Cost = Downtime Cost (\$ per Hour) x Time Spent on Activity x Replacement Frequency

### RESULTS:

<b>Downtime Cost Savings</b>	<b>\$135,000.00</b>
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## Step 4 –

We calculated the Total Annual Savings for the motor solution with this specific formula:

Total Annual Savings = Material Cost Savings + Downtime Cost Savings

### RESULTS:

<b>TOTAL ANNUAL SAVINGS</b>	<b>\$ 150,158.36</b>
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