

Application Story: Index / MSP

MODEL SCREW PRODUCTS SCORES HIGH MARKS WITH CNC

Through its use of Index multi-spindle machining centers, one Florida job shop is continuing to score high marks with precision hydraulics, aerospace and defense sector customers. Model Screw Products in Clearwater is a 78-person, 42,000 sq. ft. facility, currently producing various hydraulic components for major OEMs and government facilities. According to Tony Farrell, general manager at MSP, "Our customers have very high standards and we accommodate them by maintaining an absolute state-of-the-art machining and quality control operation."

MSP typically works carbon steels (4140, 1117, 86L20, 1215, 12L14 and 11L17) and tool steels (A2, S7) on a variety of machine tools, including CNC multi-spindle, CAM multi-spindle, grinding, honing, broaching and diamond finishing. Parts produced here range from shafts and hydraulic ports to rings, collets and caps.

Two of the newest Index machines at MSP have made significant improvements in the productivity, quality and especially the data exchange process at the company, according to Tony Farrell. An Index MS32C and MS32P are both precision CNC, six-spindle automatic machining centers, used for 2" max. bar and 5" chuck work, to produce medium and high-volume turned parts at MSP. Both feature an advanced CNC, the Siemens SINUMERIK 840D, used to control spindle movement and axis movement, monitor tool wear and engage various safety options on the machines.

Currently, according to Index sales and marketing director, Brenda Cooley, "Siemens controls are used for 99% of our axis and spindle motion. The types of drives and CNC packages we require at Index demand greater control capability for each individual axis and, with Siemens, 32 drives can be controlled with one NCU processor. Plus, there are memory

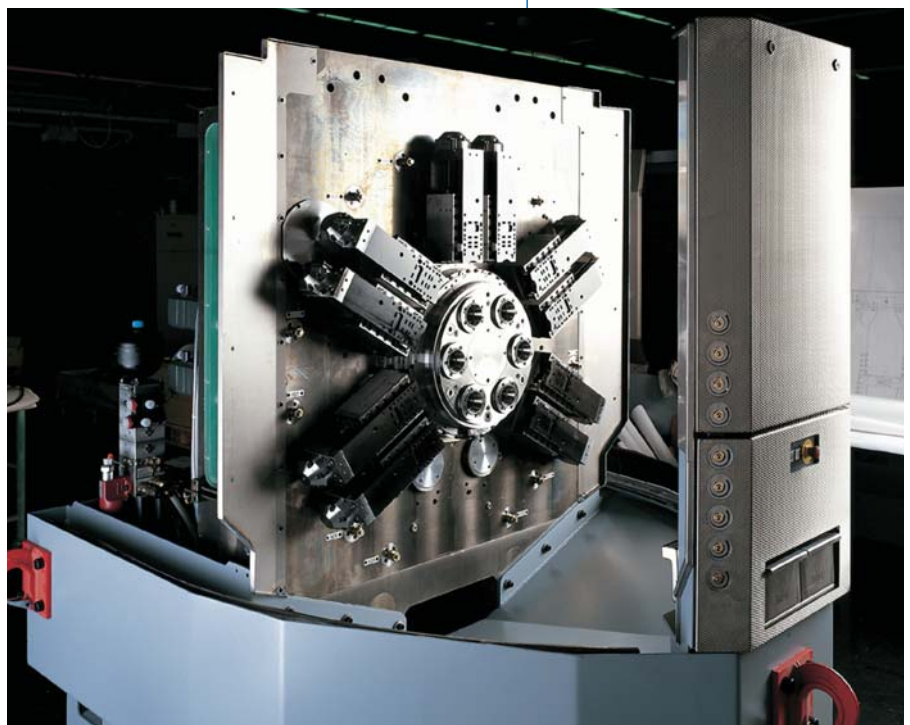
upsides, as data programs can be stored on a hard drive for long-term storage while the current programs are being stored and used out of a RAM chip for better and faster access." She also noted the control can be utilized for better tool management.

The SINUMERIK 840D is a high-level CNC, offering machine builders and end-users alike a wide range of specialized functions for milling, drilling, turning, grinding and materials handling. Its capabilities also include nibbling, punching, metal forming and laser processes. SINUMERIK 840D even offers additional features to increase shop floor productivity, especially, the challenges of high-speed and five-axis machining, according to Siemens sources.

Above left: Inspection of hydraulic cartridge valve components at MSP, with all appropriate documentation, is vital to this shop's success with its unique and demanding customer base.

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

Below: Index multi-spindle CNC machining centers are used at Model Screw Products to produce high-accuracy components for hydraulic systems and defense ordnance.



Tony Farrell of MSP comments further, "These CNC controls allow us to store multiple programs because of their substantial software capabilities. Internet capabilities onboard further allow us to communicate directly with our quality department on SPC (Statistical Process Control) data, as well as our customers for real-time production scheduling. This enhancement especially has made a tremendous impact on our business."

An MSP operator finds the control very user-friendly, as the set-up requires plain language, "fill in the blank" answers to prompts on the CNC monitor. Troubleshooting is likewise easier, as is the programmed routine maintenance on the machine, all controlled by the CNC. Because of the Internet access to real-time assistance, downtime is drastically reduced. Both the end-user (MSP) and machine builder (Index) in this example agreed the support of the CNC supplier was essential to the successful implementation of the high-level control platform into their operations.

To verify quality at MSP, every part is inspected using a variety of dimensional, impact and other testing devices. Because the end uses of

their components often include high-pressure hydraulics systems and critical accuracy defense ordnance, MSP is particularly sensitive to the QC monitoring and documentation protocols it maintains.

Index Corporation is a builder of various machine tools and machining centers, sold under the Index and Traub brand names. These include CNC single- and multi-spindle turning machines, near net shape vertical CNC chucks, Swiss Type CNC sliding headstock machining/turning centers, fixed headstock, twin turret machining centers, CNC lathes and heavy-duty CNC turning/milling centers. Founded in 1914 by Hermann Hahn, Index markets its machines to automotive, medical, aerospace, electronic, optic and other precision parts manufacturers worldwide.

Index engineering has been assisted by various Siemens personnel in the application of CNC on this builder's machine tools. Cited for their contributions specifically by Index were the Siemens technical field service and engineering departments, whom a company representative said, "...were there for us whenever needed, striving to meet our needs and to meet or beat all our expectations." ■



Above: Siemens SINUMERIK 840D CNCs control all axis and spindle motion, as well as various safety options on the machine tools. Programming is done via simple text instructions.

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