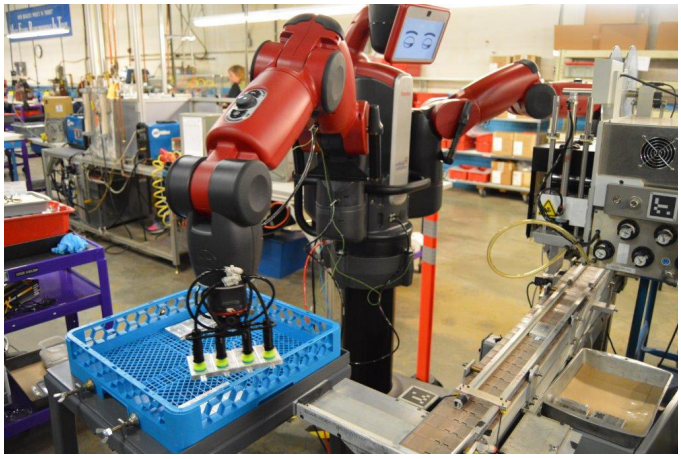
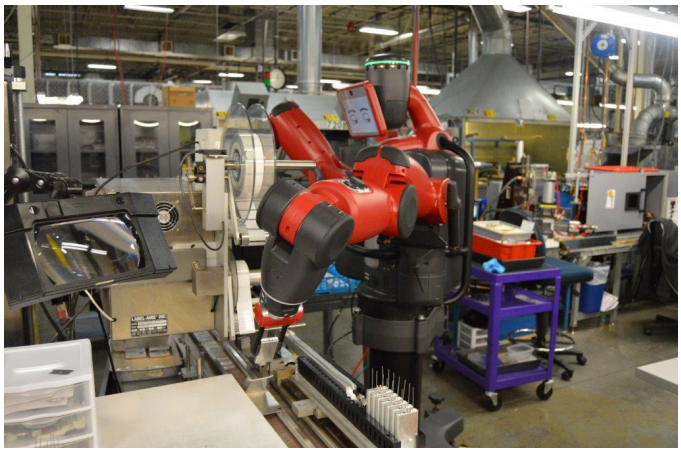
How Rethink Robotics' Baxter robots doubled efficiency at Cornell Dubilier

Facing shorter production runs, rapidly changing customer demands and impending labor shortages, manufacturers are turning to collaborative robots to enable them to be responsive to these industry trends. One major manufacturer of power capacitors has deployed Rethink Robotics' smart, collaborative robots – and is seeing powerful results.

> By implementing Baxter, Cornell Dubilier:
>
> - Doubled the speed of labeling process from 125 to 250 parts per hour
> - Saved 200 sq. ft. in floor space by streamlining a single work cell
> - Reached return on investment in just 12 months





Closing the automation gap

Cornell Dubilier, the largest power capacitor manufacturer in North America, has more than 35,000 customers who use their capacitors for aircrafts, laser medical technology, alternative energy, welders and generators. The company has embraced innovation since the year 1909, when its founder, William Dubilier, used the glass mineral mica to form a capacitor, revolutionizing radio broadcast communication. Today, Cornell Dubilier cranks out 10,000 different products on six assembly lines at its Liberty, S.C. plant, and nearly every product it designs needs to be customized using a highly manual process. In order to maintain its standing as a leader in the power capacitor industry, Cornell Dubilier needed to streamline their labeling and inspection processes and become more agile.

Daniel Brazinski, manufacturing manager at Cornell Dubilier, recalls looking for an affordable automation solution without a steep learning curve that would complement the company's existing framework. When looking into Baxter, the world's first collaborative robot from Rethink, the first thing that stood out to Brazinski and his team was the robot's adaptability and flexibility.

> "Introducing automation has traditionally been a challenge in our plant, as we produce customized products that are different from day to day," said Brazinski. "Baxter's ability to accommodate for the variability in our products and our environment made it a very intriguing option."

Brazinski and his team started with a small investment of two Baxter robots.

> "We really loved the idea of Baxter, and had seen some videos that made us think that Baxter could make a difference in our Liberty plant," said Brazinski. "While there is always skepticism when it comes to new technology, Baxter settled any doubts we had immediately."

New operators join the line

Their first Baxter was deployed to a pick-and-place application unloading prismatic capacitors from a labeling machine, a tedious job that was previously completed using only human labor. The benefits of introducing Baxter to the production line were noticeable immediately. An employee working on the line next to Baxter came up with the idea to have the robot check attached brackets while unloading the capacitors. Another employee suggested that Baxter try loading the parts into the labeling machine.

The engagement by Cornell Dubilier's operators led to several process improvements. The manufacturer has doubled the speed of its labeling process from 125 parts an hour to 250 parts an hour, and freed its operators from a tedious, manual process.

> "The innovation Baxter has helped us drive far exceeded our expectations. Baxter is inspiring our employees on the factory floor to think outside the box and look for new ways to save time and resources," said Brazinski. "The results we saw in just our first deployment more than validated our investment."

The Cornell Dubilier team deployed its second Baxter robot to inspect new capacitor installations, working in tandem with proprietary company technology. The robot uses a vision system developed in a Cornell Dubilier research and development lab to inspect parts, which was previously performed manually. As a result, Cornell Dubilier has been able to use its employees more effectively.

Even though Baxter is streamlining operations, Cornell Dubilier has no plans to lessen its workforce. In fact, the company's management team is committed to not only maintaining employment for all of the factory employees, but can now shift them to execute more complex and fulfilling tasks.

Continuous improvement

The employees at Cornell Dubilier have embraced Baxter robots, which are officially a part of the company's culture, and they're excited about the innovation the robots have helped spur on the factory floor. While the first Baxter robot paid for itself within 12 months at Cornell Dubilier, the benefit to the plant exceeds a simple return on investment calculation. Brazinski and his team see Baxter as a valuable tool to drive continuous improvement.

Cornell Dubilier is actively looking at more applications for the robots, and has already identified six additional tasks in the Liberty facility alone where Baxter may be deployed. Furthermore, the team is using Baxter as a litmus test for humans, by checking the complexity and difficulty of any manual task with Baxter before assigning it to a human worker, Cornell Dubilier is able to focus on increasing both the safety and comfort of humans on the factory floor.

In the end, Baxter improved efficiency, innovation, ROI and is only getting started at Cornell Dubilier.

> "Our entire team is excited by what we've already achieved, and how we can improve even further with this smart, collaborative robot", said Brazinski.