

QUAKELOGIC

COMPACT WELDING

SIMULATOR



QL-WS200

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COMPACT WELDING SIMULATOR



DISCOVER PROFESSIONAL WELDING TRAINING IN A COMPACT DESIGN

QuakeLogic's QL-WS200 Compact Welding Simulator is a portable virtual reality welding training system designed to deliver realistic, hands-on welding experience in classrooms, workshops, and industrial training environments. Featuring real welding torches, immersive VR technology, and instant performance analysis, the QL-WS200 provides an effective and safe solution for developing practical welding skills.

- Improves training efficiency by providing real-time feedback, performance analysis, and instant evaluation to accelerate operator learning and skill development.
- Reduces training costs by eliminating the need for consumables, welding materials, shielding gas, electricity, and workpiece preparation.
- Enhances safety by enabling realistic welding practice without sparks, heat, fumes, or hazardous working conditions.
- Supports continuous hands-on practice through multiple welding processes, realistic welding scenarios, and comprehensive user evaluation to improve training performance and readiness.

What's Included »

- 15.6" Touchscreen Monitor
- Meta Quest 3 VR Headset
- VR Welding Devices SMAW – Arc welding torch / electrode holder
 - GMAW / FCAW – Gas welding torch
 - GTAW / TIG – TIG welding torch
- VR-Based Welding Mask
- Welding Simulator Machine
- Adjustable Virtual Work Stand
- Multiple Welding Joint Types V-groove butt pipe
- V-groove butt plates
- T-joint inner corner
- Pipe-to-plate T-joint
- Plate overlay
- Straight stitching
- Teacher Software
- User Evaluation and Reporting System
- PDF Report Export and Video Recording Features

KEY FEATURES

- Realistic VR welding environment and welding sound help users learn proper welding technique and improve control during training.
- Simulates key welding effects including arc behavior, slag, spatter, electrode melting, and weld defects.
- Welding errors are detected and evaluated when improper welding technique is applied.
- Virtual bend test provides instant pass/fail results and shows the defects that caused weld failure.
- Allows proper parameter setup including material type, welding process, shielding gas, voltage, amperage, wire speed, electrode/wire material, and diameter selection.
- Tracks and scores key welding parameters including travel speed, work angle, travel angle, arc length, welding position, and contact nozzle distance
- Provides visual hints before or during welding to guide the user with speed, angle, distance, and weld seam accuracy.
- Video recording and PDF reporting features support instructor review and performance tracking.
- Welding environments can be changed, including welding workshop, construction zone, maintenance center, and shipyard.
- Right-to-left and left-to-right welding support makes the system suitable for both right-handed and left-handed users.
- Teacher software allows user evaluation, multiple-choice exams, graphical comparison of up to 20 users, and remote access to training data.
- Optional robotic welding module allows an industrial robot in the virtual environment to be programmed for selected welding parts.

PRODUCT FEATURES

Simulated Processes

SMAW
GMAW
GTAW
FCAW
TIG

Positions

PA, PB, PC, PD, PF/PG, PE, PH/PJ, 1F, 2F, 3F, 4F, 5F, 1G, 2G, 3G, 4G, 5G, 6G

Technique

Straight Stitching, Flat, Zig Zag, Triangular Crescent, Circular Weld Seam, Right-to-Left and Left-to-Right Welding

Joint Configurations / Coupons

V-Groove Butt Pipe
V-Groove Butt Plates
T-Joint Inner Corner
Pipe-to-Plate T-Joint
Plate Overlay
Straight Stitching

Simulated Materials

Carbon Steel, Stainless Steel and Aluminum

Languages

Available in multiple languages: English, Spanish, German, French, Dutch, Korean, Polish, Portuguese and Arabic

For more information on the benefits of the QL-WS200 Compact Welding Simulator, please contact QuakeLogic.

JOINTS / POSITIONS

Type	Description	SMAW	GMAW	FCAW	GTAW / TIG
Groove Plate	V-Butt Plates	X	X	X	X
Pipe	V-Butt Pipe	X	X	X	X
Groove Positions	Plate – PA, PC, PF/PG, PE, 1G, 2G, 3G, 4G	X	X	X	X
Pipe Positions	PH/PJ, 5G, 6G	X	X	X	X
Fillet	T-Joint Inner Corner	X	X	X	X
Pipe on Plate	Pipe-to-Plate T-Joint	X	X	X	X
Fillet Weld Positions	PB, PD, PF/PG, 1F, 2F, 3F, 4F, 5F	X	X	X	X
Lap Plate	Plate Overlay	X	X	X	X
Straight Bead	Straight Stitching	X	X	X	X

BASE MATERIALS

Type	Description	SMAW	GMAW	FCAW	GTAW / TIG
Type of Material	Carbon Steel	X	X	X	X
Type of Material	Stainless Steel	X	X	X	X
Type of Material	Aluminum	X	X	X	X
Material Thicknesses	3 mm – 10 mm	X	X	X	X

FILLER MATERIALS

Type	Description	SMAW	GMAW	FCAW	GTAW / TIG
Electrode / Wire Material	Selectable Electrode Material	X			
Electrode / Wire Material	Selectable Wire Material		X	X	X
Electrode / Wire Diameter	Selectable Electrode Diameter	X			
Electrode / Wire Diameter	Selectable Wire Diameter		X	X	X
Shielding Gas	CO ₂		X	X	
Shielding Gas	Argon-CO ₂ Mixture		X	X	
Shielding Gas	Argon				X

POWER SOURCE FEATURES

Type	Description	SMAW	GMAW	FCAW	GTAW / TIG
Power Settings	Voltage Selection	X	X	X	X
	Amperage Selection	X	X	X	X
	Polarization (DC+/DC-)	X	X	X	X
Wire Settings	Wire Feed Speed Selection		X	X	X
Shielding Gas	CO ₂		X	X	
	Argon-CO ₂ Mixture		X	X	
	Argon				X

ANALYSIS AND DIAGNOSTICS

Type	SMAW	GMAW	FCAW	GTAW / TIG
Live Student Evaluation	X	X	X	X
Real-Time Visual Feedback	X	X	X	X
Graphical Performance Analysis	X	X	X	X
Video Recording	X	X	X	X
PDF Report Export	X	X	X	X
Replay / Welding Analysis	X	X	X	X
Virtual Bend Test (Optional Module)	X	X	X	X

OPTIONAL FEATURES & ACCESSORIES

OPTIONAL ROBOTIC WELDING MODULE

Expand the training capabilities of the QL-WS200 Compact Welding Simulator with the optional Robotic Welding Module. This feature enables users to program a virtual industrial robot using a teach pendant while practicing realistic robotic welding operations in a VR environment. Linear and circular motion programming, Dry Run simulation, adjustable robot speed, and multiple welding commands are supported.

TEACHER SOFTWARE

The licensed instructor software enables real-time monitoring of student performance, user management, graphical comparison of training results, multiple-choice examinations, and detailed welding performance reporting through Ethernet or wireless connectivity.

MACRO TEST FEATURE

The optional Macro Test Feature allows users to evaluate completed virtual welds through a detailed macro cross-section analysis after the welding operation. The system displays weld cross-sections at multiple points, analyzes key values such as heat input, filler penetration, root penetration, fusion line, and heat affected zone, while defect checks and numerical results can be reviewed and exported as PDF reports.

VR TRAINING EQUIPMENT

The system includes a Meta Quest 3 VR headset, realistic welding torches for SMAW, GMAW/FCAW, and GTAW/TIG, a VR welding mask, and a 15.6-inch touchscreen display, providing a complete and immersive welding training environment.

TECHNICAL SPECIFICATIONS

Specification	Description
Product	QL-WS200 Compact Welding Simulator
Dimensions	63 × 54 × 60 cm
Weight	30 kg
Power Supply	1 kW
Operating System	Windows
Processor	Intel® Core™ i5-12400F, 2.5 GHz
Graphics Card	NVIDIA® RTX 3060, 8 GB
Memory (RAM)	16 GB
Storage	500 GB SSD
Display Size	15.6" Touchscreen
Vision Technology	Virtual Reality (VR)
VR Headset	Meta Quest 3
VR Headset Capacity	128 GB
Resolution Per Eye	2064 × 2208
Refresh Rate	Up to 120 Hz
Viewing Angle	110°
External Display Support	HDMI
Connectivity	USB, Ethernet, HDMI
Audio	Integrated Audio System
Video Recording	Supported
Remote Maintenance	Supported
Software Updates	Supported
Warranty	2 Years

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About QuakeLogic:

- QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, and high-quality solutions to customers worldwide.

Our Commitment

- At QuakeLogic, we are committed to quality, innovation, and customer satisfaction. We build lasting partnerships by delivering reliable solutions and dependable support.

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Contact Us:

- For product information, quotations, technical support, or partnership opportunities, our team is ready to assist you with professional and timely service.

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