



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

CASE STUDY

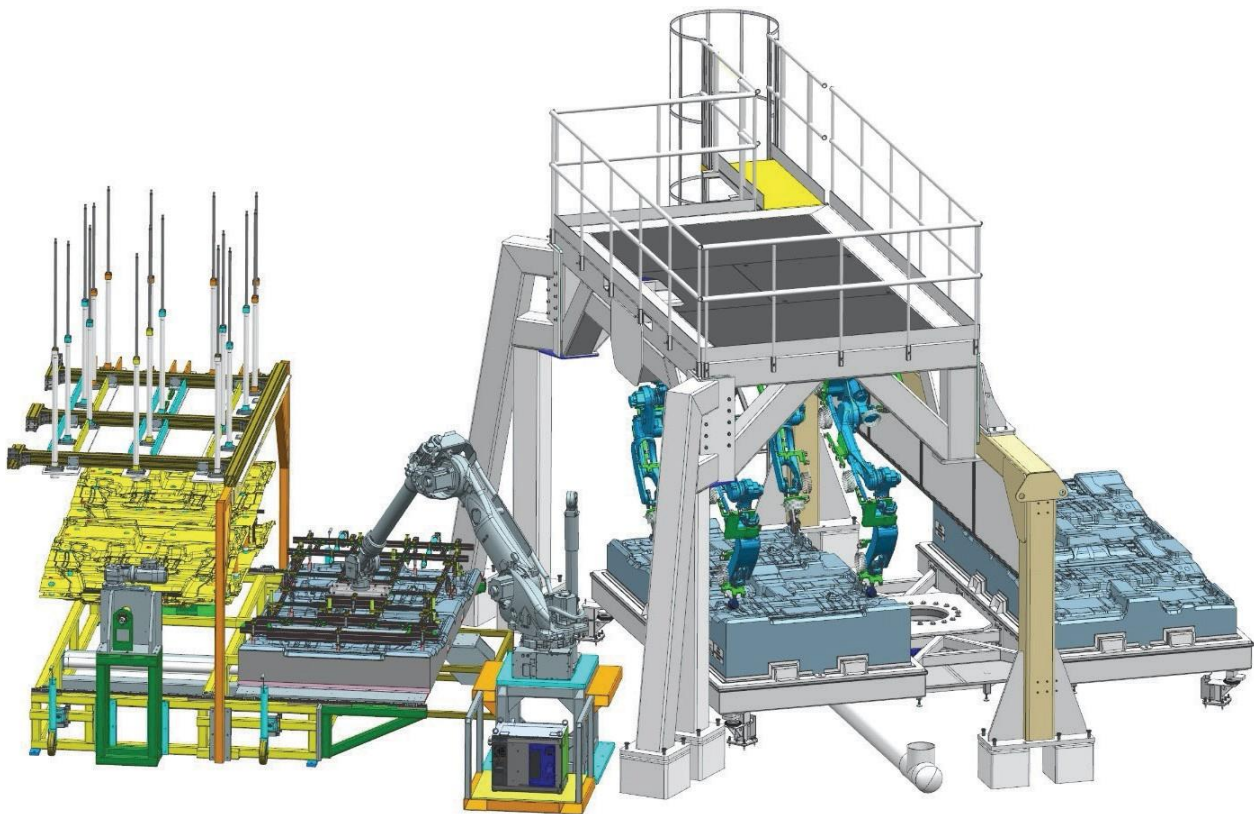
TRANSFER AUTOMATION SYSTEM

Tooling Technology, a Tooling Tech Group
Company Case Study: Transfer Automation
System

TRANSFER AUTOMATION SYSTEM ASSEMBLY SOLUTION

Customer: An industry leader of automotive flooring, acoustics, thermal management, aerodynamics, decorative trim, and other fiber-based products. It has a global reach, operating through 25 manufacturing as well as 10 commercial, engineering, testing and tool facilities in 10 countries.

- **Challenge:** One of the plants was constantly behind schedule on a particular forming line due to staffing issues. Employees did not want to work because of the heavy lifting requirements of transferring the large automotive floor carpet from the forming line to the waterjet trimming cell. The customer was close to paying the OEM for late deliveries and line shutdowns.
- **Solution:** Tooling Technology, a Tooling Tech Group company, developed an automated transfer system that integrated with the automated forming line to move the carpet from the forming cell, rotate it 180 degrees for proper orientation, and then transfer it to the waterjet trimming machine. All of this was done hands-free via a mechanical gripper system, a turn style and indexing table, and a robot arm.



Automated Transfer System

- **Description:** The entire program was fully designed, built, and integrated by the Tooling Technology team in Ft. Loramie, OH. They worked closely with the customer's team to understand the floor layout, process requirements, and timing/logistics for the install. All mechanical tooling and fixturing was also built in-house using several materials and processes including CNC machining, epoxy fiberglass layup, and aluminum casting. Hardware, programming, controls, and integration were all managed internally, and included a simulated trial at the Ft. Loramie facility before final install on the plant floor. Initial trial integration, troubleshooting, and training were included on-site, along with service and warranty for future program modifications or changeovers.
- **Results:** By replacing manual labor, the customer was able to relocate two employees each on two shifts for a total of four people that could be relocated to other lines within the plant. With no unforeseen shutdowns, the line was able to run more hours per day, which increased the total daily output, while also adding flexibility for demand fluctuations. They also saw increased efficiency within the machine cycle and improved part quality due to the consistent flow of material. Overall, the plant expects ROI in under 2 years and anticipates this line contributing to future business awards due to its increased output and efficiency contributing to lower piece price offerings.
- **Future Opportunities:** The company not only sees this system being used on other forming lines at this plant, but they are also investigating its integration at other plant locations. Automation is being reviewed for use on the front end of this line to load the material into the machine. In addition, the concept and technology are being developed for use in other functions, including pack-out, staging, and assembly operations within this plant and throughout the organization.

COMPANY OVERVIEW

Tooling Technology, originally founded in 1982, 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. In 2018, the company became one of the Tooling Tech Group of companies.

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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