

# ClassMate™

## ROBOTIC WELDING TRAINER



## ADVANCING THE MANUFACTURING SKILLS OF THE NEXT GENERATION

As businesses of all sizes now compete on a global stage, manufacturing companies are challenged to increase productivity, improve quality and reduce costs.

These challenges, coupled with the critical skilled labor shortage, drive many manufacturers to implement automated welding fabrication. Employers everywhere are demanding that prospective employees be trained in robotic fabrication technologies. Educators are rapidly moving to respond.

The Lincoln Electric ClassMate™ Robotic Trainer provides the education community with a complete advanced manufacturing solution for robotic welding training.

### Product Number »

AD2446-1  
Basic Package

AD2446-2  
Intermediate Package

AD2446-3  
Advanced Package

## FEATURES – All Models

- » Includes everything you need to present robotic manufacturing
- » Classroom Ready - Use the robot and controller for robot operation and programming in the classroom using supplied 120VAC input power cable (welding operation requires greater input voltage)
- » Exclusive use of Fanuc® robots - number one most popular robot manufacturer in the U.S.
- » New, larger expandable work surface and enclosure easily sets up in seconds.
- » Full-featured, operational robotic welding power source
- » Integrated fume control
- » Fits through a standard doorway to teach and practice programming in a classroom and move to the lab to practice welding
- » Integrated safety measures in system and software
- » 3 Basic Robotic Programming class seats

## APPLY THE CLASSMATE INTO MULTIPLE PROGRAMS

- » Industrial, Mechanical and Advanced Manufacturing Welding
- » Engineering or Technology
- » Production Processes
- » Lean Manufacturing and Manufacturing Management
- » 3D / CAD / Virtual Prototyping Programming Classes
- » Manufacturing Operations, Mechatronics, Quality Control and Inspection

The Lincoln Electric Robotic ClassMate Cell is a complete robotic training solution designed to meet the need for advanced manufacturing training. Instructors can teach robotic concepts in the classroom and quickly move to the lab for welding practice. Students can perform offline programming and then test their skills at a manufacturing-ready robotic cell.

### BENEFITS OF ROBOTIC WELDING TRAINING:

**Provide students** with advanced manufacturing skills.

**Increase student participation** and engagement with a hands-on training solution.

**Teach robotics** using the equipment implemented in manufacturing and fabrication facilities.

**Accelerate student skills** and capabilities for high graduation employment rates.

**Pique interest and enrollment** with this exciting recruitment tool.

### THE LINCOLN ELECTRIC ROBOTIC WELDING EDUCATION CELL IS IDEAL FOR:

- Training and demonstration purposes in a welding lab, classroom or even at a recruitment event
- Technical training at universities
- Trade schools
- Workforce development programs

Purchase includes access to the Lincoln Electric Train-the-Trainer Program, including curriculum and safety materials. Our goal is to help instructors and students develop the skills necessary to thrive in an advanced manufacturing environment.



*Miniflex® with EN 20 Extraction Nozzle, Welding Fixture, and Project Based Lessons*

# PACKAGES - WHAT'S INCLUDED

	PACKAGE 1 - Basic (AD2446-1)	PACKAGE 2 - Intermediate (AD2446-2)	PACKAGE 3 - Advanced (AD2446-3)
<b>Robotic 3-in-1 Welding Fixture</b> – The patent pending 3-in-1 adjustable welding fixture is designed for use on a robotic weld training system. It enables the welding instructor to teach common industry-standard joints and positions, all in one simple device.	•	•	•
<b>Miniflex® Welding Fume Extractor</b> – A portable, effective high vacuum system for the removal and filtration of welding fumes in confined and other hard to reach spaces. Integrates into bracket on cell.	•	•	•
<b>EN 20 Extraction Nozzle</b> – Funnel extraction nozzle stand offers positioning flexibility.	•	•	•
<b>Custom Lettering Program</b> – Preprogrammed with easy to use high quality lettering.	•	•	•
<b>Robotic Welding Project Based Lesson</b> (K3976-2) – Offer instructors more than a dozen complete project curriculum designed to encourage active inquiry, higher level thinking and easy integration into advanced manufacturing education programs. Includes learning activities, step-by-step instructions and discussion questions.	•	•	•
<b>Basic Robotic Programming Class</b> 3-5 Days for up to 3 instructors	•	•	•
<b>Standard 120VAC input power connection</b>	•	•	•
<b>WeldPRO Training Program and Software</b>		•	•
<b>IRVision 2D vision camera system</b>			•
<b>Additional WeldPRO Instructor Seat</b>		•	•

• Optional • Included

## WeldPRO Training Program

(Included with Intermediate and Advanced Packages. Can also be purchased separately)

Train-the-Trainer program is designed to train instructors to enable their own training of students to program FANUC robots.

### Training Program and Software Package includes:

- » Instructor License (1 Seat)
  - WeldPRO Simulation Software (laptop not included)
  - Starts at time of registration
  - Permanent – Does not expire
- » Instructor Basic Robotic Training at Lincoln Electric (3 Seats)
- » Student WeldPRO Simulation Software License Package<sup>1</sup>
  - 12 month subscription per student (laptop not included)
  - Student Licenses (25 Seats)
  - Can be renewed annually
  - School has 90 days to register student licenses before 12 month student subscriptions start

### Additional Instructor Seat Option (AD1034-50)

- » Add one additional instructor License (1 seat) for the WeldPRO Training Program and Software Package

### Annual Renewal for Student Licenses Option (AD1034-55)

- » 12 month subscription per student (laptop not included)
- » Student Licenses (25 Seats)
- » Can be renewed annually
- » School has 90 days to register student licenses before 12 month student subscriptions start

### Robotic System Specifications

<b>Product Number</b>	AD2446-1 Basic AD2446-2 Intermediate AD2446-3 Advanced
<b>Weight – lb (kg)</b>	1000 lb.
<b>H x W x D – in (mm)</b>	81.23 x 64.82 x 70 (sides expanded); 32 in. (sides folded)
<b>Input Voltage</b>	120V for Robot operation and programming

### Power Wave® S350 and AutoDrive® 4R100 Product Specifications

<b>Product Number</b>	Power Wave S350: K2823-3 AutoDrive 4R100: K3002-2
<b>Output Range</b>	5-350A
<b>Rated Output – Current/Voltage/ Duty Cycle</b>	GMAW: 350A/31.5V/40% GMAW: 300A/29V/100%
<b>Input Voltage</b>	208/230/380-415/460/575VAC single or 3 Phase 50 or 60 Hz

### Robot Specifications

<b>FANUC ARC Mate® 50iD/7L</b>	<ul style="list-style-type: none"> <li>· Six Axis Mechanical Unit</li> <li>· 7 kg Maximum Payload</li> <li>· 0.911 m Reach</li> </ul>
<b>FANUC R-30iB Mate Controller</b>	<ul style="list-style-type: none"> <li>· 6-channel servo amplifier</li> <li>· RIA compliant E-stop unit</li> <li>· Integrated operator panel (includes Auto/T1 mode switch, Estop and cycle start push buttons)</li> <li>· RIA-compliant color haptic iPendant with non touch panel and USB2.0 port</li> </ul>
<b>FANUC Robotics LR ArcTool® Software</b>	Compliant with RIA R15.06 Safety Requirements

### Safety/Weld Cell Controls

- CSA/UL certification ready system – PLEASE NOTE: Obtaining CSA/UL certification is the responsibility of the customer
- Fully integrated ANSI/RIA 15.06-2012 compliant operator safety devices including door safety switches
- RIA compliant robotic controller operator panel, robotic software and pendant

### Complete System Documentation

<b>Hard Copy binder</b>	
<b>Electronic manuals and tools</b>	operations manuals maintenance guides, spare parts lists, calibration numbers and serial numbers, print, and supplier references and specifications

### Training Classes

- Basic Robotic Programming Class
- 3-5 days (depending on options selected)
  - 3 instructor seats
  - Learn how to program and operate the cell
  - Access to Lincoln Electric welding and robotic team

- WeldPRO
- See page 3 for details

## JOIN THE LINCOLN ELECTRIC EDUCATION COMMUNITY!

Sign up for the First Pass™ Newsletter at [www.lincolnelectric.com/firstpass](http://www.lincolnelectric.com/firstpass):

See upcoming events, customer highlights, Lincoln Electric activity, updates and tips and tricks to help with your implementation of welding training in your environment.

[twitter.com/LincolnElectric](https://twitter.com/LincolnElectric)

Interact with us on Twitter® and let us know how, where and when you are using your welding training products.

[facebook.com/LincolnElectric](https://facebook.com/LincolnElectric)

Join us online and hear what others are saying. Interact and like posts and updates that you find exciting and interesting. We'd be happy to hear from you.

## EXCEPTIONAL CUSTOMER SERVICE

Lincoln Electric has 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 experts are ready to provide local support and create and implement solutions to fit your needs.

## SERVICE AND SUPPORT THAT YOU CAN COUNT ON

- » 24/7 Phone Support 1-888-935-3878
- » Contact us with comments or questions [automation@lincolnelectric.com](mailto:automation@lincolnelectric.com)
- » Education resources: [www.lincolnelectric.com/education](http://www.lincolnelectric.com/education)
- » Warranty and Service Support
- » Train-the-Trainer programs held regularly in facilities or on-site training and set-up can be purchased.

### 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.

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