



T **TOOLING**
TECHNOLOGY
A TOOLING TECH GROUP COMPANY

CASE STUDY

VIKING SPAS – HOT TUB

VIKING SPAS AND TTG: A PRODUCTIVE PARTNERSHIP

Customer: Viking Spas has been a leader in the consumer hot tub market since its founding in the early 1970s. With dozens of innovative models and an authorized dealer network that spans the United States and Canada, this third-generation, family-run company designs and manufactures its broad range of products at its factory in West Michigan. Whether you're looking for rest and relaxation after a long day at work, some fun with friends and family, or the therapeutic benefits of hydrotherapy, Viking Spas has a variety of high-quality, yet affordable, options to meet your needs.

- **Challenge:** As a pioneer in the spa and hot tub industry, the company needs to continually introduce new products that match its consumers' desires. However, Viking Spa's legacy products were originally handcrafted by journeyman patternmakers; thus, there were no electronic files to reference and use for design updates. In an effort to not only modernize its processes, but also allow for greater visualization and flexibility for future models, Viking Spa hired a design firm to generate new 3D CAD data for use in new product development. After completing the engineering phase of an updated hot tub, the company determined they would also like to create a full-scale physical model in order to ensure that the style and features fit their vision. Viking turned to Tooling Tech Group (TTG) for help.



- **Solution:** A longtime tooling partner to Viking Spa, the pattern shop at TTG used low density foam and one of its large format CNC machining centers to create an exact replica of the finished spa. Due to its size (10' x 10' x 4'), the team split the prototype into three pieces so the customer could easily step in and out of the concept model, which was important as they wanted to physically test the geometry and fit of the seats. The foam material provided the perfect balance of cost and durability, and was also readily available, allowing TTG to meet the customer needs quickly and cost-effectively.



- **Results:** The spa model took less than two weeks to complete from initial design to shipment to the customer's facility. Viking Spa inspected and tested the foam model and was quite pleased with the results, but took the opportunity to optimize the design further before committing to production tooling. The team made several small, subtle changes to the seat angles and radii to make them more comfortable, updated the CAD model, and then asked TTG to modify the foam prototype accordingly to ensure the finished products would be perfect.



- **Future:** Viking Spa is still in the process of finalizing the design. When complete, the 3D models will be used to create production-grade, cast aluminum thermoform tooling utilizing TTG's in-house foundry. And since the design and its various iterations are now captured electronically, the spa will also serve as the baseline for future models, greatly reducing development time while helping to ensure consistent quality. This project illustrates Viking Spa's innovative approach to spa and hot tub production, as well as TTG's ability to quickly take a customer's idea, collaborate with them to achieve optimal results, employ their diverse set of capabilities, and deliver production tooling that meets their unique requirements. Tooling Tech Group: a true one-stop-shop!



COMPANY OVERVIEW

Tooling Technology, originally founded in 1989, specializes in providing thermoform tooling as well as rotational and blow molds for producing plastic components and structures. Equipped with its own aluminum foundry, Tooling Technology handles all phases of the tool build in-house, from design and pattern to fabrication and finishing. Additionally, the company is home to the Segen Quick System for simplifying industrial setups, changeovers, workholding, clamping, fixturing and alignment.

Tooling Tech Group builds custom automated systems for assembly, joining and inspection as well as tooling for a variety of applications including thermoform molding, high compression composite molding, blow molding, rotational molding, die casting, and stamping. Industries served include automotive, appliance, lawn and garden, agricultural, aerospace, marine, and off-road vehicle industries, among others. Through organic growth and acquisitions, the company has become the largest tooling provider in the United States with 650+ employees, 13 modern facilities and over 1 million square feet of manufacturing space across four states.

The depth and breadth of our capabilities is achieved through the combined experience of our company units, with each of these companies being in business for 30+ years, providing both extensive industry experience and financial stability that you can rely upon. Our unique differentiator is the ability to provide all tooling services from design to engineering to simulation to machining to fabrication to try-out all within one company. This single source ability can help to streamline your business operations and simplify your life. We take full responsibility for quality, delivery, and cost management of each project starting at concept through “on time, every time” delivery.



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