Customer Profiles

Stowe Machine Doubles In Size With No Disruptions  
Windsor, Connecticut

Aerospace manufacturer surprises shop floor with purchase of new company, but 22 new machines are no problem for recently purchased eXtremeDNC system.

Stowe Machine is a Windsor, Connecticut based aerospace machining house held to the tightest requirements in the aerospace industry. Its work is exacting, its specifications precise. Strict controls are in place to assure every jet engine part it makes meets precision accuracy and perfectly consistent quality. There is no room for mistakes at Stowe Machine, nor has there been since 1947.

Stowe is under contract to such giant engine manufacturers including Pratt & Whitney and General Electric. It also makes parts for the U.S. military. The shop is certified for ISO 9002 and AS 9000 (aerospace industry standards). Stowe primarily makes rotating parts and seals, parts that can move at thousands of revolutions per minute under high pressure. The manufacturing process must be controlled tightly, and every CAD and CAM program is checked and rechecked before and after each part is machined.

Stowe Machine performs this work with 22 NC machines on its floor. The machines are a variety of lathes and machining centers, of various ages. Machines are watched closely, and if there is any error from wear, the machine is replaced, resulting in a high turnover rate of machines. Control software must be flexible enough to translate for each machine, including those coming in the door.

To make matters more difficult, Stowe Machine recently bought another jet-engine-part manufacturer, Adco Manufacturing in South Windsor, Connecticut. This means the addition of 24 more NC machines, again of varying ages and requiring tough quality checks regularly. These machines have been moved into Stowe’s facility. Some are so old they still use tape readers, and behind-the-tape-reader software (BTR) must be used to communicate with the CAM programs. Until recently, controlling and communicating with this large network of machines was a nightmare. Brian Baeder, Technical Manager of Stowe, explains how the shop transferred NC data to the machines. “Prior to using eXtremeDNC, we had a competitive product. It was a single-user program; it could only program one machine at a time. We had switch boxes all over the place to route the data. It was not a lot of fun with 22 machines. The competitive product could handle five or six machines but it was tough for twenty, and it would be impossible with forty machines.” Determined to streamline operations for better quality and cost control, Stowe turned to MACDAC to install eXtremeDNC. Baeder was already familiar with MACDAC Engineering, for its service on MasterCAM to create the NC programs.

“Now each machine has a dedicated line and the operators do not even have to leave the machine to run a CAM program. This saves five minutes for each machine operation, saving about 30 minutes per set-up, or five hours a day,” Baeder says.

eXtremeDNC can drip-feed data to as many as 128 machine tools per control computer, all running simultaneously. Any computer in the network can control the software, and machine operators can edit software at the machine using eXtremeDNC. However, it is eXtreme’s lockout features that mean the most to Stowe Machine. The CAM programs can be complex, yet it is vital they maintain coding integrity to meet manufacturing standards. The software is checked for changes before and after each run. eXtremeDNC tracks the use of each program and helps maintain integrity with a minimum of effort.

“eXtremeDNC makes it easier to document quality control, because the programs are in certain directories, protected by passwords. They are programmed to raise a flag if a program is not in the right place,” Baeder adds.

“We purchased the software from MACDAC in February 1999, and no more than a month later we found out about Adco,” he notes.

“Moving the machines was tougher than hooking them up. MACDAC needs less than an hour to have them communicating. It turns out eXtremeDNC through MACDAC was an inexpensive way to do new set up without interrupting the manufacturing process. MACDAC worked around us and was as least interruptive as possible,” Baeder says. “I pat MACDAC on the back. They always come over right away.”

Now that Stowe has eXtremeDNC communicating with its entire network of machines, there is ample room for expansion, and the company is ready to advance into the next century with whatever challenges may come.

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