



# Machine Control

## FOR EXCAVATORS: GETTING STARTED GUIDE

### 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

Trimble® Earthworks Grade Control Platform is an innovative, next generation grade control platform from Trimble featuring intuitive, easy-to-learn software that runs on an Android™ operating system. State-of-the-art software and hardware give operators of all skill levels the ability to work faster and more productively than ever before.



#### Trimble Earthworks 2D Grade Control Platform

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.

### 2D vs. 3D

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

#### 2D (Bench or Laser Reference)

Ideal for earthmoving contractors looking to improve their excavation productivity and profitability, two-dimensional grade control systems allows operators to work off a single plane—whether it be flat, single or dual slope.

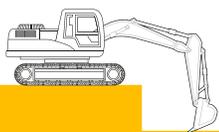
- ▶ Relative guidance to the cutting edge
- ▶ Lower cost and infrastructure investment

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.

#### 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.

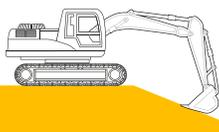
- ▶ Absolute guidance to the cutting edge
- ▶ Higher cost and infrastructure investment, easier to use and scale



#### DEPTH

Excavate to a desired depth

Level pads  
Basements  
Building pads



#### DEPTH+SLOPE

Achieve desired depth and slope

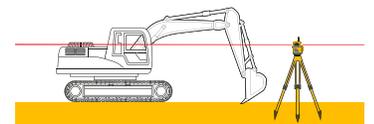
Sloped surfaces  
Embankments  
Sports fields  
Berms and levees



#### 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

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## 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 now take advantage of the first 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, for example:

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

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