

# ***LINCOLN ELECTRIC***

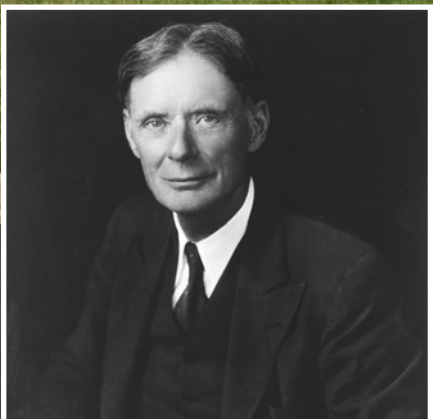
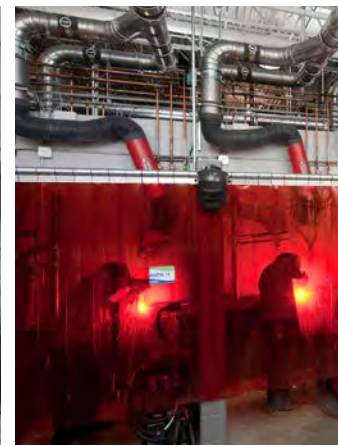
Innovative Technology. Comprehensive Welding & Cutting Solutions.



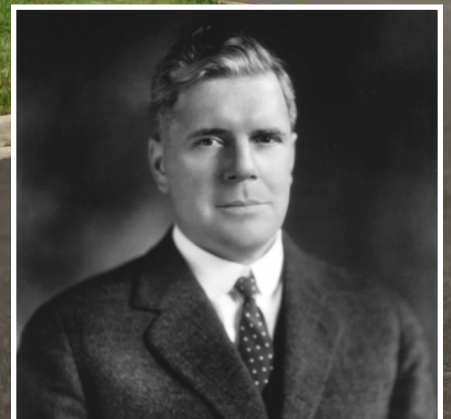
**LINCOLN**<sup>®</sup>  
**ELECTRIC**

THE WELDING EXPERTS<sup>®</sup>





John C. Lincoln



James F. Lincoln





**Founded in 1895 by John C. Lincoln, The Lincoln Electric Company is the world leader in the design, development and manufacture of arc welding products, robotic arc welding systems, plasma and oxyfuel cutting equipment and has a leading global position in the brazing and soldering alloys market. Headquartered in Cleveland, Ohio, Lincoln Electric has more than 40 manufacturing locations, including operations and joint ventures on five continents and a worldwide network of distributors and sales offices covering more than 160 countries.**

## **INNOVATION**

Lincoln Electric provides cutting-edge products and solutions, and has a long history of innovation for arc welding equipment and consumables. The Company operates the industry's most comprehensive research and product development program, supported by its R&D centers around the world, including the advanced David C. Lincoln Technology Center in Cleveland, Ohio.

## **SERVING THE WORLD**

Lincoln Electric's products and technologies play an important role in several fabrication industries and are used in the construction of significant infrastructures around the world. Arc welding is the dominant joining method for steel buildings and other industrial fabrication, including oil and gas pipelines, shipbuilding, oil refineries, agricultural and construction equipment. Additionally, the Company services a variety of industries that rely on arc welding, such as transportation and power generation.

High quality products and great customer service are important aspects of the Lincoln Electric story, but it's our unmatched welding expertise that truly sets us apart. If there's a better way for you to weld, we'll help you find it. If automation can improve your bottom line, we'll guide you through the decision-making process. If there's a method that can help you reduce costs, we'll show you how — and why. We are driven by customer satisfaction and known as the supplier of choice in the many industries we serve. We continuously strive to exceed customer expectations and are not simply known as a provider of equipment and consumables, but as a provider of complete welding solutions.

## **The Performance You Need. The Quality You Expect.<sup>SM</sup>**

No company understands welding like Lincoln Electric. No welding company has a broader network of world class facilities and people. No company is more focused on providing value to its customers. Lincoln Electric is committed to being the only welding resource you will ever need. We're backing up that commitment with quality products, and the expertise to help you use them in exceptional ways.



Mahindra World City, New Chennai - India



Guarulhos, Sao Paulo - Brazil



Shanghai - China

# Global Business Solutions

Lincoln Electric's global network of sales engineers, manufacturing facilities, service centers, distribution centers and distributors means our welding equipment, consumables and expertise are wherever your needs are.

## FEWER, STRONGER VENDORS CAN CUT YOUR OPERATING COSTS

Having a single business partner that can service all your global needs can eliminate dozens – perhaps even hundreds – of smaller, less reliable vendors from your supply chain. Because product quality varies from vendor to vendor, so does the quality of the end product. With Lincoln Electric as your welding partner, your weld quality will be consistent.



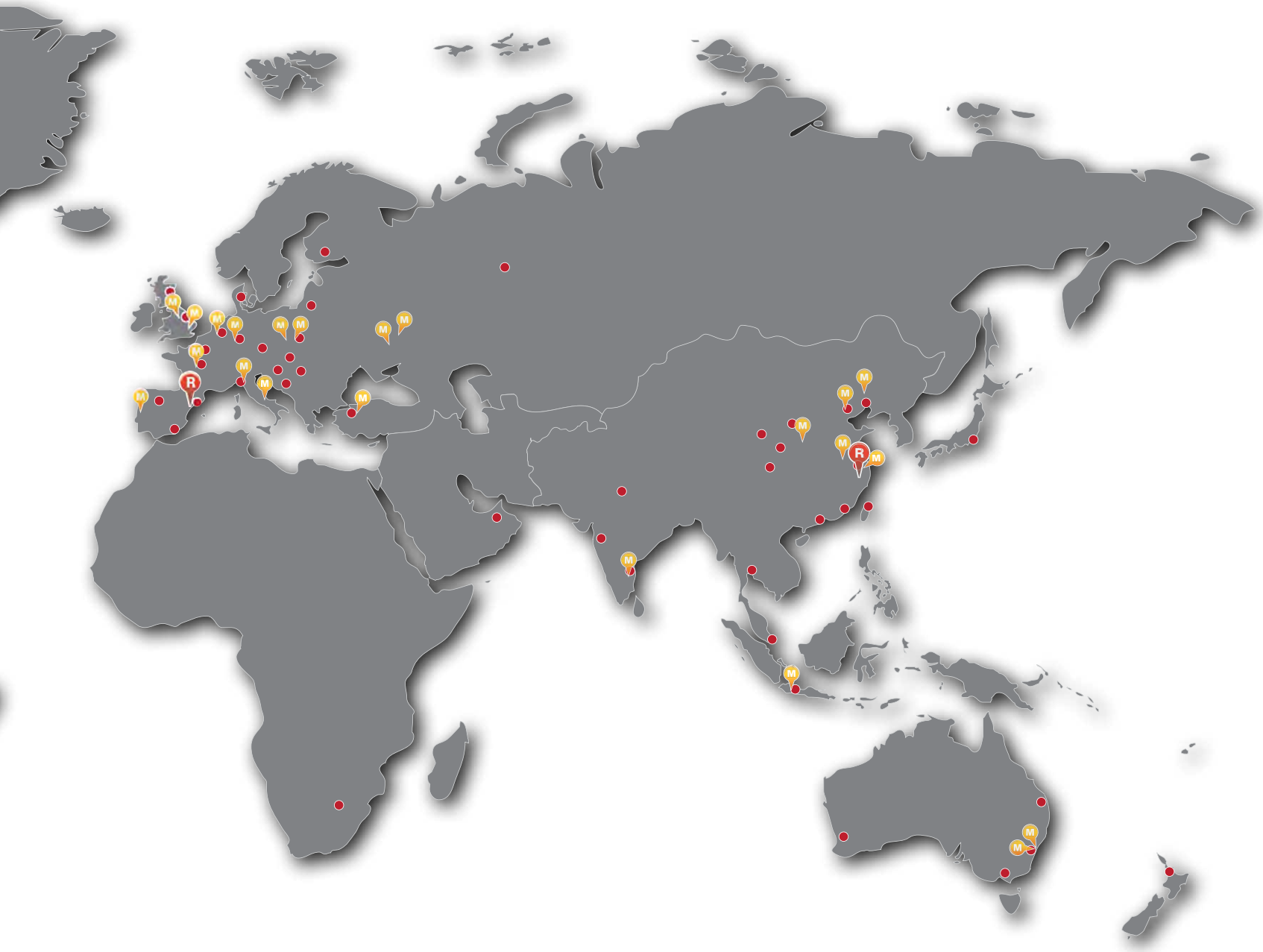




*Dzierżonów - Poland*



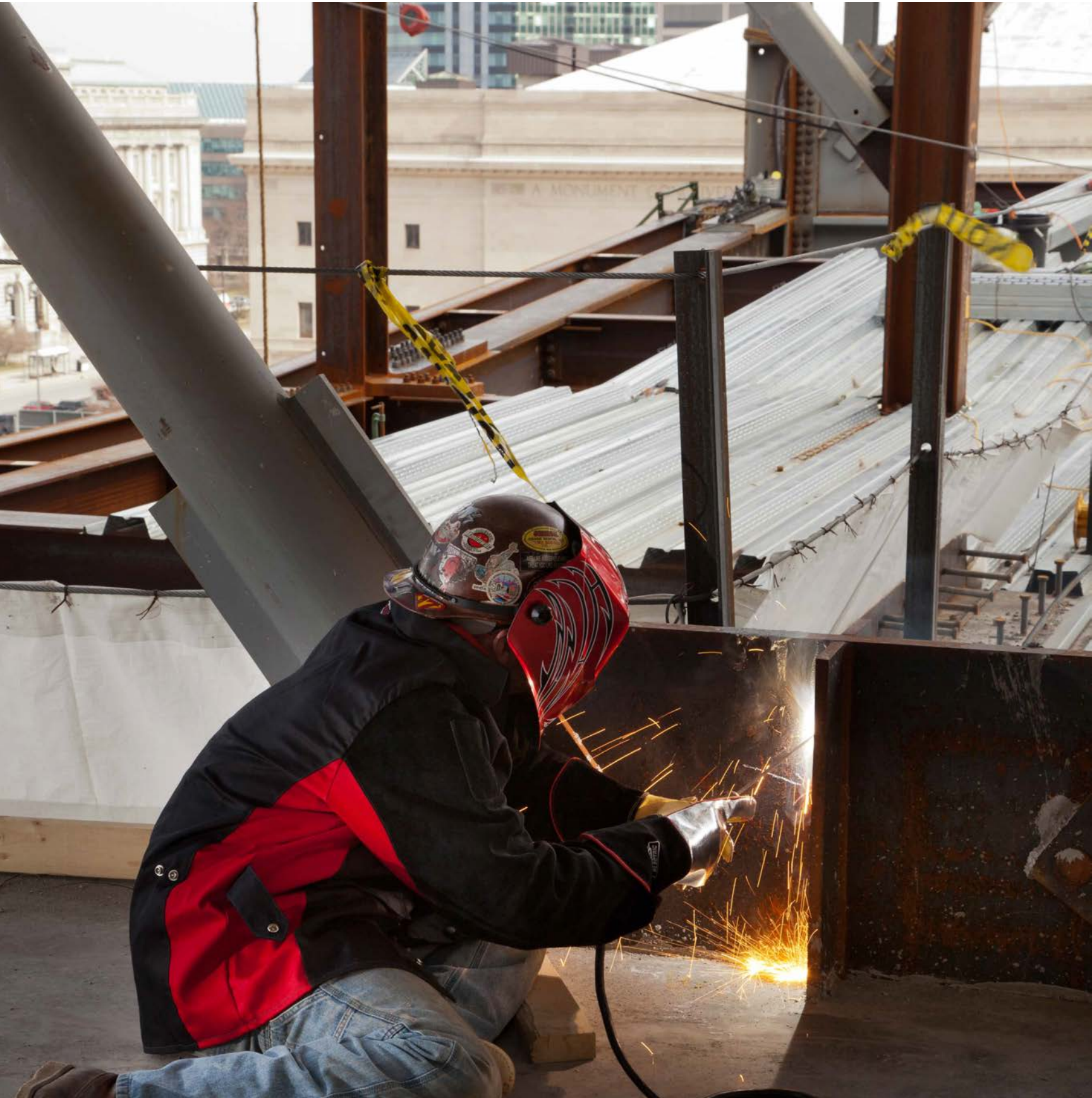
*Torreón - Mexico*





“The support provided to us by the Lincoln Electric team was outstanding. They helped us work through the set up and have made themselves readily available any time we’ve had questions.”

Kris Morse, *Weld Manager*  
T Bailey - Anacortes, WA







# Industry Segment Focus

Lincoln Electric is committed to developing welding solutions that meet the unique needs of our customers worldwide. Becoming Lincoln's global partner provides your company with specialized, industry-tested equipment and consumables created to meet industry-specific welding requirements. Whether your company fabricates pipelines, wind towers or offshore oil rigs, choosing Lincoln Electric ensures maximum productivity, quality and profitability for our customers.







# Customer Commitment and Support

## APPLICATION ENGINEERING

Lincoln Electric's well-equipped lab and testing facilities staffed with a team of engineers, metallurgists, chemists and technicians can become an extension of internal resources for customers in the quest to evaluate and solve critical welding issues.

- ▶ **Weld Procedure Analysis** - Lincoln Electric is there to help your company identify welding issues and offer specific solutions.
- ▶ **Process Development** - Lincoln Electric can help minimize transition time by helping you anticipate and avoid trouble spots.
- ▶ **Productivity Enhancement** - Lincoln Electric analyzes your welding operations and suggests ways to improve workflow, lessen downtime and increase productivity.

## TRAINING

Lincoln Electric offers a wide range of seminars, classes and materials, offered on- or off-site, to meet your basic or advanced training needs.

- ▶ Skills-enhancement programs to increase productivity.
- ▶ Stick, MIG, TIG, flux-cored, submerged arc and oxy-fuel certification classes.
- ▶ Product, process, safety and automation training.

Lincoln Electric can also be an excellent resource for books, videos and other presentation materials. The globally respected Lincoln Electric Welding School offers courses throughout the year that teach students welding processes, products, safety and techniques.

## VRTEX® SIMULATED WELDING TRAINING SOLUTIONS

The VRTEX® solution is a computer based, educational training system designed to allow students to practice and learn welding techniques in a simulated environment.

- ▶ **VRTEX® Mobile** - Introductory, portable welding simulator
- ▶ **VRTEX® 360** - Advanced, full-featured welding training simulator





"This fab shop is the future of our business, and Lincoln understands the importance of providing the right tools to stay competitive."

Doug Zollinger, *Vice President Operations*  
Wagner-Meinert, Inc. - Fort Wayne, IN





“The UltraCore® wire was the competitive advantage we needed. It delivers consistency, control and efficiency. We’ve decreased downtime, clean up and rework. We’re spending less time on projects, while dramatically increasing productivity.”

Isaac Murciano, *Chief Operating Officer*  
Owen Steel Company - Columbia, SC







# Quality and Performance

Lincoln Electric's commitment to quality standards is unmatched in the welding industry. We maintain an active and high-level presence in our industry's standards and specifications realm. Lincoln Electric welding experts serve on international boards and panels that drive decision-making regarding research, testing, and requirements relative to critical welding applications.

## OPERATIONAL EXCELLENCE



- ▶ ISO 9001 and 14001 Certified in many production facilities.
- ▶ Lean manufacturing investments.
- ▶ Six Sigma.
- ▶ Programs focused on cost reduction and operating efficiencies.

## RESEARCH & DEVELOPMENT

- ▶ Aggressive and comprehensive research and development enhances new product advancements.
- ▶ David C. Lincoln Technology Center – combines research and production facilities in a single location.
- ▶ R&D Facilities around the world – Asia, Europe, Latin America, Australia and Canada.

## QUALITY ASSURANCE

- ▶ Suppliers graded on performance.
- ▶ Test all incoming raw materials – Chemical composition is analyzed beyond industry standards to Lincoln Electric's proprietary standards before entering manufacturing process.
- ▶ All equipment must pass a rigorous set of tests based on real-life conditions, including harsh environments, impacts and vibrations.



# World Class Products

## ARC WELDING EQUIPMENT

Lincoln Electric's power sources, wire feeders, engine drives and commercial equipment are designed to meet our customers' requirements. Lincoln equipment is rugged, reliable and technologically advanced to deliver outstanding performance in the most demanding environments.

## ARC WELDING CONSUMABLES

Stick electrode, solid and flux-cored wire, cut lengths and flux are all available in a variety of material types, including mild and stainless steel, aluminum and high alloy steel, to provide high quality welds that meet your specific application demands.

## WELDING ACCESSORIES

Lincoln Electric offers a variety of welding equipment accessories, including undercarriages, covers, and kits. Magnum® and Magnum® PRO welding guns are available for all process applications.

## BRAZING & SOLDERING CONSUMABLES

Lincoln Electric companies offer a full line of aluminum, copper based alloys, phosphorus copper, high silvers, solders, brazing and soldering fluxes and chemical aids.

## AUTOMATION SYSTEMS

Lincoln Electric's Automation Solutions Team offers drop-in-place, pre-engineered and custom engineered automated welding solutions that are proven to resolve quality, productivity and skilled labor issues.

## ENVIRONMENTAL SYSTEMS

Designed to optimize weld fume control, Lincoln Electric Environmental Solutions reduce welding fume and dust in the workplace to help our customers meet OSHA requirements.

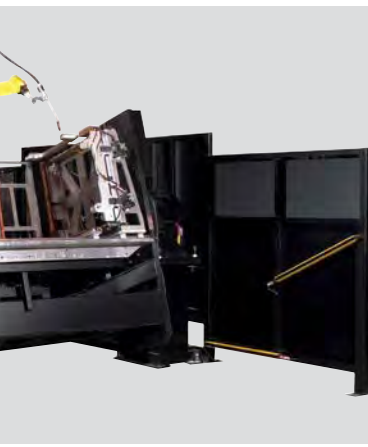
## CUTTING & BRAZING EQUIPMENT / GAS REGULATION & DISTRIBUTION EQUIPMENT

Lincoln Electric companies offer industrial duty regulation equipment; flow control equipment; welding and cutting torches; cutting, welding, and heating tips; industrial manifolds and cutting outfits.

## PERSONAL PROTECTION EQUIPMENT

Lincoln Electric offers personal protection equipment (PPE), including welding helmets, gloves, jackets, safety glasses, and tools. Whether you weld for a living or you're an occasional welder, we have the right welding safety gear for you.



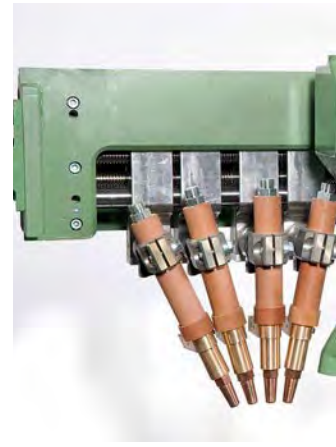


"The Lincoln Electric equipment gives us outstanding repeatability, is easy to calibrate and requires minimal maintenance. These factors save us time and money - making us more competitive in a government bid system that typically awards projects to the lowest bidder."

Gary Gardner,  
*Quality Assurance/Quality Control Manager*  
Stinger Welding Inc. - Coolidge, AZ







# Subsidiaries

## ARC PRODUCTS®

For more than 30 years, Arc Products® has designed and manufactured advanced automated systems for the welding industry. These systems are utilized in manufacturing plants around the world in seam tracking, orbital TIG, cold wire feed and pipe rotation applications.

## ASKAYNAK

Askaynak, based in Turkey, produces MIG/MAG welding wires, submerged arc wires, stick electrodes and Starweld® stainless steel MIG and TIG wires. Kobatek® products are used in hardfacing repair and maintenance welding applications.

## BURNY-KALIBURN

Burny-Kaliburn, acquired by Lincoln Electric in 2012, is a consolidation of three businesses, Burny®, Kaliburn® and Cleveland Motion Controls® (CMC). With headquarters and manufacturing operations located in Ladson, South Carolina, and over 100 years of combined experience, the complementary product lines provide customers with a wide array of conventional and high current density plasma cutting systems, including easy to use shape-cutting motion control solutions for plasma, oxy-fuel, and water jet cutting machines, as well as routing, engraving and dispensing equipment. In addition to state-of-the-art PC-based controls and drive systems, Burny® also supplies operator's consoles, torch height controls, plate making devices and pattern tracing systems for new and used cutting machines. Cleveland Motion Control® provides motion control and integrated systems solutions for a variety of applications in a broad range of industries.

## CUTTING SYSTEMS

Lincoln Electric Cutting Systems is a full-service manufacturer of CNC plasma and pipe cutting systems used in a wide range of applications and fabrication facilities worldwide. Headquartered in Reno, Nev., Lincoln Electric Cutting Systems offers the combined services and expertise of Torchmate®, a manufacturer of custom CNC plasma cutting systems since 1979, and VERNON Tool™, a manufacturer of pipe and process flow fabrication equipment since 1930.

## HARRIS® PRODUCTS GROUP

The Harris® Products Group was formed in 2006 with the merger of Harris Calorific, Inc., a manufacturer with over 100 years of experience in gas welding and cutting equipment and gas regulation and distribution systems, and the J.W. Harris Company, manufacturer of almost 100 years of brazing and soldering alloys and welding consumables. Today, the combined Company is a world leader in the design, development and manufacture of gas welding and cutting equipment, industrial and specialty gas regulation equipment, gas distribution systems, brazing and soldering alloys and welding alloys.

## INDALCO® ALLOYS, INC.

For over 25 years, Indalco® Alloys has produced a broad range of premium aluminum alloy TIG (GTAW) cut lengths and MIG (GMAW) wires in a variety of packages. Indalco® is the world's only fully integrated aluminum welding consumable manufacturer, melting pure aluminum ingots and casting its own aluminum wire rod, before aluminum welding consumables are manufactured.





### METRODE

Founded in 1963, U.K.-based Metrode Products, Ltd. offers a full range of alloyed products, including those suitable for welding on low alloy or alloy steels to consumables designed to match the performance of nickel-based alloys, for power generation, chemical and petrochemical, offshore oil and gas, and nuclear industries.

### TECHALLOY® COMPANY, INC.

Founded in 1919, Techalloy® Company, Inc. produces nickel alloy and stainless steel welding consumables for automotive exhaust systems, high temperature, anti-corrosive chemical and pharmaceutical industry applications, as well as oil and gas industry fabrication maintenance and repair.

### TENNESSEE RAND

For more than 30 years, Tennessee Rand, located in Chattanooga, Tennessee, has been a leader in the design and manufacture of tooling and robotic systems for welding applications. The company is a full service automation integrator with core competencies in advanced welding system design, high-quality weld fixtures, robotic integration, process automation, and service and support. With an additional sales, service and support office in Canada, Tennessee Rand has the capability, expertise and resources to build a variety of equipment ranging from dedicated welding cells to integrated in-line systems.

### UHRHAN & SCHWILL SCHWEISSTECHNIK, GMBH

Founded in 1963, Essen, Germany-based Uhrhan & Schwill sets the standard for multiple arc submerged arc welding systems for inner diameter and outer diameter production pipe welding. The Company also offers single arc MIG/MAG tack welding systems for pipe production. More than 300 systems are active in over 35 large diameter pipe mills around the world.

### WAYNE TRAIL TECHNOLOGIES

Ohio-based Wayne Trail Technologies is a manufacturer of flexible, automated systems and tooling used in a variety of metal forming, fabricating and joining industries for more than 50 years. The company provides solutions from turnkey, complete automated process and handling systems, to stand alone work cells.

### WEARTECH™ INTERNATIONAL, INC.

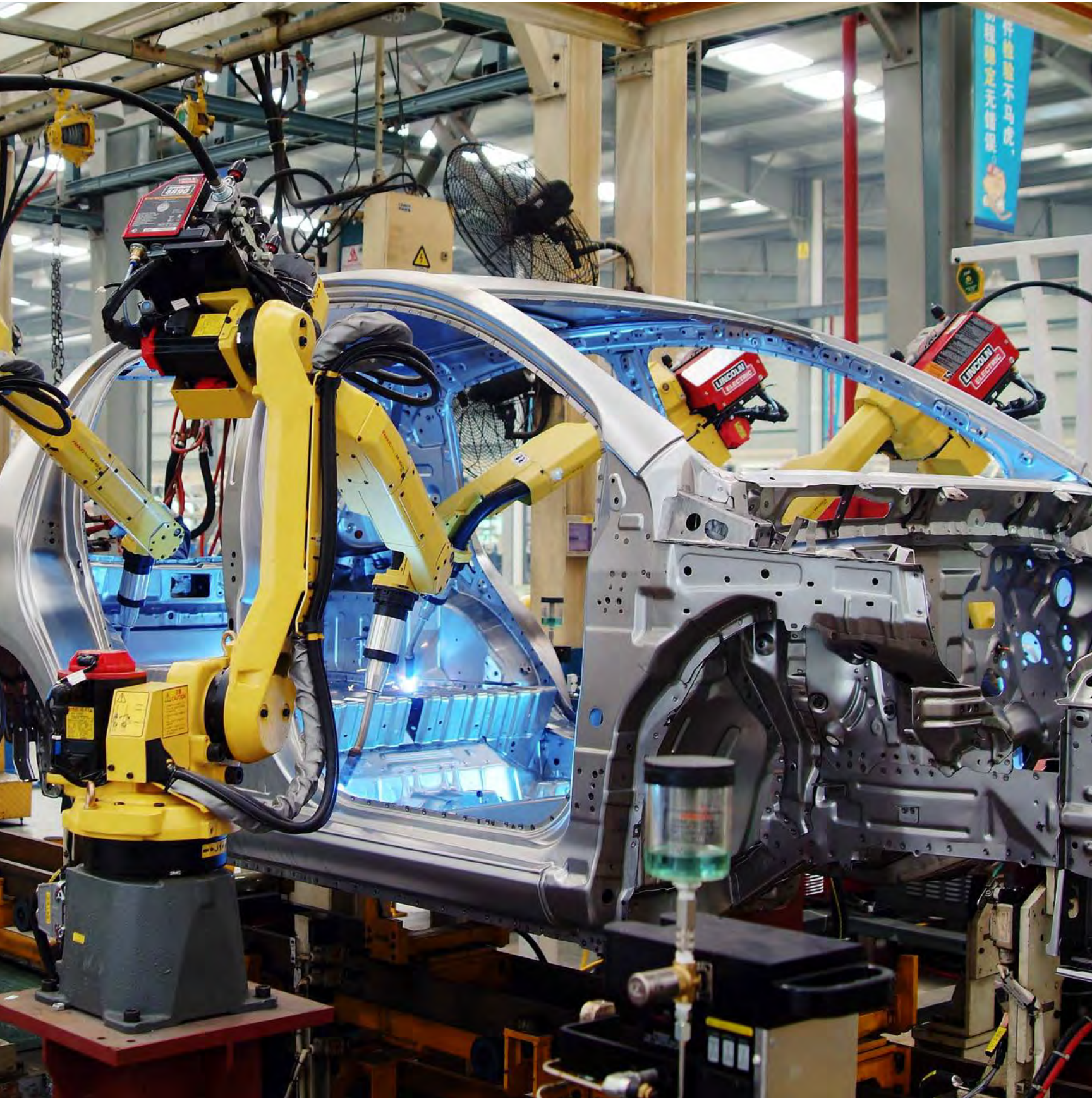
Founded in 1990, Wearthech™ International, Inc., became a Lincoln Electric Company in 2012. The Company produces cobalt-based hardfacing and wear-resistant welding consumables. Over the past 20 years, Wearthech™ has provided technical solutions to customers facing wear problems both in the United States and internationally.



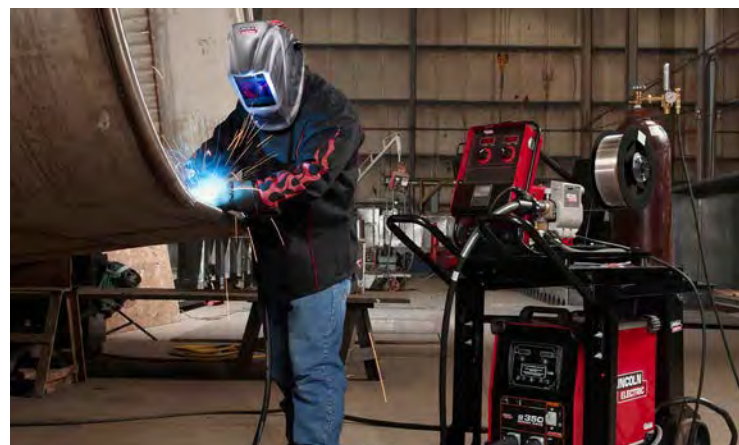
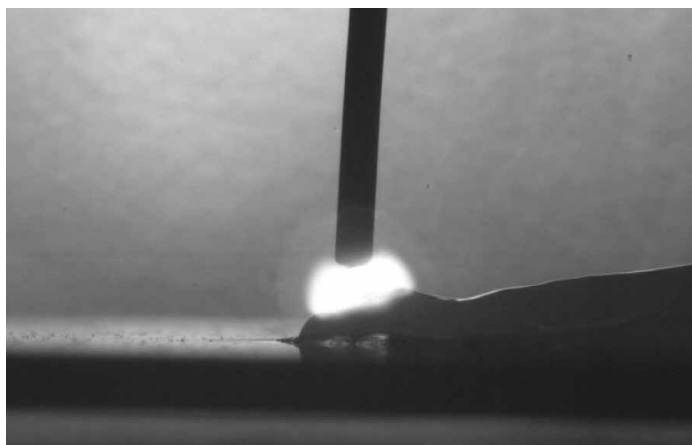


“Robotic integration has allowed us to realize significant gains in the consistency and quality of overall productivity. Automation and other initiatives have allowed G&W’s business to grow approximately 35 percent over the last three years while maintaining nearly the same number of employees.”

Gary Johns, *CEO*  
G&W Products - Fairfield, OH







# World Class Technology and Innovations

## ADVANCED TECHNOLOGY SOLUTIONS

The goal of innovation is to discover features that will efficiently provide value across many product interactions. Lincoln Electric customers purchase more than equipment and consumables when they purchase our products - they purchase a partnership. This partnership with Lincoln Electric opens the door to custom welding solutions created by the foremost authorities in the industry.

### ▶ SURFACE TENSION TRANSFER® (STT®)

Uses precise current control to make low heat input welds without spatter, distortion, overheating or burning through.

### ▶ RAPIDARC®

This pulsed MIG process is designed to maximize productivity by increasing travel speed.

### ▶ RAPID X®

Inspired by RapidArc®, Rapid X® is a pulsed GMAW process solution designed to increase productivity, reducing cycle time by utilizing an extremely short arc length. Low current wet-in technology momentarily drops the current to produce spatter-free welds.

### ▶ PRODUCTION MONITORING™ 2

This advanced weld data collection and monitoring tool is designed to allow fabricators to analyze and improve their welding operations and processes.

### ▶ WAVEFORM CONTROL TECHNOLOGY®

Customized waveforms maximize welding productivity.

### ▶ TRUE ENERGY™

True Energy™ measures and calculates the instantaneous amount of energy put into a weld for extremely accurate heat input calculations.

### ▶ MICROGUARD® ULTRA

Proprietary surface lubricant for SuperArc® premium MIG welding wire that enhances arc stability, puddle control and wetting ability.

### ▶ CHECKPOINT™ PRODUCTION MONITORING™

Collect weld data from every welding station and access detailed weld data with a simple browser interface via any mobile device.

### ▶ WELDScore™ QUALITY MONITORING TOOL

Weldscore™ delivers high-speed real-time monitoring of actual conditions at the arc.





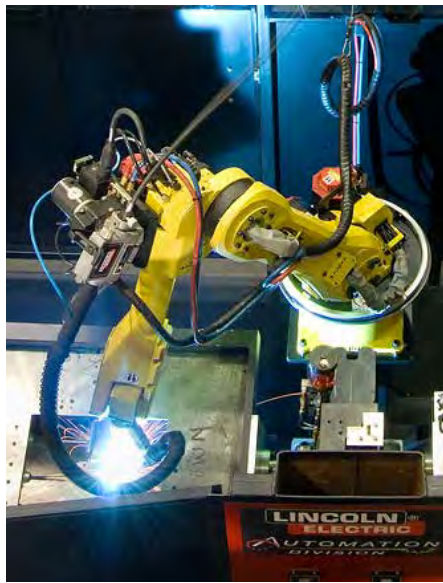
# THE LINCOLN ELECTRIC COMPANY

We will be driven by customer satisfaction and become known as the supplier of choice in our industries. We will strive to exceed customer expectations. We will be a solutions company, not simply a supplier of equipment or consumables.









THE LINCOLN ELECTRIC COMPANY  
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THE WELDING EXPERTS<sup>®</sup>