



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

CASE STUDY

TRIENDA/PENDA HOSPITAL BED

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CUSTOMER: Recognized as the largest heavy-gauge industrial thermoformer in North America, Kruger Family Industries (KFI) has a 45-year history through its two Portage, Wisconsin-based brands – TriEnda – known for producing pallets, dunnage and material handling material, and Penda, focused on truck bed liners and other automotive components. Additionally, KFI has two factories in Mexico. Altogether there are about 1,000 employees and nearly 1,000,000 sq. ft. of manufacturing space housing 39 thermoforming machines, each with a forming area of 64 sq. ft.

- **Challenge:** During March 2020, at the start of Covid, automotive plants were shutting down indefinitely and KFI wanted to quickly develop a new revenue stream. Management sent a note to the engineering group, challenging them to think about what the company could make to serve the medical industry and asking them to bring ideas in within a weekend's time, considering capability, time to market, efficient price point and scalability. Hospital beds became the company's focus as they already made fold-down beds for the Class A truck industry, providing them with existing FEA modeling regarding the stress and deflection points for when people sleep in thermoformed beds.



Emergency & Disaster Relief Bed base



Emergency & Disaster Relief Bed back support

customer-requested two-week delivery actually supplying four sets of tools (two beds and two backrests molds) within 10 days.

In addition to the original tool set, TTG produced three additional bed base tools and two more back rest tools for thermoforming the beds. All of this was accomplished without compromising delivery schedules of other customer projects at the facility.

Once this manufacturing decision was made, KFI turned to Tooling Technology in Ft. Loramie, Ohio, a Tooling Tech Group (TTG) company and long-time supplier of thermoforming tools to both Penda and TriEnda for assistance on this critical project.

- **Solution:** Producing molds of this size normally takes a five-to-six-week turnaround. By pulling together its resources and leveraging its vertical integration, TTG was able to go from design to finished tool in less than the



TTG's vertical integration allowed four (4) sets of tooling to be produced within 10 days.

- **Results:** This enabled the production of the beds to start less than a month after the initial concept was developed. The bed components were run on two different machines, producing about 1,100 units per day. The additional sets of tooling provided by TTG then allowed TriEnda and Penda to achieve their goal of 3,000 beds per day.
- **Future:** The quick turnaround of this project into a new vertical industry for KFI led them to develop other thermoformed products to serve the medical community including modular and portable wall partitions, and an Emergency Disaster Relief cot.

Since 2020, much business has returned to something close to ‘normal’. But, as quoted by KFI personnel, “We definitely will continue to rely on Tooling Tech, as they have more than proved their ability to support us in all situations.”



Fully-assembled Emergency & Disaster Relief Bed

COMPANY OVERVIEW

Founded in 1982, the Tooling Tech Group has grown organically, and through acquisition, to 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. As a vertically integrated company, we maintain tight control over quality and can provide custom services to meet your total program needs. We take full responsibility for quality, delivery, and cost management of each project starting at concept through “on time, every time” delivery.

Together, we have earned a reputation for manufacturing the highest quality tooling for casting, molding, forging and stamping. We also produce secondary automated solutions to transform parts into assemblies and functional products used around the world. We accomplish this by applying our expertise along with the latest technology, techniques, and CNC equipment to design, engineer, manufacture and test your tooling.



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