



PLUG THE PROFIT DRAIN

Faucet-maker Moen boosts productivity and OEE, minimizes downtime by automating its equipment.

➤ No manufacturer can afford to let profits to go down the drain. Moen, a Fortune 500 manufacturer of kitchen and bathroom faucets, is no exception. When struggling with overall equipment efficiency (OEE), including one machine running at only 60% to 70% of its potential, managers knew they needed to automate equipment to increase throughput and efficiency and boost profitability.

As a result, Moen increased productivity by 20% in less than one year and boosted OEE by more than 20% after implementing the FactoryTalk® integrated production and performance software suite from Rockwell Automation.

Screw machines, a form of highly automated lathe, are essential in faucet manufacturing. In general, older screw machines can't accurately count the parts produced. Unable to manually detect a rod shortage, the machine can shut down and sacrifice productivity. This also can lead to increased product flaws, forcing many manufacturers

to submit to labor-intensive quality checks — particularly problematic when more than 100 different products are in production at any given time.

Moen wanted an accurate count of parts that each screw machine operator produced in a given day. This would help to identify potential problems before they occurred and improve overall efficiency.

In addition, with growing global competition, the faucet manufacturer needed to verify rate versus cycle time to confirm that each machine was running at maximum availability.

“With increased competitive pressures, the ability to keep close tabs on our productivity and keep it as high as possible was becoming increasingly critical,” explains Steve Zurcher, lead production coach, Moen.

“This requires reliable access to operation data, including rate versus cycle time, part counts and overall operating parameters of our machines,” he adds.



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— Steve Zurcher, Lead Production Coach, Moen

Connecting All the Right Parts

Moen asked Rockwell Automation to implement a manufacturing execution system (MES). This system helps Moen measure and control critical production processes while also helping increase traceability, productivity and quality. Moen also can use the system for other functions, including inventory management, equipment and labor tracking, and quality and resolution monitoring.

Using the FactoryTalk software brought a simple view into plant operations, without adding additional manpower. The service-oriented architecture (SOA) within FactoryTalk provides a tailored mix of software integration tools and manufacturing software applications for improved access to plant-floor information.

Data from many different operations across the plant floor is now fed into one software application — FactoryTalk Metrics. Engineers can use data to help improve processes and generate reports on production development, allowing them to more easily adjust manufacturing operations to meet ongoing product demands. The FactoryTalk Metrics component automatically logs delays in a fraction of a second and serves as a basis for understanding real causes of inefficiency, waste, lost capacity and equipment status.

Moen also uses FactoryTalk Transaction Manager to more effectively integrate critical data in its shop-floor control systems with enterprise IT and other manufacturing applications.

With this software solution, the company can establish a two-way exchange of data between applications, a database and the existing control system for downloading recipes, production schedules or managing data exchanges. This software solution provides connectivity, location transparency and redundancy.

Moen also can take advantage of a user-friendly interface that allows communication using the Rockwell Software® RSLinx® communications interface software. With RSLinx, the company's control platform provides data to support multiple software applications simultaneously, including FactoryTalk Metrics and FactoryTalk Transaction Manager.

Using a DeviceNet communications network, Moen collects operating parameters, such as power, amperage, line output, fault codes and bus voltage. Operators also can pull up a trend analysis for a specific component. Engineers use a simple RSNetWorx™ software interface to define and configure device management services for DeviceNet.

"We have used Rockwell Automation products for more than eight years, so we knew their expertise and due diligence would provide us with a unique solution to our dilemma," Zurcher says. "Their understanding of our business needs helped address not only the issues we originally hired them for, but also helped open our eyes to the plethora of possibilities that an integrated plant-floor architecture can provide manufacturers in our industry."

Flowing Smoothly

The Rockwell Automation solution helped Moen boost productivity by 10% in less than one year, and increase OEE on most machines by nearly 30%. Machine part count data also allows management to schedule preventive maintenance and minimize downtime.

Moen is now able to tell how long its equipment runs and how many parts each line produces, and verify overall cycle-time versus rate without manual counting on scales. In addition, Zurcher and his team also can tell when a machine breakdown is coming because of voltage and cycle time increases.

"The main reason we automated our production with Rockwell Automation was to provide a better handle on our productivity," says Zurcher. "What we didn't expect was a tamper-proof way to count parts and monitor machine operations with the ability to compare cycle-time to rate. The benefits of the Rockwell Automation solution have helped us remain competitive in an increasingly crowded industry." □

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