VRTEX® 360

VIRTUAL REALITY WELDING SIMULATOR

Shown:
K4601-1

EXPERIENCE WELDING TRAINING ON A WHOLE NEW LEVEL

Lincoln Electric's VRTEX® 360 virtual reality arc welding trainers provide a robust, 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® training systems seamlessly transfers into real-world, hands-on welding training.

- Improves efficiency by accelerating students' progress and reducing the time required to up-skill, ultimately boosting student confidence quickly
- Reduces costs by eliminating the use of consumables, metal coupons, gas and electricity
- Increases safety with no metal, sparks, heat, gas or fumes
- Allows for more practice which creates efficiency and a quicker route to certification

What's Included »

- 22 in. Custom Touchscreen Monitor
- VR Headset
- VR Welding Devices
  - GMAW / FCAW – MIG Wire Welding Gun
  - SMAW – Retractable Stick Stinger
  - GTAW - TIG Torch and Filler with Adaptive Foot Pedal
- 7 Different Welding Coupons
- VRTEX® 360 Welding Stand for Welding Positions 0, 45-90
- Curriculum on a USB:
  - **K3205-1** First Edition - SMAW Welding Training Curriculum
  - **K3206-1** First Edition - GMAW/FCAW Welding Training Curriculum
  - **K4057-1** VRTEX Project Based Lesson 1 Student Workbook
  - **K4057-2** VRTEX Project Based Lesson 1 Instructor Guide
- Welding Procedure Specification Book for Proper Machine Set Up

Publication E16.03 | Issue Date 06/23

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KEY FEATURES

- Realistic puddle and actual welding sound helps welder learn to respond and adjust welding technique
- Simulates sparks, slag, grinding and weld cooling
- Welding discontinuities appear in weld and scoring when improper welding technique is used
- Virtual bend tests provide results instantly and reveal what caused a weld to pass or fail
- Replicates proper machine set-up using a Welding Procedure Specification. Students must enter the proper material type, process, gas flow and amperage / voltage / wire-feed speed with the ability for the instructor to change tolerances
- Tracks and scores key weld parameters including work angle, travel angle, travel speed, contact tip to work distance, aim and position
- Provides demos of successful welds
- The Weldometer™ tracks virtual consumables, base material and gas usage to assist with calculating the cost savings of VR training
- Replay mode helps instructors and welders identify what went wrong or well
- Coupons can be viewed and rotated during welding to check for proper angles. The Instructor-view enables the virtual weld to be rotated and viewed for evaluation
- Bypass Mode allows the user to quickly demonstrate a weld with or without WPS setup
- Built-in curriculum with Lesson Mode includes Welding Standards, Safety, Measurement and Principles of Welding

PRODUCT FEATURES

Simulated Processes

GMAW – Short Arc
GMAW – Axial Spray
GMAW – Pulse
FCAW – Gas-Shielded
FCAW – Self-Shielded
SMAW – E6013
SMAW – E7018
SMAW – E6010
GTAW with Filler Metal
GTAW without Filler Metal

Positions

2F/PB, 3F/PF, 4F/PD, 5F/PH (Pipe on plate), 1G/PA, 2G/PC, 3G/PF, 4G/PE, 5G/PH/PJ, 6G/H-L045/J-L045

Technique

Push, Drag, Straight Stringer, Weave and Whip

Joint Configurations/Coupons

Flat Plate Coupon
Tee Joint Coupon
Lap Joint Coupon
6 in. Diameter Pipe Coupon
2 in. Diameter Pipe Coupon
3 in. Pipe on 6 mm Plate Coupon
V-Groove Joint Coupon

Simulated Materials

Mild Steel, Stainless Steel and Aluminum

Languages

Available in 15 different languages: English, French, Spanish, German, Russian, Portuguese, Polish, Japanese, Chinese, Turkish, Finnish, Italian, Korean, Swedish and Norwegian

For more information on the benefits of the VRTEX® Virtual Training Platform, see document MC22-34.

JOINTS/POSITIONS

Type	Description	Apply to Welding Procedure			
		MMA SMAW	GMAW MAG/MIG	FCAW GAS/SS	GTAW TIG
Groove	Plate V-Butt	X	X	X	
	Pipe V-Butt	X	X	X	
Groove Positions	Plate – PA-1G, PC-2G, PF/PG-3G, PE-4G	X	X	X	
	Pipe – PC-2G, PH/PJ-5G, H-L045/J-L045-6G	X	X	X	
Fillet	T-Plate	X	X	X	X
	Pipe on Plate T-Angle	X	X	X	
Fillet Weld Positions Include	T-Plate – PB-2F, PF/PG-3F, PD-4F	X	X	X	(PB-2F)
	Pipe on Plate – PB-2F, PD-4F, PH/PJ-5F	X	X	X	
Lap	Plate Overlapped	X	X		X
Lap Positions Include	PB-2F (SMAW, GMAW, GTAW), PF/PG-3F (SMAW, GMAW), PD-4f (SMAW 6010)	X	X		(PB-2F)
Plate	PA-Flat	X	X	X	X

BASE MATERIALS

Type	Description	Apply to Welding Procedure			
		MMA SMAW	GMAW MAG/MIG	FCAW GAS/SS	GTAW TIG
Type of Material	Carbon Steel	X	X	X	X
	Stainless Steel		X		X
	Aluminum		X		X
Material Thicknesses	3 mm – 10 GA	X	X		X
	6 mm – 1/4 in	X	X	X	
	10 mm – 3/8 in	X	X	X	
	Schedule 40 and 80 Pipe	X	X	X	(PB-2F)

FILLER MATERIALS

Type	Description	Apply to Welding Procedure			
		MMA SMAW	GMAW MAG/MIG	FCAW GAS/SS	GTAW TIG
Stick Electrodes	Low Hydrogen E7018 – 2.4 mm – 3/32 in	X			
	Low Hydrogen E7018 – 3.2 mm – 1/8 in	X			
	Rutile E6013 – 3.2 mm – 1/8 in	X			
	Celulosic E6010 – 3.2 mm – 1/8 in	X			
Mild Steel Solid Wire	ER70S-6 – 0.9 mm – 0.035 in		X		
	ER70S-6 – 1.2 mm – 0.045 in		X		
	ER70S-6 – 1.4 mm – 0.052 in		X		
Flux-Cored Wire	E7IT-1 - 1.2 mm – 0.045 in			X	
	E7IT-8 – 2.0 mm – 5/64 in			X	
Stainless Steel Solid Wire	ER308LSI – 1.2 mm – 0.045 in		X		
Aluminum Solid Wire	ER4043 – 1.2 mm – 3/64 in		X		

FILLER RODS

Type	Description	Apply to Welding Procedure			
		MMA SMAW	GMAW MAG/MIG	FCAW GAS/SS	GTAW TIG
Carbon Steel	ER70S-6 – 1.6 mm – 1/16 in				X
Stainless Steel	ER308L – 1.6 mm – 1/16 in				X
Aluminum	ER4043 – 2.4 mm – 3/32 in				X
TIG (GTAW) Tungsten Electrode	Pure Tungsten / Thoriated Tungsten				X

POWER SOURCE FEATURES

Type	Description	Apply to Welding Procedure			
		MMA SMAW	GMAW MAG/MIG	FCAW GAS/SS	GTAW TIG
Power Source Settings	AC	X			X
	DC +/ DC – (Polarity)	X	X	X	X
	Voltage		(V/Trim)	X	
	Amperage	X			X
	Wire Feed Speed		X	X	
	Pulse		X		X
Arc Striking Modes	Scratching – Lift Arc	X			X
	High Frequency				X
Shielding Gases	CO_2		X		
	Argon-CO_2		X	X	
	Argon		X		X

ANALYSIS AND DIASGNOSTIC

Type	Apply to Welding Procedure			
	MMA SMAW	GMAW MAG/MIG	FCAW GAS/SS	GTAW TIG
Live Action Student Evaluation Report	X	X	X	X
Demo	X	X	X	X
Replay	X	X	X	X
Virtual Bend Test (Mild Steel, Grooved and 150 mm Pipe)	X	X	X	

RECOMMENDED ACCESSORIES

Oxy-fuel Cutting Software and Hardware
This unique feature enables students to also experience cutting in a virtual environment. Every aspect of the oxy-fuel cutting feature is designed to address real-world cutting applications – from setting up the torch to executing the cut
Order K4485-1

PRODUCT NUMBERS/ BUNDLE OPTIONS

K4601-1, VRTEX 360 Single User Virtual Reality Welding Training Simulator on a Pallet

K4601-3, VRTEX 360 Single User Virtual Reality Welding Training Simulator in Crate

TECHNICAL SPECIFICATIONS

Product	Part Number	Specification	Input	Description	Dimensions in (cm) "H x W x D"	Weight lbs (kg)
VRTEX® 360 Single	K4601-1 K4601-3	Power Supply	1 phase 115/230 V AC (50/60 Hz)	115-230 VAC	**Machine Dimensions:** 28 in x 20 in x 34 in (711 mm x 508 mm x 864 mm) **Stand Dimensions:** 80 in x 39 in x 47 in (2032 mm x 991 mm x 1194 mm)	**Machine Weight:** 150 (68) **Stand Weight:** 105 (48)
		Processor		Intel® Core i7		
		Chipset		Intel® Q370 Chipset		
		RAM		4GB DDR4-1600		
		Graphics Card		NVIDIA® GeForce GTX-1050Ti		
		Hard Disk		Solid State, 120 GB SSV NVMe, SATA 2.5 in.		
		Audio		Realtek® ALC888, High Definition Audio		
		Operating System		Windows® 10 Pro		
		Display Size		22 in.		
		Display Resolution		HD LCD 1920x1080		
		Port for External Display/Projector		HDMI		
		Vision Module Resolution		UltraSharp® Headset Resolution, 2160x2160 Per Eye		
		Operating Temperature		0-45º C		
		Humidity		10-80%		
		Remote Maintenance/Upgrades		Yes		
		Regulations		CE, CSA, RCM, EAC		
		Certifications		ISO 9001, ISO 14001		

For best welding results with Lincoln Electric® equipment, always use Lincoln Electric consumables. Visit www.lincolnelectric.com for more details.

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