



ANNEX POSITIONERS

LINCOLN ELECTRIC AUTOMATION POSITIONING SOLUTIONS

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LEA-012624JT1-02

The image shows a large industrial facility with a high ceiling and steel beams. Two large, grey robotic positioners are the central focus. Each has a vertical column and a horizontal arm extending outwards. Yellow robotic joints are visible at the ends of the arms. The floor is a light-colored concrete. The background features a wall of vertical corrugated metal panels. The lighting is bright, coming from overhead fixtures.

ANNEX

POSITIONERS

Understanding Drives Solutions

Here at Lincoln Electric Automation™, we provide comprehensive expertise and product portfolios to be the one-stop shop for manufacturers looking to automate their business. Whether you are a single-shop manufacturer turning to automation for the first time or an international corporation designing a completely automated facility, our standard and custom solutions in collaborative robots, robotic welding systems, automated guided vehicles (AGVs), robotic positioning equipment and more can make that happen. Processes such as build-to-print, finishing, assembly, and cutting simply scratch the surface of what we can do with your manufacturing.

The ANNEX Positioners

Lincoln Electric Automation has developed the ANNEX™ part and robot positioners to provide manufacturers with the highest possible speed, precision, and consistency. With a portfolio of both standard and custom offerings, there is a wide range of solutions to fit various applications. Whether there is a high-volume automotive line requiring rapid cycle times or a heavy fabrication line manipulating massive parts, ANNEX positioners can get the job done. ANNEX positioners are ANSI/RIA safety compliant and integrate well with most major robot manufacturers including FANUC®, ABB®, Yaskawa®, Kuka®, and Kawasaki®. ANNEX positioners also integrate with Allen-Bradley® servo motors & controls for standalone applications using custom touch panel operator controls, positional and logic programming, safety scanners, light curtains, and workspace guarding.

About Lincoln Electric

Lincoln Electric is the world leader in the engineering, design, and manufacturing of advanced arc welding solutions, automated joining, assembly and cutting systems, plasma and oxy-fuel cutting equipment, and has a leading global position in brazing and soldering alloys. Lincoln is recognized as the Welding Expert™ for its leading materials science, software development, automation engineering, and application expertise, which advance customers' fabrication capabilities to help them build a better world. Headquartered in Cleveland, Ohio, Lincoln operates 71 manufacturing and automation system integration locations across 21 countries and maintains a worldwide network of distributors and sales offices serving customers in over 160 countries. For more information about Lincoln Electric and its products and services, visit the Company's website at <https://www.lincolnelectric.com>.

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ANNEX HEADSTOCK/TAILSTOCK PAIR

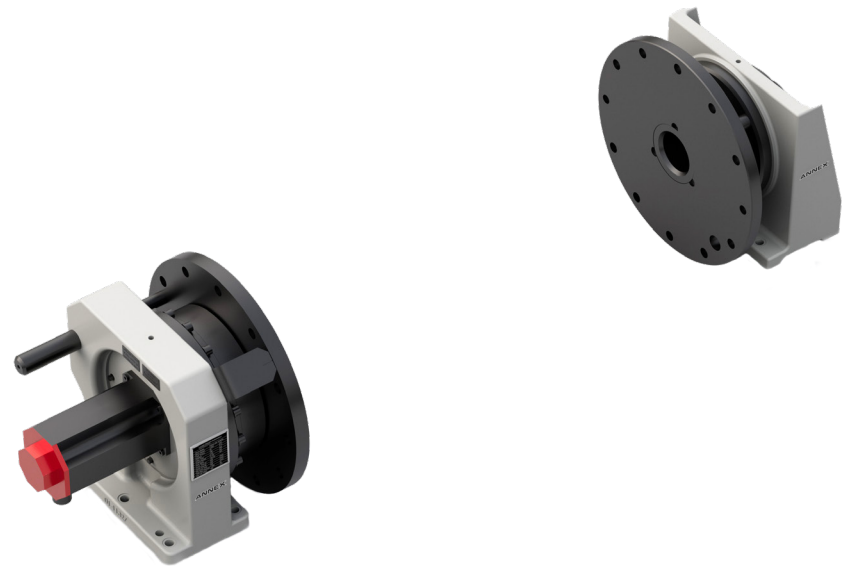
The ANNEX™ Headstock/Tailstock Pair part positioner efficiently places the part into the required position, adapts to a range of tool bed lengths, and provides a large tool envelope.

KEY FEATURES

- Nabtesco® gearboxes
- Ball screw drive
- Pillow block bearing & through bore spindle
- Primary axis sweep of +/-180°
- Weld-ground isolation reduces risk of electrical damage to the positioner or robot controller
- Continuous performance in demanding applications
- Maximum static and dynamic rigidity design
- Simplified cable management

OPTIONS

- Rotary ground
- Fabricated risers
- Fabricated trunnion base
- Custom paint colors



ANNEX INLINE TURNTABLE

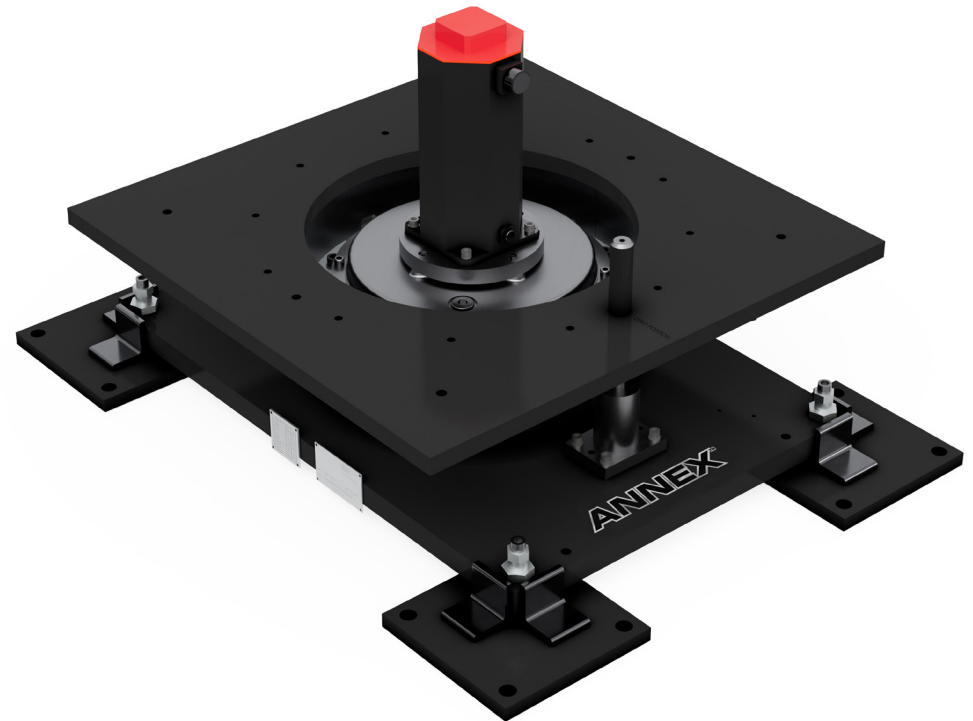
The ANNEX™ Inline Turntable part positioner efficiently places the part into the required position, adapts to a range of tool bed lengths, and provides a large tool envelope.

KEY FEATURES

- Nabtesco gearboxes
- Leveling bolts/plates
- Mastering keys/pins
- Weld-ground isolation reduces risk of electrical damage to the positioner or robot controller
- Continuous performance in demanding applications
- Maximum static and dynamic rigidity design
- Simplified cable management
- Overhead power connection

OPTIONS

- Shot pin
- Custom paint colors



ANNEX OPEN CENTER TURNTABLE

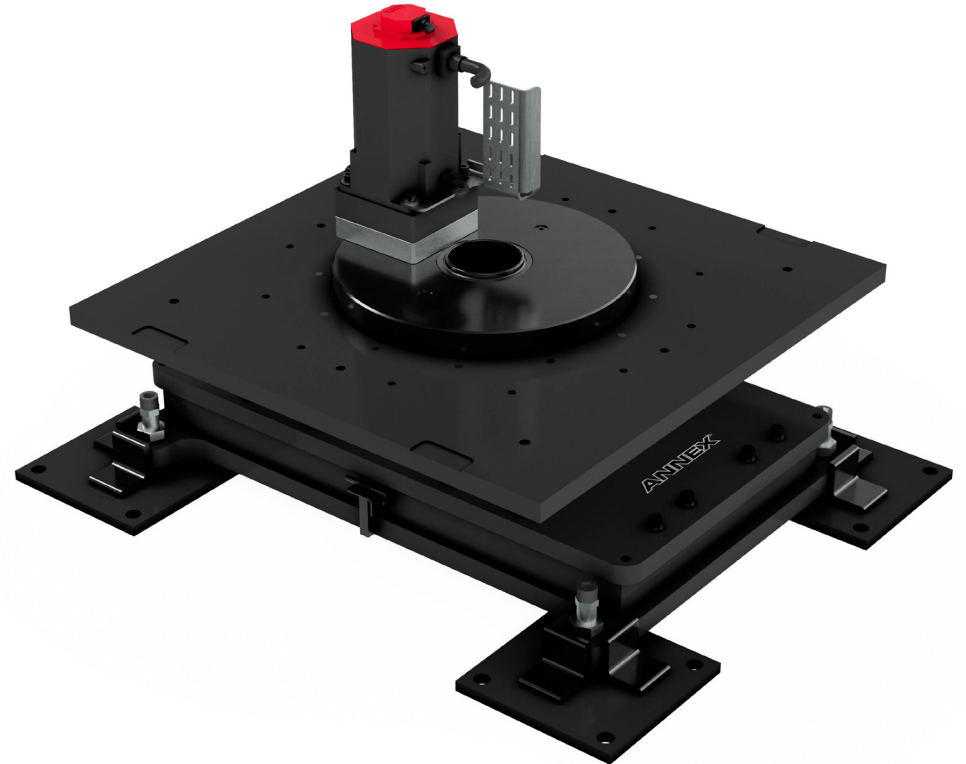
The ANNEX™ Open Center Turntable part positioner efficiently places the part into the required position, adapts to a range of tool bed lengths, and provides a large tool envelope.

KEY FEATURES

- Nabtesco gearboxes
- Leveling bolts/plates
- Mastering keys/pins
- Weld-ground isolation reduces risk of electrical damage to the positioner or robot controller
- Continuous performance in demanding applications
- Maximum static and dynamic rigidity design
- Simplified cable management

OPTIONS

- Shot pin
- Custom paint color



ANNEX™

GROUP 3
AXIS 1

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GROUP 3
AXIS 2

GROUND LUG
MAX CURRENT: 150A



ANNEX SKYHOOK

The ANNEX™ Skyhook part positioner offers two degrees of motion to help weld in the optimal position. With 2 axes, there is access to multiple surfaces with custom applications for greater payloads while allowing the operator access for assembly applications.

KEY FEATURES

- Nabtesco gearboxes
- Geared slewing bearing & pinion drive
- Leveling bolts/plates
- Configurable swing diameters
- Maximum static and dynamic rigidity
- Simplified cable management
- Removable maintenance covers for easy access
- Easy access lubrication points
- Optimal load heights for improved ergonomics

OPTIONS

- Rotary ground
- Elevating axis (z-axis)
- Load curves
- Custom paint colors
- Custom swing diameters





ANNEX DROP CENTER

The ANNEX™ Drop Center part positioner is a 2-axis system designed for heavier payloads. It provides access to multiple surfaces, placing welds into desired positions effortlessly while allowing the operator access for assembly applications.

KEY FEATURES

- Nabtesco gearboxes
- Geared slewing bearing & pinion drive
- Leveling bolts/plates
- Configurable swing diameters
- Mastering keys/pins
- Continuous performance in demanding applications
- Maximum static and dynamic rigidity design
- Simplified cable management
- Removable maintenance covers for easy access
- Easy access lubrication points

OPTIONS

- Rotary ground
- Elevating axis (z-axis)
- Load curves
- Custom paint colors
- Custom swing diameters





ANNEX Z-AXIS HEADSTOCK/TAILSTOCK

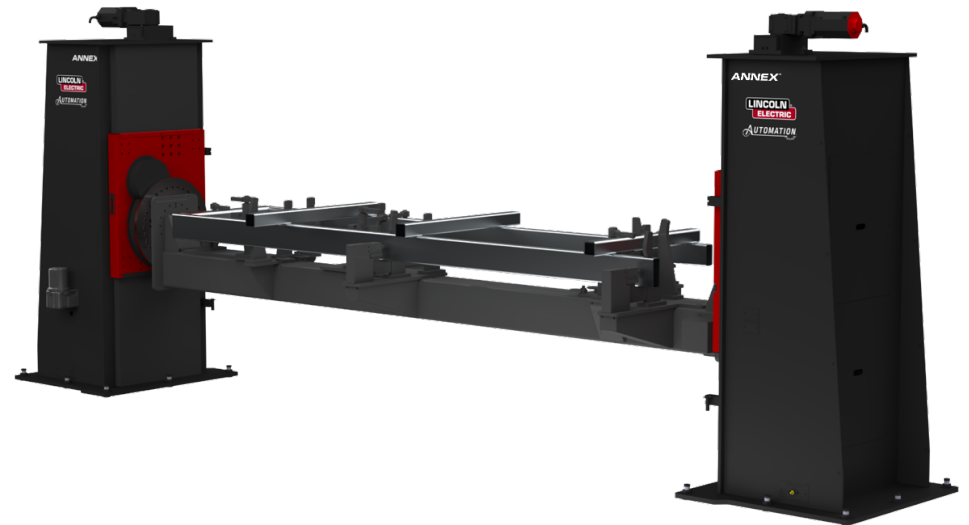
The ANNEX™ Z-Axis Headstock/Tailstock part positioner is a servo-driven rotational axis system with custom tooling and operation screens. It provides a dual-bearing tailstock to support two-piece tooling, and helps improve the accuracy and repeatability of manufacturing.

KEY FEATURES

- Nabtesco gearboxes
- Geared slewing bearing & pinion drive
- THK® linear rails & bearings
- Cable carrier
- Ball screw auto lubrication system
- Leveling bolts/plates
- Configurable tool bed, tool swing, and weight capacity
- Designed for maximum static and dynamic rigidity
- Simplified cable management
- Removable maintenance covers for easy access
- Easy access lubrication points
- Improved ergonomics and/or robot reach with elevating axis

OPTIONS

- Rotary ground
- Double bearing (secondary axis, required for split tooling)
- Custom paint colors
- Custom configurable tool bed, tool swing, and weight capacity





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ANNEX DUAL TRUNNION TURNTABLE (TT2T)

The ANNEX™ Dual Trunnion Turntable part positioner allows the robot to work while the operator interacts with the opposite side. As a 3-axis turntable, the TT2T positioner provides horizontal indexing and combines a slim design with dual headstock/tailstock positioners for heavy tooling and part configurations.

KEY FEATURES

- Nabtesco gearboxes
- Leveling bolts/plates
- Configurable tool bed, tool swing, and weight capacity
- Mastering keys/pins
- Weld-ground isolation reduces risk of electrical damage to the positioner or robot controller
- Built for continuous performance in demanding applications
- Designed for maximum static and dynamic rigidity
- Simplified cable management
- Removable maintenance covers for easy access
- Overhead power connection
- Optimal load heights for improved ergonomics

OPTIONS

- Shot pin
- Rotary ground
- Custom paint colors
- Custom configurable tool bed, tool swing, and weight capacity



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ANNEX COMPACT FERRIS WHEEL

With compact headstock and tailstock boxes to minimize footprint, the ANNEX™ Compact Ferris Wheel comes with a configurable tool bed, tool swing, and weight capacity for a wide range of parts.

KEY FEATURES

- Nabtesco gearboxes
- Leveling bolts/plates
- Configurable tool bed, tool swing, and weight capacity
- Mastering keys/pins
- Weld-ground isolation reduces risk of electrical damage to the positioner or robot controller
- Built for continuous performance in demanding applications
- Designed for maximum static and dynamic rigidity
- Simplified cable management
- Removable maintenance covers for easy access
- Overhead power connection
- Optimal load heights for improved ergonomics

OPTIONS

- Shot pin
- Rotary ground
- Custom configurable tool bed, tool swing, and weight capacity
- Custom paint colors
- Double bearing (secondary axis, required for split tooling)





DEMAG 25 TON

FANUC Robot M-900iB 260L

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ANNEX

ROBOT 3

ANNEX MATERIAL HANDLING RTU

This modular, easy-to-assemble track design accelerates the productivity of your automated manufacturing processes. The ANNEX™ Material Handling Robot Transfer Unit robot positioner accommodates the FANUC R2000 or M900 family of robots.

KEY FEATURES

- GAM™ right angle gearbox
- THK linear rails & bearings
- Cable carrier
- Leveling bolts/plates
- Mastering keys/pins
- Built for continuous performance in demanding applications
- Designed for maximum static and dynamic rigidity
- Simplified cable management

OPTIONS

- Fabricated robot riser
- Multiple-carriage configuration
- Auto-lubrication system
- Custom paint colors
- Additional RTU types
 - Overhead
 - Elevated Base





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4R220
AUTODRIVE

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4R220
AUTODRIVE
SERIAL NO. 850-1
MAY 2006

WELDING WIRE

ANNEX ARC WELDING RTU

This modular, easy-to-assemble track design helps accelerate the productivity of your manufacturing processes. The ANNEX™ Arc Welding Robot Transfer Unit robot positioner accommodates FANUC ARC Mate® robot series 100, 120, M710, and comparable robot brands.

KEY FEATURES

- Stober® inline gearbox
- THK linear rails & bearings
- Cable carrier
- Leveling bolts/plates
- Mastering keys/pins
- Continuous performance in demanding applications
- Maximum static and dynamic rigidity design
- Simplified cable management

OPTIONS

- Fabricated robot riser
- Multiple-carriage configuration
- Auto-lubrication system
- On-board welding wire box/drum
- On-board reamer
- Custom paint colors
- Additional RTU types
 - Overhead
 - Elevated Base

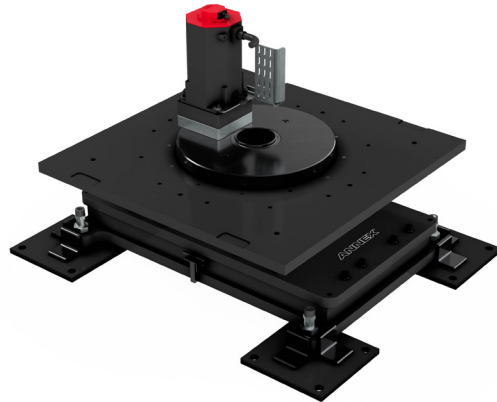


HOW TO CHOOSE YOUR ANNEX POSITIONER

SINGLE-AXIS POSITIONERS

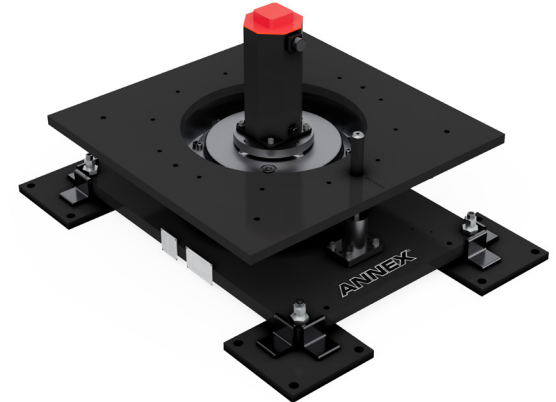
Do you need a positioner that provides a through bore for cable routings?

If so, the **ANNEX Open Center Turntable** positioner is for you!



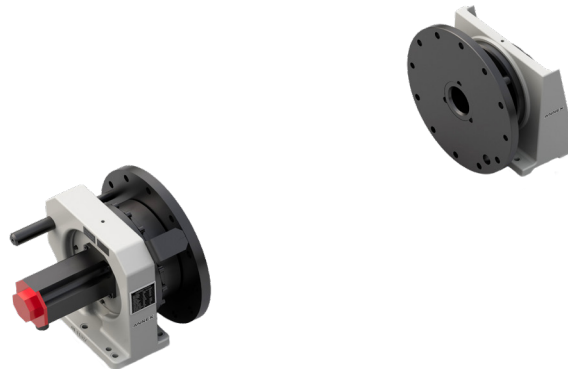
Do you need a positioner that provides simple horizontal rotation?

If so, the **ANNEX Inline or Open Center Turntable** positioner is for you!



Do you need a positioner that provides simple vertical rotation?

If so, the **ANNEX Headstock/Tailstock** positioner is for you!



Request a quote online at www.lincolnelectric.com/ANNEX

HOW TO CHOOSE YOUR ANNEX POSITIONER

DUAL-AXIS POSITIONERS

Do you need a positioner that provides access to multiple surfaces?

If so, the **ANNEX Skyhook** positioner is for you!



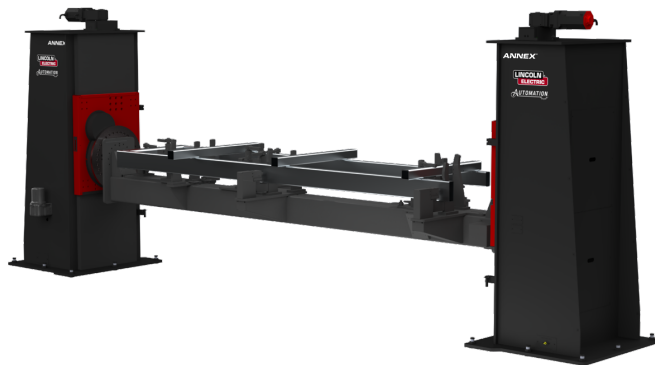
Do you need a positioner capable of large capacity to position complex geometry?

If so, the **ANNEX Drop Center** positioner is for you!



Do you need a positioner to improve ergonomics and/or access?

If so, the **ANNEX Z-Axis HSTS** positioner is for you!



Request a quote online at www.lincolnelectric.com/ANNEX

HOW TO CHOOSE YOUR ANNEX POSITIONER

MULTI-AXIS POSITIONERS

Do you need a positioner that allows free loading/unloading?

If so, the **ANNEX TT2T or Ferris Wheel** positioners are for you!

Do you need an positioner with a compact indexing footprint?

If so, the **ANNEX Ferris Wheel** positioner is for you!

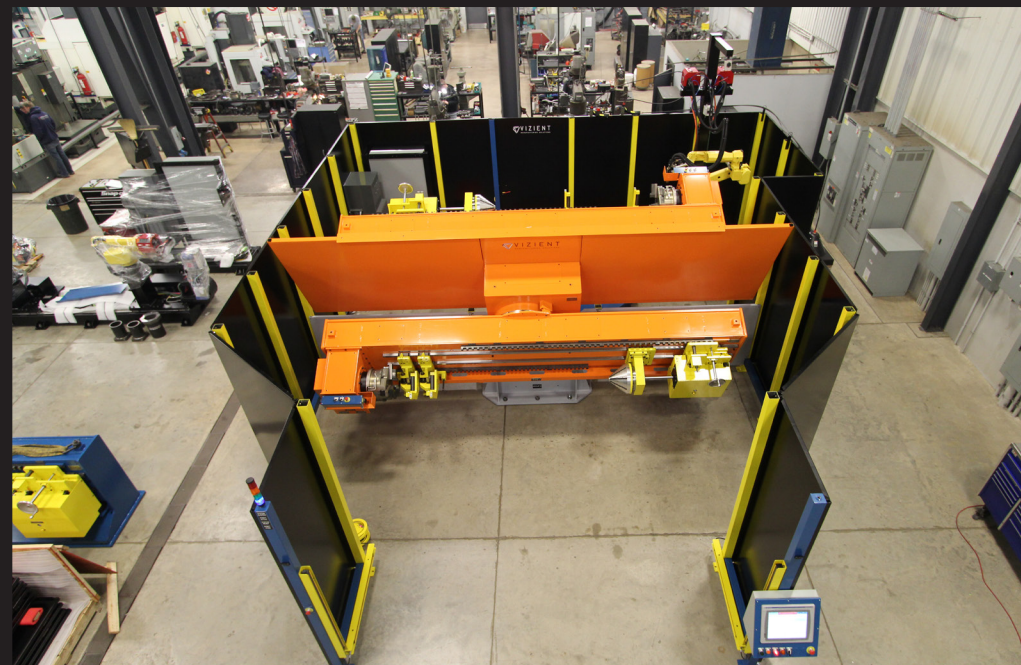
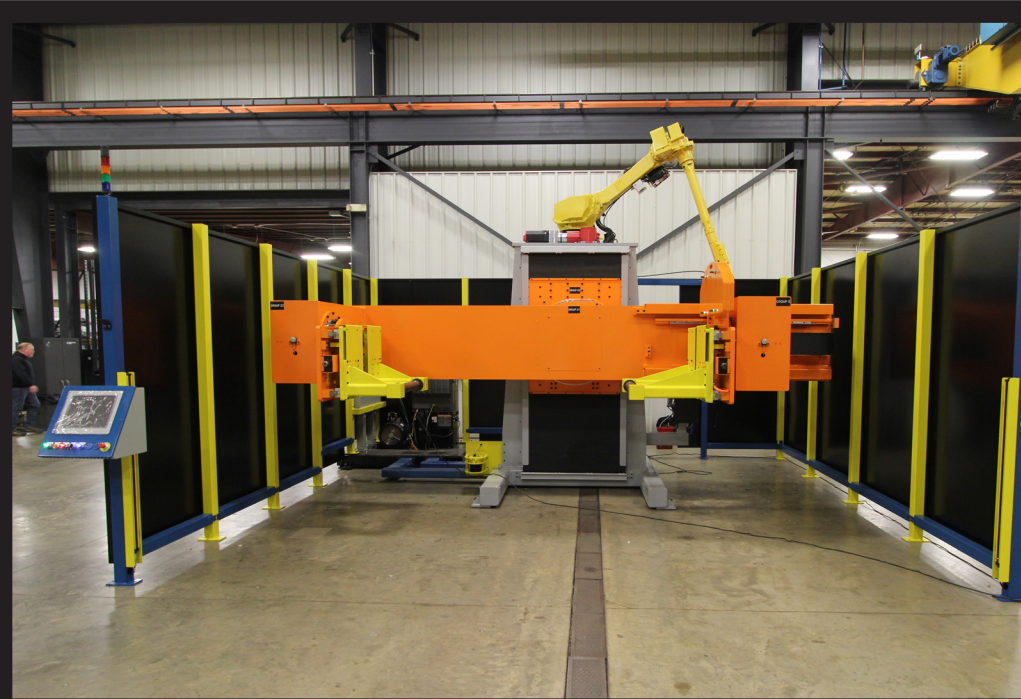


Do you need a unique solution?

If so, please contact us to inquire about our **custom positioners!**

Request a quote online at www.lincolnelectric.com/ANNEX

CUSTOM ANNEX POSITIONERS



THE ULTIMATE PAIR

ANNEX positioners can repeatedly rotate tooling and parts into desired orientations for high-difficulty welds in Pro-Pak® robotic welding systems!



Learn more at www.lincolnelectric.com/Pro-Pak

AUTOMATION MANUFACTURING LOCATIONS

91

ROBOTIC
technicians

153

SERVICE
technicians



Apodaca, Mexico
Beijing, China
Bettendorf, IA, USA
Caxias do Sul, Brazil
Chattanooga, TN, USA
Churubusco, IN, USA
Cleveland, OH, USA
Coldwater, OH, USA
Columbus, OH, USA
Essen, Germany
Fort Collins, CO, USA

Fort Loramie, OH, USA
Guarulhos, Brazil
Hamilton, ON, Canada
Ladson, SC, USA
Macomb, MI, USA
Merzig, Germany
Mississauga, ON, Canada
Parthenay, France
Pont-Sainte Maxence, France
Pune, India
Reno, NV, USA

Saltillo, Mexico
San Diego, CA, USA
Scheifling, Austria
Shanghai, China
Shelby Township, MI, USA
Siheung-Si, South Korea
Sydney, Australia
Valencia, Spain
Vankleek Hill, ON, Canada
Weiterstadt, Germany



ANNEX™

System configuration on photographs displaying active welding is for demonstration purposes ONLY. Always ensure appropriate ventilation is in place when welding and that fume exposure is below applicable thresholds. For more on welding safety, visit <http://safety.lincolnelectric.com>. For more information on Lincoln Electric Weld fume control, see your sales representative or visit <https://www.lincolnelectric.com/weld-control-welding-equipment>.

The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.

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CUSTOMER ASSISTANCE POLICY

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, and cutting equipment. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

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