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Software & Controls

Prototype Payoff - Pg. 20

In this issue:

. . .and much, much more!

Jesus Guillen, setup machinist, uses Shop Floor Automation's Predator DNC software to download a program to one of Implant Direct's 26 Star turning centers.

Shop of the Future

An Innovative Dentist Builds an Advanced Technology Shop to Revolutionize the Dental Implant Industry.

Story and photos by C. H. Bush, editor

For most people, one good money-making idea in a lifetime is about all there is. For others two or three innovations may be the limit. For some, however, great profitable ideas seem to gush forth in an unending stream. For these lucky few, the problem is picking the right one to ride to success.

"That's how my boss, Dr. Niznick, is," says Joe Morales, director of manufacturing for Calabasas, CA's Implant Direct, LLC. "By the end of 2000 Dr Niznick had 23 U.S. patents issued for his dental implant innovations, including the internal connection patent that has become the basis for modern implants. Via lectures and live surgical demonstrations, he personally has trained more than 10,000 dentists worldwide on the placement and restoration of dental implants using s. As a result, in 2005 Barons Magazine said that many people consider him to be the godfather of American implant dentistry."

According to Morales, Dr. Gerald Niznick has another innovative idea that he believes is going to change the face of implant dentistry forever.

"The name of our company, Implant Direct, says the idea in a nutshell," Morales explains. "Dr. Niznick believes that dental implants need to be less expensive, so he created a new product line of implants (*9 new patents*) that we

Joe Morales, Implant Direct director of manufacturing, right, and Oscar Guzman, senior manufacturing engineer discuss ways to improve finishes on the implant products they produce.

are selling direct to dentists over the internet. The idea is to cut production costs for our titanium implants so low that we can sell them for about one-third the cost of other products. We just started selling directly to dentists through our website at the end of 2006, and right now Dr. Niznick is on a 36-city tour explaining the concept to dentists. Our website is designed to allow dentists to easily go through the ordering process directly from their offices, and, so far the idea seems to be catching on."

New Manufacturing Approach

On January 7th, 2001, Dr. Niznick sold the assets of his previous implant manufacturing business, Paragon Implant Company, to Sulzer Medica which was subsequently acquired by Zimmer Dental. However, he retained ownership of the 40,000 square foot Calabasas, California factory that housed the company. In November 2004, Zimmer's lease expired, and they moved out, leaving the facility free for Implant Direct, LLC.

"I've been with Dr. Niznick for 16 years," says Morales, "so we've had years of experience producing implants in what I now call the old-fashioned way. When Dr. Niznick founded Implant Direct in 2004, he said he wanted the most modern, highly productive plant possible. He wanted a facility that could run 24 hours a day, lights out whenever possible, but always with minimal employee hands on. When we started two and a half years ago every piece of equipment had been moved out. The place was empty. It was a blank slate, and Dr. Niznick gave us the money and the goal to build something new."

Morales, who in his career had worked as setup man, production supervisor and then manufacturing supervisor for Dr. Niznick's previous company, became a key member of a team tasked to fill the new operation with advanced equipment and software.

"We did just that," he says. "In the first two and a half years we bought a new Walter CNC tool grinder, 14 new Star SV-12 turning centers and 12 new Star SB-16 turning centers. They're all equipped with live tooling, automatic bar feeders, on-the-floor PCs, and Shop Floor Automation's Predator DNC software. They're also equipped with TriMist filters, Atam throughput optimization systems and Kennametal quick-change tooling systems. Like I said, the goal is simple. We want these machines to run 24/7 with minimal help and minimum downtime. We want to produce high-quality titanium implants at the lowest cost possible."

Previous Experience

Previously, Morales says that their implants, with normal technology, required as many as four different setups to get a finished part.

"Today, with our new technology, we get finished parts in one setup," he says. "The Star machines are very precise, and with their live tooling we cut out interim production steps completely. All that we do now is check and clean the parts to make sure they're burr free and meet specs. It's hard to believe, but we have 35 people divided up over two manned shifts and one completely unmanned "lights out" shift, producing more and better parts than anyone ever thought possible. In fact, a lot of people in the industry laughed at us and said it was impossible to produce quality dental implants lights out. I don't think they're laughing now."

Add-Ons Make a Difference

Morales says that, in addition to the capability of the Star machines themselves, a lot of the new plant's productivity gains have come from their addons.

"The Kennametal quick-change system, for example,"

Atam throughput optimization system at work. The Atam, a black box sitting on top of the Star, monitors system vibration and yields reports as required.

Line up of Star SV-12 turning centers at Implant Direct LLC. In the first two and a half years the company bought a new Walter CNC tool grinder, 14 new Star SV-12 turning centers and 12 new Star SB-16 turning centers. The machines are all equipped with live tooling, automatic bar feeders, on the floor PCs, Shop Floor Automation's Predator DNC software, TriMist filters and Atam throughput optimization systems.

he says, "makes changeover really fast. And then there's the Atam systems, which monitor machine vibration. If a machine's vibration gets out of the norm, say because of a chipped or broken tool, the Atam sends a message to the machine controller, which then shuts down the machine. That saves on machine damage and prevents major downtime for repairs."

DNC Traffic Cop

With two full-time programmers using PartMaker and SolidWorks to create G-code to run the 26 Stars producing 600-900 highly precise titanium implant components, Morales says the company needed a reliable software package to allow programs to quickly and easily reach the right machines.

"We chose Shop Floor Automation's Predator DNC software," he says. "All our machines have plenty of built-in memory, so we don't use the drip-feed feature of the software, but we use most of its other features. All our machines are linked to their own computers, which, in turn are linked to a server with Predator software. That way, our guys can read their travelers, input the program they need and Predator will deliver it to their workstation."

With the ability to service up to 256 CNC machines, Morales says that, once installed, the 32-bit Predator has performed with complete reliability.

"One thing we really like about the Predator software is its editor," he says. "With as many parts and programs as we have, document control is extremely important. In the past, if an operator made changes to the G-code, the change could slip through a crack. But Predator prevents that. As soon as a program is no longer needed on the floor, it goes back to the programmer via Predator Software. The programmer uses the Predator editor to compare the returned program with the original. The software instantaly flags changes so the programmer can check it out."

Another useful feature, according to Morales, is the software's "mass" editor.

"The mass editing capability lets you call up multiple programs all at once and make changes to them," he says. "This saves a tremendous amount of time. For instance, let's say we wanted to alter speeds, feed rates or G-code. With Predator we can make one change and the software will change the entire family of parts all at once. It's one of the key links in our manufacturing chain that helps us run this factory on the cutting edge of technology."

Morales says Implant Direct is constantly on the lookout for new technology to help the company automate and cut costs further.

"Dr. Niznick is constantly creating new products," he says, "so we're constantly on the lookout for better technology. It's the name of the game around here.' ■