



QL - 3in1 Heavy Equipment Simulator

HEAVY EQUIPMENT SIMULATOR



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The QL 3 3in1 Heavy Equipment Simulator is a full-service, motion-enabled training system designed to deliver highly realistic and immersive operator training for multiple types of heavy construction equipment on a single physical simulator platform. This integrated multi-equipment training system enables trainees to safely develop operational skills across different equipment types using configurable controls, advanced motion feedback, and real-world simulation scenarios without the risks, costs, or logistical challenges associated with live equipment training.

The simulator is engineered for intensive institutional and professional training environments, including workforce development centers, vocational programs, and technical training facilities. By combining cutting-edge technology with practical training applications, the QL 3 3in1 provides a comprehensive solution that bridges the gap between classroom learning and real-world operation, ensuring trainees gain the confidence and competence needed for professional heavy equipment operation.



Supported Equipment & Motion System

The QL 3 3in1 Simulator provides a comprehensive training experience for various heavy equipment operations, combining versatile equipment configuration with a highly realistic motion system.

Excavation Training

Realistic digging, lifting, and material handling operations with authentic control response.

Dozing Operations

Pushing, grading, and earth-moving exercises with dynamic terrain interaction.

Loading Functions

Material transport and placement training with precision control development.

Equipment Configuration

The QL 3 3in1 Simulator supports multiple heavy equipment types within one integrated system, allowing rapid switching between machine configurations without changing the physical simulator platform. Equipment type selection is entirely software-based, providing maximum flexibility and training efficiency.

- Hydraulic Excavator
- Bulldozer
- Track Loader

Motion & Feedback

The advanced 3-axis motion system (3-DOF) delivers realistic physical feedback that dynamically adapts to the selected equipment and operating conditions, creating an immersive training experience that closely mirrors real-world operation.

- Pitch, Roll, and Vibration
- Haptic force feedback for controls
- Realistic resistance during operations

Cabin Design & Visual System

- The QL 3 3in1 features a full-scale operator cabin designed to replicate real machine ergonomics with an industrial steel structure and safety-focused design. The cabin provides an authentic operating environment that prepares trainees for the physical and spatial demands of actual equipment operation. Configurable controls match each equipment type, including an adjustable padded operator seat, functional joysticks, steering wheel and control levers, foot pedals, and a complete instrument panel with accessory switches. Emergency stop and safety interlocks are integrated throughout the system to ensure maximum trainee protection.

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Panoramic Visual Display

- Minimum three 40-inch class flat-screen displays provide a comprehensive panoramic field of view for full situational awareness. High definition synchronized rendering creates realistic depth perception and spatial awareness essential for safe equipment operation.

2

Realistic Control Interface

- Industrial-grade controls replicate the exact feel and response of real heavy equipment, allowing trainees to develop muscle memory and control precision that transfers directly to actual machine operation in the field.

3

Safety-First Design

- Comprehensive safety features including emergency stops, safety interlocks, and ergonomic design ensure that training can be conducted with complete confidence in trainee protection throughout all exercises.

- The visual system's multi-camera viewpoints include operator cab view, external views, and overhead and panoramic perspectives, giving trainees the ability to understand equipment positioning and surroundings from multiple angles4a critical skill for safe and effective heavy equipment operation.

Comprehensive Simulation Software

- The simulation software provides an extensive range of operational scenarios and training exercises designed to develop complete operator competency. Trainees experience realistic excavation and earth moving, trenching and backfilling, loading and unloading, lifting and material handling, grading and leveling, and equipment maneuvering and positioning across multiple environment types. Each scenario is carefully crafted to present authentic challenges and decision-making opportunities that operators will encounter in professional settings.

Diverse Operating Environments

Train in urban, suburban, rural, highway, agricultural, and construction scenarios that mirror real-world conditions

Safety & Compliance

Pre-operation inspections, hazard recognition, fault scenarios, and safe operating practices integrated throughout.

Practical Training Exercises

Excavation, trenching, loading, lifting, grading, and equipment maneuvering exercises build comprehensive skills.

Instructor & Assessment Tools

- The dedicated instructor workstation provides comprehensive oversight and evaluation capabilities. Instructors can monitor trainee activity in real-time, conduct performance evaluation and scoring, record and playback training sessions, provide student feedback and track progress, and configure training scenarios with adjustable difficulty levels. The integrated curriculum includes theoretical and practical learning modules, pre operation equipment inspection training, performance-based assessments, and feedback mechanisms for continuous improvement4all included with a perpetual curriculum license with no recurring fees

System Performance & Technical Capabilities

- The QL 3 3in1 Simulator is engineered for stable continuous operation during extended training sessions, utilizing an optimized real-time physics and graphics engine that delivers consistent, high-quality performance. The system's multi-camera viewpoint capabilities provide trainees with operator cab view, external views, and overhead and panoramic perspectives, enabling comprehensive spatial awareness development and equipment positioning skills that are essential for professional operation.

Professional Installation

On-site installation, commissioning, system calibration, and comprehensive testing upon delivery.

Staff Training

Train-the-Trainer instruction ensures your staff can effectively operate and maintain the system.

Documentation

Complete user and maintenance documentation provided for ongoing reference and support.

Ongoing Support

Technical support and maintenance services available to ensure continuous operation.

Offline Operation

- Fully functional offline operation with no internet connection required during use. Software updates can be installed locally within secure facilities, making the system ideal for environments with restricted or no network access.

Local Updates

- Software updates and enhancements can be deployed locally without requiring external network connectivity, ensuring security and operational continuity in controlled environments.

Secure Environment

- Designed specifically for facilities requiring network isolation while maintaining full training functionality and system performance without compromise.

Warranty, Applications & Key Benefits

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| <p>Years Total Warranty One year standard warranty plus two year extended warranty covering hardware, motion system, and simulation software with on site support included.</p> | <p>Professional Competency Prepare trainees for certification and professional operation with comprehensive skill development.</p> | <p>Cost-Effective Training Significantly reduce fuel, maintenance, and equipment costs compared to traditional training methods.</p> |
| <p>Equipment Types Single simulator platform trains operators on excavator, bulldozer, and track loader configurations.</p> | <p>Safe Learning Environment Eliminate risks associated with live equipment training while building real-world skills.</p> | <p>Platform Solution Integrated multi-equipment training system eliminates the need for separate simulators for each equipment type.</p> |

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| <p>Typical Applications</p> <ul style="list-style-type: none"> • Heavy equipment operator training • Workforce development programs • Technical and vocational education • Professional certification preparation • Risk-free skills development and assessment | <p>Key Benefits</p> <ul style="list-style-type: none"> • Single simulator for multiple equipment types • Reduced training costs vs. live equipment • Enhanced safety for trainees and instructors • Consistent, repeatable training scenarios • Scalable institutional training solution |
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- The QL 3 3in1 Heavy Equipment Simulator represents a comprehensive, cost-effective, and scalable solution for institutions committed to delivering world-class heavy equipment operator training. By combining advanced technology, realistic simulation, and flexible configuration in a single platform, the system provides an unmatched training experience that prepares operators for successful careers in the construction and heavy equipment industries.

Transforming Training Operations with QuakeLogic Excellence

As the definitive industry leader, QuakeLogic empowers organizations to elevate their operational capabilities and achieve unparalleled training efficacy through our cutting-edge simulation technology

Connect with QuakeLogic: Your Gateway to Innovation

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