

Design, Deliver, Diversify

Onanon's diverse product line and highly automated process has allowed the company to expand technologically and easily adapt to RoHS



Jim Levante (left) and Dennis Johnson of Milpitas, CA-based Onanon, Inc.

By Anna Wells, Editor

On any given day, you could show up at Onanon, Inc.'s Milpitas, CA facility and see a completely different production process. One day the facility could be pumping out pin connectors for printed circuit board, or medical devices for heart defibrillators. You might even show up to find the folks at Onanon making fins that, according to company CEO Dennis Johnson, can make you "swim like a dolphin."

That's because the name of the game at Onanon is diversification, and if you ask Johnson, and Sales Engineering Manager, Jim Levante, these processes aren't quite as different as they might appear.

Measured Methods

Onanon deals mostly with engineered plastics, using high-speed machine manufacturing (turning 110,000 RPM) to cut the material. These multi-spindle machines travel at 2,000 inches/minute.

"We spread that out so the same machine has multiple spindles- as many as 30 parts simultaneously," explains Johnson. "That gives us the repeatability. And having all of our processes be automated- that allows us to engineer the quality into the process. So with a batch of our parts- they're either all good, or they're all bad. There is no operator error that can be interjected.

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"With that said, we still have some operator-intense processes, otherwise we wouldn't need this many people," he adds. "What we've done to combat that, is we've moved into Lean Sigma, and 100 percent proficiency training. Basically, it's teaching our employees how to learn; we do training every week."



Onanon prides itself on being able to engineer quality into its products, and utilize automation to guarantee a consistent result.

Showing How It's Done

"With our diversification, we borrow from all the different industries that we know, so we can use different technologies," Johnson says.

With eggs in so many baskets, Onanon company leaders know that they must take a very cultivated approach to keeping production moving. But with the company's highly automated lines and sophisticated engineering team, they not only keep it moving, but are able to offer completely customizable products.

Most important to this development of a diverse product line and impressive throughput is, according to Johnson, "being on the forefront of automation and technology."

"We constantly have the latest laser, and the latest assembly pick and place equipment, so we can compete with offshore companies-because our customers are constantly coming to us with their needs."

Design-To-Delivery



Onanon's emphasis on highly sophisticated equipment has helped boost throughput rates of its diverse product line.

Responding to customer demands has become the basis of Onanon's "5 day design to delivery" offering. The confidence behind this comes with the company's ability to offer a sales staff that doubles as an engineering staff, and the equipment necessary to make its own tooling for customized products.

Understanding RoHS: The Basics

RoHS regulations have their genesis in Europe, where the buildup of hazardous wastes in landfills was generating significant environmental concerns. Their version of RoHS was adopted in 2003, and went into effect in July. The environmental group Greenpeace estimates that as much as 4,000 tons of high-tech waste is discarded in the world every hour.

RoHS specifically targets the use of lead, mercury, cadmium, and hexavalent chromium, as well as flame-retardants polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE). Maximum concentration values (MCVs) of the materials entail 0.1 percent by weight.

While foreign markets are key for growth, RoHS concerns also exist in our own backyard. California RoHS, which took effect January 1, 2007, prohibits the sale of eight types of electronic devices:

- Those that contain cathode ray tubes, including computer monitors and TVs.
- Laptop computers, monitors, and TVs with LCDs.
- Plasma TVs- if they contain more than the specified concentrations of lead, mercury, cadmium, or hexavalent chromium under the EU directive.

Onanon, and other manufacturers of electronic equipment components, were then faced with compliance to this directive. Exemptions for California RoHS include video displays in electronic medical devices, specialty equipment such as thermostats and heating regulators in motor vehicles, large commercial or industrial equipment applications, and video displays in several appliances. In contrast to the EU, California does not restrict PBB or PBDE.

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"Historically you've got to make hard tooling, where with our automation, we can program one of these machines in just a matter of minutes and have it produce the

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parts" explains Levante. "The (prototype) parts are going to be made the same way the production would be made. It's all made the same as production, so our customers get a lot of confidence that what the prototypes are is what the production is going to be, and it doesn't take too long."

Making RoHS Work

Most recently, Onanon has seen success with its line of compliant pin connectors. This has utilized a close tolerance milling manufacture.

Since California has adopted the RoHS (restriction on hazardous substances) directive, the mandate is for pin connectors to be solderless, eliminating lead connections. Explains Johnson, "In the electronics industry, that's been our concrete for all these years. So now what do we do? We need to have connections that don't utilize lead."

According to Johnson, the industry has been approaching this directive from a variety of angles. "None of them are ideal. Because solder not only created an electrical contact, but it also created a mechanical contact to hold the components on- it did many other things besides create this electrical continuity," he says.



Onanon deals mostly with engineered plastics, using high-speed machine manufacturing (turning 110,000 RPM) to cut the material.

For Onanon, a company that historically has dealt mainly with engineered plastics, its advantage is in its alternative to traditional molding. "Some of the products we make can be molded, but a lot of them can't," explains Johnson.

According to Johnson, for many products the company produces, the parts need the same TG (transition of glass) in order to expand and contract identically. "Where these certain types of connectors get surface-mounted onto a printed circuit board- they need to have the same TG as the circuit board," says Johnson.

"Otherwise when they run it through the reflow oven, and they use a molded plastic insulator, it's going to expand and contract differently, and open on the solder joint. You can't mold a part that's going to do that. It's a big plus, and we have the

automation to manufacture in high volumes."

Competitive Edge

When it comes to RoHS, Onanon's diversified product line has helped the company gain a competitive edge. Says Johnson, "We have the benefit, because we have been playing around in that world for a long time. It's nothing new to us." Based on its experience with customization, Onanon was able to more easily make the adjustment to its line, and to its technology.

"Whenever you can eliminate the need to solder-and just plug in like you do your wall plug-when you plug your vacuum in, you don't actually have to go down and solder it in. Whenever you can borrow that type of technology, you're really better off. And that is really what our compliant pin technology has done-they just plug them right into a gold-plated circuit board, and you don't have to solder," Johnson says.

Finding New Avenues



Onanon houses over a million dollars worth of drill bits.

That brings us to the "dolphin" swim fin, produced by Onanon, and once endorsed by Olympic gold medal butterfly swimmer, Pablo Morales. "It's not a connector, but we use that same material," explains Johnson. "The reason we use that material is because you can't break it. So when the swimmer kicks off the side of the pool, if it was plastic it would just shatter-whereas this material bends, but it doesn't break."

Other ways in which Onanon has been able to "piggyback" technologies, include its upcoming entry into the LED market. "The problem with LEDs is that they get too hot. So we've developed a new, very innovative heatsink system that will allow LEDs to be used like light bulbs, and for a very good price," explains Levante. "We're really moving towards those green markets right now. Some of the things we've done in the LED market haven't been done before-these are innovative ways to install LEDs."

Technology First

Levante and Johnson see the technological steps as critical to Onanon's growth,

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although the company is not one to hoard its secrets. "If you try to own everything, you're not getting anywhere," says Levante. "So the technology that we will be using in future products will be open architecture. We want other people to adopt our new technology, and we will continue to develop new products based on our ideas."

Adds Johnson, "We have that much confidence that we can compete. The 40 cents an hour labor rate in China doesn't scare us, because of our automation. We can compete with that. It's the ability to make millions of parts with 48 employees. That's our claim to fame-automation in high volume."

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