CASE STUDY:

Dramatic Savings at Baldor Electric Company

Baldor Electric Company is a leading producer of industrial electric motors, power transmission products, drives and generators. In 2007, Baldor completed the acquisition of Reliance Electric Company, including Dodge mechanical and Reliance Electric motors, from Rockwell Automation. Headquartered in Fort Smith, Arkansas, Baldor products are produced in 26 plants in the US, Canada, England, Mexico and China and are sold to distributors and OEMs in more than 70 countries worldwide. With an emphasis on quality, Baldor recorded $811 million in sales in 2006.

Challenge

At Baldor, management believes in product quality just as much as production quantity. To ensure a high level of quality, Baldor decided to institute a policy dedicated to customer satisfaction. The policy would involve continuous quality and reliability improvements, with each employee playing a specific role.

With the new quality initiatives, Baldor’s objectives were to:

- Improve gauging and measurement accuracy
- Decrease production cycle times
- Lower the cost of scrap
- Make faster and more accurate inspections

To achieve these goals, Baldor needed to monitor quality data around the clock and use data analysis to make process adjustments when necessary. The solution also needed to be user-friendly for the production and quality teams to quickly adopt as part of their job responsibilities. With the new quality policy, Baldor instituted the methodology of Statistical Process Control (SPC) into the corporate culture with quality personnel, engineers and managers all using data to improve processes.

Solution

Baldor implemented InfinityQS ProFicient™ SPC software in inner-ring machining, inner-ring grinding, outer-ring grinding, ring roller and face grinding cells, with plans to expand the application to induction heat treating, conventional heat treating and cast iron housing machining.

To meet the data analysis challenge, Baldor created an enterprise-wide mandate for quality improvement. Using ProFicient software, Baldor now creates SPC monitor charts and capability charts and makes them available to all employees with a shared responsibility for data analysis. A strategic group conducts regular meetings to share successful SPC techniques and make data driven quality decisions based on ProFicient’s analysis tools.
On the shop floor, Baldor evaluated gauging and made updates throughout its production facilities. Along with its user friendly interface, ProFicient gives operators the framework for easier gauging methods with finer resolution gauges and better inspection tools and methods. The improved inspection tools and methods have produced faster, more accurate inspections that generate a substantial cost savings. These savings are due to the elimination of secondary gauges and handwritten charts and log books. InfinityQS software streamlined quality initiatives on the shop floor and all operators are using the ProFicient database for check sheets.

**Results**

As a result of their commitment to quality, Baldor was able to measure quality improvements throughout their manufacturing processes. The application of ProFicient’s process-defined control limits led to a reduction in product variation. They were able to limit unnecessary machine adjustments by relying on actual data instead of personal preference when making adjustments.

Using InfinityQS in the inner-ring machining department, Dodge reduced the amount of leftover stock in the bores for grinding. This stock reduction decreased cycle times by an average of 15% per piece, yielding yearly savings of approximately 2511 production hours. The process now produces less variation in machined inner rings (±.0002” vs. ±.002”).

Baldor recorded significant cost savings as a result of the first phase of the InfinityQS implementation. They reported 66% annual dollar savings from reduced scrap for internal customers and 63% annual dollar savings from reduced scrap in InfinityQS work centers. The figures added up to a 13% reduction in overall scrap costs. Baldor’s customers are on the winning end of the quality improvements as Baldor reports a 48% reduction in warranty claims. Baldor expects to see further savings as the InfinityQS implementation rolls out.