

Industry: Paper & Forest Products  
Application: Resin Pumps – Eliminated Downtime  
Products: DODGE® Quantis® ILH and Baldor•Reliance™ VS Master  
Services: Industry Engineering Solutions

## DOCUMENTED SAVINGS CASE STUDY NO. 15

### The Challenge

A Georgia based OSB (Oriented Strand Board) facility was having problems with over-current tripping their variable frequency drives (VFD) on their resin pumps. The problem was occurring when the facility would run one of their exclusive wood flooring products. Most of the facility's OSB products requires 2 gallons per minute (GPM) from the resin pumps to produce the product. However, this particular product required more resin than typical OSB, demanding over 9 GPM from the resin pumps.

### The Baldor Solution

The OSB facility got Baldor Industry Engineering involved to solve the issue. After analyzing the system and getting feedback from the facility's maintenance team, it was determined that the new demand on the resin pumps was exceeding the system's capability. A pump analysis showed that the increased flow (GPM) demand correlated to a horsepower (HP) demand on the VFD that was causing the over-current trips. The solution was to increase the HP and output torque capability of the system. The existing system was composed of a competitor's 3 HP motor, a 1.8:1 ratio gearbox, and a 3 HP VFD. The Baldor solution was to install a Baldor•Reliance™ 5 HP VS Master motor, a 4:77:1 ratio Quantis ILH gearbox, and a 5 HP VFD. The motor fit into the same foot print as the competitor's unit, and combined with the gearbox ratio, improved the HP and output torque rating of the system. See photos and graphs on the back page. A complete engineering analysis is available with detail.

### The Savings

On average, the nuisance trips were a weekly occurrence, and caused operational downtime at a minimum of 20 minutes per occurrence. The Baldor solution has been running problem free for several months. Costly downtime was eliminated. And the facility has realized an immediate and ongoing operational savings.

### The Conclusion

Baldor has not only the products, but the people and the services that are invaluable to customers. Baldor's Industry Engineering team is unparalleled, and is a value added service of which customers and distributor partners are taking advantage. Again, Baldor is making its customers successful, and delivering Total Cost of Ownership (TCO) results to the industry.

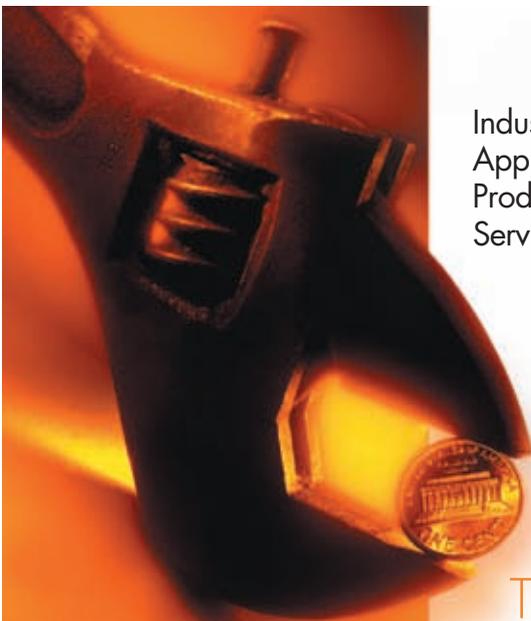




Figure 1: Existing System



Figure 2: Solution System

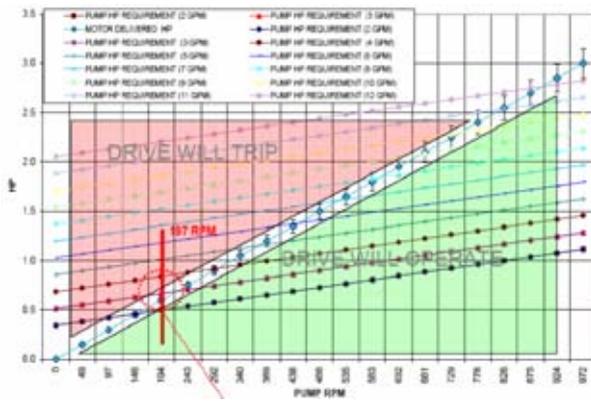


Figure 1: Existing System (HP vs. RPM)

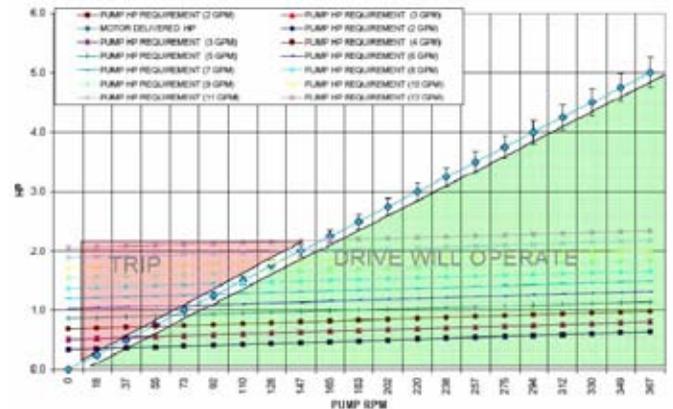


Figure 2: Solution System (HP vs. RPM)

## Step 1 —

For the application that was analyzed, Baldor asked the following questions:

- The frequency of downtime occurrences.
- The average time-span of each downtime occurrence (minutes).
- Downtime costs (\$ / minute).

## Step 2 —

We calculated annual savings for elimination of downtime using a specific formula:

Annual Downtime Savings = Downtime cost (\$ / minute) x Time-span of Each Downtime Occurrence (minutes) x Annual Frequency of Downtime Occurrence (X / year).

### RESULTS:

**Annual Downtime Elimination Savings**

**\$ 113,360.00**



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