



A new extrusion line was one of many improvements made at Vitex.

Vitex Extrusion: The Total Turnaround *From Aging Plant to Nimble, Value-Added Manufacturer*

Vitex Extrusion, LLC located in Franklin, NH, is experiencing strong growth from its continuous reinvestment strategy, which began in 2007 and is ongoing to this day. Through investments of more than \$11 million over time, this small, regional extruder has transitioned from an aging facility into a nimble and growing aluminum extruder and value-added components manufacturer. Timing made the approach risky and bold, as the company has had to move forward against the headwinds of a very tough recession and sluggish recovery. Following through on its strategy without looking back, Vitex's focus on adapting to continually changing market opportunities is paying off for this independent, regional extruder.

Plant History

A 115,000 sq ft greenfield extrusion mill was built on 26 acres in Franklin in 1986 by the former Jarl Extrusions, which relocated two aluminum extrusion presses—a 9 inch and a 7 inch line—from its Rochester, NY, plant. The then new facility's capabilities were limited to mill finish extrusions; the plant did not have any finishing or value-added manufacturing capabilities. (Jarl Extrusions' Rochester plant eventually ceased operations and closed.)

In 1989, Alcan Aluminum acquired the Franklin facility along with Jarl's Elizabethton, TN, plant, with the intent of adding another extrusion line in Franklin. However, the planned investment by Alcan never materialized. In 1994, the Franklin plant became part of Cressona Aluminum's acquisition of Alcan's North American extrusion operations.

Alcoa purchased all of Cressona Aluminum's extrusion plants in 1996. Shortly after the Alcoa acquisition, the Franklin plant was sold to Aavid Thermalloy, an international thermal management company, whose principal manufacturing operations were located in New Hampshire. In 2001, the plant was again spun off by the thermal management company to a local investment group, which incorporated the business under the name Vitex Corporation.

Between 1986 and 2007—through each successive ownership group—only minimal capital investments were made in the extrusion and related operations. Consequently, the plant was operating at sub-industry productivity and volume levels, generating only 13 million lbs per year on its two older presses. Without a clear change in its business plan and supporting capital investments, the plant's long-term viability was questionable.

Aggressive Investment in Value-Added

The Vitex Extrusion story began to shift in 2007, when Andy Curland (Figure 1), recently appointed chief operating officer of Vitex at the time, partnered with Rainbow Capital, a private equity firm, to acquire the plant. From the outset, Curland, who became the president and ceo of Vitex, recognized that the company needed to make changes



Figure 1. Andy Curland.

to generate acceptable investment returns and remain viable long term. Two crucial elements in successfully implementing a business's capital reinvestment strategy are an understanding of its current and potential customer needs and taking corresponding decisive action in both operating and investment strategy. "We looked at what we had, where we could succeed, and where we could not succeed," said Curland. The company considered other independent regional extruders as models to try to emulate, in particular those with strong value-added capabilities. "What we saw was a number of independent extrusion plants with two to four presses, that over time had developed sophisticated value-added manufacturing capabilities," he said. "Our barrier to entry into value-added manufacturing—via a stepped investment approach—would be far less risky than pursuing investments in additional press capacity or in-plant finishing capabilities. At the time, we believed we could work towards a business mix where approximately 50% of revenues (less metal costs) would be derived from value-added manufacturing."

The new business plan was based on pursuing a three-point strategy focused on intensive capital investment coupled with a targeted marketing plan. This included aggressively adding capabilities in value-added manufacturing; revising the marketing strategy away from commoditized commercial markets to focus heavily on extrusion-based, fabricated components; and upgrading its existing press lines.

Curland had already investigated and outlined an investment strategy prior to Rainbow Capital's acquisition of Vitex. "The whole basis of our acquisition was that we were going into value-added," he said, noting that approximately \$900,000 worth of value-added equipment was purchased before they had officially closed on the purchase of the company. The business was officially acquired in May 2007 with deliveries of the equipment shortly thereafter. "We hit the ground running," he said.

Immediately following the acquisition, a significant section of the plant was converted from warehousing to an integrated value-added fabricating division, including the installation of a MetlSaw C-2 sawing center, a 5 axis, long bed CNC machine, a double head flow through deburring system (Figure 2), and a four stage customized work cell (dedicated to a recently secured Tier 2 automotive rack contract). The plant continued to grow its fabrication and machining division over the years and has since installed a 3 axis, long bed CNC (2008), two double head miter sawing centers (2009 and 2012, respectively), a second MetlSaw C-2 sawing center (2010), and eight vertical machining centers from 2007-2014. In early August of this year, the company began installation and start up of a new six pallet horizontal machining center (Figure 3). The value-added business now consumes about 40% of the plant's extrusion production (Figure 4).



Figure 2. Dual head deburring of 6063 sump housings.



Figure 3. Newly acquired Kiwa KH-45 six pallet horizontal machining center.

This value-added strategy, which allowed Vitex to diversify its target markets, is one of the reasons as to how the company weathered the economic downturn in 2008-2009. "In terms of end markets we were well positioned," said Curland. "We got through the end of 2008 unscathed, and 2009—although it started out scary—also turned out to be a good year for us, in particular because of two business contracts in solar that supported the growth."

"We are an industrial extruder, and we use that as the best term to describe the company," he added. The company heavily serves the electronics and solar markets, as well as sporting goods, furniture, Tier 2 automotive, and B&C markets. "In general, we focus on selling our products to regional OEMs," he said. "Regardless of their industry, if there's a fit for Vitex in terms of capabilities and we can create value for the customer, that's the business we target. As a small, regional extruder, we can't take the risk to be overly reliant on certain industries. Frankly, our limited exposure in B&C and automotive during the 2008-2009 business slow-down was a good thing."

Simply having more capabilities was not the only factor in growing the business in what has been economically challenging markets. Curland stated that his sales teams'

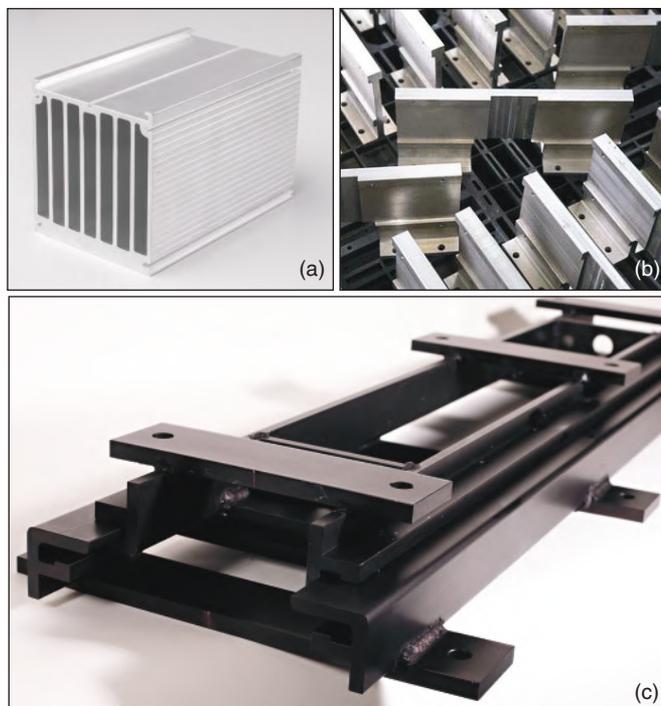


Figure 4. Sample components extruded at Vitex: (a) 6063 multi-port heat sink, (b) 6061 machined internal antenna station components for security detectors, and (c) a welded, machined, and anodized adjusting assembly for a basketball backboard.

leadership never loses sight of the importance of being proactive in new business development. “To find growth opportunities, we go to where the growth is occurring and commit our investment and capability resources to offer exceptional service to those customers. The continued investments we make in our business are, essentially, investments into our customers’ businesses. The central component of our sales development strategy is to align new opportunities to be consistent with our current or planned extrusion and value-added manufacturing strengths. Simply going after pounds is not our sales teams’ focus.”

Modern Extrusion Capabilities

Following the initial investments in value-added equipment through 2010, Vitex began to look into its third goal of modernizing its extrusion lines. Since lineal extrusion sales were still a big part of the company’s business, it was important to remain a viable extruder for its customer base. Initially, Vitex planned to only upgrade its existing 9 inch and 7 inch presses. However, after evaluating the upgrade, the company reconsidered its options. “We were going to spend upwards of \$1.5 million on upgrading the line and still have an old press,” said Curland. “It was our management team that put together the final analysis that warranted making the investment leap into a new extrusion line.” The company’s performance in 2009 and 2010 enabled it to find new financing options that supported investment in a new press line, which would replace its 7 inch Youngstown press line with a new 8 inch line.

After analysis of the options available, Vitex turned to Prezezzi Extrusion to purchase a new 2,750 ton, front-loading aluminum extrusion press with an 8 inch circle size (Figure 5). The circle size was selected based on an internal analysis showing that over 80% of the company’s extrusion dies had profile face weights in the range of 1.0 to 3.5 lbs/ft. Granco Clark was selected to supply the furnace, hot saw, and handling equipment for the new line. “We chose Prezezzi because they were highly respected in the U.S., at the forefront of front loading press technology, and a private company. When we travelled to Italy and met Prezezzi’s president, management team, and several of their customers, we were ready to finalize the purchase.” said Curland. “As a small extrusion company with limited internal engineering bandwidth, we needed to feel the ongoing support would be there. We feel the same way about Granco Clark.”

Construction of the new 8 inch line required the removal of the old 7 inch press line. A key strategic element in the new press line project budget was to leverage the mill’s existing facility, which included full coverage by an overhead crane system. “Again, we looked at what else had

occurred in the industry,” said Curland. “To put the 8 inch line in the existing building was approximately a \$7 million investment. Building a separate facility for the 8 inch line would have doubled our project costs. At \$14 million, it was unlikely we would get an acceptable payback on an 8 inch line.” Using the same facility required extensive foundation work (performed by Langley Construction of Goffstown, NH), but allowed the company to use the existing crane system, much of the existing electrical system, and maintain its two straight line production flows.

The new 8 inch, 2,750 ton Prezezzi front loading press (Figure 6) allows the plant to supply extruded profiles and components with tighter dimensional tolerances and superior finishes to what the old line was capable of achieving. The press accepts billet lengths up to 47 inches, has a 14 second dead cycle time, and includes a Rexroth variable speed hydraulic system (Figure 7). Prezezzi’s patented PE energy saving control system provides the press with significant energy savings along with a significant reduction in oil hydraulic system maintenance. Vitex also has access to support from both of the supplier’s U.S. and Italian offices.

Vitex already had a long term successful business supplier partnership with Granco Clark, which made the decision to stay with the same supplier for the handling equipment an obvious choice. Key components of the Granco handling system include a Series 60 hot-jet billet heating furnace, hot log saw, high pressure water spray quench system, 1,000 lb double headed puller, one-man/no-man 75 ton stretcher unit (Figure 8), finish saw, automatic saw scrap handling system, and an SCS Extrude diagnostic system, which allows Granco to remotely diagnose any potential problems with the equipment.

The new line also includes seven Castool single cell die ovens and a Belco dual end flow aging oven with capacity to accommodate 12-24 ft aging racks. At present, Vitex is also in the process of installing the Optalex press optimization system.

Mechanical installation of the new extrusion line was performed by Clarkson Industrial of Spartanburg, SC.



Figure 6. Control station for the 8 inch press.



Figure 5. Loading of billet into the 8 inch, front loading press.



Figure 7. Variable speed hydraulic pumps.



Figure 8. Stretcher (75 ton) installed for the 8 inch press line.

Ground-breaking with initial foundation work began on August 31, 2011. Working under a 24/7 schedule, the project team successfully completed the installation of the new press line in 77 days, with push of the first billet occurring on November 17, 2011. A full production shift was initiated the following month. A second production shift was added in January 2012, followed by a third shift beginning in April of the same year. The installation of the new line has increased annual extrusion capacity from 16 million lbs to 30 million lbs.

“Our productivity is two and a half times where it was in 2005-2006,” said Curland. “We’re getting the productivity we expected from the new press line. The gains we’ve achieved are due equally to the investments and the continuing support we receive from our staff in taking on the challenges of working with the new equipment and operating systems.”

In discussing benchmarking and performance optimization at the plant, Curland said, “Shortly after the press

was installed, we began a structured die optimization program with guidance from Bill Dixon of QED Extrusion. We continue to evolve in this area. Our two primary die suppliers, Ultrasonic Extrusion Dies of Michigan and Dinamex Extrusion of Montreal, have been very supportive in our progress with understanding and deploying new die technologies.”

Continual Reinvestment

Through implementation of value-added capabilities, diversification of its target markets, and installation of a new extrusion line, Vitex has grown from its position as an outdated extruder, clinging to existence, into a successful regional manufacturing company. Its integrated aluminum manufacturing solutions approach has proven to be responsive and rapidly scalable for fulfilling component production, complete product manufacturing, and supply chain management requirements. Ongoing strategic capabilities investments supported by business performance has allowed Vitex to expand through challenging economic times.

Future manufacturing investments are under consideration. In value-added, the company is considering installation of additional multi-pallet horizontal machining centers, an automated circular cold saw, stretch-forming equipment, and 3D prototyping capabilities. The company also is looking into the addition of a billet taper quench system, a stacker system, and automation of its packing line, as well as an eventual replacement strategy for its older 9 inch extrusion line. “Our plan is not to change course, but to continue,” said Curland. “Our focus is to be a value-added products manufacturer, who is backward integrated with world class extrusion equipment that we invested in and to grow from there.”

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EXTRUSION

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