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Invested in OTHERS

Pedigree Ovens and The Pound Bakery quadrupled its processing facility with a clear focus on growing other companies.

By Jennifer Semple | jsemple@sosland.com

The new 212,000-sq.-ft., primarily pet treat, processing plant in Harvard, Illinois, owned by Pedigree Ovens and The Pound Bakery is designed to be flexible in both the type of products the company can produce and in what volumes. Small-batch capabilities are just as important as large-volume production runs and the planning behind this new facility reflects that. As a leading co-manufacturer in the pet treat space, Pedigree Ovens and The Pound Bakery is clearly focused on helping its customers expand into new product areas. Each processing capability has the systems necessary to offer the full range of batch sizes. This is crucial for a company that helps its customers enter a product category with the goal of them thriving in that category. Kurt Stricker, president, and Lexie Berglund, director of sales and marketing of Pedigree Ovens and The Pound Bakery, see their role with customers as much more than a supplier. They view the company as a partner in its customers' future success. And the investment in the new, $32 million facility completed this past December is a big bet on those partners.

"We built our business taking in smaller customers and grew with them," Berglund says. "We offered them a lot of flexibility. Some manufacturers wouldn't take on customers for less than a truckload or two and we were willing to produce 300 lbs. or 500 lbs. initially to help them figure out how to efficiently package their products."

Pedigree Ovens and The Pound Bakery isn't necessarily searching for those large customers who require 200,000-lb. production runs. "We're trying to be like the 'craft beer people' who can react to trends quickly, use better ingredients, and take advantage of new ingredients or packaging that comes along," Stricker says. "We want to help brands get to market quicker and increase their offerings. The bigger building and additional capabilities and warehousing is all built around our customers' needs and how the market is changing."

Stricker explains that in the more than 20 years since he opened Pedigree Ovens and The Pound Bakery in 1997, he's seen human-like pet treats take over the market. Although Stricker says he helps his customers respond to the humanization trend, he may very well have helped start it.

Father of humanization?

Stricker grew up working in his family's bakery owned by both sets of his grandparents and eventually his parents. As one of three brothers working in the family business in Harvard, Stricker decided to strike out on his own. After meeting a woman at an equipment auction in Chicago who had been producing humanized pet treats, Stricker knew that was something he could produce. He had never seen a pet treat that looked similar to human food. He looked at small boutique pet shops and large national pet specialty retailers in and around Chicago



Pedigree Ovens and The Pound Bakery relies on its entire team to keep production rolling. Front Row (from left): Jarden Gratz (Chief Operating Officer), Kurt Stricker (President), Lexie Berglund (Director of Sales and Marketing), Tom MacKenzie (Plant Manager) Back Row (from left): Victor Figueroa Mendez (Baking Supervisor), Sarah Lund (Director of Marketing), Dave Freymiller (SQF Practitioner), Cathy Wright (Director of Cold Extrusion), Cameron McGuire (Director of Hot Extrusion), Dave Bernau (Purchasing Manager), Katie Fritz (Account Executive), Carlos Huicochea (Cold Extrusion Supervisor)

Photography by Gabmaster Photography



The company has grown by an average of 30% each year producing primarily baked dog treats.

"We're trying to be like the 'craft beer people' who can react to trends quickly, use better ingredients, and take advantage of new ingredients or packaging that comes along."

Kurt Stricker

and found they weren't offering any product like that, or if they were it was very expensive.

Stricker bought a piece of equipment from the auction and started producing humanized pet treats in 5,000 feet of space divided between four rooms in an old dairy building that his dad owned. His first products were not dog bones. They were more humanized, sheeted biscuits for dogs that looked like graham crackers. Stricker also produced donuts, hexagon-shaped cookies, mini honey-wheat bagels and cheese sticks — all formulated for dogs. His line quickly grew to 11 different dog treats available in bulk and his first customer was a large grocery store chain that Pedigree Ovens and The Pound Bakery employees would stock weekly.

Stricker began making dog treats using ingredients he was familiar with from his experience at the family bakery. Today the focus is still on human quality ingredients and creating the cleanest ingredient panels possible.

One day Stricker was asked to produce a private label treat for a customer, and the rest, they say, is history. "At the time, brokers were dictating where products were distributed," Stricker says. "The industry has changed so much with the humanized treats. So many smaller companies are now able to sell their products across the country."

Pedigree Ovens and The Pound Bakery has grown organically by an average of 30% each year producing primarily baked dog treats. Less than 2% of their current business is complete and balanced pet diets. They produce bird food, fish food, horse treats, reptile treats and even kangaroo treats. The company also produces a few house brands. Its TreatSimple line features five main ingredients with each formula offering key superfoods, and the Wholesome Mutt line of organic dog treats just launched in March of this year.

Since its beginning, Pedigree Ovens and The Pound Bakery has always been a full-service company. "We would take the products we produced for customers, package them and warehouse them for our customers," Stricker says. "We had to start turning customers away three years ago because we just didn't have the space." The company maxed out its existing 50,000-sq.-ft. building, and Stricker went "all in" on the future growth potential of pet treats and pet food and decided to build a new, quadruple-the-size, 212,000-sq.-ft. processing facility.

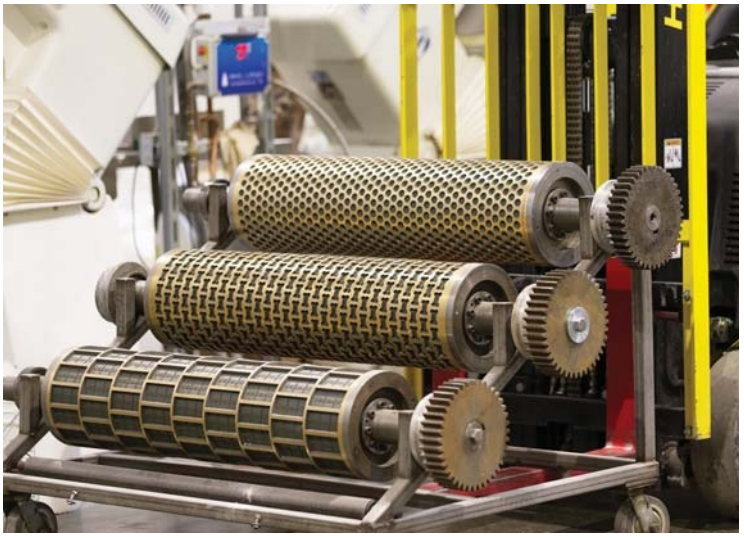
All roads lead to packaging

The new facility was designed from the ground up on 22 acres. Out of the 212,000 sq. ft., nearly half, 100,000 sq. ft., is warehouse and storage; 11,000 sq. ft. is office, and another 100,000 sq. ft. is dedicated to processing and packaging. The processing space is divided into four rooms with their own focus: baking, hot extrusion, cold extrusion and dry blending. Each processing room feeds into a common packaging area. The new facility is SQF approved and FSMA compliant.

Hot extrusion and dry blending are new capabilities. The company offered cold extrusion for the past two years, but that was happening in a different space. "We saw a niche that could be filled by taking our customers that are just doing baked treats and offering them the ability to produce multiple products in hot extrusion, cold extrusion with functional ingredients and dry blending," Stricker says. "We can now offer a wider variety and help them expand their brands."

Pedigree Ovens and The Pound Bakery is focused on helping customers break into new markets. Berglund explains, "This is a huge opportunity for our customers to grow into new product areas. We have customers that sell a good volume of baked treats, and now we can help them expand their product line with dental sticks and other extruded products. The minimum run for our extruded machines will be between 10,000 lbs. and 20,000 lbs. Some customers might not be able to reach that minimum initially. We're planning to develop house recipes that brands can purchase in smaller minimums to help them get started. Then they'll be able to order custom recipes and reach our minimums once they grow the new product line. Doing this allows brands to get into a market where they wouldn't be able to otherwise."

The new facility features ingredient storage in a sepa-





rate room from the finished-product warehouse; three large silos for the most used ingredients — oat flour, quick oats and eventually rice flour; three band ovens, three small wire-cut lines and one sheeter in the baking room; two cold extrusion lines; three hot extrusion lines; three ribbon blenders for dry blending; and seven packaging lines.

Schenck Process Group engineered the equipment and process that connects all the equipment from the silos to the packaging room. Everything from the ingredient warehouse to processing and final packaging is connected throughout the building. The new facility also has a high-quality dust control system that the team engineered. "Schenck's product manager, Jake Barrett, did an outstanding job for us," Stricker says. "Without Schenck and Jake's support, our new facility wouldn't be as efficient as we've been able to make it."

Their bread and butter

In the baking room, the company now has three band ovens with the addition of a new line from Reading Bakery Systems (RBS), Robesonia, Pennsylvania. The goal for the tunnel ovens is to run them continuously 24/7. Because most orders are unique in size and vary in ingredients, which requires a lot of changeovers, it's a challenge to keep the ovens running continuously. The company fills in the gaps with house brand products and a few standing, but flexible, orders from customers. Two of the band ovens are from Baker Perkins. One is 150-ft. long, and the other is 120-ft. long with a Radio Frequency Macrowave at the end for drying. The macrowave is used for larger products that are not grain free and for the grain-free formulas that hold a lot more water. The macrowave technology removes the remaining water without adversely affecting the appearance or texture of the finished product.

The new RBS system is a complete rotary-moulded biscuit line. It includes an AMF batch mixer, portable inline dough feed system, heavy duty design rotary moulder for large diameter die rolls, convection oven and a 3-pass dryer. The system's main purpose is to supply formed biscuits. The system was specifically designed so Pedigree Ovens and The Pound Bakery has the flexibility to run different types of products through the oven and dryer. The dough feed and rotary moulder can be replaced with an RBS Low Pressure Unit, which offers coextrusion capabilities.

"We provide the same level of design for human food applications as we do for pet food applications,"

Top: The company has around 40 rotary molds of which about half are customer owned. Bottom: Pedigree Ovens and The Pound Bakery uses human quality ingredients to create the cleanest ingredient panels possible.

says Sam Pallottini, director, cookie, cracker and pet food sales, RBS. "However, the Pedigree Ovens and The Pound Bakery line is designed more robustly as pet food has more protein and fat in it. This requires larger reinforced rolls and bigger gearmotors in both the dough feed and forming machines. The oven is used to set and dry the product while the dryer reduces the moisture."

Both the oven and dryer are designed to bake and dry pet treats efficiently. The oven features top and bottom blowers for independent air flow adjustment via recipe control. The RBS oven is designed for air flow balance and heat control. The key variables for baking — humidity, air flow, temperature and heat flux — can be monitored. The dryer has three levels, heat and airflow adjustments and enables moisture to be lowered efficiently in a small amount of floor space. The product will start at the top tier and then softly tumble down to the middle and bottom tiers. This causes the product to reposition itself as it passes through the dryer giving it full exposure to warm air. The dryer is a key component in achieving the level of moisture or water activity needed for shelf life requirements.

Pallottini says it was an exciting project. "Pet food lines require long and narrow buildings. It is exciting to see a new building that not only plans for today's requirements but the requirements in 5 to 10 years. Having the ability for extra space to add on another oven zone or even add a dryer to an existing line is always a plus as Pedigree Ovens and The Pound Bakery grows. Existing plants will usually limit the ability for growth. The system we provided as well as the company's other existing baked pet food lines are designed to add extra oven zones and dryers to increase the throughput without a large investment in the future."

Also in the baking room are a bank of small Baxter rack ovens for wire-cut, sheeted or low pressure extruded products in small batches. These are used for products with a higher fat content, for seasonal formulas or for test runs.

For the rotary moulders, the company has around 40 molds of which about half are customer owned. A rotary mold can cost between $15,000 for the smaller tunnel ovens or as much as $30,000 for the larger RBS oven. The RBS oven is for larger volume orders. Berglund explains, "We need about 40,000 lbs. to run continuously within one shape to be efficient on that oven. On our smaller ovens we like to run a minimum of 10,000 lbs. but on a regular basis we will run smaller volumes than that."

On the rotary lines, the company produces a lot of soft and chewy treats. Many of them with seasonal-themed ingredients or shapes that include glycerin, molasses and brown rice syrup that all help maintain the soft texture. On the sheeting line, the company produces blank cookies for bakeries to decorate on-site. The company also produces a few treat bars that are formulated to be a complete and balanced diet.

With the larger space for the baking operations



The company's 120-ft. Baker Perkins band oven has a Radio Frequency Macrowave at the end for additional drying.

and the new RBS line, Pedigree Ovens and The Pound Bakery has the capacity to double their baking output, not just with an added line but also with the efficiencies gained through automation. "With the new Reading line we should be able to dial in our water activity a little bit better and put that product onto a conveyor and bring it to a holding area and then go right into packaging all without manually handling the product," Stricker explains. "We can evolve from manually putting product on pans and taking it to the packaging area to the product traveling by conveyor to packaging, which reduces the handling and increases the efficiency."

Three for the money

The output potential for the company's new hot extrusion capabilities far exceeds the potential baking output according to Stricker. And almost all the hot extrusion output is new business. With the hot extrusion lines all from Wenger Manufacturing, Sabetha, Kansas, Pedigree Ovens and The Pound Bakery can now produce kibble, long goods, semi-moist products, dental chews and co-extruded chews. Initially, Stricker planned for only one new Wenger Thermal, Twin-Screw extruder until a customer who had heard Stricker was putting in a new line called and explained that they had a co-extrusion product they couldn't fill a demand for and asked if co-extruded products would be available.

"So we added another extruder which made us really versatile," Stricker says. "We were going to take one line and make long goods and kibble. Now we have two lines that can produce kibble and long goods at the same time, or we can co-extrude into long goods or semi-moist products. It was through Wenger's expertise that we got the equipment and the versatility that we have now. The only hot extrusion capability we had before was the Wenger X25 and we were only making fish food."

The hot extrusion room is equipped with one Wenger TX85 twin screw extruder, one Wenger TT760 thermal twin screw extruder and the Wenger X25, a 5¼-in. diameter single screw extruder. "There are the three major categories of extrusion cookers used in the pet food industry today," says Galen Rokey, process technology director, Wenger Manufacturing, "and Kurt has a model in each of these categories which gives him maximum flexibility in producing the broadest range of products."

The categories include single-screw extrusion, twin





Top: The new RBS system is a complete rotary moulded biscuit line with an AMF batch mixer, portable inline dough feed system, large diameter die rolls, convection oven and a 3-pass dryer. Bottom: Three holding tanks from MacProcess allow Pedigree Ovens and The Pound Bakery the flexibility to mix different percentages of products into packages.



Three hot extrusion lines from Wenger can produce kibble, long goods, semi-moist products, dental chews and co-extruded chews.

screw extrusion and thermal twin screw extrusion. Single screw extrusion — the Wenger X25 — produces less complex pet foods at economical production costs. This would include low fat, low meat products and other products with a narrower range of ingredient flexibility. By changing the extruder screw configuration, the X25 single screw extruder is a good machine for making regular brown and round kibble for dogs and for cat food as well as simple soft moist treats with humectants added to prolong shelf life.

Twin screw extrusion — the Wenger TX85 — is the system of choice for pet foods above 7% internal fat, up to 70% meat and sizes that are less than 1.5 mm or greater than 25 mm in diameter. The TX85 is also equipped with a Density Management System (DMS) to make fully cooked but unexpanded chew treats that have dental attributes. The self-wiping, intermeshing screw profiles of the twin screw design permit a broad range of recipes including those that would be so sticky they would build up in the single screw design. This system utilizes mainly shear or mechanical energy (friction) to cook and is limited on how much thermal energy (steam) can be used in the extrusion cooking process.

Thermal twin screw extrusion — the Wenger TT760 — can utilize mechanical energy or thermal energy to cook a product. The thermal twin design allows much higher levels of steam inclusion to shift the cooking process from mechanical energy inputs to thermal energy inputs which results in lower wear costs, lower energy costs and a broader range of final products. The thermal cooking process of the thermal twin system reduces the stickiness of starches in pet foods compared to when the product is cooked with shear. This reduces many processing challenges when processing pet foods — especially the grain-free diets.

The Wenger thermal twin line at Pedigree Ovens and The Pound Bakery can also deliver product directly to a baking oven to produce extruded, baked products. "Coupling extrusion with the baking process yields a unique pet treat product that has improved palatability and textural attributes not found in standard pet products that are extruded and then dried," Rokey adds.

Not only does the extruder design contribute to process flexibility, but the complete line downstream of the extruder can have an impact on what products can be manufactured. "The thermal twin line offers pneumatic conveying of product directly off the extruder die which can be introduced into the Wenger Air Flow II dryer cooler or it can be diverted into the Reading Bakery Systems oven to get a baked appearance before going to the Wenger dryer to finish the moisture removal process," Rokey says. "With the addition of the TX85, Kurt has another avenue of product capability for long goods." Long goods involve a process line where the product comes off the extruder in ropes which are conveyed directly in to a cooling tunnel to set the linear structure and then are cut to the proper length with a Reading Ultra-Sonic Guillotine Cutter. Many pet treats require a dense, chewy texture to impart dental attributes and the DMS added to the TX85 permits this type of processing. This machine can do anything in the range of a direct expanded snack treat up to long goods such as jerky strips and ropes.

Finished product leaves the hot extrusion room on Meyer conveyors and travels to the packaging room where product can either go into holding tanks or to one of several different packaging machines. The three holding tanks from MacProcess allow Pedigree Ovens and The Pound Bakery the flexibility to mix different percentages of the three products from the holding tanks into packages.

Compared to the company's baking capabilities, Stricker says the hot extrusion room has much greater capacity, but that's not how they'll use the extruders. "Hot extrusion is new for us and the output is so much higher than baking. Those two new Wenger lines could produce 100,000 lbs. per day total, but we'll never use that capacity because we're not just doing kibble; that's where you get that output." The company has a few initial contracts for denser sticks and pieces, which can have a much slower output rate of 2,500 lbs. per hour.

"One thing we know we want to produce is an extruded stick with a better ingredient panel, less salt, fewer preservatives and less sugar," Berglund says. "We want to take extruded products and clean up the label, just like we've always done with treats. People are conscious



"We want to take extruded products and clean up the label, just like we've always done with treats."

Lexie Berglund



about the ingredient panel of their dog biscuits, and we want to offer that in an extruded meat treat. We're seeing ingredient panels get cleaner and cleaner, and we want to follow that trend. One of our test stick products on the extruder has just eight ingredients, which is great for an extruded treat."

Cold extrusion

Pedigree Ovens and The Pound Bakery produces grain-free, organic, GMO-free, wheat-, corn- and soy-free products. In 2015 the company partnered with Ken and Preston Munsch to purchase PetDine and AquaDine, which is today the company behind their cold extrusion products. With Ken and Preston's experience in feed and functional nutrition, the company has been able to grow exponentially in the functional treat market.

"If you're going to feel good about giving your pet some kind of treat, it might as well have some benefit to them as well, even if it's a general health benefit," Stricker says. "You see a lot of hip and joint, skin and coat, or calming products out there now that are defined for one function or another. The trend is to make the treat something good for the dog or for a problem it has."

Pet treats and pet foods that are commonly referred to as functional foods, supplements and superfoods are produced in the company's new cold extrusion room that contains two Bonnet 4-in. line extruders that can each produce 800 lbs. per hour. Preston Munsch, the driving force behind the growth of this functional line, has allowed the company to offer formulation as a service as well. The company produces a lot of functional products with added supplements. Usually it's through a blend of superfoods and functional ingredients. "It's cold extruded, so it doesn't affect any of the products because of the heating tolerance," Stricker says. "All the ingredients are pre-cooked and put into a paddle blender."

The cold extruded products go from start to finished, packaged product all in one room. "There is no kill step in that process, so we send that product out for testing before we ship it to customers," says Dave Freymiller, SQF practitioner and head of quality for the company. "We have a separate space in the warehouse designated for product from the cold extrusion room while we wait for the third-party tests to come back." Functional ingredients such as probiotics, prebiotics and glucosamine and superfood ingredients such as blueberries, salmon, flax seed, kale and nettle leaves are commonly included in the company's cold extruded formulas and marketed

Top: Pedigree Ovens and The Pound Bakery co-manufactures pet treats and pet food and also produces house brands.
Bottom: Kurt Stricker, president of Pedigree Ovens and The Pound Bakery, is in the business of helping other companies grow.

as beneficial to skin and coat, calming, joint aid, supportive for digestion, or just the general health of pets.

Added to the mix

Another new capability for Pedigree Ovens and The Pound Bakery is dry blending. The dry blending room has three ribbon blenders from A&J Mixers combined with material handling equipment from Flexicon to convey product and further automate the process. "We are going to be doing more and more blending," Berglund says. "We have some customers that do dehydrated food blends or freeze-dried food blends. We've had those opportunities over the years and said no because we didn't have that dedicated space." The company is currently producing a dehydrated food blend for one customer who offers a complete and balanced dehydrated pet food. The batch size for that customer is around 2,000 lbs., and the blended product moves by conveyer into the packaging room where it's packaged into a bag or a box depending on what the customer chooses.

"We do a lot of 'one and done' cake mixes or cookie mixes," Berglund adds. "We'll be able to do that a lot more efficiently now by blending it and transferring the blended product to a form/fill/seal powder filler. We do approximately 15,000-20,000 pieces per run."

The new dry blending room will also supply other areas of production by blending the necessary ingredients and transferring them to other areas to be baked or extruded. Stricker estimates that 60% to 70% of what is produced in the blending room will be used for hot extrusion applications.

Flexible packaging

There are five automated paths that bring finished product into the packaging room. As product comes in on conveyors, the plant is designed to allow the destination to change depending on the packaging required. That automated flexibility will have a huge impact on overall production efficiency.

The packaging lines include a Bosch form/fill/sealer, a Bosch flow wrapping machine, a Veronica Vertical VHL Cartoner from Ultra Packaging, two Umbra pouch-

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The new 212,000-sq.-ft., primarily pet treat processing plant in Harvard, Illinois, was designed to be flexible in both the type of products that can be produced and in what volumes.

ing lines, one for pouch sizes from 1 lb. to 50 lbs. and one for pouch sizes of 4 oz. to 4 lbs., and a Niverplast CombiPlast machine that integrates case erecting and bag placing in one.

"It's always been our theory that we need to be flexible in the way that we make baked and now extruded products, and the same thing goes for packaging," Stricker says. "We want to be a resource that brands can turn to for many different products."

In packaging, the company has more than tripled its capacity. "A lot of the functional PetDine products we make are packaged into plastic jars," Berglund says. "We'll package into about anything except glass or cans." All products pass through Fortress metal detectors, some before packaging and some after depending on the packaging materials used. The availability of packaging materials often determines product output. Each package is unique to each customer and sometimes can take 6-8 weeks to receive from printers.

The right space

Having more space for access to ingredients was a key driver in the layout and design of the new building. Ingredient storage is now separate from warehouse space. The company stocks about 1,000 different ingredients on Bradford Systems moveable racks. They have room for almost 1,800 pallets which is a 50% increase from conventional pallet racking in the same space. With the space-saving moveable racks, they gained an extra 600 spaces.

"Our biggest gain in efficiency has been just having more space," Stricker says. "Which has enabled us to have all of the ingredients in one place with easy access to processing. Our cold extrusion used to be across the street from us, and we had to move ingredients back and forth. Being able to have everything in one building has really improved our efficiency."

With 80,000 sq. ft. of warehouse space available for customer storage and B2B fulfillment and 10 bays for incoming and outgoing trucks, Pedigree Ovens and The Pound Bakery can be a full-service company again, plus some. The previous 50,000-sq.-ft. facility is now being used for direct-to-consumer ecommerce fulfillment for brands they manufacture. With all of these extra fulfillment services offered in house, as well as their centralized Midwest location, Pedigree Ovens and The Pound Bakery offers brands the opportunity to save money on shipping and other fees by having them manage their logistics.

The company currently employs 140 people with the labor equally divided between production and packaging. Much of the new automation eliminated physical work but the increased output creates a greater labor demand in packaging. "We're lucky that we have a really good, core workforce," Berglund says. "We have good retention and a great group of employees that we really depend on."

Every opportunity to gain efficiency was embraced from the building construction to the custom selection of equipment. "We moved from a metal building with insulation and an external and internal wall which isn't ideal," says Jared Gratz, chief operations officer, Pedigree Ovens and The Pound Bakery. "Our new building is a concrete structure that is designed better for food safety." The company recycles or reuses whatever it can. Efficient use of energy was a priority from automatic-shut-off LED lights to recirculating air from the hot processing rooms to heat the warehouse area.

Having the flexibility to run a wide range of batch sizes only works if it can be done efficiently as well. "Kurt put a lot of effort into planning the equipment so it's flexible for us, and we can do those small minimums without having a lot of scrap," Berglund explains. "There aren't many other manufacturers of our size that also produce as low of minimums as we do. We try really hard to remain flexible in our production amounts."

Being flexible seems to work. Berglund says the company is projecting a 50% growth for 2018 and looking to double their business by 2019. "We're really excited for the future growth of our company and the new services and capabilities we've added." ***PFP***