



# JR AUTOMATION TECHNOLOGIES, LLC

## DOOR PANEL TRIM ASSEMBLY CELL CASE STUDY

### INTELLIGENT DESIGNS

#### FAST FACTS:

- In business since 1980
- 120,000 sq. foot facility
- 210 employees
- North of Holland, MI

JR Automation Technologies, LLC staffs ingenious, qualified professionals who design and build solutions for efficiency and speed, customized for your specific needs. Whether that means machines or process development, the JR team has a smart, lean solution to your challenging project.

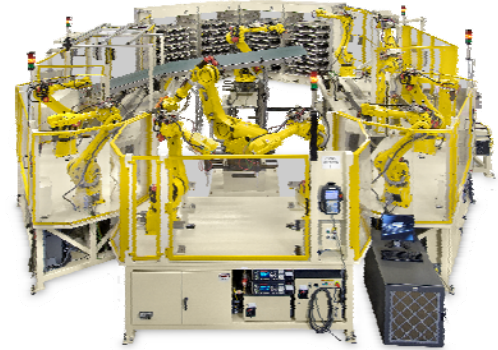


13365 Tyler Street  
Holland, MI 49424  
P: 616-399-2168  
Website: [www.jrauto.com](http://www.jrauto.com)

#### CHALLENGE:

Create an assembly solution to produce any door, any day, at a rate of 1 door every 30 seconds.

Additionally, integrate all processes in a modular design, with flexibility to add additional work stations.



#### SOLUTION:

This assembly solution makes part changeover a part of the process, with zero downtime. The machine produces any configured door by using two material handling robots surrounded by individual robotic work stations and a fixture rack.

It also greatly reduces future capital costs because new product lines require adding a new fixture, not a new machine—the material handling robots carry the parts on fixtures through the cell.

The individual robotic work stations perform the following processes: part loading, sonic welding, clip inserting, heatstaking, and tab bending.

JR greatly enhances testing and maintenance options with the modular design—the work stations are easy to bypass or remove without adversely affecting the rest of the line.

And, the modular design provides the freedom of using individual work stations across multiple cells or product lines, as well as the flexibility to add additional work stations in the future.

We provide additional flexibility with 6-axis robots taught to CAD, which keeps weld points the same despite machine variations. The machine user interface and robot software also allow for:

- Multiple weld points for different part types
- Remote adjustment, diagnostics, and troubleshooting of sonic weld robots
- 2 robots in close proximity run by a single controller with collision guard

#### OUTCOMES & BENEFITS:

- Change parts with zero down time
- Add part families by adding fixtures, not new machines
- Mix and match assembly stations, and robot programs