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—Sean Dotson
President
RND

Concept to Reality

RND Automation & Engineering delivers top quality on time.



Image courtesy of RND Automation & Engineering LLC

Project Summary

When there isn't an off-the-shelf solution for a manufacturing process, RND Automation & Engineering LLC steps in. Its experience with custom automation machinery encompasses over 15 years of working with such leading manufacturers as Johnson & Johnson, Coca-Cola, Proctor & Gamble, and Pepsi. Other fields in which RND succeeds include assembly, inspection, pharmaceutical processing, robotics, and material-handling. Projects range in size from over \$1 million automated work cells to semi-automatic operator-assisted devices small enough for a table-top.

RND's motto is "Concept to Reality," offering best-in-class quality and on-time custom machinery to clients. An excellent example of this is the customized automated valve assembly machine it recently completed. It was too complex a project for 2D software, so armed with Autodesk® Inventor® software and Digital Prototyping, RND was able to:

- Design, engineer, test, and manufacture the machine in less than one year
- Cut material waste by animating the machine's robots in operation
- Minimize production downtime on the factory floor to only four days

The Challenge

"A major challenge involved simulating and optimizing the movement of the robots," says Sean Dotson, president of RND. "Also, the nature of this project was very time-consuming. We had to find ways of reusing data to work as efficiently as possible."

The Solution

"With Inventor we could simulate the motion of the robot and place the surrounding equipment such that singularities could be avoided and the paths optimized," Dotson continues. "We were also able to reuse a pallet lifting design in several of the stations. Some stations had to be slightly different, but being able to reuse a lion's share of the parts saved a lot of time."

Since adopting Autodesk Inventor, rework and design mistakes have dropped drastically. Dotson says that now when the parts hit the manufacturing floor, a majority of the time they bolt together with few issues.

"We are also able to take much of the on-floor prototyping that used to be done and create digital prototypes," he adds. "With the tools Inventor gives us, we can easily see when a linkage might bind or see if a plate will deflect too much."

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The Result

"Trying to make sense of it in 2D would have been very difficult," says Dotson. The machine was ready in less than a year, well ahead of estimations. Working in 2D it would have taken almost twice as long to complete. The company also cut material waste and minimized production downtime significantly. "Plus, of course, it's just more fun to design in Inventor," concludes Dotson.

For more information on Autodesk Inventor, visit www.autodesk.com/inventor.

For more information on RND Automation, visit www.rndautomation.com.