



Application Story: Emco Maier / Orscheln

ORSCHELN JUMPS INTO CNC... AND GOOD GOT BETTER

At Orscheln, LLC in Moberly, Missouri, they had subscribed to a time-tested and reliable old maxim, namely, "If it ain't broke, don't fix it."

Founded in 1938, this 47,000 sq. ft. screw machining facility, with 54 employees and a wide range of services, produces products for automotive, marine, aircraft, military/defense, recreational and housing market customers. They do turning, forming, laser cutting, crimping, welding, bending and coating to manufacture such end-products as marine cables, aircraft control cables, electronic throttle controls, engine/valve/pump controls, fluid level indicators, parking brake cables and levers, push-pull cables, trailer parking brake systems and transmission shift controls.

Typically, this Orscheln facility fabricates products from various grades of carbon steel, stainless steel, brass and aluminum. The majority of their conventional screw machining was done on the benchmark brands of equipment...Wickman, Acme, Davenport and Brown & Sharpe. Occasionally, they even outsourced some work, when necessary, because of workload or part particulars.

Recently, this established and highly-successful shop "jumped" into CNC machines, acquiring three EMCOTURN 420 and one EMCOTURN 332 machines from Emco Maier USA. As Daryl Duschene, plant superintendent for this facility, explains, "We bought our very first CNC machines and there was some hesitation... until we began to use them. As first-time users of CNC, we anticipated a long learning curve and we were concerned about its impact on our productivity. However, we quickly found our learning curve was minimal, due to the very operator-friendly controls onboard all the machines, the SINUMERIK 840D from Siemens."

On their CNCs, Orscheln uses the controls for axis and spindle positioning, most often

storing the parts programs directly in the memory of the machine's CNC control. They transfer other programs to and from their resident network via a handheld PC.

As Duschene further commented, "In setting up one of the CNC machines, we especially like the very precise 0.0001" incremental movement of the axes and the user-friendly graphics, when setting the threading data. Our operators and QC personnel have commented several times how the dimensions of our finished components stay within tolerance with very little variation. This gives us great confidence in the machines, the controls and the overall process. So much confidence, in fact, that we've actually run the machines unattended for several hours with excellent results. For first-time CNC users, we experienced very short learning curves and we mostly taught ourselves. We went from the

Above left: Powerful CNC programming and control capability includes one program running two parts simultaneously, a polygonal turning feature and full graphic simulation of the cycles.

Above right: EMCOTURN 420 MC Plus, a dual-spindle horizontal turning center with Siemens SINUMERIK 840D CNC.

Below: Siemens SINUMERIK 840D powerline CNC package with SIMODRIVE 611U drives.



installation date of the first two EMCOTURN 420s to fully-loaded production runs on three shifts within only three months. When you add in the fact we ran over 130 different part numbers in that time, it's remarkable how easy it was to get the job done."

Plans are in the works for Orscheln to acquire additional CNC machines, all projected to include Siemens 840D controls and drive packages. The company reports improvements in both part cost and quality, resulting from use of the CNC machines. As Duschene explains, "Part quality was greatly improved, several ways. Surface finish has very notably improved. We now have the capability to hold tolerances of $\pm .001$ ", whereas before we couldn't. Our process capability allows us to achieve a 1.67 Cpk for our customers, where before we couldn't. We have eliminated

secondary operations, thereby reducing our lead time to our customers."

On the dual spindle machines, one part program runs on the CNC, simultaneously producing both parts without interruption or collision, the result of Siemens advanced SIMODRIVE 611U drives, part of the SINUMERIK 840D powerline package, according to Emco Maier.

As a result of their quick ramping up on CNC operations, plus the demonstrated improvements in part quality and overall time-to-produce, Orscheln has been able to perform more work in-house. At this successful shop, "good got better" and they credit the enhancements of CNC for much of that growth. ■



Parts produced on the CNC machines at Orscheln, LLC in Moberly, MO include various cable assemblies, throttle control components and levers.

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