

Educational Resources and Product Guide

Welding training materials to maximize instructor efficiency and teach the next generation of welders

Our Company



Miller® is about building things that matter.

We lead the welding industry in building advanced, solution-focused products and meeting crucial needs for welding safety.

We're about the partnership and work. Our products are designed with our users for manufacturing, fabrication, construction, aviation, motorsports, education, agriculture, and marine applications.

Miller Electric Mfg. LLC, is headquartered in Appleton, Wisconsin, and wholly owned by Illinois Tool Works (NYSE: ITW). The company maintains its industry leadership by setting the standard for reliability, quality, and responsiveness.

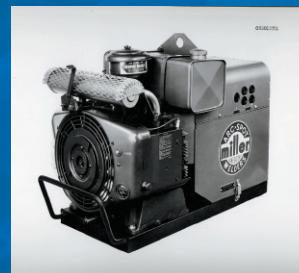
This company began with an innovation that responded to customer needs, growing from a one-man operation in 1929, to the world's largest manufacturer of arc welding products. Miller keeps the tradition alive by focusing on its top priority: people.

THE POWER OF BLUE®

In 1929, Niels C. Miller recognized the need for a small, affordable arc welder that would operate on the type of electricity readily available in rural Wisconsin. His simple, non-rotating AC welder was smaller, lighter, and less expensive than DC units available at the time.

In 1935, Miller Electric invented the world's first high-frequency stabilized AC industrial welder. We continue to innovate equipment to further strengthen our position as a world leader in the welding industry.

As Miller looks to the future and continues to take innovative steps to manufacture the best products, we recognize that the greatest "Power of Blue" is not in the products but in the talented people.



Building Future Welders

The future of welding is in the hands of the next generation which is why Miller creates solution-focused products and provides instructors with supportive resources that help more easily train their students, building future welders.

Scholarships

Miller® strongly believes that all individuals who are interested in welding should have the opportunity to learn the trade and work towards a degree that will help them build their future and achieve success. With various Miller and AWS scholarship opportunities, we're helping to grow the welding workforce and the passion for our craft.

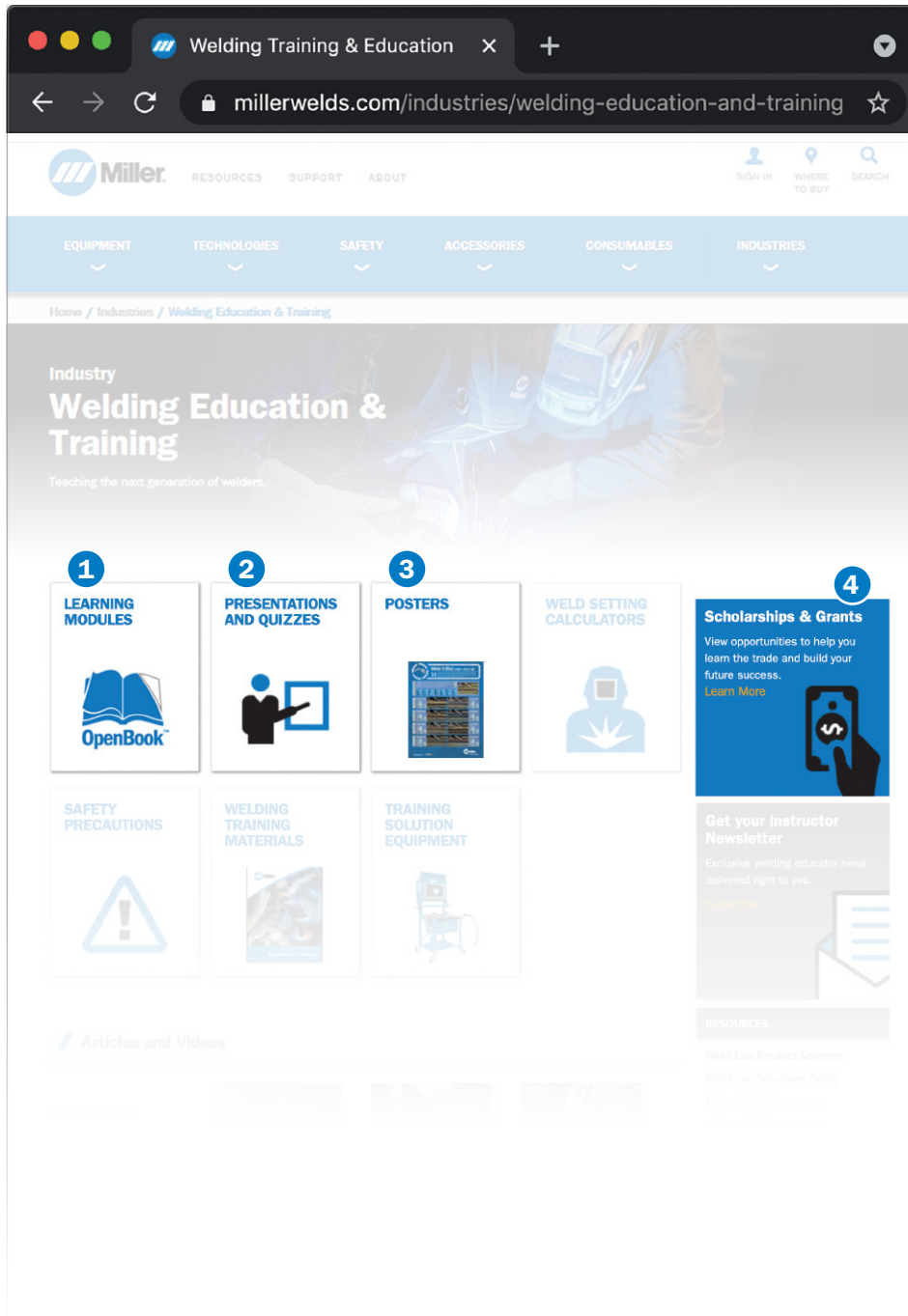


MillerWelds.com/scholarships



Instructor Resources

The Instructor web page is a useful tool for instructors to find information and resources for their classroom and lab. Use this site to find welding training related articles, welding resources for the classroom, sign up for the Instructor e-newsletter, and find recommended equipment and filler metals. [MillerWelds.com/weldingeducation](https://millerwelds.com/weldingeducation)



1 OpenBook™

FREE, easy-to-use online resources and training materials to support your curriculum and set up weld instructors and students for success

[MillerWelds.com/openbook](https://millerwelds.com/openbook)

2 Presentations and Quizzes

Welding presentations and quizzes covering topics like MIG, TIG and Stick welding, basic electricity and filler metal selection

[MillerWelds.com/quizzes](https://millerwelds.com/quizzes)

3 Posters

Engage your students with informative welding material

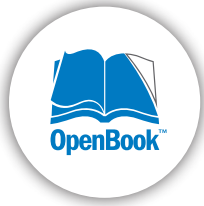
[MillerWelds.com/posters](https://millerwelds.com/posters)

4 Grant Assistance Tool

Are you looking for grant assistance to fund new updates? Make your application stand out from the rest so your organization has a higher chance of gaining additional resources

[MillerWelds.com/grantassistance](https://millerwelds.com/grantassistance)

OpenBook™



OpenBook™ is a FREE software application or web-based technology used to plan, implement, and assess learning processes. OpenBook provides welding instructors with an easy tool to assign and deliver welding content, create quizzes, download welding labs, monitor student participation, assess and report student progress and performance. OpenBook welding assignments can also be utilized with Miller® Training Solutions like AugmentedArc® and LiveArc™.

Customize Your Classroom

- Implement materials that fit your curriculum and learning objectives, including:
 - Compatible with Miller AugmentedArc®
 - e-Learning modules
 - Weld lab activities
 - Course builder
 - Quiz builder
 - Lab builder
 - Custom certificate of completion
- Track individual student progress
- All material aligns with AWS standards

Motivate & Engage Students

- Interactive, stimulating learning includes videos and activities
- Quick, digestible segments
- Mobile friendly
 - Easy to access homework from anywhere
 - Students can check grades and status
- Certificate of achievement awarded from Miller and Hobart® for pre-curated courses



Learn how Eric Pesak, weld instructor at College Station Independent School District, takes full advantage of OpenBook to customize his classroom and train the next generation of welders.

MillerWelds.com/Pesak



For details, visit MillerWelds.com/Openbook

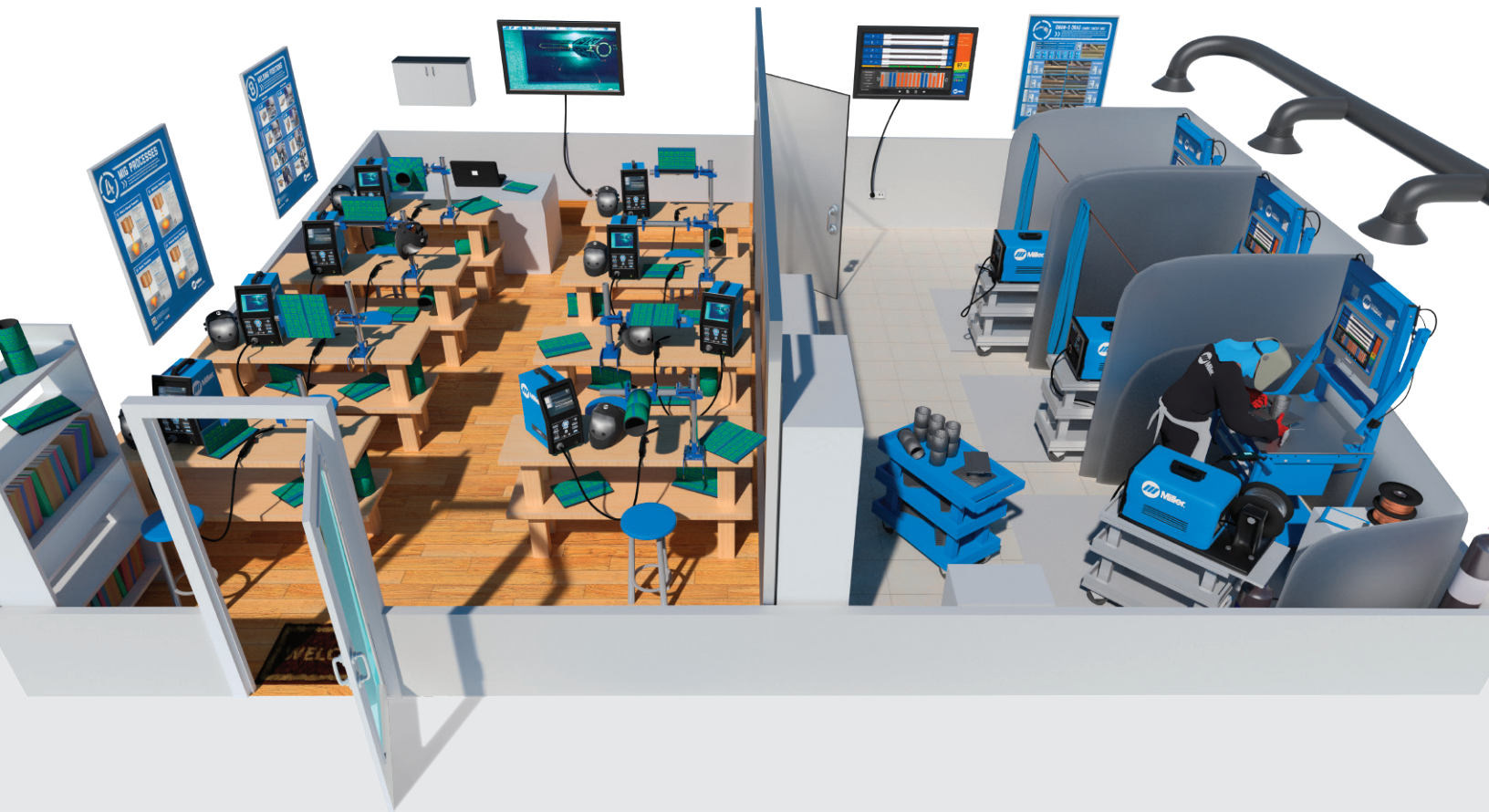
How Miller® Training Solutions Benefit YOU

ITW WELDING: COMMITTED TO THE FUTURE OF WELDING

Committed to the success of the welding industry

Collaborating with welding educators and trainers

Developing innovative and engaging solutions



Miller training solutions are developed to support your efforts:



Optimize instructor efficiency



Minimize material cost



Deliver real-time feedback



Enhance job candidate recruiting and screening



Reduce overall training time



Build a larger, more skilled workforce



Assess weld operator skill and performance



User-friendly

Classroom Training Solutions

MobileArc™ Augmented Reality Welding System

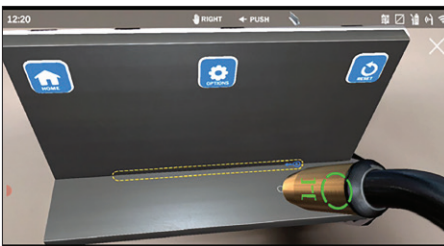
Affordable, easy-to-use welding simulation solution

An affordable, easy-to-use welding simulation tool designed to attract, engage and introduce students to welding through a hands-on augmented reality experience.



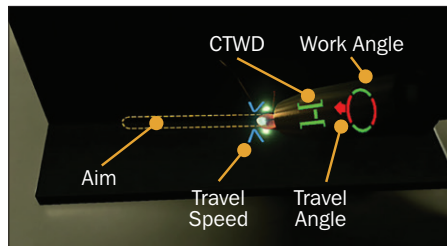
- Practice MIG welding on T-, lap and butt joints using 2F and 1G welding positions
- Highly portable, lightweight design makes transport easy for remote learning and recruiting events
- Easy setup and simple user interface allows for students to work independently, increasing instructor efficiency
- Real-time feedback is provided on users' technique to help correct errors, reinforce proper welding practices and accelerate skill advancement prior to live-arc welding
- Minimizes material cost by eliminating the need for wire, gas and metal coupons/workpieces

Watch MobileArc Demonstration



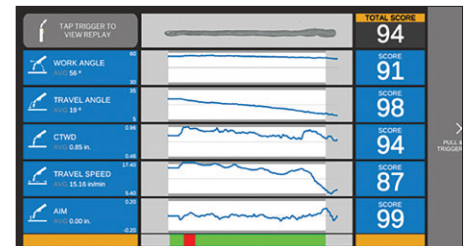
MobileArc™ display

- Simulator generates three-dimensional images of metal workpieces that replicate the view of the weld to give real-time feedback



Welding simulation screen

- Visual aids guide the user to achieve target parameters that are monitored when maintained or exceeded



Post-weld feedback screen

- User's performance is scored, graphed and recorded for playback

Classroom Training Solutions

AugmentedArc® Augmented Reality Welding System

Highly realistic multiprocess welding simulation solution

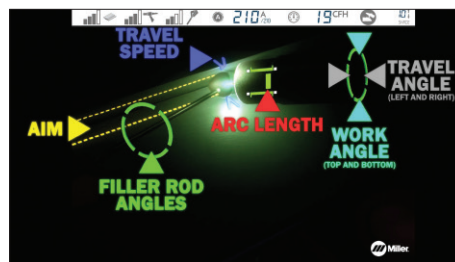
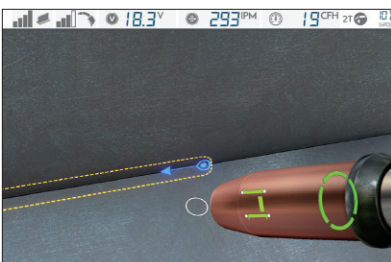
For beginner to advanced-level weld students, this system simulates multiple welding processes, blending real-world and computer-generated images into a unique, augmented reality environment. Features classroom connectivity, student history and reporting, Miller® and NCCER (National Center for Construction Education and Research) welding exercises, and the ability to create your very own exercises.

- Practice MIG, Flux-Cored, Stick and TIG welding on T-, bead on plate, butt, lap, pipe-to-plate butt pipe, v-groove with backing and v-groove without backing joints
- Available with FREE teacher software, a user-friendly and flexible LMS where instructors can create and manage their own welding curriculum
- Ability to view real-time results to track student progress
- Includes OpenBook™ GMAW, SMAW and GTAW theory content, quizzes and welding exercises
- Integrated with exercises for NCCER Welding Levels 1 - 2 curriculum
- Features Distance Learning Mode so the system can be placed at any remote location for home use or on-the-go learning



#951823

Watch AugmentedArc Demonstration



Score	Pass/Fail	Play	Stop	AR	View Log
90	Pass				
95	Pass				
87	Fail				
94	Pass				
98	Pass				
97	Pass				
95	Pass				
95	Pass				

AugmentedArc display

- The helmet's external optical sensor captures and sends images of coded devices and workpieces to AugmentedArc simulator
- Simulator generates three-dimensional images of metal workpieces, augmenting them into a real-world environment
- Display on simulator replicates the view inside helmet to give real-time feedback

Welding simulation screen

- Visual aids guide the user to achieve target parameters
- Adherence to pre-determined or custom welding parameters is monitored, with confirmation when maintained or alerts when exceeded
- Realistic arc sounds from internal helmet speakers accompany the visuals for a truly immersive experience

Post-weld feedback screen

- User's performance is scored, graphed and recorded for playback
- Performance feedback on various parameters is provided
- Video is stored and available for replay for student and instructor review via teacher software

Weld Lab Training Solutions

LiveArc™ Welding Performance Management System

Reality-based recruiting, screening and training solution

Ideal for lab training, the Miller® LiveArc welding performance management system provides both a simulation/pre-weld setup mode as well as a live-arc training mode, allowing the user to gain experience and build techniques in pre-weld exercises before seamlessly transitioning into real welding on GMAW, FCAW and SMAW processes.



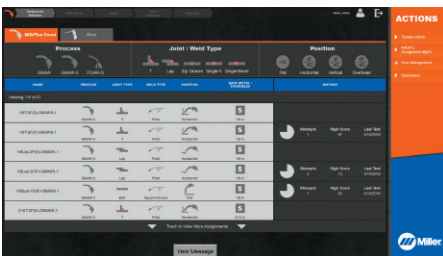
Motion Tracking Technology

Measures the operator's adherence to pre-set technique parameters using advanced motion-tracking technology. Cameras track the movement of LEDs embedded in the MIG SmartGun and SMAW SmartStinger; the system then delivers visual feedback on the operator's performance via the LiveArc system's main display.



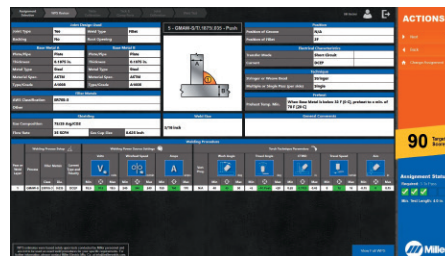
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Watch LiveArc Demonstration



Assignment selection screen

- Guides the user through a range of targeted exercises including a library of customized assignments entered by the instructor



Welding procedure specification (WPS) screen

- Guides the user through proper selection and preparation of materials
- Provides correct power source and wire feeder settings
- Provides target values and limits for various parameters
- Assignment parameters can be configured to suit the skill level (and scoring potential) of the user
- Displays instructor-determined target score and assignment completion criteria



Post-weld feedback screen

- Data is provided following tests in both simulation and live-arc modes along with performance feedback on various parameters

Weld Lab Product Offerings

Miller® offers preferred pricing on welding equipment and packages for educational institutions. If your high school, tech school, community college, or other educational facility is building a new welding lab – or upgrading an existing one – start with a brief questionnaire so a Miller representative can offer recommendations on how you can improve your weld training area. MillerWelds.com/productselector



Multiprocess Welding Solutions for GMAW, FCAW, SMAW, and GTAW

▶ **Education Discount Program:** Educational pricing for Welding and Safety Equipment and Filler Metals. Call your local distributor for special pricing.

Miller recommends



Innovation

Focused on optimizing quality, ease-of-use and cost

Collaboration

Partnering to meet customer needs

Trusted source

Deep product and application expertise to deliver success

Visit HobartBrothers.com for more information.

More than just filler metal... SOLUTIONS for your business.

Weld Lab Product Offerings

Miller® offers a wide range of personal protection and safety products for head, face, hand and body, including helmets, fume extraction, eyewear, respiratory solutions, welding jackets and gloves to protect the welder behind the hood and the environment they work in. Protect what matters most. [MillerWelds.com/safety](https://www.millerwelds.com/safety)



Ensure your students are prepped and outfitted with comfortable and fitted PPE.

Miller recommends:

- Classic Series Welding Helmet
- Classic FR Cotton Jacket
- Classic Safety Glasses
- Performance Gloves
- Jobsite Tool Bag



Building Future Welders

Miller® is committed to the future of welding and offers supportive resources for students, educators and professionals.

With innovative welding training solutions like MobileArc™, AugmentedArc® and LiveArc™ along with free training resources, you can enhance classroom learning, more easily manage your classroom curriculum, and help educate and train more welding students.

Teaching the next generation of welders begins with you – and Miller® is here to help.

