

October 13, 2008

SAN FERNANDO VALLEY BUSINESS JOURNAL

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Solid Concepts' Acquisition - A Prototype for Growth

Firm Moves in Competitive Industry

By Mark R. Madler
Staff Reporter

In making his first ever acquisition, Joe Allison went to an unlikely state – Michigan.

Not just anywhere in Michigan but Troy, an area reliant on the struggling auto industry where parts suppliers are threatened with closing as automakers scale back production and lay off workers.

In that environment Allison, President of Solid Concepts Inc., saw a labor pool in need of diversification to make parts used by manufacturers other than the Big Three.

Bringing Composite Tooling Technologies into the fold of Valencia-based Solid Concepts opened the door to making products that end up in a diverse range of places including military jets, hospitals, cell phones and museums.

For years, growth has been driven from inside the company. Along with Valencia, the company has manufacturing facilities near San Diego, Arizona, Austin, and now Michigan; and sales support offices in nine other states.

A \$1 million project has already been lined up to make large parts used in MRI equipment.

The Composite Tooling acquisition was coupled with the creation this summer of a new division to provide fast-turnaround rigid prototypes, both recent steps Solid Concepts has taken to tap into new customer bases in the competitive prototyping industry.



Process: Prototyping at Solid Concepts.

Composite Tooling makes products in fiber-reinforced plastic, a manufacturing method previously not available to Solid Concepts customers. The new rapid prototyping division offers service to customers looking to have only one part made and who don't need to sit down with a Solid Concepts engineer to design that part.

"They give you geometry you have never seen before and we make and ship it on the same day," Allison said.

Rapid prototyping, or layered manufacturing, is still a relatively new industry still finding its way and making new discoveries to make the process faster and more efficient.

The Santa Clarita Valley, in fact, could be considered a birthplace of the industry as it was at 3D Systems that Chuck Hull developed Stereolithography in which a laser is used to trace a pattern on resin to make a prototype part.

3D Systems had been based in Valencia until moving several years ago to South Carolina.

Allison worked at the company until he and two partners founded Solid Concepts in 1991. Later he hired other 3D Systems employees to join him at Solid Concepts.

The importance of prototypes in manufacturing is that it allows potential parts to be touched and modified before tens of thousands of dollars get spent on tooling up machinery for production.

Solid Concepts uses selective laser sintering, a process that builds a part by heating and fusing a powder; the internally developed QuantumCast process for strong pre-production and short run production parts; the Stereolithography apparatus with a laser layering the part from resin; and traditional CNC (computer numerical control) manufacturing to make production parts.

Cosmetic changes or parts made from urethane require hand finishing, a process that Solid Concepts employees can also provide.

“As much as we think it’s about the process there is a little bit of art to it, too,” said marketing director Scott McGowan.

While the type of prototyping done at Solid Concepts is not unique, one aspect the company excels in that others don’t is software development by an internal staff.

That gives an advantage, but not every company is willing to do that because of added staff and overhead, said Todd Grimm, the vice chair of the Society of Manufacturing Engineers Rapid Technologies & Additive Manufacturing Technical Community.

“It is like adding an IT department for a small business,” said Grimm.

That technical advantage is evident in the ZoomRP division which turns around prototypes quicker than ever. Customers upload their computer-aided manufacturing designs and other information into a website that automatically generates a work order at the Valencia location, setting a machine in motion to produce the part. If an order is placed by the early afternoon, the part gets shipped out the same day.

This type of rapid prototyping has been driven from inside the company. Along with Valencia, the company has manufacturing facilities near San Diego, Arizona, Austin, and now Michigan; and sales and support offices in nine other states.

Acquiring another company to expand the customer base was new to Allison although it was a path he long considered before finalizing the Composite Tooling deal in August.

The lessons learned from that experience included not waiting until late in the process to examine the financial records of the company being bought.

“I think we will do it faster and better next time,” said Allison, who added that he has a second acquisition target in mind.

The acquisition is a potentially positive move for Solid Concepts in that it taps into a customer base that can draw from the Rust Belt states of the Midwest, Grimm said.

That Composite Tooling brings a different manufacturing process, and an unusual one at that, doesn’t hurt.

“He (Allison) has another thing to talk about that makes him unique plus a new set of ears that are willing to hear his story,” Grimm said.