



# Robotic SAW

Bigger Welds, Faster™

Lincoln Electric Automation has integrated the new Power Wave® AC/DC 1000® SD power source featuring Waveform Control Technology® with robotic welding technology to create a highly advanced robotic submerged arc welding (SAW) system.

We took the increased weld speeds, consistently higher quality welds and improved efficiencies provided by the Power Wave® AC/DC 1000® SD and enhanced them with our expertise in welding automation. By adding robot features such as Touch Sensing, path follow and vision-based systems or automated flux recovery, the solution can be elevated to the next level. Lincoln Electric Automation robotic SAW solutions cannot be beat for weld quality, efficiency and productivity.

## BENEFITS

- Streamlined robot dress-out package
- Higher deposition rates at faster travel speeds
- Superior penetration
- Excellent fusion
- Attractive, smooth, and quality beads
- Minimal or no spatter
- Increased productivity and arc on-time

## MATERIALS

- Carbon steel
- Low alloy steel
- Stainless steel
- Nickel-based steel

## APPLICATIONS

- Structural Steel
- Process and Power Generation
- Wind Tower Fabrication
- Heavy Fabrication
- Offshore
- Pipe fabrication





# Robotic SAW

Bigger Welds, Faster™

## AN UNBEATABLE SOLUTION: POWER WAVE® TECHNOLOGY

Key features of the  
Power Wave® AC/DC 1000® SD include:

### Efficiency

- Inverter-based design reduces energy demand.
- Power factor correction (Up to 95%).

### Global Connectivity

- One model offers the ability to be connected anywhere in the world.

## AUTOMATED WELDING EXPERTISE

Submerged Arc Welding has historically been limited to straight paths and fixed torch angles due to flux delivery limitations. Lincoln Electric Automation has engineered a cable management package and a patent-pending flux delivery system that accommodates all of the advantages of robotic welding including flexible programming at air angles and positions.



## LINCOLNWELD® WIRE AND FLUX

Combining over 70 years of experience in flux design and manufacturing with our full line of solid and cored wires for subarc welding, Lincoln Electric is your best source for submerged arc welding consumables. Better chemistry and better manufacturing systems result in flux and wire of consistently superior quality – time after time. With over 100 flux / wire combinations to choose from, there's a great Lincolnweld® combination for whatever your job demands.



For more information, request publication C5.10 - Lincolnweld® Submerged Arc Consumables Catalog.

### 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](http://www.lincolnelectric.com) for any updated information.

### No Hardware Reconfiguration

- Easy polarity switching.
- Eliminate downtime or the need for multiple power sources.

### True Energy™

- Measures, calculates and displays instantaneous energy in the weld.
- A must for critical heat input calculations.

### Software Based Controls

- Upgrade through file download at [PowerWaveSoftware.com](http://PowerWaveSoftware.com) as new features become available.

### Production Monitoring™ 2

- Track equipment usage, store weld data and configure limits to assist in welding efficiency analysis.

### Premium Welding Process Controls

- Waveform Control Technology® capability provides control over AC frequency, balance, and offset.
- Control penetration, bead shape and minimize arc interaction.

## WORLD-CLASS WELDING AND AUTOMATION EXPERTISE

Lincoln Electric's strategic alliance with FANUC Robotics translates into an unparalleled combination of welding and robotics expertise, plus single-source efficiency. Whether you're considering your first automated cell, or you're ready to upgrade or enhance your existing robotic systems, there's no better partner than Lincoln Electric and FANUC Robotics.

## EXCEPTIONAL CUSTOMER SERVICE

Lincoln Electric and FANUC Robotics have a global network of facilities and people to provide quick response and personalized attention. No matter where your welding operations are located today, no matter where they will be tomorrow, Lincoln Electric welding experts can provide local support, ready to create and implement solutions that fit your needs.

## VALUABLE CUSTOM SOLUTIONS

While Lincoln Electric offers a wide spectrum of pre-engineered systems, we also offer the ability to modify or completely customize the creation of your weld cell to meet your precise needs. Contact us today!

### Automation Service Hotline

1-888-935-3878

### Automation After-Hours Technical Support

1-888-532-8001



**LINCOLN**  
**ELECTRIC**

**AUTOMATION**  
DIVISION

### The Lincoln Electric Company

Automation Division

22221 Saint Clair Avenue

Cleveland, Ohio 44117-2522 USA

1-216-383-2667

Email: [Automation@lincolnelectric.com](mailto:Automation@lincolnelectric.com)

[www.lincolnelectric.com/automated-solutions](http://www.lincolnelectric.com/automated-solutions)