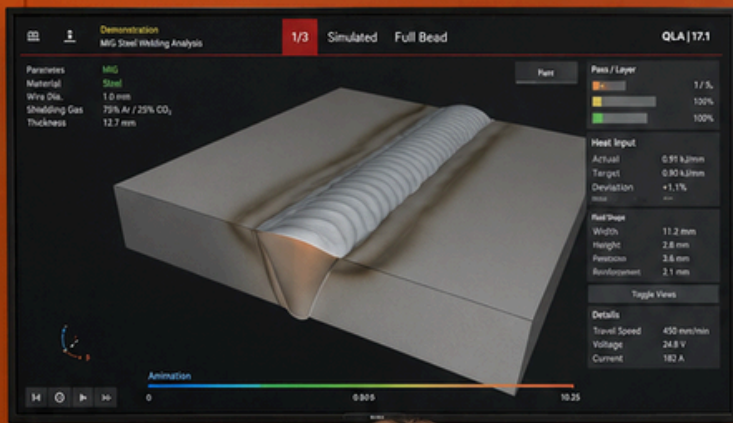




QL-Dual User Welding Simulator

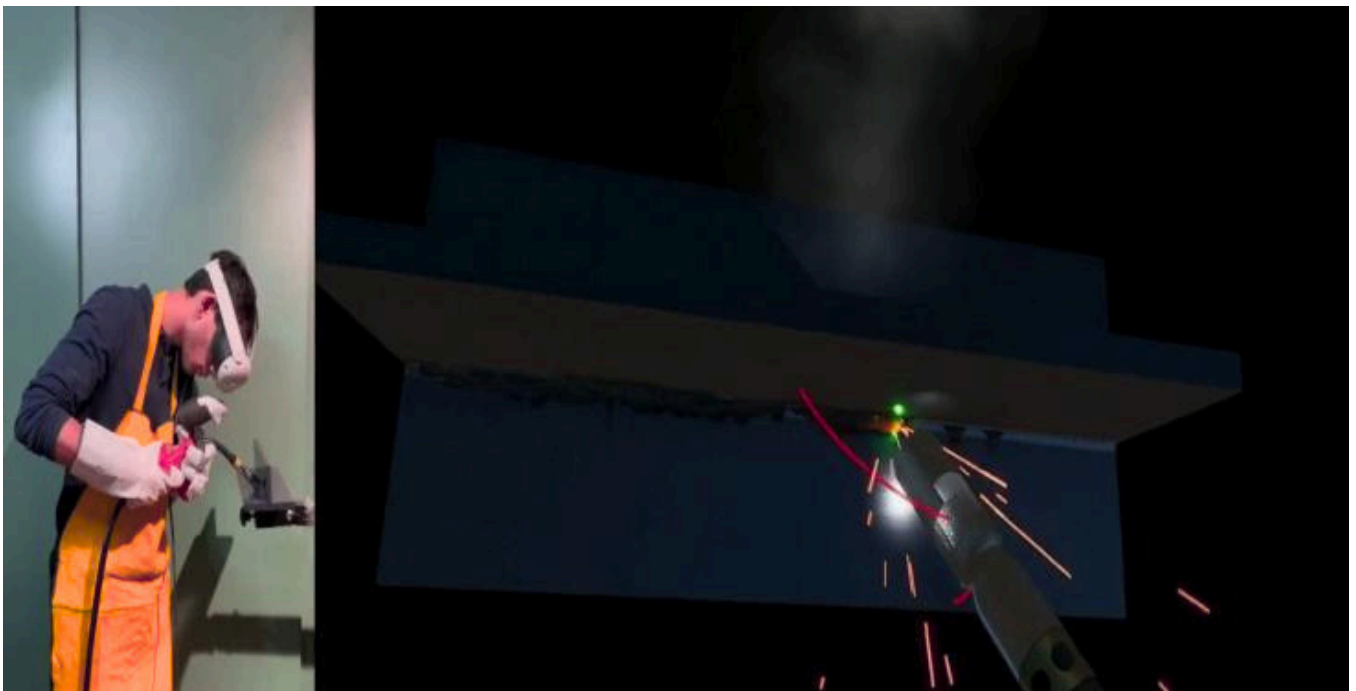
VIRTUAL REALITY-BASED DUAL-OPERATOR WELDING TRAINING SYSTEM



QL-Dual User Welding Simulator

AUTOMATIC CONCRETE COMPRESSION TESTING MACHINE

- The QL-Dual User Welding Simulator is a virtual reality-based welding training system designed for vocational, career, and technical education programs. The system allows students to practice welding in a safe and controlled virtual environment – without real arc exposure, fumes, consumable material waste, or workshop safety risks. Configured as a dual-user system, two welders can train simultaneously on one machine, each independently performing welding exercises using different processes, coupons, joints, welding positions, and Welding Procedure Specifications (WPS). Suitable for welding classrooms, vocational schools, correctional education programs, technical colleges, workforce development centers, and industrial training laboratories.



✓ Standard System Configuration:

- Each QL-Dual User Welding Simulator includes the following main components:

Component	Description
<ul style="list-style-type: none"> • Main Console Unit 	<ul style="list-style-type: none"> • Central simulator console with integrated touchscreen interface
<ul style="list-style-type: none"> • VR Headsets 	<ul style="list-style-type: none"> • 2 VR headsets for simultaneous dual-user training
<ul style="list-style-type: none"> • Base Stations / Cameras 	<ul style="list-style-type: none"> • 4 optical infrared tracking base stations / cameras
<ul style="list-style-type: none"> • External Displays 	<ul style="list-style-type: none"> • 2 external displays for student/instructor viewing
<ul style="list-style-type: none"> • Welding Device Sets 	<ul style="list-style-type: none"> • 2 complete welding device sets
<ul style="list-style-type: none"> • Welding Stand Sets 	<ul style="list-style-type: none"> • 2 welding stand sets for side-by-side dual-user operation
<ul style="list-style-type: none"> • SMAW Device 	<ul style="list-style-type: none"> • Retractable stick stinger simulator
<ul style="list-style-type: none"> • GMAW/FCAW Device 	<ul style="list-style-type: none"> • MIG/GMAW/FCAW gun simulator
<ul style="list-style-type: none"> • GTAW/TIG Device 	<ul style="list-style-type: none"> • TIG torch with filler rod capability
<ul style="list-style-type: none"> • Foot Pedal 	<ul style="list-style-type: none"> • Adaptive foot pedal device for GTAW/TIG training
<ul style="list-style-type: none"> • Software Platform 	<ul style="list-style-type: none"> • Training, scoring, instructor monitoring, replay, reporting, and student management software



✓ Dual-User Training Capability

- The system supports two students training at the same time on one machine. Dual welding stands allow two trainees to work side by side, while each student performs independent welding exercises using separate devices and training parameters.

Welding Processes

- Each trainee selects their own process independently

Coupons & Joints

- Different coupon types and joint configurations per user

WPS Settings

- Independent Welding Procedure Specification per trainee

Scoring & Results

- Separate scoring and performance tracking for each student

- This dual-user configuration increases classroom throughput and allows instructors to train two students simultaneously using one simulator unit.

✓ Supported Welding Processes

- The QL-Dual User Welding Simulator supports a comprehensive range of industry-standard welding processes.

01- SMAW / Stick Welding

02- GMAW / MIG Welding

03- FCAW / Flux-Cored Arc Welding

04- GTAW / TIG with Filler Metal

05- GTAW / TIG without Filler Metal

✓ GMAW / MIG Module Parameters

Parameter	Range / Options
• Wire Type	• Solid, flux-cored, aluminum wire
• Wire Diameter	• 0.8 mm, 1.0 mm, 1.2 mm, 1.6 mm
• Shielding Gas	• CO ₂ , argon mixture, argon
• Gas Flow	• Up to 25 L/min
• Wire Feed Rate	• Up to 10 m/min
• Voltage Range	• 12V – 32V
• Current Range	• 25A – 270A

- The GMAW/MIG module supports Short Arc, Axial Spray, and Pulse modes, with 2-step and 4-step control, CC/CV option, and DC+, DC-, and AC polarity selection. The system provides guidance for arc length, work angle, travel angle, and welding speed.

✓ FCAW, SMAW & GTAW/TIG Modules

FCAW Module

- Gas-Shielded FCAW
- Self-Shielded FCAW
- Flux-cored wire support

SMAW / Stick Module

- E6013, E7018, E6010 electrodes
- Sizes: 2.5 mm, 3.15 mm, 4.0 mm
- Current range: 50A – 240A
- Virtual electrode consumption & auto-replacement
- Rod clamping angles: 90°, 120°, 150°, 180°
- Real industrial-style stick stinger device

✓ FCAW, SMAW & GTAW/TIG Modules

GTAW / TIG Module

- TIG torch with filler rod capability
- GTAW with and without filler metal
- Filler rod sizes: 2.0 mm and 2.4 mm
- Adaptive foot pedal control
- Current range: 25A – 270A

Special GTAW Training Materials

- Copper
- Brass
- Nickel
- Titanium

✓ Welding Positions, Coupons, and Joints

- The system supports a broad range of plate, pipe, and out-of-position welding exercises to prepare students for real-world certification and industrial work.

Supported Welding Positions

- **Groove Positions**
- 1G, 2G, 3G, 4G, 5G, 6G
- **Fillet Positions**
- 1F, 2F, 3F, 4F, 5F, 6F
- Flat
- Horizontal
- Vertical
- Overhead

Practice Coupons and Joint Types

- **Joint Configurations**
- Butt, Lap, Fillet, Tee, Groove, Pad welds
- **Pipe Configurations**
- Pipe-to-pipe, Pipe to-plate, Pipe-on plate practice
- **Plate & Pipe Specs**
- 3/8 in. / 9.5 mm plate · 2 in. XXS pipe groove welds · 6 in. Schedule 40 pipe · Schedule 40 and Schedule 80 pipe welding

✔ Material Simulation & Welding Environment

- The simulator produces welding puddles, sparks, slag, grinding effects, dynamic welding sounds, welding discontinuities, and virtual bend test evaluation — all without real arc exposure or consumable material waste.

Supported Base Materials

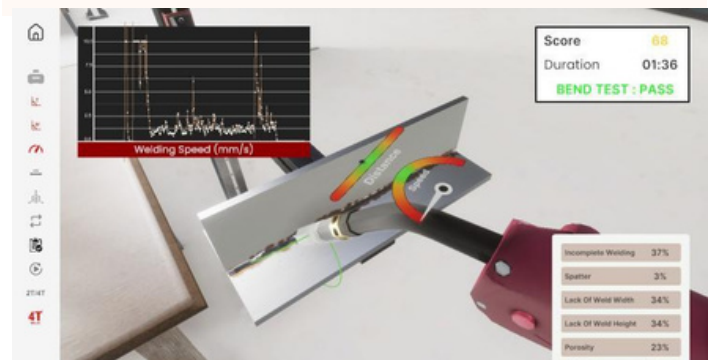
- Low Carbon / Mild Steel
- Stainless Steel
- Aluminum

Filler & Wire Materials

- Stick electrodes
- Mild steel solid wire
- Flux-cored wire
- Stainless steel solid wire
- Aluminum solid wire

Students must configure machine settings according to WPS requirements before welding practice. The simulator creates a fully immersive virtual welding environment:

- **Setup Simulation**
 - Process, material, coupon, gas, voltage, current, wire feed speed, polarity, and position selection
- **Visual Effects**
 - Welding puddle, sparks, slag, weld cooling, and weld discontinuities when improper technique is used
- **Audio Feedback**
 - Dynamic welding sounds and puddle behavior based on operator technique



✓ Instructor & Student Management

- The software platform supports instructor monitoring, student management, reporting, and training administration with a full suite of tools for both educators and learners

Instructor Features

- **Live Monitoring**
 - Real-time instructor viewing with 360-degree angles, zoom control, and view angle adjustment without disturbing the student's VR experience
- **Evaluation Tools**
 - Standardized objective feedback, student performance evaluation, administrator and trainer login, activity monitoring, and data backup
- **Coupon Inspection**
 - Ability to rotate and inspect the virtual coupon from any angle

Each student can have a unique username and password. Teachers can manage student names, trainer/admin login is available, and reports can be downloaded in PDF format.

- | | | |
|---|---|---|
| <ul style="list-style-type: none">• Account Management | <ul style="list-style-type: none">• Assessment Tools | <ul style="list-style-type: none">• Reporting |
| <ul style="list-style-type: none">• Individual student username and password login; add, edit, and delete student names | <ul style="list-style-type: none">• Homework facility, practical exam facility, and achievement ranking | <ul style="list-style-type: none">• PDF report download, offline access to trainer software functions |

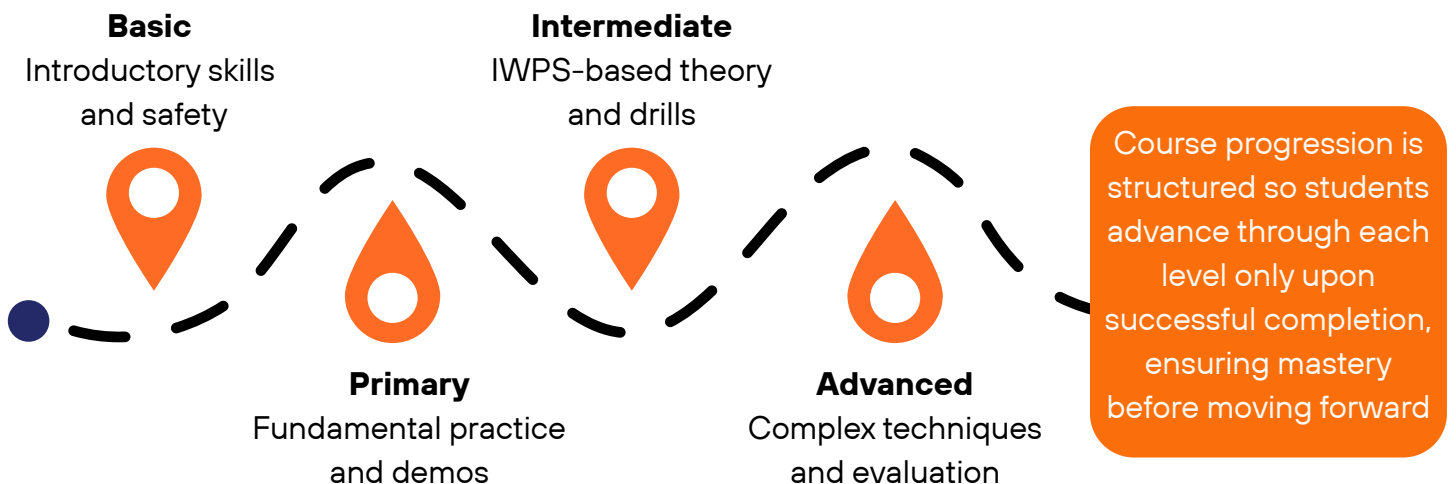
✓ Training Content, Curriculum & Virtual Environments

Built-In Training Features

- Built-in demo welds and lesson mode
- Welding principles and safety measures
- Technical demonstrations
- WPS-based training with theory integration
- Basic, primary, intermediate, advanced, and professional practice levels
- Course progression based on successful completion
- Ghost training guidance
- Practical exams and homework functions
- Training manuals and user manuals included

Virtual Work Environments

- The system includes immersive virtual 3D environments and industrial workpiece training scenarios:
- **Industrial Sites**
 - Pipe processing plant · Oil pipeline · Shipyard · Dockyard · Construction site · Factory/workshop
- **Specialized Venues**
 - Military base · Motorsports garage · Aviation hangar · Port welding · Freight yard container
- **Railway & Heavy Industry**
 - Railway wagon, Coach side/end panels, Cylindrical tank, Railway girder, Construction equipment



✓ Tracking System & Work Stand

- The system uses an optical infrared tracking system for accurate welding movement detection, combined with a purpose-built adjustable welding stand system.

• Optical Infrared Tracking Features

- Lighthouse Tracking
- Optical infrared lighthouse tracking with 4 base station/cameras for full arena coverage
- Movement Analysis
- Posture analysis, precise torch movement feedback, and welder movement tracking
- Calibration Modes
- Room tracking, floor tracking, room calibration, and floor calibration modes

• Welding Stand System

- Dual Stand Sets
- Two welding stand sets for side-by-side dual user operation
- Height Adjustment
- Metallic flexible work stand with height adjustment up to 7 feet using LM guide integration for smooth operation
- Position Flexibility
- Supports multiple welding positions and exercise configurations

✓ MSystem Hardware Specifications

Hardware & Computing Specifications

Item	Specification
• Technology	• Virtual Reality
• Viewing Experience	• 360-degree 3D immersive VR
• Touchscreen Display	• Integrated, minimum 15 inches
• RAM	• Minimum 16 GB
• Storage	• Minimum 1 TB

✓ MSystem Hardware Specifications

Hardware & Computing Specifications

Item	Specification
• VR Headsets	• 2
• Base Stations / Cameras	• 4
• Console Unit	• 1
• External Displays	• 2
• Torch Sets	• 2
• Welding Stand Sets	• 2
• Torch Sets	• Optical infrared lighthouse tracking

✓ Electrical Configuration,

- Final electrical configuration shall be confirmed according to the installation site requirements before delivery.

Electrical Configuration

The system can be supplied in a U.S. compatible electrical configuration:

120V / 60Hz

Standard U.S. residential and light commercial

Electrical Configuration

The system can be supplied in a U.S. compatible electrical configuration:

208/240V / 60Hz

Industrial and heavy commercial configuration

✓ Installation, Training & Support

Delivery & Installation

- Full delivery, installation, and commissioning at the installation site

Operator Training

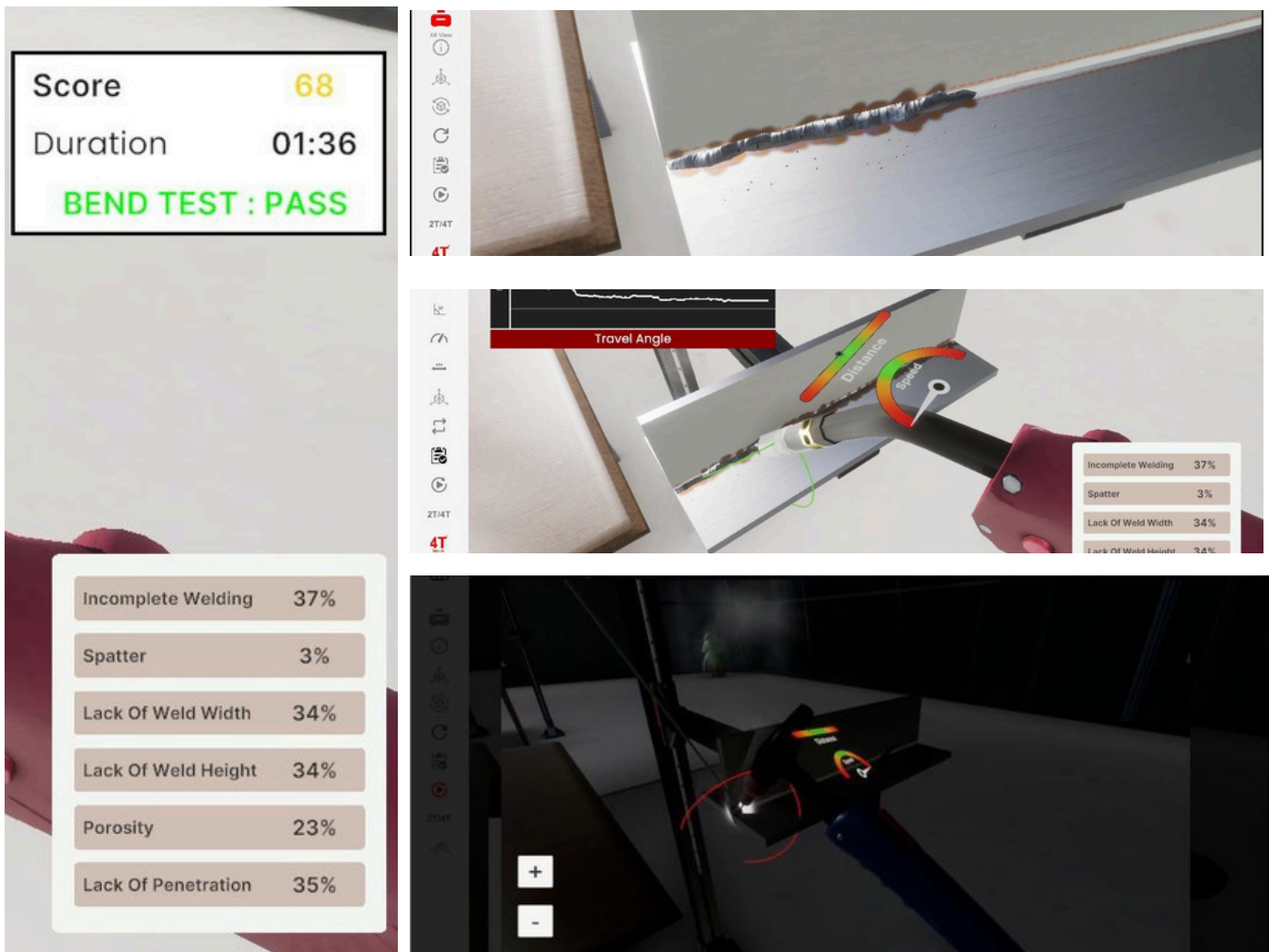
- Minimum 5 days of operator training and instructor orientation, including system calibration

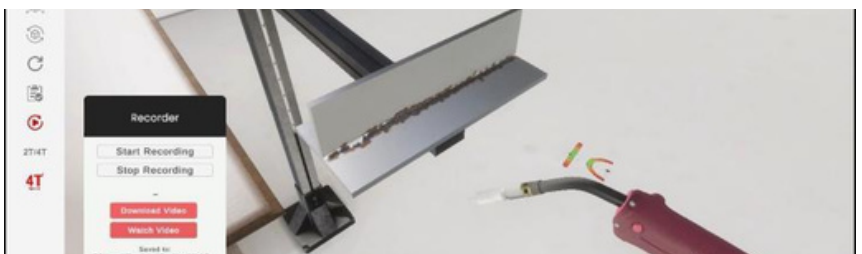
Documentation

- Training manuals and user manuals included with each simulator

Warranty & Software Support

- One-year limited warranty with extended warranty option; software support and updates during warranty period





Advanced Virtual Welding Training & Dual-Operator Simulation Solutions

Corporate Headquarters

QUAKELOGIC INC.
2008 Opportunity Dr. Suite 130
Roseville, CA 95678, USA

Executive Support Line

+1 (916) 899-0391

Direct support for VR welding simulators, dual-user welding training systems, and industrial welding education applications.

Available Monday - Friday, 9 AM - 5 PM PST

Strategic Inquiries

sales@quakelogic.net

For VR welding simulators, welding education laboratories, vocational training centers, and industrial welding training applications.

Our Commitment to Advanced Welding Training Solutions

Immersive VR Welding Training

Delivering immersive and repeatable virtual welding practice with realistic welding physics, scoring systems, and industrial process simulation.

Dual-Operator Training Performance

Providing simultaneous dual-user welding exercises with independent training parameters, real-time tracking, and performance evaluation tools.

Dedicated Training & Technical Support

Ensuring reliable operation with installation assistance, instructor orientation, calibration guidance, software support, and operator training services..

Scan to Explore VR Welding Training & Simulation Solutions



Explore Dual-User Welding Simulation Capabilities and Industrial Training Applications

Discover how the QL-Dual User Welding Simulator enhances welding skills, classroom efficiency, operator performance, and industrial training capabilities.

www.quakelogic.net