

# ***“How Can We Repurpose Four Used Robots Into A State-Of-The-Art Welding Cell?”***

## **What Our Client Said**

Our current welding robots are ready to be retired, but it doesn't make sense for us to replace them with new models right now. We have four used robots, but we're not sure they are right for this application (or if they even work).

## **What We Heard**

Help us to create a capable robotic welding cell by capitalizing on the resources we already have, and install it with as little downtime as possible.

## **What We Did**

LSI replaced four Kuka welding robots with four newer, repurposed Fanuc robots that the client already owned, along with new Lincoln welders. LSI programmed the Fanuc robots and Lincoln welders, integrating the robots into the existing welding cell controls. The project utilized an interdisciplinary team of LSI engineers and technicians. First, engineers at LSI in Jackson, Tennessee, developed a plan to simulate the cell's proposed function. The replacement cell was then temporarily assembled at the LSI campus in Memphis, Tennessee. This allowed for real-world testing while programmers and engineers created a new set of controls for the robots. Once LSI and the client were both satisfied with the cell's performance, it was disassembled and installed at the manufacturing facility.

## **LSI provided:**

- Simulation development and fabrication of necessary simulated parts
- Cell testing for full functionality on LSI's campus
- PLC5 modifications and changed communications from ControlNet to DeviceNet
- Assembly for testing, disassembly and then final re-assembly and installation on-site
- Construction management, including demo of original robots, controllers and welders

## **The control system consisted of:**

- Rockwell PLC5
- DeviceNet
- Fanuc ArcMate Robots
- Lincoln S700 Welders
- PanelView HMI
- Custom Design/Build Test Stand



## ***The Results Speak For Themselves***

### **Making The Most Of Resources**

- By repurposing robots that the client already owned, resources were maximized
- The project came in on budget

### **Minimal Downtime**

- Real-world testing was performed without disrupting manufacturing
- The original cell stayed in service until its replacement was on-site and ready to go
- The new cell is more reliable and requires less maintenance

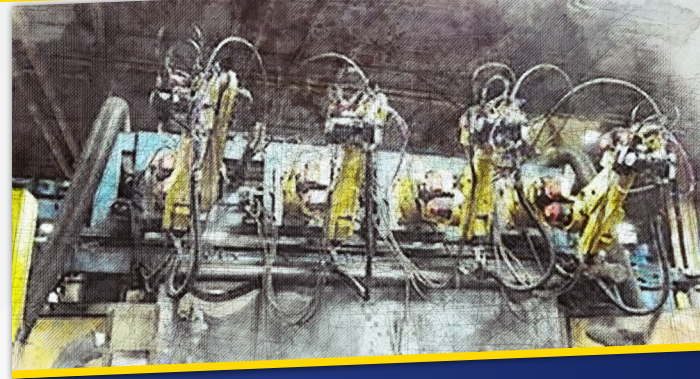
### **Improved Controls**

- The cell uses a modified PLC5 program with communications moved from ControlNet to DeviceNet to send commands to the robots and welders.
- Controls remained familiar to workers, with little training necessary

### **Ahead Of Schedule**

- Testing, installation and commissioning all went smoothly
- The cell was in service ahead of schedule

***Let LSI listen to your challenges today, and we'll work together to write a success story for you.***



### **LSI listened,**

then developed a unique solution that made the most of existing assets and minimized the need for downtime. Because LSI is independent and not owned by a manufacturer, we were able to put the customer's needs first – making the most of available resources without pressuring them to purchase extra equipment. The project was an efficient way of improving productivity, and the customer is already brainstorming ways to involve LSI in future plans.

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***Throughput increased.  
Downtime decreased.  
Maintenance costs were reduced. By working with LSI, the client redeployed and repurposed existing assets to improve productivity without an unreasonable investment.***

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