

UHRHAN
SCHWILL

LINCOLN
ELECTRIC

PIPE MILL

WELDING & CUTTING SOLUTIONS



The Lincoln Electric Company

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 a global network of manufacturing, distribution, sales and technical support covering more than 160 countries.

INNOVATION

With a long history of innovation in arc welding equipment and consumables, Lincoln Electric has been providing cutting-edge products and comprehensive welding process solutions to our customers for nearly 120 years. We operate the industry's most comprehensive research and product development program, supported by our R&D centers around the world.

CUSTOMER COMMITMENT & SUPPORT

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 PIPE MILL INDUSTRY

Welding Solutions to Meet the Most Demanding Requirements – Yours.

INDUSTRY CHALLENGES

Lincoln Electric understands the critical nature of welding requirements in the pipe mill industry. From stringent requirements on extreme wall thicknesses to consumables for pipe used in highly corrosive environments, consistency and reliability are key to delivering a project on time and under budget.

TYPICAL PIPE MILL APPLICATIONS

Whether the pipe you're making is destined for an oil field or a stadium, you're likely to encounter demanding customers, exacting line specifications and unforgiving delivery schedules. Lincoln Electric understands the necessity of welding that is done right the first time. Online SAW-H, offline SAW-H or SAW-L, no matter the pipe-making process, we have the equipment, consumables and technical know-how to ensure that you will be able to deliver the highest-quality pipe on time. With manufacturing locations around the globe, we're able to quickly and efficiently provide the products you need when you need them.

Uhrhan & Schwill, a Lincoln Electric company, is the recognized industry leader with decades of experience in the development of integrated systems for pipe mills. This unique expertise, paired with fully operational pipe mills located within our global headquarters in Cleveland, Ohio, USA, and in Essen, Germany, allows us to provide unmatched technical knowledge in application, procedure and product development tailored specifically to pipe-making.

LINCOLN ELECTRIC PROVIDES SOLUTIONS AND TRAINING

To make a quality pipe every time, you need the right resources. Lincoln Electric offers a complete solution to support your mill: consumables to weld everything from mild steel up to X120 and beyond, equipment that's reliable and cutting-edge, integrated solutions and unmatched experience in the industry. We believe every production campaign is unique and we have a team of technologists, engineers, metallurgists, programmers and specialists to support your mill.

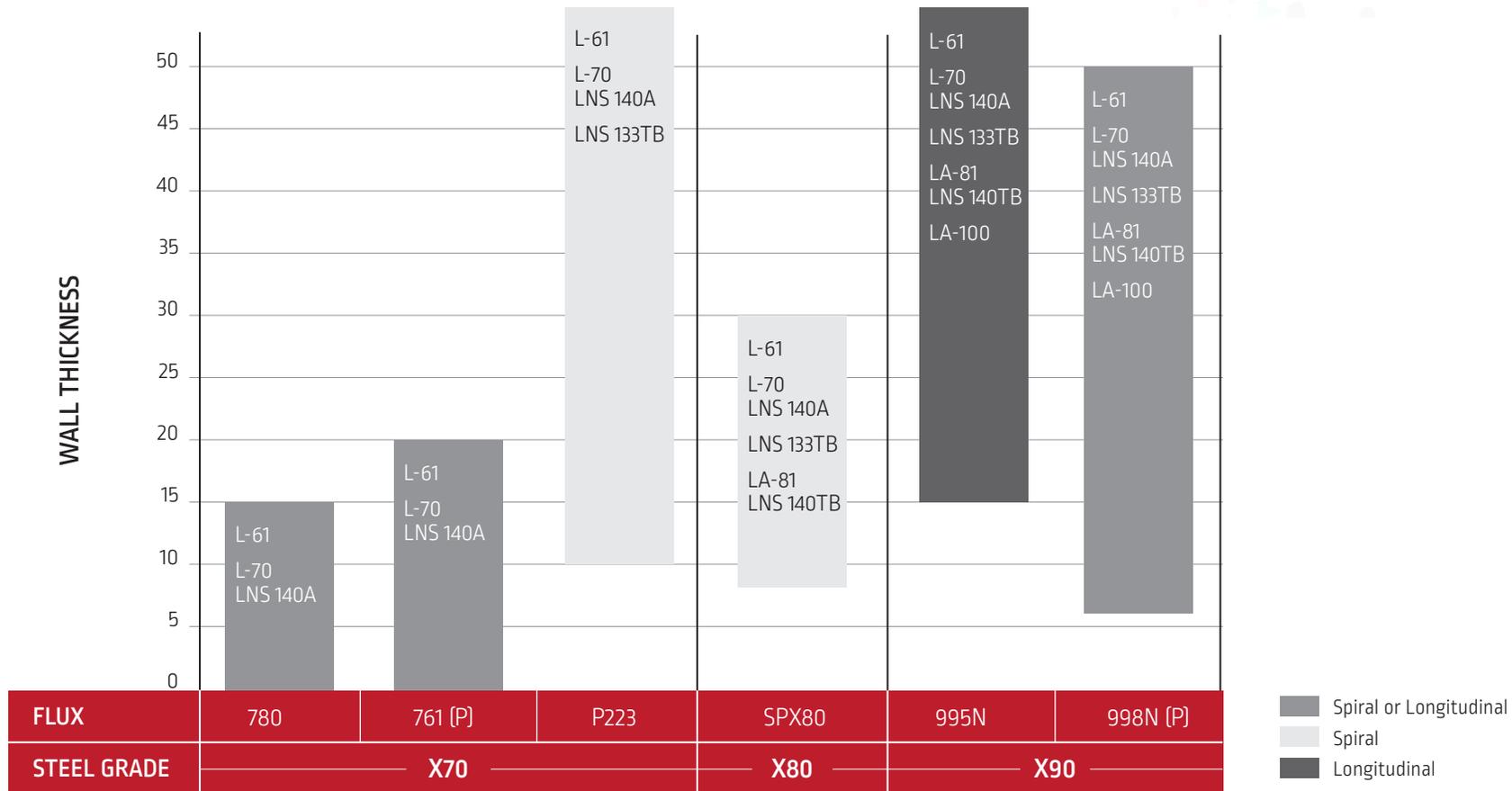
Lincoln Electric also offers a variety of on-site, regional and global training programs specifically designed to address the welding and cutting challenges you face every day.



CONSUMABLES

Lincoln Electric treats consumables as engineered products that must meet all project specifications as well as industry and regulatory standards. Lincoln Electric operates the industry's most advanced research center and is constantly developing better-performing wire and flux for the pipe mill industry. For example, with high-speed welding capability, high-impact properties, a smooth bead profile, self-peeling slag and extremely good out-gassing, Lincolnweld® SPX80™ is designed to meet the specific requirements of spiral pipe welding of up to API X80 grade pipe.

In order to increase customer efficiency, Lincoln Electric also sells consumables in bulk, offering single-package options from 50 lbs (22 kg) to 2,800 lbs (1.3 metric tons).



Recommended Wire & Flux Combinations

HELICAL PIPE WELDING (SAW-H)

Modern spiral mills produce pipes with diameters from 12 to 140 inches (300 to 3556 mm) and wall thicknesses ranging from 0.25 to 1.25 inches (6.4 to 30 mm).

Whether you are welding online or offline SAW-H, Lincoln Electric provides industry-leading solutions for every aspect of the pipe-making process, including consumables specifically engineered for pipe.

The industry-leading Lincolnweld SPX-80 flux is designed for fast welding speeds, excellent wetting and – most importantly – a “direct to coating” finish, which translates to less inventory and more operating cash.

Furthermore, when you utilize Waveform Control Technology® on the state-of-the-art Power Wave® AC/DC 1000® SD, you can manipulate the arc to optimize bead profiles, cutting additional time and cost from finishing operations.

Finally, with new developments in continuous tack welding solutions, Lincoln Electric has raised the bar, achieving tack welding speeds of up to 50 ft (15 m) per minute.



Best-Fit Solutions

Equipment

- » Power Wave® AC/DC 1000® SD
- » Uhrhan & Schwil Integrated Systems
- » Uhrhan & Schwil Z5 Digital Controller
- » Buried-Arc Tack Welding Waveforms

Consumables

- » Lincolnweld® L-61 wire
- » Lincolnweld® L-70 / LNS 140A wire
- » Lincolnweld® LNS 133TB
- » Lincolnweld® LA-81 / LNS 140TB
- » Lincolnweld® 761(P) flux
- » Lincolnweld® P223™ flux
- » Lincolnweld® SPX 80 flux



LONGITUDINAL PIPE WELDING (SAW-L)

Lincoln Electric and Uhrhan & Schwill have decades of experience providing cost-saving solutions for every aspect of longitudinal pipe production, including applications for diameters as small as 7.5 inches (190 mm) ID using a single arc and 18 inches (450 mm) ID with 4 arcs. From procedure development and the unmatched ability to implement six-arc applications to continuous flux delivery and recovery, we offer a full spectrum of products and knowledge in the pipe-making industry. Innovations such as Waveform Control Technology provide energy savings and increased deposition rates which lead to lower conversion costs.

A wide variety of bulk packaging options for wire and flux means fewer changeovers. That means less man-hours per ton, a safer work environment and an overall reduction in conversion costs. Paired with the industry-leading technology of the Power Wave equipment platform, Lincoln's SAW-L solutions are reliable, efficient and cost effective. And with the ability to implement various combinations of hot, cold and twin wire applications, there are options to explore additional opportunities.

Best-Fit Solutions

Equipment

- » Power Wave® AC/DC 1000® SD
- » Uhrhan & Schwill Integrated Systems
- » Uhrhan & Schwill Z5 Digital Controller
- » Buried-Arc Tack Welding Waveforms

Consumables

- » Lincolnweld® L-61 wire
- » Lincolnweld® L-70 / LNS 140A wire
- » Lincolnweld® LNS 133TB
- » Lincolnweld® LA-81 / LNS 140TB
- » Lincolnweld® LA-100 wire
- » Lincolnweld® 995N flux
- » Lincolnweld® 998N (P) flux



EXTENDED CAPABILITIES

Whether you are upgrading existing operations or constructing a completely new mill, Lincoln Electric will provide the state-of-the-art products and advanced technical expertise necessary to get you up and running or to optimize your current pipe making operations.

Lincoln Electric also offers a full range of automation capabilities, including new processes to improve the quality and efficiency of time consuming tasks such as the welding and cutting of run-on and run-off tabs for both spiral and longitudinal applications.



UHRHAN & SCHWILL

Founded in 1963 in Essen, Germany, Uhrhan & Schwill has long led the way in the development of customized welding systems for pipe mills. The company has more than 300 systems active in every pipe-making region around the globe, including the United States, China, India, Russia and Europe.

Uhrhan & Schwill specializes in fully integrated and customized multiple-arc welding systems for longitudinal and spiral pipe welding. The company custom designs its systems to match each individual customer's needs, whether that means adapting existing systems or designing new ones.

The 1998 acquisition of Uhrhan & Schwill by Lincoln Electric was a merger of perfectly complementary companies: Lincoln Electric's superior consumables, power sources and process solutions with Uhrhan & Schwill's integrated pipe welding systems. Together, they continue to innovate and provide the most efficient and best performing welding solutions in the industry.





The Lincoln Electric Company
22801 St. Clair Avenue
Cleveland, OH 44117-1199 U.S.A.
www.lincolnelectric.com/pipemill

CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company® is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information 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. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but 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.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.



MC13-165