

An aerial, high-angle photograph of a yellow excavator with a black cab, working on a construction site. The excavator's arm is extended, and its bucket is digging into a pile of dark, rocky soil. The ground is uneven and covered with small stones and clumps of earth. The excavator's tracks are visible, and the overall scene is brightly lit, suggesting a sunny day.

Getting started with  
machine control  
for excavators





# Take the guesswork out of earthworks

Performing earthworks faster, more accurately and more profitably is critical to success in today's highly competitive construction industry.

Gain a competitive edge, streamline your operations and improve your bottom line with machine control from the company that invented machine control.

## Dig with confidence

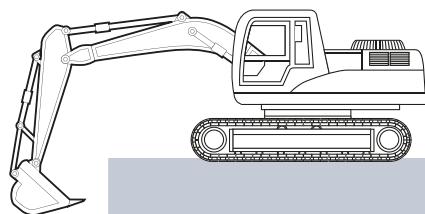
The Trimble® Earthworks grade control platform for excavators features state-of-the-art software and hardware to give operators of all skill levels the ability to work faster and more productively than ever before.





# Trimble Earthworks 2D grade control

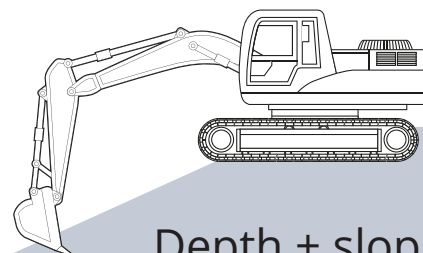
Trimble 2D grade control uses an angle sensor, dual axis sensor and optional laser catcher to measure the relationship between the body, boom, stick and bucket. This determines where the bucket teeth are and where they should be, to achieve the desired depth and slope.



## Depth

Excavate to a desired depth

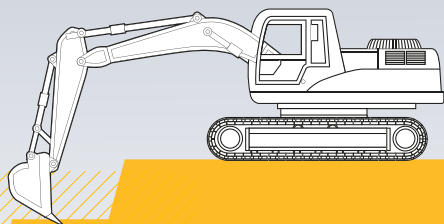
- Level pads
- Basements
- Building pads



## Depth + slope

Achieve desired depth and slope

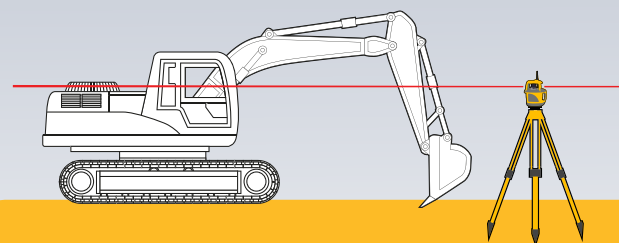
- Sloped surfaces
- Embankments
- Sports fields
- Berms and levees



## Profile

Excavate along a profile

- Trenching
- Foundations and footers
- Utilities



## Laser

Increase accuracy using an optional laser reference, easily upgrade to 3D

- Applications requiring high precision and accuracy



# Choose between two grade control systems — 2D or 3D — depending on the type of work that you're doing.

## 2D (bench, laser or sonic reference)

Ideal for earthmoving contractors looking to improve their excavation productivity and profitability.

Two-dimensional grade control systems allow operators to work off a single plane — whether it be flat, single or dual slope.

- Relative guidance to the cutting edge
- Lower cost and infrastructure investment

With Trimble 2D machine control, operators know the grade is correct from point A to point B to dig a straight-line trench and can expect a consistent grade on a vertical plane.

## In-field design

In-field design allows operators to create quick and straightforward designs directly from the cab.

For single or two-way sloping pads, work can begin in seconds without the need for office interaction, making it perfect for temporary projects. Operators can develop alignments and section profiles for various features, including drainage systems, roadways and retention ponds.

This tool is designed to accommodate both light commercial and residential foundations, offering support for options such as strip footings, waterfall footings and thickened edge slabs.



## 3D (GNSS reference)

Three-dimensional grade control systems allow operators to add variable distances, such as a curved line or a curved trench.

The excavator can be moved on the jobsite and still dig on grade.

- Absolute guidance to the cutting edge
- Higher cost and infrastructure investment, easier to use and scale





## Increased efficiency

Using Trimble Earthworks, operators can work more efficiently to deliver a product to grade. Avoid over-digging and eliminate the need for personnel to check grade, freeing them to do other work while the operator maintains an accurate grade. Jobsite safety is also improved with fewer people working near the machine.

### Common applications include:

- Residential and commercial sites
- Road construction
- Trenches, embankments and ditches
- Finished slope work
- Dredging and waterways

## Excavator automatics

With Trimble Earthworks, you can incorporate integrated aftermarket grade control automatics for excavators and tilt-rotator attachments. Excavators can work semi-automatically, allowing operators to create smooth, flat or sloped surfaces more easily.

### How it works:

1. The excavator is placed in autos mode
2. The operator controls the stick
3. Trimble Earthworks controls the boom and bucket
4. Stay on grade, reduce overcut and increase production

## Streamlined upgrades

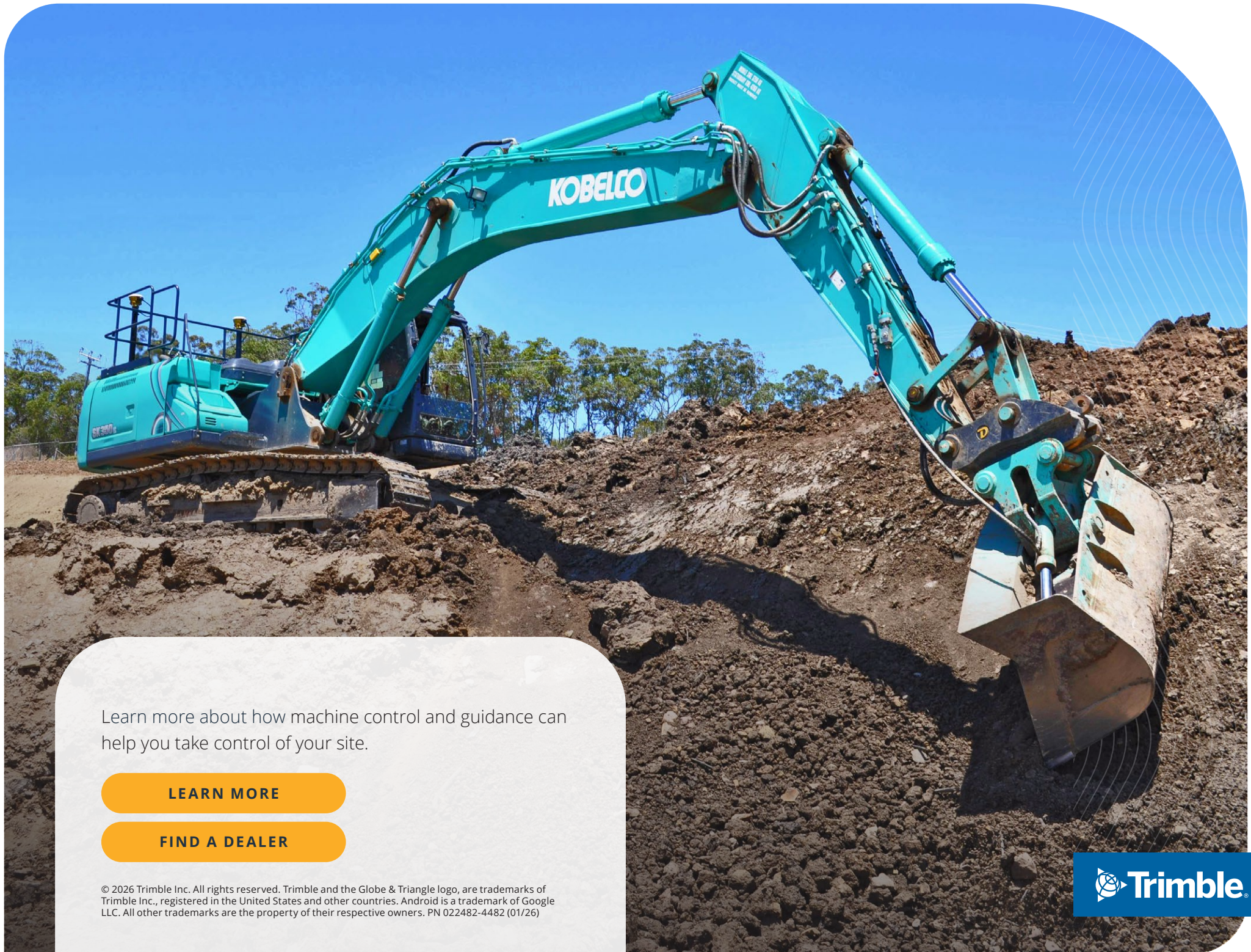
The Trimble Earthworks 2D grade control system offers the flexibility to easily upgrade to a 3D system. A 3D system can minimize rework, optimize data management, reduce costs and get the job done faster. It is especially beneficial for operators working on complex designs.

### Common 3D applications:

- Larger-scale drainage projects
- Highways and railways
- Airport runways and tarmacs
- Landfill management
- Underground utilities







Learn more about how machine control and guidance can help you take control of your site.

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