ITW Welding

Educational Resources and Product Guide

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 and health.

We're about the partnership and work. Our Products are designed with our users for manufacturing, fabrication, construction, aviation, motorsports, education, agiculture, 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, Niles 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, the company recognizes that the greatest "Power of Blue" is not in the products but in the talented people.

Miller®

The Power of Blue®

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 & Trainers**

Developing **Innovative & Engaging Solutions**

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Scholarships

Miller Electric Mfg. LLC Scholarships

https://www.aws.org/foundation/page/miller-electric-mfg-co-scholarship

Miller is dedicated to providing innovative business-building solutions and ideas, which are driven by the company's unique customer-intense focus.

The partnership between Miller Electric and AWS provides financial assistance to those individuals interested in pursuing a career in welding engineering technology, or welding engineering.

Instructor Resources

The Instructor web page is a useful tool for instructors to find information and resources for the classroom and the 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.

https://www.millerwelds.com/industries/welding-education-and-training

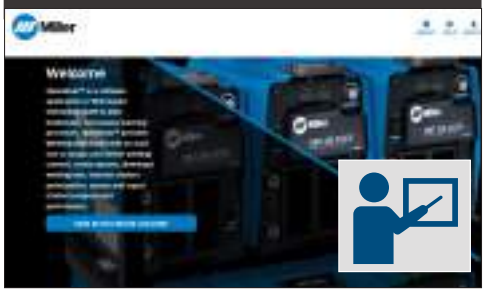
Want to Write a Successful Grant Applicaiton?

Are you a welding instructor or training program administrator looking for grant resources to fund new equipment or classroom upgrades? Get the free Grant Assistance Tool today.

Grant Assistance Tool

Order Posters for your classroom.

OpenBook™ an easy tool to assign and deliver welding content.



Presentations and Quizzes
Enhances OpenBook experience for classroom review.

Miller 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 be utilized with Miller Training Solutions like AugmentedArc™ and LiveArc™.

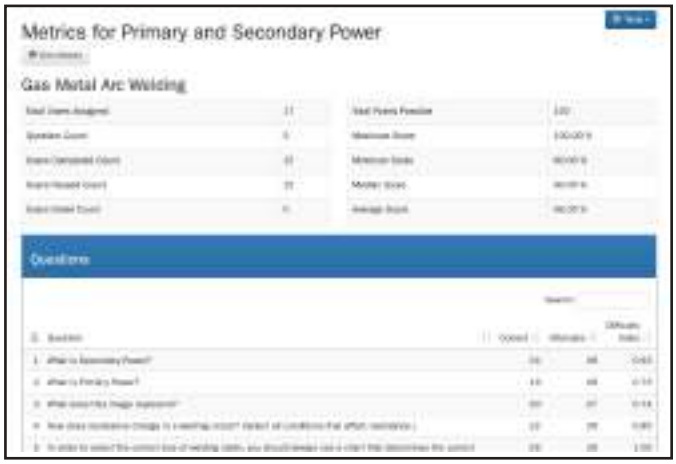
FREE TEACHING MATERIAL
Ideal for High School, Post-Secondary, and Industiral Welding workforce training.

Customize Your Classroom

- Implement materials that fit your curriculum and learning objectives, including:
  - e-Learning modules
  - Weld lab activities
  - Course builder
  - Quiz builder
  - Lab builder
- 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



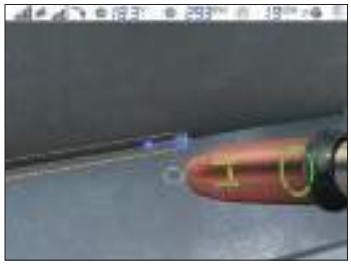
FREE sign up link https://openbook.millerwelds.com/

Classroom Training Solutions

AugmentedArc™ Augmented Reality Welding System

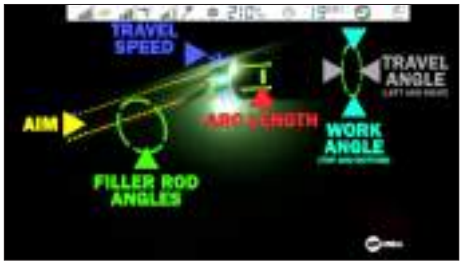
The industry's most realistic welding simulation system

The AugmentedArc system improves the efficiency and economy of classroom education with augmented reality technology that's ideal for beginner and intermediate-level students. Users wear a specially designed helmet that shows them images of the real world, augmented with computer-generated images of metal workpieces, weld arcs and weld beads. The result is a simulation that closely resembles live-arc welding — without using an actual arc or consuming wire, shielding gas or coupons.



AugmentedArc display

- 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 graphical 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 inside 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

FREE Teacher Software (no fees for upgrades)

- Teacher software is a user-friendly and flexible learning management system (LMS) that allows instructors to manage courses, content and students, and maximizes the usefulness of AugmentedArc welding simulators.
- Create and manage your own welding curriculum
  - Create quizzes, theory and welding simulation exercises
  - Use pre-developed exercises or fully customize your own exercise parameters, technique and scoring criteria
  - Offline mode allows you to manage the content from anywhere
- Manage student progress
  - Review the complete history and detailed results of student activities
  - View real-time results of welding simulations
  - View statistics and download reports for individual students or entire

Weld Lab Training Solutions

LiveArc™ Welding Performance Management System

The industry's most complete live arc welding training system

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.

Assignment selection screen
- Guides the user through a range of targeted exercises
- Includes a library of assignments designed by Miller and the flexibility to configure customized assignments
- Offers assignment completion status, history summary and easy access to detailed performance history data

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
- Performance feedback on various parameters is provided
- All test data is stored and allows for monitoring and evaluation

Weld Lab Product Offerings

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

Multiprocess Machines

Dynasty® 280 DX with CV
(951799)
Processes: MIG, AC/DC TIG, Pulsed TIG, Stick, Air Carbon Arc, and Flux-Cored

Multimatic® 255
(951767)
Processes: MIG, Pulsed MIG, Flux-Cored, DC Stick, DC Lift-Arc TIG, and Pulsed TIG

XMT® 350 MPa with Feeder
(907366)
Processes: MIG, Pulsed MIG, Stick, TIG, Flux-Cored, Air Carbon Arc Cutting & Gouging

MIG Machines

Millermatic® 211
(907614)
Processes: MIG and Flux-Cored

Millermatic® 255
(951766)
Processes: MIG, Flux-Cored and Pulsed MIG

Invision™ 352
(951411)
Processes: MIG, Flux-Cored, Pulsed MIG and Air Carbon Arc Gouging

Hobart® Filler Metals

Hobart 418
Stick Electrode

Provides low-hydrogen, x-ray quality welds with self-peeling slag and low spatter. Excellent arc starts and re-starts. **E7018**

Hobart 335A
Stick Electrode

Superior arc drive for deep joint penetration. Ideal for galvanized, dirty, or coated metals. **E6011**

Hobart 610
Stick Electrode

Delivers consistent, superior arc control without fingernailing — from the first electrode to the last. Excellent vertical down capabilities. **E6010**

FabCO® Excel-Arc™ 71
Gas-Shielded Flux-Cored Wire
Low-hydrogen, high-penetrating weld deposit, along with best-in-class operability and easy slag removal. **E71T-1**

Fabshield® XLR-8
Self-Shielded Flux-Cored Wire
Excellent mechanical properties within a wide range of heat inputs. Usable for AWS D1.8 Demand Critical Welds. **E71T-8**

Quantum Arc™ 6
Solid Wire

Features high deoxidizer levels to weld through light rust or mill scale. Excellent wetting characteristics and feedability. **ER70S-6**

Keeping You and Your Students Safe

Head and Face

Classic Series

Helmets for the value minded welder. Models feature a 5.15 sq. in. viewing area, variable lens shades, industry-leading graphics and auto-on/off circuitry. Backed by Miller's 2 year warranty.

Hand and Body

Classic Cloth Apparel

Protect your welders with preshrunk, flame-resistant garments that features finished hems and reinforced stitching for enhanced durability. Barracuda style stand-up collar provides necessary neck protection. Available in jackets, sleeves, cape sleeves, bibs and aprons.

MIG (Lined)

TIG

Work

Performance Gloves

Three-dimensional pattern provides an excellent fit, resulting in unprecedented comfort and dexterity. Premium materials enhance wear, extending glove life.

Weld Fume

FILTAIR 130

FILTAIR 4000

FILTAIR Capture 5

FILTAIR SWX

Centralized FILTAIR® Fume Extraction

The complete line Miller FILTAIR fume extractors are designed specifically for welding – drawing weld fumes away from the welder's breathing zone and keeping your facility clean. We offer many types of Fume Extraction equipment to best fit your environment and fume control needs.

N95 Disposable Masks

Features a flame retardant outer layer that offers necessary protection for welding applications.

For the full line of safety products, visit millerwelds.com/safety

ASK your Miller Distributor about our Student Discount on Miller PPE including helmets!

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