MWES
MIDWEST ENGINEERED SYSTEMS



ROBOTIC WELDING SOLUTIONS

Turnkey and Custom Automation Systems Built for Precision, Repeatability and Real-world Manufacturing Needs.

www.mwes.com | 866.880.MWES | info@mwes.com

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MWES
MIDWEST ENGINEERED SYSTEMS

WELDING AUTOMATION THAT WORKS FOR YOU

CUSTOM ROBOTIC WELDING SYSTEMS. PROVEN PERFORMANCE.

FLEXIBLE WELDING AUTOMATION BACKED BY PROVEN INTEGRATION EXPERTISE

Whether you're welding small components, large structural assemblies, or high-volume production parts, Midwest Engineered Systems (MWES) delivers robotic welding solutions engineered around your application. From standardized EasyARC™ welding systems to fully custom automation cells, we help manufacturers improve weld quality, increase throughput, reduce rework, and address skilled labor challenges with practical, production-ready automation.

Our robotic welding platforms support **MIG, TIG, laser and plasma welding processes** and are designed to handle everything from simple weldments to complex multi-axis applications. With integrated positioners, coordinated motion, material handling, and advanced process controls, every system is built for precision, repeatability, and long-term reliability.

SCALABLE ROBOTIC WELDING SOLUTIONS

FROM SMALL COMPONENTS TO LARGE ASSEMBLIES — WE AUTOMATE IT ALL



SMARTER WELDING STARTS HERE

Backed by more than 35 years of automation integration experience and over 8,000 systems installed across North America, MWES manages every phase of your project in-house—from concept development and engineering to fabrication, controls, installation, and commissioning. Whether you're implementing your first robotic welding system or expanding an existing production line, MWES delivers scalable automation solutions built to perform today and adapt for tomorrow.

"AT MWES, WE DON'T JUST BUILD ROBOTIC WELDING SYSTEMS—WE ENGINEER SOLUTIONS THAT SOLVE REAL PRODUCTION CHALLENGES. WHETHER YOU'RE AUTOMATING A SINGLE PROCESS OR AN ENTIRE WELD LINE, OUR GOAL IS TO DELIVER PRECISION, RELIABILITY AND LONG-TERM VALUE."

EASYARC™ LASER WELDING SOLUTIONS

PRECISION LASER AUTOMATION FOR MODERN MANUFACTURING

The EasyARC™ Laser Welding Solutions portfolio offers scalable automation ranging from mobile laser welding carts to high-performance robotic laser weld cells. Designed for fast deployment and consistent production, each system combines coordinated motion, integrated laser process equipment, and Class 1 safety to deliver precision welds with minimal heat input. Whether you're improving weld quality, increasing throughput, or automating demanding applications, EasyARC provides a practical path to laser welding automation.



EASYARC LASER COLLABORATIVE WELDING CART

A compact, collaborative robotic laser welding system designed for flexible automation. The EasyARC Laser Cart solution enables operators to quickly teach weld paths, adjust parameters, and run production with minimal training—no advanced programming required. Built for modern manufacturing, EasyARC delivers narrow, cosmetically clean welds with minimal heat distortion, improving quality and reducing post-process finishing.



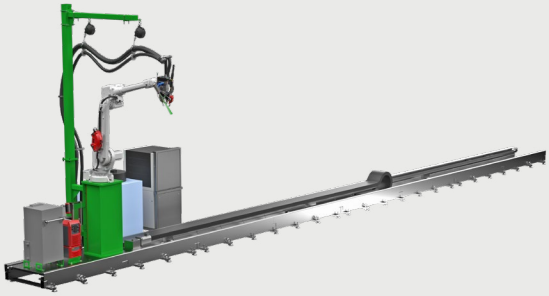
EASYARC FERRIS WHEEL LASER WELD CELL

A high-throughput robotic laser welding system featuring a rotary "Ferris wheel" fixture that enables continuous production. While one part is being welded, operators can safely load or unload the next part, maximizing laser-on time and production efficiency for medium- to high-volume applications.



EASYARC H-FRAME POSITIONER LASER WELD CELL

A flexible robotic laser welding cell equipped with integrated servo positioners that allow the robot to control part rotation and orientation during welding. This configuration improves weld access and consistency on complex assemblies and larger components requiring multi-axis positioning.



EASYARC HYBRID LASER WELD CELL

A versatile robotic welding system that combines laser welding with traditional arc welding processes in a single cell. This hybrid approach enables manufacturers to use precision laser welding for critical joints while utilizing MIG or other arc processes for heavier structural welds.

EASYARC™ STANDARD WELDING SOLUTIONS

SIMPLIFY WELDING WITH AUTOMATION

The EasyARC™ Standard Welding Solutions portfolio offers scalable robotic welding systems for every stage of automation—from plug-and-play collaborative weld carts to pre-engineered standard weld cells. Designed for fast deployment, consistent performance, and long-term reliability, these production-ready systems help manufacturers improve weld quality, increase throughput, and reduce manual welding without the time and cost of a fully custom solution.

EASYARC MIG COLLABORATIVE WELD CART

The EasyARC MIG Welding Cart is a pre-engineered, plug-and-play collaborative welding system designed for fast deployment and simple operation. The fully integrated robot, controller, welder, and worktable arrive ready to weld with a single power connection. EasyARC software enables operators to quickly teach weld paths and begin production with minimal training—no advanced programming required. Its mobile design allows easy movement between workstations while improving weld quality and increasing throughput. Optional positioners and RTU (Robot Transport Unit) packages expand application flexibility and improve part accessibility.



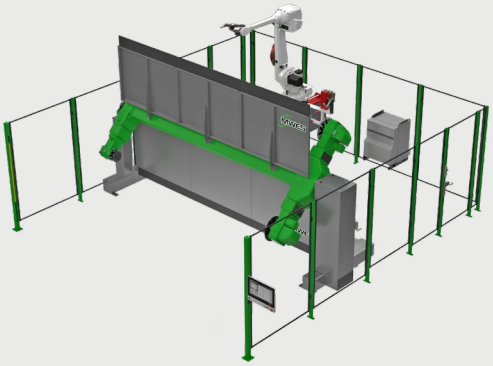
EASYARC BACK-TO-BACK WELDING CELL

A dual-station robotic welding cell that allows operators to load one fixture while the robot welds on the opposite station, maximizing arc-on time and reducing downtime between cycles. Ideal for l*ow-volume, high-mix production* and job shop environments, the large work envelope accommodates either a single large weldment or multiple smaller parts in a single setup. Independent workstations provide the flexibility to run different part sizes simultaneously—allowing one side to remain in production while the other is retooled for the next job. ***Available in both single-station and dual-station configurations, with the dual-station configuration pictured.***



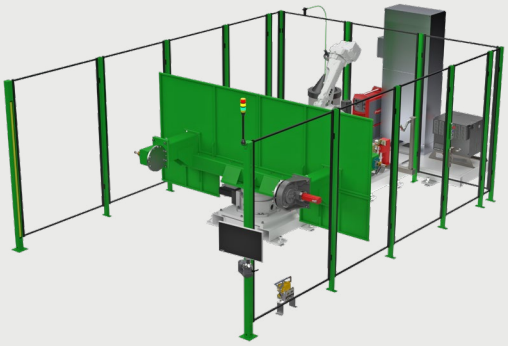
EASYARC FERRIS WHEEL (FW) WELDING CELL

A high-throughput robotic welding system featuring a rotary Ferris wheel fixture that continuously indexes parts into the welding position. While one part is being welded, additional parts can be loaded or unloaded, making it ideal for medium- to high-volume production.



EASYARC H-FRAME WELDING CELL

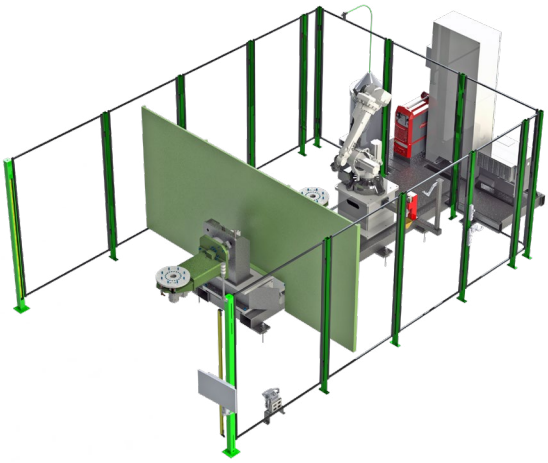
Designed for welding large, heavy, or complex assemblies, the H-Frame configuration provides a pedestal mount that supports long-reach robots and integrated positioners for maximum accessibility. Ideal for structural weldments and oversized components, this versatile platform also excels in *high-volume production*, where its rigid design, large work envelope, and automated operation deliver consistent weld quality and maximum throughput. ***Available in single-station or dual-station configurations, as pictured.***



EASYARC™ STANDARD WELD CELLS

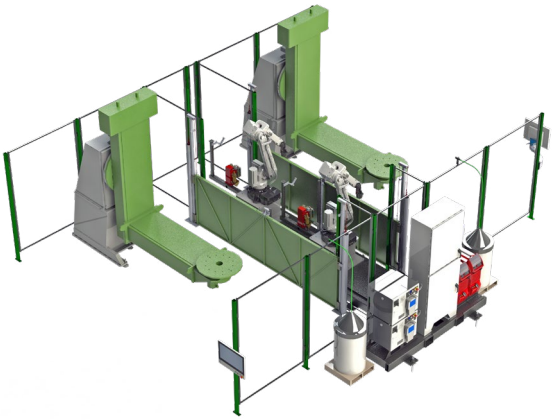
EASYARC INDEXING STANDARD WELDING CELL

A rotary indexing welding cell that automatically rotates fixtures between load and weld positions, enabling efficient part changeover and consistent cycle times for repeat production. The system is ideal for ***medium- to high-volume*** manufacturing where minimizing downtime is critical. **Optional integrated positioners** with horizontal or vertical rotation can be added to improve part access, optimize weld orientation, and support more complex applications.



EASYARC 2-AXIS POSITIONER (SKYHOOK) WELDING CELL

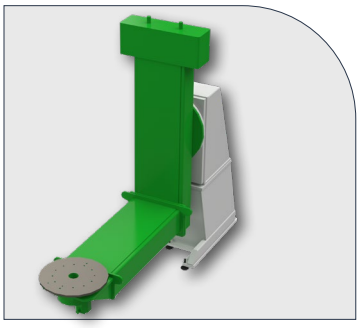
A robotic welding cell equipped with a servo-driven two-axis positioner that rotates and tilts parts during welding, allowing the robot to maintain optimal weld orientation throughout the process. This configuration improves weld quality, accessibility, and consistency on ***large, complex assemblies,*** while reducing repositioning and supporting efficient, repeatable production. ***Available in single-station or dual-station configurations, as shown.***

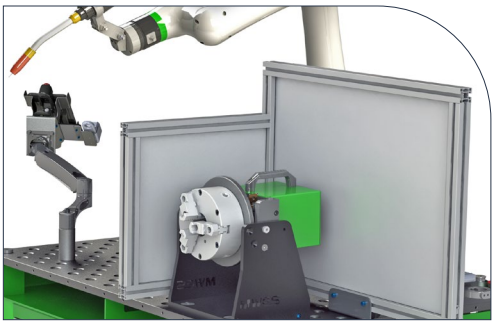


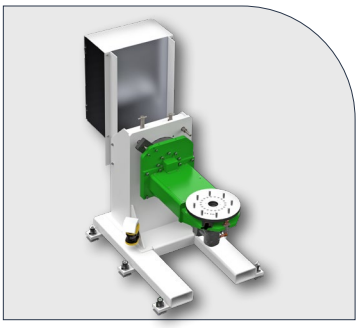
EASYARC WELD POSITIONERS

Skyhook • Headstock/Tailstock • Drop Center • Custom Heavy-Duty

Proper part positioning improves weld access, consistency and overall system productivity. MWES integrates servo-driven positioners with robotic welding systems to rotate, tilt, and manipulate parts throughout the weld cycle. Available in a range of configurations and capacities, positioners can support EasyARC standard weld cells or larger, more demanding custom applications.







EASYARC™ SOFTWARE

WELDING AUTOMATION WITHOUT THE LEARNING CURVE

EasyARC™ software is designed to eliminate the need for welders to learn complex robot code. Acting as an intuitive layer between the operator and the robot's teach pendant, EasyARC allows users to create production-ready welding programs through a clean, user-friendly interface—without writing or viewing code.

With a clean, guided interface and physical teach buttons on the robot, EasyARC enables fast setup, consistent results, and confident operation—whether you're automating your first weld or scaling production.

KEY FEATURES & BENEFITS:

- **WELD PROGRAMMING—SIMPLIFIED**
  Create linear, circular, and skip welds with guided actions. Define weave patterns, weld speeds, and parameters without ever viewing robot code.

- **AUXILIARY AXIS & POSITIONER CONTROL**
  Coordinate up to *four auxiliary axes* within EasyARC™ programs—allowing parts to rotate and reposition automatically for optimal weld access.

- **TORCH CLEANING**
  Teach torch cleaning routines directly in the app for consistent maintenance, reduced downtime, and improved weld quality without writing code.

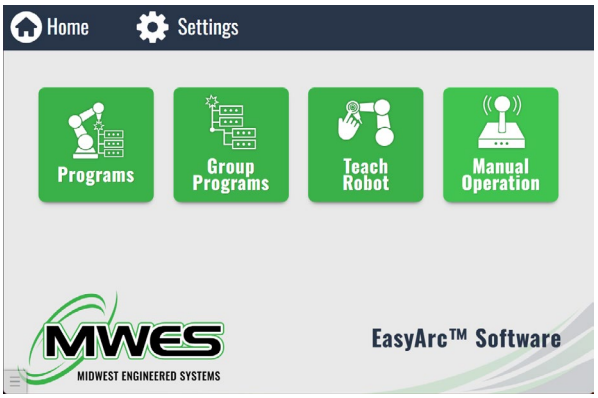
- **TOUCH SENSING**
  Easily integrate touch sensing into weld programs to automatically compensate for part variation by applying precise offset adjustments to the taught path.

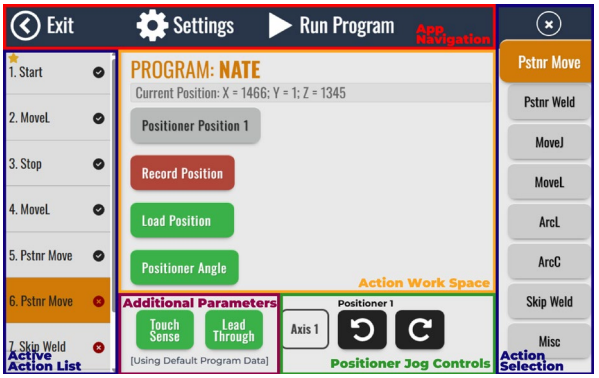
- **FRAME OFFSET TEACHING**
  Teach base and work object frames directly within the application to quickly relocate programs, establish accurate part references, and enable flexible part positioning—resulting in faster changeovers and greater production flexibility.

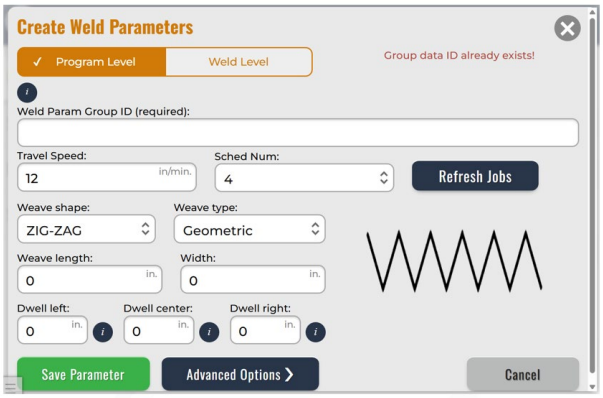
- **GROUP PROGRAMS & PART PATTERN TEACHING**
  Chain multiple programs together and run the same weld sequence across multiple part locations—ideal for batch production and high-mix environments.

- **TORCH ANGLE ADJUSTMENT**
  Fine-tune torch angles manually and lock them in to maintain consistent orientation throughout the weld.

- **SKIP WELDING**
  Program skip weld patterns accurately and efficiently without added complexity.









CUSTOM WELD CELLS

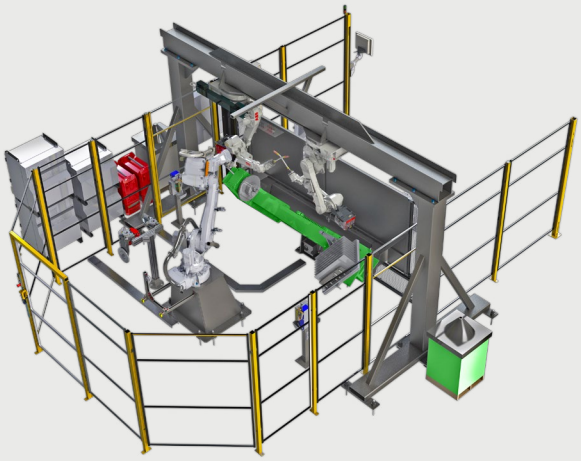
TAILORED SYSTEMS FOR COMPLEX PARTS, LARGE STRUCTURES AND UNIQUE PRODUCTION NEEDS

MWES goes beyond standardized systems with fully custom robotic welding solutions. From heavy-duty structural components to intricate assemblies, our team designs, builds and commissions automation systems engineered for your exact requirements.

With more than three decades of experience designing and integrating automated weld systems, MWES combines proven engineering practices with industry-leading technology to deliver systems that work seamlessly on your shop floor. From fixtures and positioners to multi-robot integration and specialized controls, every custom weld cell is engineered to deliver consistency, productivity and long-term reliability.

Key Advantages of MWES Custom Weld Cells

- **Tailored Design** – Every system is custom-built for your parts, processes, and production goals.
- **Heavy-Duty Capability** – Positioners and fixtures capable of handling parts weighing more than 10,000 lbs.
- **Flexible Integration** – MIG, TIG, CMT, or laser welding processes configured to your needs.
- **End-to-End Service** – From design and build to installation, training and 24/7 support.



CUSTOM DUAL-STATION WELDING SYSTEM

MWES engineered this custom system to automate the welding of blades and shafts using a modified ABB® servo positioner with integrated tooling and three ABB robots. While welding takes place on the guarded side of the positioner, operators safely load new parts on the opposite side. Once welding is complete, the positioner automatically indexes—keeping production flowing with minimal downtime.

This dual-station design ensures continuous operation, improves weld consistency, and reduces manual handling, all within a fully guarded and safety-compliant work cell.

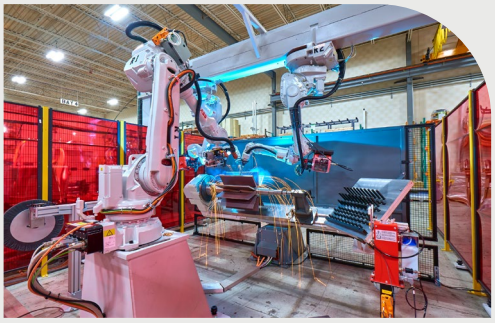
System Features:

- **3 ABB Robots + Servo Positioner** for precise, coordinated welding
- **Two-Station Fixturing** – weld on one side, load/unload on the other
- **Fronius® TPSi 500A Packages** ensure consistent weld quality
- **Safety Built-In** – fencing, light curtains and automated part handling

Result: Higher throughput, consistent quality and safer operation in a compact, fully automated cell.

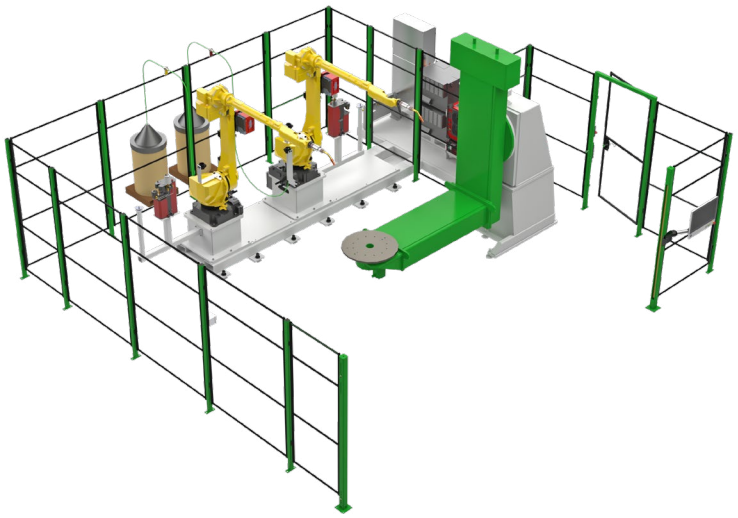






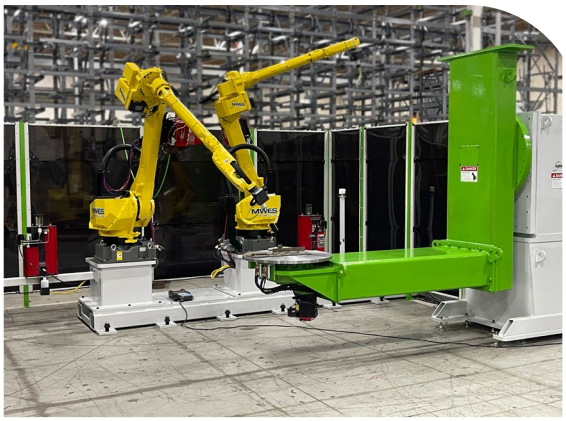
CUSTOM FLOOR WELDMENT ROBOT CELL

MWES designed this custom robotic weld cell to meet demanding production requirements for floor weldments. Featuring two FANUC® M-710iC 12L long-reach robots in a multi-move configuration, the system allows both robots to weld simultaneously on the same part—maximizing throughput while ensuring consistency across every weld.



At the heart of the system is a servo-driven two-axis positioner, integrated as an external axis of the FANUC controller. This positioner precisely rotates and repositions parts, giving the robots optimal access to complex geometries and improving overall weld quality.

Equipped with Lincoln® Power Wave 450R welding packages and water-cooled torches, the system is built for performance and reliability. Ancillary weld equipment, including TCP calibration, torch cleaning, tactile sensing and thru-arc seam tracking, further enhance accuracy and repeatability.



System Features:

- **(2) FANUC® Long-Reach Robots** working in multi-move coordination
- **Servo-Driven 2-Axis Positioner** for precise part access & positioning
- **Lincoln® Power Wave 450R Packages** with water-cooled torches
- **Enhanced Accuracy –** TCP calibration, torch cleaning and seam tracking options
- **Operator Safety Built-In –** fencing, flash protection, light curtains and area scanner

Result: Faster cycle times, consistent weld quality, and safer, more efficient production.

ADVANCED MULTI-ROBOT WELD CELL

MWES engineered this robotic weld cell to handle large weldments with speed, precision, and repeatability. The system features four FANUC® AM120iD/12L six-axis robots mounted on servo-driven Robot Rotating Bases (RRBs), extending reach and adding a seventh axis of motion.

A 5,000-lb-capacity head/tailstock positioner at the center manipulates parts for optimal access, allowing all four robots to weld simultaneously with coordinated motion. Each robot is powered by a Miller® Auto-Continuum 500A package and equipped with a Binzel® water-cooled torch, ensuring high-deposition performance and consistent weld quality.

Ancillary tools—including touch sensing, thru-arc seam tracking, torch cleaning, and anti-spatter spray—further enhances accuracy and minimize downtime. Operator safety is built in with fencing, flash protection, interlocked roll-up doors, and scanners, creating a secure, efficient welding environment.

System Features:

- **(4) FANUC® Robots** with servo-driven rotating bases for extended reach
- **5,000 lb Head/Tailstock Positioner** with vertical lift for optimal part positioning
- **Miller® Auto-Continuum Packages** with water-cooled Binzel® torches
- **Ancillary Tools –** touch sensing, seam tracking, torch cleaning
- **Safety Built-In –** fencing, roll-up doors, scanners, and interlocks



Result: A powerful multi-robot cell delivering speed, precision and consistent weld quality for oversized parts.

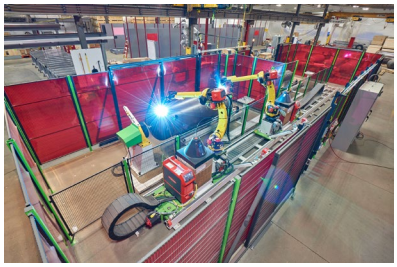
PRESSURE VESSEL ROBOTIC HANDLING & WELD CELL

MWES engineered this robotic welding system to automate the handling, fit-up, and welding of large pressure vessels and cylindrical assemblies. The dual-station cell utilizes two FANUC® ARC Mate robots mounted on a coordinated servo travel track, allowing the system to perform both material handling and welding operations across multiple vessel configurations.

Servo-driven headstock/tailstock positioners manipulate vessels into optimal weld positions while coordinated robot motion supports automated flange placement, tack welding, girth seam welding, and attachment welding. The system integrates Lincoln Electric® weld packages, tactile sensing, thru-arc seam tracking, torch cleaning, and custom combination weld torch/gripper end-of-arm tooling (EOAT) to improve weld consistency and reduce manual handling.

Integrated safety fencing, interlocked access gates, operator stations, and coordinated controls provide a safe and efficient production environment for high-volume vessel welding applications.







System Features:

- **(2) FANUC® ARC Mate Robots** with coordinated servo travel track
- **Dual servo-driven headstock/tailstock positioners**
- **Lincoln Electric®** welding packages with water-cooled torches
- **Touch sensing**, seam tracking, and torch cleaning integration
- **Combination weld torch/gripper** EOAT for material handling and welding
- **Integrated safety fencing**, interlocks, scanners, and operator controls

Result: An integrated robotic welding and handling system designed to improve weld consistency, reduce manual material handling, and support efficient production of large pressure vessel assemblies.

WHAT CAN WE AUTOMATE?

ROBOTIC WELDING SOLUTIONS FOR VIRTUALLY ANY APPLICATION

Whether you're welding small brackets or large structural fabrications, MWES engineers automation solutions designed around your parts, production volume, and quality requirements. Our systems are built to handle a wide range of materials, part sizes, and welding processes across virtually every manufacturing industry.

Applications We Commonly Automate:

- **Structural Fabrications -** Frames, chassis, bases, and heavy weldments
- **Pressure Vessels & Tanks -** Cylindrical assemblies, flanges, and vessel components
- **Agricultural & Construction Equipment -** Booms, buckets, arms, hitches and structural components
- **Material Handling Equipment -** Conveyors, racks, carts and fabricated assemblies
- **Automotive & Transportation -** Frames, suspension components, crossmembers and sub-assemblies
- **Energy & Infrastructure -** Generator frames, skids, enclosures and structural supports
- **General Fabrication -** Brackets, weldments, tube assemblies, sheet metal and custom fabrications

Designed Around Your Production

- Low-Volume, High-Mix Manufacturing
- Medium-Volume Production
- High-Volume Automated Production
- Large, Heavy Weldments
- Precision Assemblies
- Multi-Part Kit Welding
- Lights-Out Manufacturing

No matter your part size, production volume, or welding process, MWES can engineer a robotic solution that fits your operation.

ADDITIVE MANUFACTURING SOLUTIONS

LARGE-SCALE METAL 3D PRINTING BY ADDERE

Through our ADDere® Additive Manufacturing division, MWES delivers industrial-grade metal additive solutions for large-scale, high-strength, production-ready components. Using both Laser-Wire Directed Energy Deposition (DED) and Wire Arc Additive Manufacturing (WAAM), ADDere produces massive near-net-shape parts in stainless steel, titanium, Inconel, tool steels, and other specialty alloys—with builds measured in feet, not inches.

These advanced technologies provide manufacturers with faster lead times, reduced material waste, and the ability to create complex or oversized geometries impossible with traditional forging, casting, or subtractive machining. ADDere additive systems are engineered for the toughest industries, including aerospace, defense, energy, heavy equipment, and industrial manufacturing.



KEY FEATURES:

- **LARGE-FORMAT PRINTING**
  Build envelopes measured in meters, not millimeters
- **WIDE MATERIAL COMPATIBILITY**
  Stainless steel, titanium, Inconel, tool steels, specialty alloys and more
- **COMPLEX & CUSTOM GEOMETRIES**
  Design freedom beyond traditional machining or casting
- **PRODUCTION-GRADE REPEATABILITY**
  Shorter lead times and lower costs for one-offs or small batches
- **NEAR-NET-SHAPE EFFICIENCY**
  Reduce machining, minimize waste and accelerate production



WHY ADDere?

MWES additive manufacturing opens the door to new design possibilities while lowering costs and accelerating production. Whether producing custom components, tooling, prototypes, or fully functional mission-critical parts, ADDere brings next-generation metal manufacturing to real-world industries.

Learn more at ***ADDere.com***









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THE FUTURE OF WELDING IS AUTOMATED

Advanced automation systems engineered to increase weld quality, reduce labor costs, and boost productivity.

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