



# VIRTUAL TRAINING - REAL RESULTS

ACHIEVE A HIGHER STANDARD OF WELDING PERFORMANCE WITH VRTEX®

**LINCOLN**  
**ELECTRIC**

# Experience Welding Training on a Whole New Level

Lincoln Electric's VRTEX® virtual reality arc welding trainers provide a powerful, cutting-edge solution for cultivating welding talent quickly and resourcefully. From superior graphics creating the most realistic and responsive welding puddles available, to exceptionally accurate sounds and movements, what can be learned virtually with VRTEX® seamlessly transfers into real-world, hands-on welding training.



## VRTEX® Transport™

- Uni-gun™ device is used for SMAW, GTAW, GMAW and FCAW welding. TIG filler metal and adaptive current foot pedal included
- Practice flat, horizontal and vertical welds
- K4603-1 (Pallet) / K4603-3 (Crate)

## VRTEX® Transport™ + Dual User

- Uni-gun device is used for SMAW, GTAW, GMAW and FCAW welding. TIG filler metal and adaptive foot pedal included
- Two of each device are included
- Dual stands allow for training two welders at a time on one machine
- K4633-1 (Pallet) / K4633-3 (Crate)

## VRTEX® 360 Single User

- Retractable SMAW stick stinger, GMAW/FCAW gun and GTAW TIG torch, filler metal and adaptive foot pedal devices realistically simulate the look, feel and action of actual guns and torches
- Practice flat, horizontal, vertical and overhead 5G and 6G
- K4601-1 (Pallet) / K4601-3 (Crate)

## VRTEX® Engage

- SMAW, GMAW and FCAW-S
- Includes universal welding handle with attachments for both a welding gun and a manual welding stick electrode holder
- K4299-1



# Why Choose VRTEX®?

Build confidence, reduce mistakes and train to weld in a variety of situations and orientations. VRTEX® creates a safe environment in addition to saving on material costs.

Practice repetitive welding without the time needed to tack plate and toss scrap.

## NEW! Dual User Feature

Exclusive to Lincoln Electric!

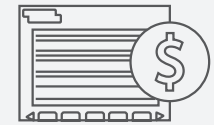


## VRTEX® 360+ Dual User

- Retractable SMAW stick stinger, GMAW/FCAW gun and GTAW TIG torch, filler metal and adaptive foot pedal devices realistically simulate the look, feel and action of actual guns and torches
- Two of each device are included
- Dual stands allow for training two welders at a time on one machine
- K4602-1 (Pallet) / K4602-3 (Pallet)



**Reduce Training Costs**



**ROI Calculator**

Track material usage on every weld with the VRTEX® Weldometer™



**42% Certification Rate Increase**



**23% Faster Training**



**Safer**

No metal, sparks, heat, gas or fumes



**Mobile Learning**

\*Average increase using virtual reality equipment, according to Iowa State University study.

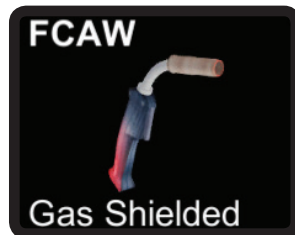
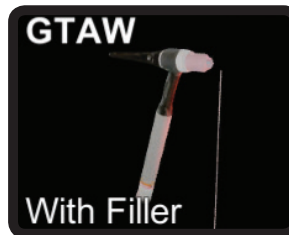
# Welding Processes and Materials

Use VRTEX® to teach welders of varying skill levels to weld using the most common welding processes and materials.

## Simulated Processes:

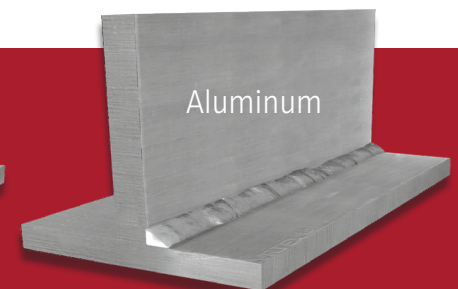
**NEW!**

GTAW with and without filler metal exclusively on VRTEX® Transport™ and VRTEX® 360 and 360+



## Realistic Simulated Materials:

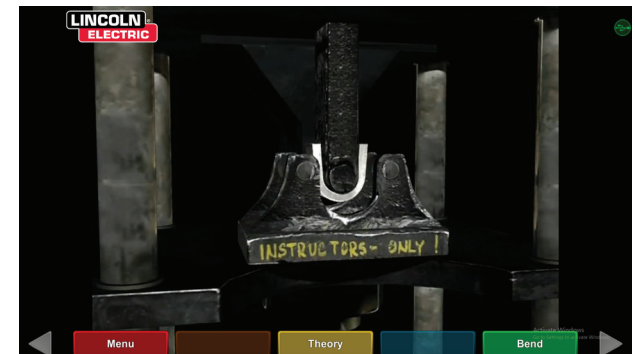
With stunningly realistic look and feel, embedded with actual welding sounds for each alloy.



# Learn and Improve Welding Skills With A More Realistic and Valuable Welding Training Experience:

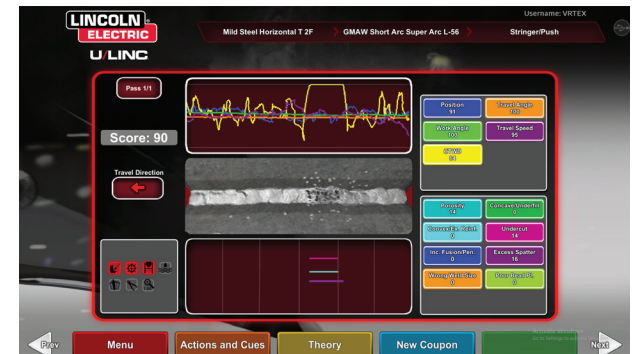
## Life-like Welding Environment:

- Realistic puddle and actual welding sound helps welders learn to respond and adjust welding technique
- Simulates sparks, slag, grinding and weld cooling
- Welding discontinuities appear when improper welding technique is used
- Virtual bend test provides results instantly and reveals what causes a weld to pass or fail



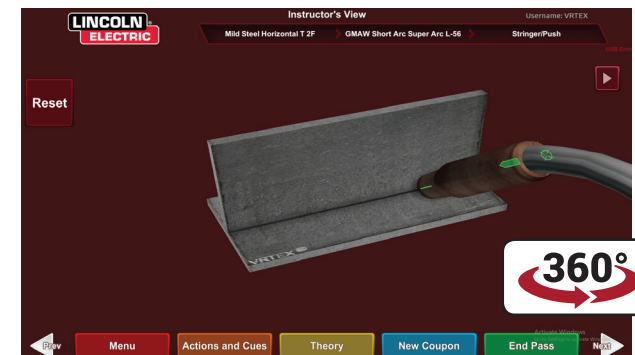
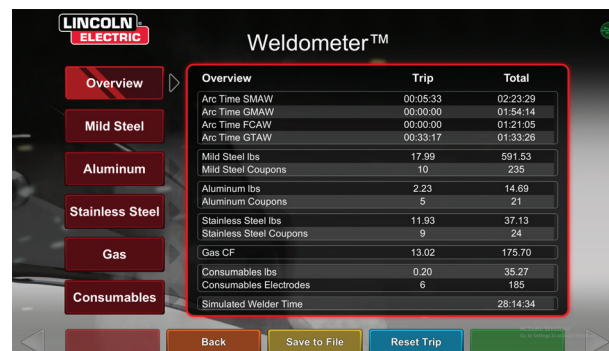
## Reinforcement for Students:

- Demos of successful welds
- Replicates proper machine set-up using a Welding Procedure Specification. Students must select gas type, process, gas flow, amperage/voltage and wirefeed speed
- Tracks and scores key weld parameters including work angle, travel angle, travel speed, distance and position



## Support for Welding Instructors:

- Encourages more consistent feedback than traditional training
- Replay mode (in multiple views) helps instructors and welders identify what went wrong or well
- Intuitive software program designed to bridge welding curriculum with hands-on training
- Instructors can view and rotate coupon during welding to check for proper angles



# VRTEX<sup>®</sup> Comparison Chart

Processes/ Transfers	Engage	Transport™	Transport™+	360	360 +
GMAW - Short Arc	X	X	X	X	X
GMAW - Axial Spray	X	X	X	X	X
GMAW - Pulse	X	X	X	X	X
FCAW - Gas-Shielded		X	X	X	X
FCAW - Self-Shielded	X	X	X	X	X
SMAW - E6013	X	X	X	X	X
SMAW - E7018	X	X	X	X	X
SMAW - E6010		X	X	X	X
GTAW with Filler Metal - <b>NEW!</b>		X	X	X	X
GTAW without Filler Metal - <b>NEW!</b>		X	X	X	X

Languages	Engage	Transport™	Transport™+	360	360 +
English	X	X	X	X	X
Spanish	X	X	X	X	X
German	X	X	X	X	X
French	X	X	X	X	X
Russian	X	X	X	X	X
Portuguese	X	X	X	X	X
Polish		X	X	X	X
Japanese		X	X	X	X
Chinese		X	X	X	X
Turkish		X	X	X	X

Positions	Engage	Transport™	Transport™+	360	360 +
2F	X	X	X	X	X
3F	X	X	X	X	X
4F				X	X
5F (Pipe on Plate Only)				X	X
1G	X	X	X	X	X
2G	X	X	X	X	X
3G		X	X	X	X
4G				X	X
5G				X	X
6G				X	X

Coupons	Engage	Transport™	Transport™+	360	360 +
Practice Plate	X	X	X	X	X
Pad	X	X	X	X	X
Lap Joint		X	X	X	X
Tee Joint	X	X	X	X	X
Groove 3/8 in. (9.5 mm)	X	X	X	X	X
Groove on 2 in. XXS Pipe (50 mm)				X	X
Groove on 6 in. Sch 40 Pipe (150 mm)				X	X
Pipe on Plate				X	X

Technique	Engage	Transport™	Transport™+	360	360 +
Push	X	X	X	X	X
Drag	X	X	X	X	X
Straight Stringer	X	X	X	X	X
Weave	X	X	X	X	X
Whip		X	X	X	X

Materials	Engage	Transport™	Transport™+	360	360 +
Mild Steel	X	X	X	X	X
Aluminum		X	X	X	X
Stainless Steel		X	X	X	X



Features	Engage	Transport™	Transport™+	360	360 +
Discontinuities shown in the weld and scoring	X	X	X	X	X
Scores travel speed, work angle, travel angle, contact tip to work distance, and aim	X	X	X	X	X
Free two-day training at the manufacturer site	X	X	X	X	X
Multi-Pass Welds	X	X	X	X	X
Real Welding Sounds	X	X	X	X	X
Instant Scoring/Performance Feedback	X	X	X	X	X
Theory	X	X	X	X	X
Demo Welds	X	X	X	X	X
Replay Mode	X	X	X	X	X
Lesson Mode - Lessons include Welding Standards, Measurement, Safety, Principles of Welding	X	X	X	X	X
Visual Cues	X	X	X	X	X
Tolerance Levels - User Customization		X	X	X	X
Bend Test				X	X
Restarts (Tie-ins)				X	X
Multiple Users at Once			X		X
Learning Levels	X	X	X	X	X
Additional Score Modules - D1.1 and ASME				X	X

Virtual Environments	Engage	Transport™	Transport™+	360	360 +
Pipe Processing Plant	X	X	X	X	X
Motorsports Garage	X	X	X	X	X
Construction Site	X	X	X	X	X
Military Base		X	X	X	X
Weld Booth				X	X
Shipyards				X	X





For more product information and specifications,  
visit [lincolnelectric.com/VRTEX](http://lincolnelectric.com/VRTEX) or contact [VRTEX@lincolnelectric.com](mailto:VRTEX@lincolnelectric.com)



#### 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.

Publication MC18-54 | Issue Date 08/19

©Lincoln Global Inc. All Rights Reserved.

All trademarks and registered trademarks are the property of their respective owners.

**The Lincoln Electric Company**  
22801 St. Clair Avenue · Cleveland, OH · 44117-1199 · U.S.A.

[www.lincolnelectric.com](http://www.lincolnelectric.com)