Excavator Training Pack
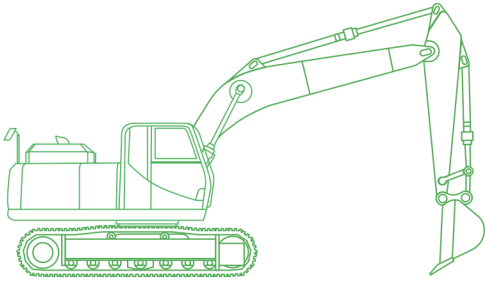

Simulated Equipment Specs /

Hydraulic excavator:
21 t (23 USt)

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 using Trimble® Earthworks Grade Control Platform.

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 Trimble® Earthworks Grade Control Platform which runs off a tablet that users can connect to the simulator. Visual aids are overlaid onto the existing ground along with cut/fill information, slope data and other customizable reference points to provide the user with a better understanding of the work that needs to be done.

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.
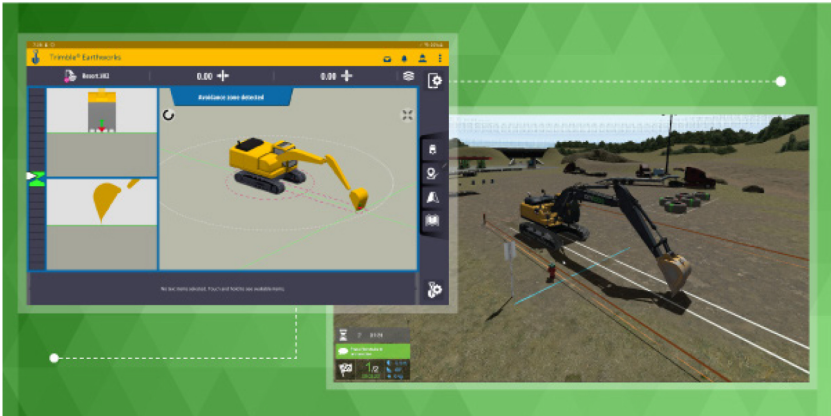
Supported CM Labs Hardware Platforms

The Excavator Training Pack can be installed on any CM Labs simulator hardware platform, with different configurations to meet your budget, space, and training requirements. CM Labs' 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 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
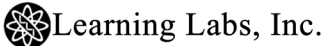✓ Trenching for foundation work

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 Instructor Operating Station allows trainers to generate reports and review current and past performance.