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Tooling & Workholding



Productivity Triples - Pg. 50

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View of 4 of Conejo Industries 10 Kitamura machining centers. Operators are foreground Pedro Hernandez, machine operator, Abraham Sanchez (front right). Machines are Mycenter 2XiF Spark Changer, a Mycenter 1 and two Mycenter 0 Spark Changers (rear).

Swimming Upstream

How a Job Shop Learned to Swim Against the Offshore Flow.

*Story and photos
by C. H. Bush, editor*

Swimming upstream in order to assure the survival of the species is a practice usually attributed to salmon. You know, once a year they fight their way up the same stream in which they were born in order to mate and start the cycle over again.

Lately, however, many job shops in the metalworking industry are feeling the same pressure to swim upstream to achieve survival. In their case, though, the stream is not water, but the steady offshore flow of work to China, Taiwan, South America and other low-wage countries.

“In the past few years, a lot of shops looked around and suddenly discovered they were no longer in business,” says Peter Jorgensen, president of Newbury Park, CA’s Conejo Industries. “I know, because that came close to happening to me. If you’re not paying attention, that outflow of business will wash you away and drown you.”

Founded in 1970 by Jorgensen’s father, Erik B. Jorgensen, Conejo Industries grew over the years to become a very successful shop producing parts for a wide range of industries. Peter Jorgensen joined the company in 1977 after earning a college degree in business. He took over as president of the company in 2003.

“In our heyday we had 50 employees using almost a

Abraham Sanchez (left), machine operator, shows a recently produced small part to company president Peter Jorgensen

million pounds of aluminum a year producing heat sinks and other parts for the computer industry,” Jorgensen says. “The heat sinks were extrusions with fins on them, and we cross-cut the fins with blades, and then cut them off. Back then we were making 5-6,000 parts a day per machine working 3 shifts. Trucks were coming in with extrusions and leaving with pallets of heat sinks going to Compaq, Hewlett Packard, Selectron, people like that. It was great back then.”

The Tide Changed

The PC market was “really hot” for about 4 years, Jorgensen recalls.

“You could get \$3 or \$4 for heat sinks in those days,” he says, “because the computer was \$4,000-\$5,000. But things changed. The price for a PC dropped, and there was huge pressure to drop the price of all the components. A piece of aluminum had to drop down to well under a dollar, which was tough, because there was anodizing, cross cutting, marking, taping on the back of the heat sinks. All of that cost labor dollars. Eventually, some time in the 90’s, our customers started moving everything offshore to China because the computers were moving over there. If you weren’t careful, you got washed overboard in the rush.”

One year IBM demanded that its vendors put country of origin on their parts, Jorgensen remembers

“We had to make labels for the parts,” he says. “We put American flags on them. And we put flags on the side of the boxes, but then about six months later they said, if it was made in the U.S.A., they didn’t want it. It was too expensive.”

Unlike many shops, Jorgensen followed IBM to China in an effort to hang on to the business.

“We went to China and did a contract deal with a Chinese outfit,” he says. “We taught them how to make the products for our customers, so we wouldn’t lose the job, but eventually other Chinese companies competed with them, and we lost IBM anyway.”

Shifting Gears to High Speed

Jorgensen says that even now, in 2007, most of his customers are building factories in China. But he believes he has found a way to not just survive, but to make money.

“The bottom line is that my customers want zero defects,” he says. “They don’t want to maintain big inventories, and they want the prices to drop every year, sometimes as much as 10%. I can understand that, because as products mature through their life cycles, they have to be reduced in price. Our customers can’t cut their prices if we don’t cut ours, and I’ve tried to accommodate them.”

Heat sink used as an electronic chassis wall is made of billet aluminum. Switching to the high-speed spindles on the Kitamura MyCenter 4XiF machines cut throughput time from 8 hours down to 3 hours.



Jorgensen’s first efforts weren’t too successful, he recalls.

“At first I was struggling to cut costs, and I was losing money doing it,” he says. “At the same time I was looking for a way to be able to compete with offshore pricing. I felt that if I could find a way to provide competitive pricing, I could keep a lot of the business, because the offshore companies were having trouble with quality control and making small parts with really tight tolerances. If I could figure out how to do that and make money doing it, I’d be okay.”

Jorgensen’s answer was simple in essence.

“I had to double my throughput,” he says, “and that meant cutting my cycle times in half. Ultimately I decided that the only way to do that was by shifting to high-speed machining and increasing the inches per minute that parts were made.”

Jorgensen says he had to mentally shift gears away from the “old way” of doing things.

“I had run two or three shifts for years,” he explains. “I had the attitude that I could always do more work with more people. But as prices drop, that kind of thinking catches up with you. If you’re not making enough money on each part, your costs are going to exceed your revenues. That’s suicide.”





Francisco Montes, machine operator, sets up the Kitamura Mycenter 4XiF.

To satisfy his new high-speed goal, Jorgensen went to Westec in search of equipment.

“Everyone there had machines with 10-12,000 rpm spindles,” he says. “They had the Fanuc 18 and the Fanuc 16 controls, but I didn’t really see the machines moving 500-600 inches a minute unless you looked at mold machines. Then, as I shopped around, Kitamura told me they were developing some 20,000-rpm machines. I really wanted 30-40,000-rpm spindles but they were just too expensive for me. Conejo Industries had always been a Kitamura shop, so I knew that their machines would be excellent. The result is that in the past two years I’ve bought four new 20,000-rpm machines from Kitamura, including three MyCenter 2XiFs and a MyCenter 4XiF.”

Back in the Race

The result of Jorgensen’s move to high-speed Kitamura spindles has been better than he had hoped for.

“One machine with one man now does the work of three machines and two men,” he says. “We now do the same amount of work in one day shift that we used to do in three shifts, and, because of the precision of the high-speed machines, our quality is as good or better than ever.”

Jorgensen sites a case in point.

“We make a fairly large heat sink,” he says. “It used to take 8 hours on my old MyCenter 1, but now on the MyCenter 4XiF, the cycle time is down to 3 hours. That’s amazing, really. What makes it all work is that the

Kitamura machines have the ability to take corners at high speed without slowing down. They’re very high-quality box-way machines driven by the Fanuc 16i, which has high-speed look ahead. The really important thing to me is that I can run these machines at 300 inches per minute and still retain high precision and quality. We’re holding very, very tight tolerances, plus or minus a thousandth on most of the dimensions and true position of 2 thousandths diameter. Our customers check our parts under microscopes and we have a perfect quality record with them.”

Now and Tomorrow

At present Conejo Industries serves a variety of customers in the computer, the telecommunications, the bicycle, the automotive aftermarket, fiberoptics, and, they still make a huge number of heat sinks for a variety of customers.

“Right now we’re running twelve CNC machines, including ten Kitamuras and two others,” Jorgensen says. We have eight employees in a 4500-square-foot facility, but the important thing is, we’re making as many or more parts as we used to, and we’re making money. We’ve learned to swim against that powerful offshore tide, and we’re not just standing still or going backwards. We’re moving ahead. That’s a good feeling.”

And the future?

“Faster spindles,” he says. “The only way to fly.” ■