



# JR AUTOMATION TECHNOLOGIES, LLC

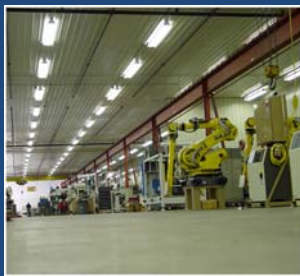
## CABINET FACE FRAME ASSEMBLY CASE STUDY

### INTELLIGENT DESIGNS

#### FAST FACTS:

- In business since 1980
- 120,000 sq. foot facility
- 190+ 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:

A cell that can assemble face frames without manual labor.



#### SOLUTION:

- Line Scan Camera 2048x1 CCD
- 18 Megapixel Vision Inspection System
- Precision glue applicator
- Integrated drills and screwdrivers
- Fanuc M710iC/50 robot
- Fanuc M16iB/20 robot
- Customized EOAT with 5 grip configurations

Historically, cabinetry assembly requires intense manual labor by skilled workers. Taking into account the tradition of cabinet building, the JR team integrates the newest software technology on the market to develop a dual robotic cell to assemble face frames in order to eliminate the strenuous manual labor.

This process with this level of flexibility has never before been automated. The first of its kind, the Cabinet Face Frame Assembly Cell is opening a new door to the industry. Utilizing emerging software technology and the intelligence of the dual robot team; this cell is capable of creating any combination of any part type within the tolerances and parameters of wood type and total size. The possibilities are seemingly limitless and infinitely adjustable.

From large to small, from complex to basic, there is absolutely no changeover necessary between part types, saving valuable time for the customer. With this level of flexibility every part can be different from the next. Not only is this process efficient, the glue application is precise and only applies the exact amount necessary consistently conserving glue.

Overall, this process is very intuitive; the robots are taught flexible paths and insert, move, fasten and re-grip according to the software data. Even the dual robot team reflects the motions of an actual artisan, from the flawless robot to robot hand-off to the fluid movements of the actual assembly; this cell accurately mimics the action of skilled workers. After the successful application of this assembly solution, JR Automation Technologies, LLC partnered with Stiles Machinery to create a strong business relationship that lead to future work for the company.

#### OUTCOMES & BENEFITS:

- Eliminates the physical effects of high stress manual labor
- One-piece flow
- Consistently flush joints from inconsistent parts
- Low cost and low friction table surface
- Hundreds of part combinations
- Adaptive Screw Control
- Flexible
- Clean cell for working