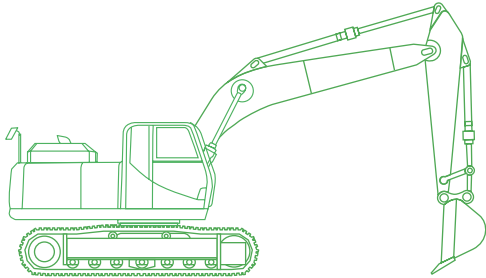


# Excavator Training Pack



## Simulated Equipment Specs

### Hydraulic excavator:

21 t (23 US t)

Engine: 119 kW / 160 hp

Swing speed: 13.3 RPM

### Long carriage

Heavy-duty bucket

Halogen working lights

ISO and SAE Joystick Controls

## Overview /

CM Labs' Excavator Simulator Training Pack immerses trainees in a virtual environment that promotes rapid skills acquisition — from excavating and trenching, to trailer loading, safety corridor management, and more. By training operators in this virtual world, organisations will see reduced wear and tear on their equipment, while simultaneously reducing risks to trainees and other personnel.

## Key features & benefits /

The Excavator Simulator Training Pack focuses on the three training pillars of safety, technique, and efficiency. While it automatically detects safety violations — including contacts with power lines or people, hazardous load trajectories, and turnovers — it also captures objective scores to indicate technical proficiency, including completion time, movement efficiency and accuracy, bucket efficiency, and more.

### A progressive learning program

covering standard excavator duties such as trenching, bench loading, and load handling in a realistic worksite.

### Performance metrics and reporting

that show trainees how to safely handle equipment and perform efficient excavation operations.

### Best-of-class simulation

that ensures real skills development and learning opportunities that are not available on the real machine.



## Best-in-class simulation provides real learning benefits

The Excavator Simulator Training Pack's high-quality visuals include CM Labs' hallmark machine and work site realism, along with the most advanced earth-moving simulation in the industry. The award-winning soil graphics are the result of decades of academic research, resulting in an engaging learning experience that translates directly into work site skills.

The training packs' advanced learning tools include a Grade Quality Sensor (GQS) overlay, which provides visual indications to operators as a reminder to maintain a safety corridor on both sides of the trench. The GQS can be activated at any time during the exercise. In addition to real-time feedback on excavation height, slope, and consistency, the GQS will also provide an overall excavation performance score to operators.

In addition, operators and instructors can change the time of day at any moment during exercises in order to practice for nighttime operations. They can also introduce inclement climate conditions, which can be difficult or impossible to recreate in a training yard.



## Supported Vortex Hardware Platforms

The Vortex Excavator Training Pack can be installed on any Vortex simulator hardware platform, with different configurations to meet your budget, space, and training requirements. Vortex simulators are built to last, designed for years of 24/7 operator training.

**Vortex Edge laptop-based instructional platform**

**Vortex Trainer portable single display trainer**

**Vortex Advantage with one, three, or five displays**

## Learning program

**The Excavator Training Pack features progressive learning exercises—from beginner to advanced—designed to progressively teach skills and build confidence:**

- ✓ Basic controls familiarization
- ✓ Swing, boom and stick control
- ✓ Loading and unloading from trailer
- ✓ Picking up and handling loads
- ✓ Pipe placement in trench
- ✓ Traveling and proper positioning
- ✓ Bench loading into a haul truck
- ✓ Trenching for foundation work

## Performance measurement

**The Excavator Training Pack gives trainers objective insight into performance and abilities. Trainers can measure performance metrics such as:**

- ✓ Completion time
- ✓ Movement efficiency and accuracy
- ✓ Pendulums and collisions
- ✓ Maximum shock loads
- ✓ Volume of material excavated per bucket load and in total
- ✓ Cycle Time
- ✓ Contacts with power lines, personnel, or vehicles

The optional student management system allows instructors to generate reports from excavator training sessions, and review current and past performance.



645 Wellington Street,  
Suite 301  
Montreal, Quebec,  
Canada H3C 1T2

info@cm-labs.com  
**cm-labs.com**  
T +1 514 287 1166

@vxsim  
youtube.com/vortexsim

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