

25 Meet the 2012 Product of the Year winners inside



April 2013

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Investment in excellence

One plant's improved productivity and quality was repaid when their company expanded the facility 30

Baldor's roller bearings plant in Marion, N.C.



All photos courtesy of Baldor.

Investment in **excellence**

One plant's improved productivity and quality was repaid when the company expanded the facility.

By Bob Vavra, CFE Media

How do you measure productivity? By OEE? By defects per thousand? Is there a dashboard you look at, a Lean manual you consult to figure out how productive you are as a facility?

Here's a new metric to consider: How many capital investment dollars is your senior management willing to put into expanding your facility? In Marion, N.C., the answer is a LOT of dollars.

When Baldor was acquired by ABB two years ago, the plant had just completed a major capital investment to manufacture taper roller bearings previously sourced from India. However, additional capital investments were needed to address other capacity constraints exposed by recent growth. A decade-long effort at improving quality, reducing waste, and emphasizing safety as a core principle already had earned Baldor's Marion facility top awards



The roller bearing business in the Baldor plant in Marion, N.C. has benefitted from the cross-training of line workers.

from *IndustryWeek* as well as the North American Maintenance Excellence award. Even with the acquisition costs involved in adding Baldor to its global portfolio, ABB looked at the opportunity to expand on Marion's track record of excellence and signed off on a significant expansion of the facility.

The move has allowed Baldor to position Marion for future roller bearing growth.

"Not only does the expanded manufacturing footprint support our roller bearing growth initiatives, it has also allowed us to create a new future state layout for our existing processes," said Marion plant manager Mark Earley. "This future state will facilitate additional work combination, point-of-use material delivery and storage, and improved product flow. It also allows us to strategically position our dynamic 'build-on-demand' cells to reduce component and finished goods distance traveled by 65%."

Personnel flexibility

The 96,000-sq-ft expansion in Marion included literally raising the roof—to 24 ft, 4 ft higher than the existing plant. It allowed for an expansion of the manufacturing cells to insource large diameter housing machining, as well as giving the plant the flexibility to move existing workstations to further improve efficiency.

But the work floor isn't the only place where flexibility is crucial to Marion's success. The Baldor plant has just two operator classifications: Machine Operator and Utility Operator. The



The 96,000-sq-ft expansion at Baldor Marion came as a result of the operational improvements.



Employees are given all the data they need to succeed, including continuous tracking of production data.

latter handles assembly and material handling functions. The work is standardized to less than 20 specific jobs in each classification.

Rather than limiting the jobs an operator can learn or perform, maximum pay is dependent on proficiency in at least four specific jobs, and many of the employees are proficient in twice that many.

This kind of work system puts the onus on continual training and improvement, but the end result is a more flexible workforce that can be assigned based on work load and personnel issues in a given day or week. Like baseball players, workers check the starting lineup each day to see where they'll be assigned. For the 135 workers on three shifts at Baldor, every day is unique.

"The broad definition of job classifications provides us a flexible workforce that can react to our daily customer demand. This structure requires a commitment to in-depth training

“They understand the competitive advantage that their flexibility and skills provide. We have found that most employees like moving around.”

Mark Earley
Baldor Marion Plant Manager



Flexible scheduling and cross-training have led to improvements in operational statistics. It also has led to a decrease in maintenance costs as employees can work with fewer mistakes in the process.

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Mark Earley, Baldor Marion Plant Manager

with dedicated training resources,” Earley said. “We also don’t let business conditions shortcut training. This focus on training is not only impactful to customer service and product quality, it also protects our capital equipment and tooling investments from costly mistakes.”

Earley added that flexibility has helped both the productivity of each station as well as the workers. “They understand the competitive advantage that their flexibility and their skills provide,” he said. “We have found that most employees like moving around versus being tied to one cell indefinitely.”

A more flexible, diverse workforce allows Baldor to build its core competencies in cast iron machining, in tapered bearing manufacturing, and in final assembly. That has led to improvements in operational statistics.

Investment in operations

The maintenance investment has been especially important to help rein in costs over the past four years. “Baldor has made significant

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investment into our maintenance processes in forms of diagnostic equipment, spare parts management, and technician training,” said Randy Rampey, manufacturing services manager for Baldor Marion. “The return on that investment is tangible.”

It wasn’t always that way, Rampey notes. “In 1999, we were totally reactive maintenance,” he said. “We tried to refurbish the equipment, and finally got it to a decent level of maintenance, and then we were able to continue. But still, we would find something too soon and some things not soon enough.”

In the past five years, a strategic approach to maintenance at Marion has produced machine uptime averages of more than 98% each year. In 2012, it hit 99.2% uptime.

There are other metrics at play as well. “Our dependency on outside contractors has been reduced by 95% over that same time period,” Rampey said. “After an initial maintenance cost increase to bring our assets up to acceptable condition, the overall maintenance cost has been reduced to 0.8% of sales value produced.”

Beyond the physical plant, Baldor’s investment in maintenance, safety, and quality has produced the kind of metrics that make the investment in concrete and steel easier to make.


The facility also has been recognized multiple times by the North Carolina Dept. of Labor for its safety record.

Rampey said employees along with front office staff, audit the safety programs to ensure a high emphasis on safety issues, including off-the-job safety. “There’s a lot of peer involvement,” Rampey said. “When there are



close calls and injuries, we try to talk about it on the line.”

The employees have returned the commitment to the plant. During the 2009 recession, they supported Baldor’s plan of taking voluntary time off to prevent general layoffs. Now that the business is growing, management rarely has to schedule overtime because there are enough employees who volunteer to work extra shifts. In another show of support, the plant has had 100% participation in the Marion United Way campaign for the past 13 consecutive years.

Its commitment to maintenance excellence and its flexibility in its workforce designed to meet the evolving needs in Marion made it easy for Baldor and ABB management to make the additional investment into Marion. 

The switch from a reactive maintenance strategy has been a key component in Baldor’s success in Marion.



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