

A close-up photograph of a hand holding a white medical device, likely a syringe or a pen, against a blurred background. The device has a clear, textured section near the tip. The hand is positioned on the right side of the frame, with fingers gripping the device. The background is out of focus, showing hints of a wooden surface and a bright, possibly windowed area.

**BRINGING
STAMPING
IN-HOUSE
EXPANDS
HORIZONS
FOR FACET
MEDICAL.**



Facet Medical Technologies is a medical device company based in Atlanta, GA, serving the global diabetes care, wound care, and drug-delivery marketplaces. **With a 49-year heritage, Facet Medical is proud to be one of the largest providers of lancets and lancing devices in the world. "Our mission is to improve lives by making medical devices that contribute to improved diagnostics and therapy," the company says.**

Early in 2018, in response to a request from a major OEM customer, Facet began investigating what it would take to produce stamped and formed needles in house. After conducting due diligence, the company decided on bringing in stamping, molding, material-handling, and engineering services from Ridgefield, NJ-based BRUDERER Machinery (www.brudereramericas.com). “Our history with advanced stamping technology started with our history with BRUDERER,” says Matthew McClure, Facet’s director of operations and engineering. The results are pointing the way to a future of significant growth opportunities for the company.

No Ordinary Needles

This was no small project for Facet. Although Facet had extensive experience with high volume automation, vision inspection and micro-insert molding, it involved bringing in disciplines and functions, such as stamping, Facet never had before. And the needles they wanted to produce are no ordinary product. For critical applications in insulin delivery and glucose-level detection, needles (or “sharps” for those in the business) are complex, specialized products. Designed for use in drug-delivery systems (“pen needles”) and for pricking the skin for blood samples (lances and lancets), sharps provided by Facet can be chemically etched,

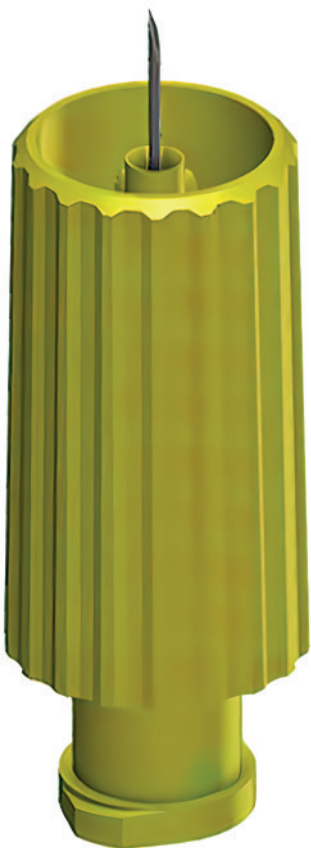
precision-beveled, and over-molded with plastic bodies specifically designed to reduce discomfort and enhance performance.

Facet required a complete production line and all related disciplines for starting with raw material in and ending with finished product out. “Facet Medical is in my opinion one of the best examples of a BRUDERER turnkey customer,” says Alois J. Rupp (AJ), BRUDERER Machinery CEO. “Our team was able to provide Facet a complete production solution to receive raw materials (in this case chemically etched stainless steel and resin) and ship out sharpened, over-molded, cleaned and inspected needles.”

It started early in 2018 with a phone call from Mr. Brett Rogers, Facet Medical’s technical project manager. He was investigating potential suppliers for the company’s turnkey project and had called the general BRUDERER phone line. It so happened that AJ Rupp was in the office and took the call. Rogers clearly outlined what Facet was looking to do and Rupp clearly understood the task at hand. After an extensive review with BRUDERER’s chief engineer Sean Tucker, BRUDERER provided Facet a detailed writeup including a proposed line layout as to how the stamping system would work. The integrated molding and inspection systems came later.

Rogers indicated he would need to also evaluate other stamping suppliers and would be back to BRUDERER within due time. “I believe he evaluated two other potential suppliers and later placed the complete order with BRUDERER,” Rupp says.

Facet had a number of goals for bringing stamping in house. Primary among them was cost. “We were largely depending on external suppliers,” explains Giles Rae, Facet’s chief commercial officer. “This affected quality control, meaning we had to verify and validate outside manufacturing processes rather than relying on our own.”



Insert-mold products provided by Facet also feature a variety of sharps with over-molded plastic bodies and patented beveled-edge designs.



Facet stamping line.

And those processes are not simple and straightforward. As lancing devices are a high-volume business for Facet's OEM customer, component parts come in supplied on a continuous reel. To integrate them into production, assembly and inspection at Facet, the defect rate had to be as low as humanly possible. "We just cannot accept rejects," Rae states.

Entire Ecosystem

Recognizing Facet's need for "absolute repeatability and reliability" on the stamping line, Rupp and the BRUDERER Machinery team recommended a stamping line consisting of decoiling, in-line lubrication, precision stamping, in-line aqueous cleaning, automated inspection, and rewinding. Specifically:

- The BRUDERER/Leicht de-coiler is specially configured for etched material and includes paper take-up and non-contact loop-control system.

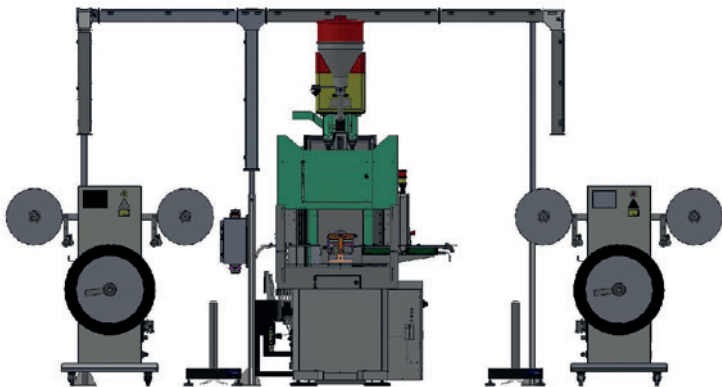
- The BRUDERER Microlube inline lubrication system has a fog chamber and vacuum system to maintain air quality in clean room conditions. Excess oil mist can be extracted/separated, filtered, and returned to the process.
- The BRUDERER stamping press and the mechanical feed unit is set up specially for etched material. With an available press force of 280kN, the stamping press is a high-performance mechanical press with an adjustable stroke and speed range of 100 to 2000spm (strokes per minute).
- Following stamping, the BRUDERER Inline aqueous cleaning system provides lubricant and debris-free parts for the subsequent inspection and molding operations.
- Next is a 100% inline inspection system to assure part quality prior to next operation.
- Then a second BRUDERER/Leicht functions as a rewinding system with paper interleaf and loop control. →

In addition to the stamping line, BRUDERER also specified and supplied four molding lines for Facet’s growing production process consisting of the following equipment:

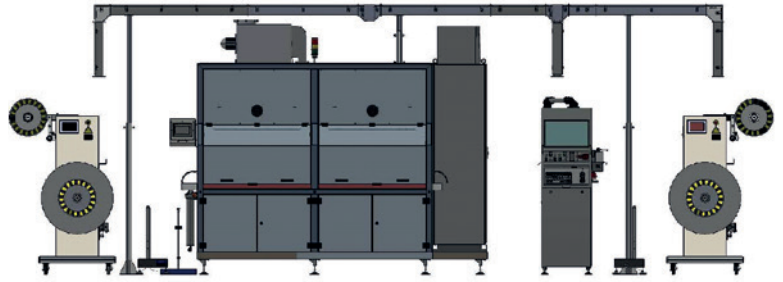
- BRUDERER/Leicht powered de-coiler specially configured for pre-stamped material.
- BRUDERER push-pull gripper feed system for sequential feeding of the stamped strip through the molding operation.
- Arburg injection molding machine – (provided by Facet)
- BRUDERER/Leicht powered rewinding system configured for stamped over-molded components including paper interleaf and loop control.

Completing the production system, Facet’s final cleaning and inspection line consisted of the following:

- a. BRUDERER/Leicht Model powered decoiler.
- b. BRUDERER Inline aqueous multi-chamber cleaning system to provide debris-free parts to customer-specified cleanliness specification for final packaging.
- c. BRUDERER/Otto inline inspection system to assure part quality at a rate of approximately 1300 parts per minute prior to final packaging and shipment to end user.
- d. BRUDERER/Leicht model powered rewinding system for finished parts.



Front view of a Facet Medical molding line. BRUDERER supplied four.



Front view of the Facet final wash line.

BRUDERER provided and oversaw controls, interlocks, power distribution, and all additional aspects required. The result is more than a network of process knowledge and key players, it’s an entire production ecosystem for Facet’s continuing benefit.

FAT and SAT

Bringing production in house with state-of-the-art stamping, molding, cleaning, and inspection equipment, particularly for Facet who did not have these disciplines before, requires more than engineering expertise, it requires expert project management. Clear and well-written specifications are crucial for both BRUDERER and Facet. Incomplete or nebulous specifications on either side can result in contentious phone calls and tense meetings.

Fortunately, BRUDERER has a well-established track record with turnkey, multi-equipment projects. “Throughout installation, training, and startup, BRUDERER was wholly integrated not only with our team but also with managing all the suppliers,” Rogers says.

Good project management documentation covers:

- **Functional requirement specifications**
assuring the system integrator provides the understanding of the system the customer desires, expressed in general terms.
- **Scope of work**
Here the system integrator expresses understanding of who does what during the execution of the contract.
- **Detailed design specifications**
the system integrator then creates documentation to support the work required, including equipment drawings, such as schematics, enclosures, pipe schedules, I/O lists, HMI screen prints and report formats, and guiding the customer and subcontractors toward complete installation.

- **Factory acceptance test (FAT)**
testing the programmed system prior to delivery.
- **Site acceptance test (SAT)**
FAT performed after delivery, at the end user's location.

"The entire engagement from covering BRUDERER's past experience with stamping lines producing sharps through to our FAT and SAT was great throughout," Rogers explains. "What we received in addition to the equipment was a valuable network – an entire ecosystem of stamping, strip handling, molding, cleaning, and inspection expertise," adds McClure.

What It All Means

At the time of this writing, Facet's production line, servicing a large medical OEM, is growing very quickly. "Production is up 60% quarter over quarter and our customer is very happy with the quality," says director of operations Matthew McClure. "We're in the midst of moving forward on new commercial opportunities and planning how to expand and grow line capacity." Building on the experience gained this specialized needle project and the turn-key solution developed with BRUDERER Machinery, Facet has since

successfully bid and won an additional large-scale program. "From the beginning Facet saw this as an opportunity to push the boundaries of our knowledge base and expand into an adjacent manufacturing technology," Rogers says. "Find the right partner and equipment solution was critical to realizing that vision."

BRUDERER Machinery CEO AJ Rupp emphasizes the open communication and the clear goal-setting on the part of Facet Medical, calling them an "ideal customer." The Facet team, for their part, responds with recognizing BRUDERER's technology and project coordination skill with "how much care and expertise was baked into this project from the start, with the result being a great deal of help for us in not worrying about things."

The Facet/BRUDERER experience proves that establishing a successful production operation is possible not only through finding the right technology provider, it's about an ongoing relationship based on open communication, active listening, mutual respect, caring, and trust. This is how the benefits of modern production technology come to life.

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*Matthew McClure, Director Operations and Engineering
FACET MEDICAL TECHNOLOGIES*