

## FIRST PASS YIELD IMPROVEMENT CREATES DRAMATIC REDUCTION IN LEAD TIME

**ABOUT CARLYLE JOHNSON MACHINE CO.** The Carlyle Johnson Machine Company is a Bolton, Connecticut, manufacturer. Carlyle Johnson (CJ) designs and builds brakes and clutches for specialty applications. Their products are found in components for airplanes, satellites, surgical robots, military tanks, fire trucks, and more. Over the last 100 years CJ has become known as the “go-to” brake and clutch manufacturer for parts used in manufacturing facilities across the nation including electric utilities, textile producers, packaging, and mining/drilling companies.

**THE CHALLENGE.** Carlyle Johnson prides itself on providing the highest quality, most innovative products and services in a global marketplace environment of increasing competition. In an ongoing effort to defend its market share and improve its manufacturing and support processes, Carlyle Johnson introduced a continuous improvement (CI) implementation initiative at the company to harness the talent of its workforce.

Having previously worked with CONNSTEP, part of the MEP National Network™, CJ opted to send one of its shop employees to its Continuous Improvement Champion Certification (CICC) program to refresh his CI skills.

**MEP CENTER'S ROLE.** Carlyle Johnson sent manufacturing engineer Simon Bertocci to CONNSTEP's CICC course, where classes are taught using a “Learn It - Do It” approach and a mentored lean project is conducted at the facility of each attendee. Bertocci saw this as a perfect opportunity to apply his new skills to CJ's Returned Material (RMA) process.

The RMA process at CJ had grown to a lead time of 43 days, which was not only upsetting customers but also perpetuating any errors found through more shipments than necessary. To improve responsiveness and alleviate customer concerns, CJ set out to reduce the time and money spent on RMA's, since they are not paid for them, and establish a more streamlined RMA process to free up capacity for more value-added work.

Bertocci applied his CICC training and thought about what happens at every step of the RMA process, working reducing the back and forth to minimize steps. He drew a current state value stream map for shop floor employees as well as a future state spaghetti diagram. Bertocci then determined root causes to help create new improved flow processes which eliminated rework and resulted in significant cost savings. Internal documentation was streamlined to only capture what was needed and a visual management process was put in place. Most importantly, total lead time was reduced from over 40 days to five days. In addition, total processing time went from 11.8 hours to 3.4 hours and first pass yield jumped from 10% to 90%.

**"Following guidance from my CONNSTEP mentor on this CICC project I was able to lay out problems visually and uncover issues that were normally hidden. In the end, we reached our goal of having an RMA process that reduces the amount of returns coming back. And it freed up some of my time to apply to new projects."**

-Simon Bertocci, Manufacturing Engineer

## RESULTS



\$2,000,000 in increased or retained sales



\$100,000 in cost savings



\$50,000 in new products

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