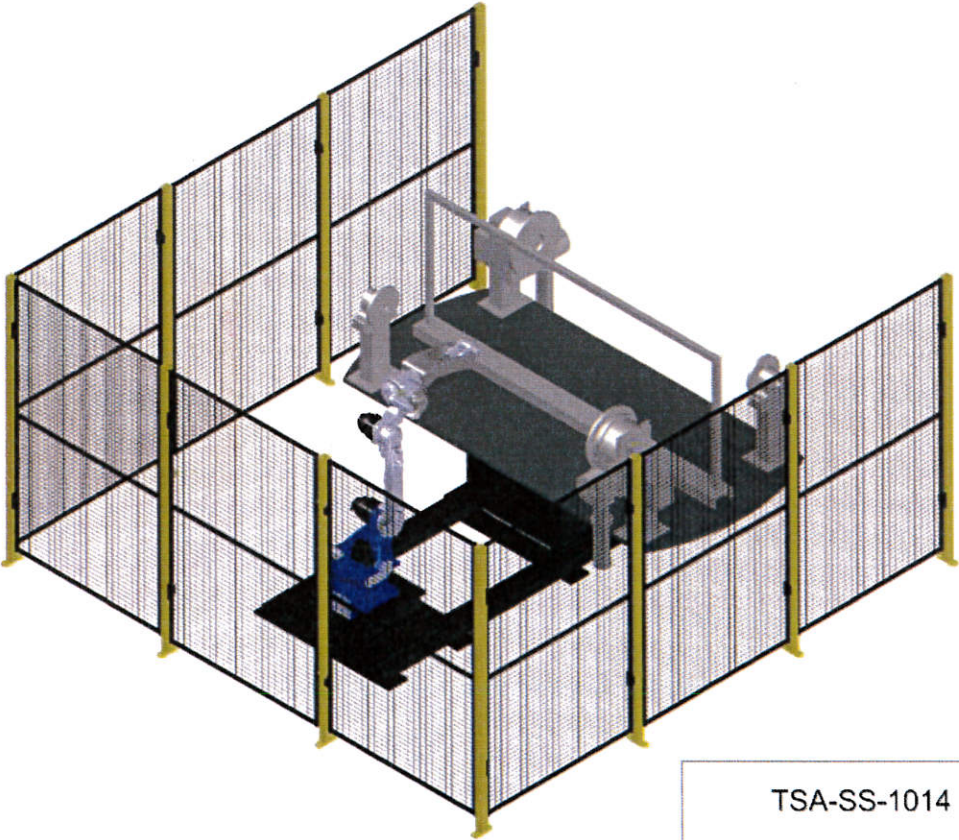


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**PROJECT DELIVERABLES:**

**Qty.    Description**

Tri-State Automation pneumatic robotic turn table weld cell with 1 Manual Slide Door and Allen Bradley Controls and 1 (Fanuc Arcmate 120i) welding robot with Lincoln PowerWave 455M Power Supply and auxiliary weld equipment. (Electric Positioners illustrated not included)



TSA-SS-1014

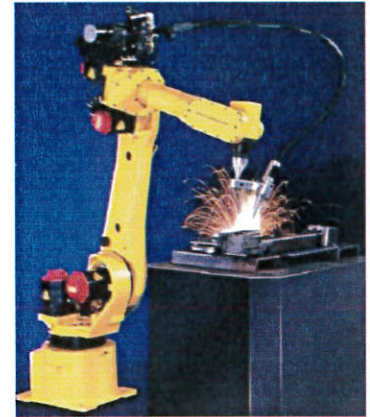
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## **PROJECT DELIVERABLES (Continued):**

### **Qty.    Description**

- 1                    **Fanuc ArcMate 120i – Welding Robot (Refurbished)**  
Suitable for high-speed welding and cutting processes, the Fanuc Arcmate 120i is a six-axis robotic arm that is servo-driven. The Arcmate 120i welding robot provides accurate and consistent path performance based on its simple and reliable construction.

In addition to high-speed cutting and welding, the Arcmate 120i is capable of performing a variety of welding applications, including MIG welding, TIG welding, Plasma welding and Plasma cutting.



- 1                    **Robot Base Riser**
- NEW Fabricated steel riser for robot mounting
  - Includes drilled and tapped holes for mounting

- 1                    **Rj3-iB Robot Controller – Robot Controller (Refurbished)**  
The FANUC R-J3iB uses advanced technology packaged in a proven, reliable and efficient controller design. Process capability and open architecture features provide intelligence to improve application and motion performance while simplifying system integration. The R-J3iB Controller incorporates the plug-in options concept, which allows flexibility for application specific configurations while maintaining a commonality for all users of the system.

Additionally, the R-J3iB supports both analog and digital input and output modules while also allowing the addition of optional process I/O boards, as necessary.


- 1                    **Lincoln Power Wave 455M Weld Package – and Auxiliary Weld Equipment (Refurbished)**
- Tri-State Automation to integrate and test weld the welding robot
  - Does not include any welding power or ground cables
  - Tri-State to include Fronius software function

- 1                    **Axcellent Mesh Cell Fence Guarding Package**
- 2.44 m (8') solid panel perimeter safety fence
  - Arc flash protection curtains
  - Safety fence between positioners
  - One access gate with positive break safety switch
  - Dual-channel safety hardware for access gate
  - Will meet ANSI/RIA R15.06-2012 standards
  - Required cables
  - Light curtains at positioner load/unload stations

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## PROJECT DELIVERABLES (Continued):

**Qty.    Description**

- |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                           |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p><b>Allen Bradley Safety Light Scanner</b></p> <ul style="list-style-type: none"><li>• Customizable protection and warning zones are easily created to safeguard any area</li><li>• Setup time is minimal with easy-to-understand software that features live wiring diagrams and an automatic mapping function. State Information Output</li><li>• Advanced functions are available with the SZ series like muting or even simultaneous monitoring of 2 zones with a single unit. All-In-One - Built-in Controller</li><li>• Additionally, each scanner will log date, time, and position of recent breaches for informed and efficient troubleshooting.</li></ul> |  A photograph of an Allen Bradley Safety Light Scanner. It is a small, black, cylindrical device with a yellow lens at the top, mounted on a white base. The scanner is positioned on a grid of orange and white squares, which represents a safety zone. The scanner is pointing towards the right side of the frame. |
| 1 | <p><b>Allen Bradley PLC Control Panel with Touch Screen HMI</b></p> <ul style="list-style-type: none"><li>• Safe operating zone for the robot and up to three external axes</li><li>• Three axes can be monitored independently during motion or standing still allowing a “detach jog” function in any position</li><li>• Three dual-channel inputs for up to eight safety zones</li><li>• Each robot must have an FSU for stand-still monitoring or zone monitoring of the robot is required.</li></ul>                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1 | <p><b>Operator Station</b></p> <ul style="list-style-type: none"><li>• Mounted in NEMA enclosure, fence mounted, and cable.</li><li>• Functions: Job Start, Emergency Stop, Hold, Alarm Reset, and Servo Power-up</li><li>• Opto-couple switch for cycle-start activation</li><li>• Ready signal light and alarm indication light</li><li>• Positioner auto/manual switch</li><li>• Manual positioner-jog joystick</li></ul>                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1 | <p><b>4' x 9' Pneumatic Tooling Turn Table (Dual Stations) - Refurbished</b></p> <p>Weld tables will be installed by Tri-State Automations parent company Tri-State Industries experienced steel fabrication team in an effort to customize the tables to the proposed system while decreasing the cost of outsourcing the tables to an independent fabricator.</p>                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                           |

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## PROJECT DELIVERABLES (Continued):

**Qty.    Description**

**0                      Custom Robotic Weld Fixtures for Part #:**

- Individual custom aluminum based robotic welding fixtures to be loaded manually by operator with customer supplied piece parts.
- Electronically controlled laser sensors designed and integrated to safe haven the operator while loading the weld table. Crossing light screen will emergency stop the system and return the robot to a safe home position.
- Manual De-Staco fixture clamps
- Bolt in assembly to accommodate future fixtures
- Ergonomic load / unload fixture for operator

**NOTE:** Tri-State Automation approves the current part tolerances for the parts stated in this proposal as adequate for robotic welding except for limited touch up programming and secondary manual weld operations between fixture adjustments and material runs. Tri-State Automation **HIGHLY** recommends that QC Supply attempts to decrease the part tolerances of the specified parts to meet the criteria below. This will assist in decreasing the need to adjust robot programs between runs and increase weld consistency between weld cycles. The tighter the tolerances are on the parts, the higher the success rate and weld quality will be when robotically welding.

**Weld Seam Gap between weld pieces –**

**Zero to Half the Diameter of the weld Wire Used.**

**Example: Wire Diameter = 3/64" (1.2mm or 0.046") -> Gap not to exceed 0.02"**

**(0.6mm)**

**Over all Part dimensional (to maintain weld location between cycles) -**

**+/- 1/32" (0.03125)**

**Scope of Supply Conclusion:**

1. (1) Fanuc Arcmate 120i Welding Robot with Rj3-iB Controller (Refurbished)
2. (1) 4' x 9' Pneumatic Tooling Table (Dual Station Controls)
3. (1) Allen Bradley PLC Control System with Touch Screen HMI
4. (1) Allen Bradley Safety Laser Light Screen
5. (1) Common Equipment Base for Robot Controller and Lincoln Power Supply
6. (1) Operator Station with push button control
7. (1) Lincoln Powerwave 455M weld package with cables, software and integration
8. Complete Turn-Key Integration of TSA customer weld cell and Components
9. (1) Days of Field Installation and Start-up Installation Support (Freight to Customer Facility Included)
10. Run off / Prove out at Tri-State Automation Facility and Customer Location
11. (0) Custom Modular Robotic Weld Fixtures - Integrated Safety System to Protect Operator While Manually Loading Weld Fixtures.
12. (1) Acellent Cell Guarding Package
13. (2) Days of Operator Training - Hands on Training with Tri-State Automation Certified Advanced Robotic Operator and Programmer at QC Supply Facility in Delphi, IN.
14. Freight – The responsibility of the customer

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**Additional Items for Future Integration / Purchase:**

**Miscellaneous Information:**

**\*\*Tri-State Automations Commitment to Customer Support\*\***

- Highly qualified application programming support
- **Tri-State Automation to provide local Expert field service and technical support**
- Cost effective and local field service support out of Chicago.
- Regional Technical Manager for asset management support

**Additional Days of Training**

All further training in addition to the 2-day package included in the proposal are available upon customer request post delivery and installation of the proposed robotic system. Tri-State Automation has agreed to a 15% new customer training discount for QC Supply if the training is requested in conjunction with the days of training included in the proposal. Pricing for additional days of training are below.

- Robotic System Training per Day: \$1,700.00 per day with a maximum of 2 members.

# Invoice

Date	Invoice #

Bill To

Ship To

P.O. Number	Tech

Terms	Delivery Date	Purchased By
Due on receipt	9/9/2021	

Quantity	Item Code	Description	Price Each	Amount
0.4	ROBOTIC SYSTEMS	1. (1) Fanuc Arcmate 120i Welding Robot with Rj3-iB Controller (Refurbished) 2. (1) 4' x 9' Pneumatic Tooling Table (Dual Station Controls) 3. (1) Allen Bradley PLC Control System with Touch Screen HMI 4. (1) Allen Bradley Safety Laser Light Screen 5. (1) Common Equipment Base for Robot Controller and Lincoln Power Supply 6. (1) Operator Station with push button control 7. (1) Lincoln Powerwave 455M weld package with cables, software and integration 8. Complete Turn-Key Integration of TSA customer weld cell and Components 9. (1) Days of Field Installation and Start-up Installation Support (Freight to Customer Facility Included) 10. Run off / Prove out at Tri-State Automation Facility and Customer Location 11. (0) Custom Modular Robotic Weld Fixtures - Integrated Safety System to Protect Operator While Manually Loading Weld Fixtures. 12. (1) Axelent Cell Guarding Package 13. (2) Days of Operator Training - Hands on Training with Tri-State Automation Certified Advanced Robotic Operator and Programmer at QC Supply Facility in Delphi, IN. 14. Freight – The responsibility of the customer		

			<b>Total</b>	
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