

VRTEX[®] 360

VIRTUAL REALITY ARC WELDING TRAINER

BLENDING TRAINING SOLUTIONS FOR WELDING EDUCATION

The VRTEX[®] systems are virtual reality arc welding training simulators. These computer based training systems are educational tools designed to supplement and enhance traditional welding training. They allow students to practice their welding technique in a simulated and immersive environment. The VRTEX systems promote the efficient transfer of quality welding skills and body positioning to the welding booth while reducing material waste associated with traditional welding training. The combination of realistic puddle, arc welding sound, and real time feedback tied to the welder's movement provides an exciting, hands-on training experience.

The VRTEX 360 is a best-in-class, advanced level welding training system. It is designed to provide a full featured, expandable platform in an easy to use and engaging welding training tool. The VRTEX system is ideal for basic to advanced welding training, as a testing, recruitment and engagement tool for educational and industry and for preparation for advanced level evaluation for instructors. The VRTEX 360 is constantly on the move incorporating additions for your training purposes each year!



BENEFITS

FLEXIBILITY

- » Multiple welding processes and positions
- » Variety of joint configurations
- » Instructor tools allow modification based on preferred welding program and style

INNOVATION

- » Realistic appearance of welding puddle and welding sounds
- » Magnetic tracking system provides accurate measurements for student evaluation

CLASSROOM PERFORMANCE

- » Visual cues give real-time technique feedback
- » Record, archive and verify student work and performance

CONSUMABLE AND ENVIRONMENTAL SAVINGS

- » No welding consumables, wire or waste
- » Track savings with the Weldometer™

FEATURING

- » **Supports All Out of Position Welds** from flat, horizontal, vertical to overhead, the VRTEX 360 supports all position welding and can be ready in a matter of minutes.
- » **User Machine Interaction** provides equipment and procedural set-up using a touchscreen display for movement through the simulation software. VRTEX 360 and VRTEX Mobile supported functionality is mirrored to make transfer of interaction seamless between the systems.
- » **Dedicated Welding Gun and Stinger** provides tactile feedback which adds realism to the simulation. The VRTEX 360 stinger device retracts at the rate a real stick electrode would melt off to simulate the melting of a real electrode.
- » **Tabletop Coupon Stand** allows the VRTEX 360 welding coupons to be placed in multiple positions with or without the adjustable table to simulate real welding applications.

LINCOLN[®]
ELECTRIC



VRTEX 360 WELDING MACHINE COMPONENTS AND SPECIFICATIONS

Computer

- » Windows® 7 Professional
- » Intel® Core i5 Quad Processor
- » 4 GB 1333 MHZ DDR3 Memory
- » 60 GB Solid State Hard Drive

Software

- » VRTEX welding simulation software
- » THEORY Function explains and defines elements within the virtual environment
- » Virtual locations: Weld Booth, Pipe Processing Plant, Desert Base, Ironworks Construction Site, Motorsports Garage (optional with Upgrade 2)



Monitor & Speakers

- » 17 in. LCD Touchscreen Monitor with built-in speakers

VRTEX 360 Stand

Welding stand with independent table and arm height adjustment offers flexibility and supports multi-position welding. 90, 45 and 0 degree arm positions allow for 2G, 5G and 6G pipe welding

VRTEX 360 Stinger and Gun

VRTEX 360 gun is based on the Magnum® 300 welding gun; VRTEX Stinger device retracts at rate of electrode melt off; Simulates SMAW, GMAW, FCAW-S and FCAW-G

- » SMAW
 - E6010 (Fleetweld® 5P+)
 - E6013 (Fleetweld 37)
 - E7018 (Excalibur® 7018 MR™)
- » GMAW
 - Short Arc: SuperArc® L-56®, 0.035 in. (0.9 mm)
 - Axial Spray: SuperArc L-56, 0.045 in. (1.1 mm)
 - Pulse: SuperArc L-56, 0.045 in. (1.1 mm)
 - STT®: SuperArc L-56, 0.045 in. (1.1 mm)
- » FCAW
 - Gas-Shielded: UltraCore® 71A85, 0.045 in. (1.1 mm)
 - Self-Shielded: Innershield® NR®-232, 5/64 in. (2.0 mm)

Language Support - English, French, German, Spanish, Turkish, Japanese, Chinese (Mandarin), Portuguese (Brazilian), Russian, Korean, Hindi and Arabic

Welding Coupons - Tee joint, Flat plate, Groove joint, 6 in. diameter schedule 40 pipe, 2 in. diameter XXS pipe, and Lap joint (available only with Upgrade 5)

Helmet - Monoscopic output with a large field of view





SET-UP AND INSTALLATION REQUIREMENTS:

- » The VRTEX system requires a space of 8 ft. L x 8 ft. D x 8 ft. H (2.4 m x 2.4 m x 2.4 m).
- » When operating multiple units in one location, alternate between standard and alternate frequency systems (unique part numbers are identified).
- » The VRTEX system is not designed for operation in harsh environments. Recommendations are listed in the instruction manual.
- » Avoid magnetic fields, conductive and high frequency objects and processes.
- » An uninterruptable power supply (UPS) may be required for protection of the system from power irregularities and/or disruptions.

VRTEX 360 EXTENSIONS™ SOFTWARE UPGRADE PROGRAM

This upgrade program ensures the development of new and exciting features and functionality to the industry leading welding training simulator. Expand functionality, enhance instructor tools and enrich operational enhancements.

AD2435-2: VRTEX 360 Upgrade 2

- » AWS virtual bend test for multi-pass pipe and groove welds and a virtual bend test certificate upon successful completion
- » Advanced scoring modules based on the American Welding Society D1.1 or ASME
- » Motorsports garage virtual welding environment
- » Instructor panning view function

AD2435-3: VRTEX 360 Upgrade 3

- » GMAW aluminum welding support including visual and audio sound differences
- » Shielding gas and THEORY additions specific to aluminum welding
- » Video replay for instructor or student review and analysis on the welding process
- » Entry, intermediate and advanced welder learning levels are available from the instructor view

AD2435-4: VRTEX 360 Upgrade 4

- » GMAW stainless welding upgrade includes multiple tolerance levels, equipment settings, discontinuities plus visual and sound differences
- » Expanded THEORY functionality
- » Demo Weld functionality allows the instructor or student to view an example weld or a demonstration of proper technique, prior to a weld being made
- » Expanded support includes 0.052 in (1.3 mm) solid wire and SMAW on thinner material

AD2435-5: VRTEX 360 Upgrade 5

- » New lap weld coupon with support for mild steel, aluminum and stainless steel
- » Ability to provide a score on a welding pad to increase effectiveness and provide a numerical assessment of skill level
- » Additional GMAW-P, pulse spray welding modes for use on mild steel



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VRTEX 360 Orderable Items

VRTEX 360 System	AD2433-1 – VRTEX 360 Standard Frequency AD2433-2 – VRTEX 360 Alternate Frequency
VRTEX 360 One-Pak[®]	AD2434-1 – VRTEX 360 Standard Frequency One-Pak AD2434-2 – VRTEX 360 Alternate Frequency One-Pak VRTEX 360 One-Pak includes VRTEX 360 system, upgrades 2, 3, 4, 5 curriculum, project based lesson for student and instructor
VRTEX 360 New Lessons in Arc Welding	K3205-1 – SMAW Edition K3206-1 – GMAW/FCAW Edition VRTEX 360 curriculum contains spiral bound guide and DVD videos
VRTEX Project Based Lesson	K4057-1 K4058-1 Project Based Lessons for the VRTEX Welding Training Systems is a workbook containing 15 lessons that can be implemented with a welding curriculum. K4057-2 – Project Based Lessons Instructors Guide

VRTEX 360 Operating and Shipping Information

Input Power	115/230/1/50/60
Input Current	4 A at 115, 2A at 230
Net Weight	Machine: 315 lbs (143 kg); Stand: 105 lbs (48 kg)
Dimensions (H x W x D)	Machine: 66 x 30 x 42 inches (1677 x 762 x 1067 mm) Stand: 80 x 39 x 47 inches (2032 x 991 x 1194 mm)
Packaged Weight	Crate – machine and stand: 850 lbs (386 kg)
Packaged Dimensions (H x W x D)	Crate: 72 x 48 x 72 inches (1829 x 1220 x 1829 mm)

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

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

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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 VRTEX@lincolnelectric.com
- » Online Tips and Tricks (www.VRTEX.com)
- » Warranty and Service Support
- » Train-the-Trainer programs held regularly in facilities or on-site training and set-up can be purchased.



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