



## JR AUTOMATION TECHNOLOGIES, LLC

### SOLUTIONS FOR LEAN MANUFACTURING: INTEGRATING ROBOTIC AUTOMATION WITH BUSINESS SYSTEMS

#### 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.

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**If lean manufacturing is a goal**, it may be a good idea to investigate automation solutions that integrate with business systems. This method combines a business's network and software with machinery and automation equipment. The benefit of this approach is manufacturing systems that are easier to control and run while increasing throughput and reducing production downtime. Working with a company that understands business processes and systems, and uses that understanding to design and build custom manufacturing solutions, produces solutions that work in harmony with any business model. The following examples demonstrate this principle in action.

#### **Example 1: Eliminate work in process (WIP) and produce smaller lots**

Direct interaction with a robot assembly machine from a remote computer running native software on the internet can eliminate WIP and produce smaller lots. From the operator's point of view, simple keyboard strokes control various complex functions as needed. Behind the scenes, software such as Silverlite, XML, WCF, OPC, and PLC communicate quickly from the robot to the PC and back again. This custom networking solution performs regardless of scale; allowing for quick and accurate responses to changing market and business conditions.

#### **Example 2: Create faster cycle times, and continuous, level rates of throughput**

Automating a manual visual inspection process through a visual studio environment (for example, C-sharp, SQL, VB.net, WCF, among others) can create faster cycle times and level rates of throughput. The machine uses a touch screen application for visual acceptance or rejection of parts passing by cameras on a conveyor. Instead of an operator picking up a part, inspecting it, placing it back down correctly, and noting the results for each and every part, the camera takes a picture, the picture shows up on a screen, and the operator verifies part quality with one touch. Part quality is crucial, but now, the work cell achieves quality without sacrificing cycle time, and easily meets demand.



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#### **Example 3: Decrease downtime**

Updating multiple robot programs simultaneously and instantly using a web interface that interacts with a server and asynchronous JavaScript and XML (AJAX) can decrease downtime. This fast set-up system lets technicians quickly change multiple robots' x,y,z coordinates for any part, all at once. A technician chooses a part on the computer, which loads the appropriate robot programs from a server. The technician then selects the desired teach point from a virtual part display on the computer and makes the necessary adjustments. AJAX then updates all applicable robot programs. This solution increases robot file consistency and allows for file backup, all while reducing maintenance time.

Working with a special automation machine design resource to develop equipment integrated with native network and software provides companies with customized solutions to their business process needs. Incorporating information technologies that work directly with native business systems allow

manufacturing solutions and business process models to work together seamlessly. The result is lean manufacturing solutions that allow companies to produce effectively for their end users.

Please contact JR Automation Technologies, LLC for more information.

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