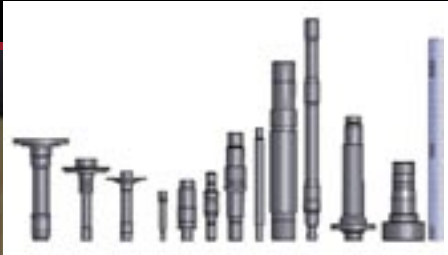


Automated Cells Make Drive Shaft & Drill Bit Manufacturer Twice As Productive

CUSTOMER SUCCESS STORY



McConnellsburg PA-based Fulton Precision Industries, Inc. makes transmission shafts for Caterpillar construction equipment and rock drill bits for Atlas Copco. The 94 separate Caterpillar parts range in diameter from 2" to 5.5" and in length from 27" to 42", with individual shafts weighing up to 235 pounds. Lot sizes are relatively small, and each shaft has complex geometry that must be machined to tolerances of +/- .0007 of an inch.

The Difference Is
GOSIGER



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automation solutions rev up productivity

According to Fulton's President, Walt Barmont: "When we considered adding two new L 470 Okuma lathes to our shop, Gosiger, the Okuma dealer, proposed automating our process by adding a Fanuc 165F robot to load and unload parts. Gosiger Automation (Dayton, OH) worked with us to make sure the system would not only increase productivity, but would deliver the accuracy and repeatability we require, and it does."

In designing the cell, Gosiger Automation addressed a number of issues unique to Fulton Precision's manufacturing processes. For example, the robot is set up to service two machines and is capable of running two different part numbers simultaneously, one in each machine. This, of course, provides exceptional production flexibility.

Additionally, the cell allows parts to be run between centers, with or without a steady rest. They can also run in two consecutive operations using stepped chuck jaws. Additionally, the design meets a requirement that the cell produce any two of the 94-part family simultaneously. Once again, this provides an unusual degree of system flexibility.

To accommodate Fulton Precision's operational requirements, the cell design calls for mounting the robot between two outward-facing machine tools and loading the parts over the back of each machine. This layout allows ergonomic operator access to either machine tool

for service or changeovers, while the opposite machine continues to operate completely automatically.

Although Fulton Precision's goal was to increase productivity by 30% - 40%, the automated cell has actually delivered much greater efficiencies. Because the cell runs unattended and greatly reduces operator time, productivity has more than doubled. The cell can run any of the 94 parts in one machine while simultaneously running any other part in the opposite machine, without any tooling changeover or adjustment. In addition, the cell's simplicity and ease of programming makes it practical to set up eight-piece and larger lot sizes.

Based on the flexibility and better-than-anticipated efficiencies, Fulton Precision had Gosiger install three more identical cells. Today, 131 different parts can run on the original tooling design without a changeover.

This increased efficiency became even more significant when the overall economic situation worsened and Fulton Precision, like virtually everyone else, had to make do with less. "Although our overall sales are down" Barmont explains, "this increased productivity allows us to actually improve our profit margins. Working with Gosiger Automation has been excellent on all counts, from design through installation and training. They took the time to understand our needs and adjust the design accordingly. Just as important



ABOVE: To accommodate operational requirements, the cell design calls for mounting the robot between two outward-facing machine tools and loading the parts over the back of each machine.

to us is how responsive they are if we have a question or a minor glitch. They get us an answer in 24 hours or less."

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