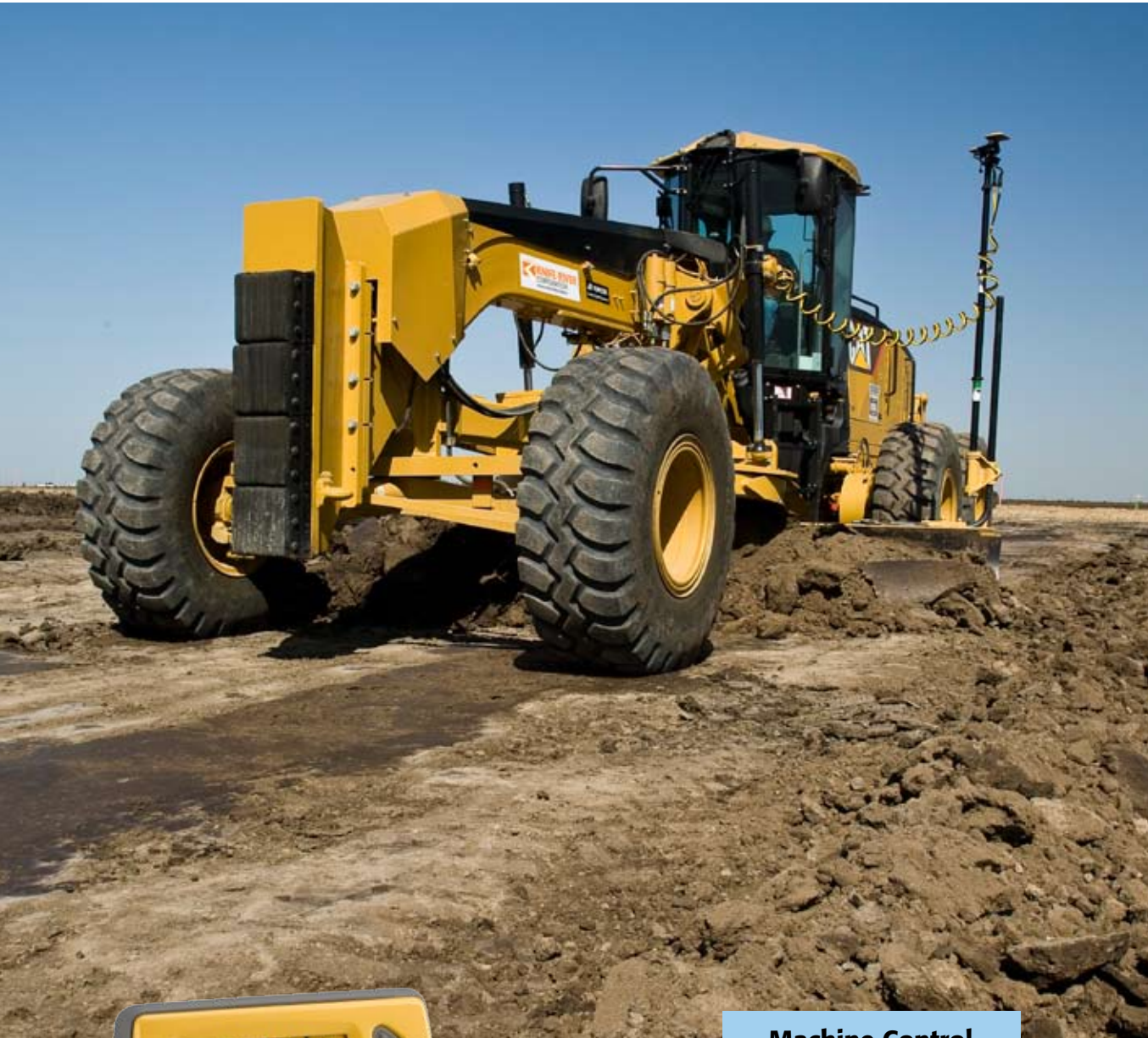


# 3D-MC

## Automatic Stakeless Grading



### Machine Control Systems For Use On:

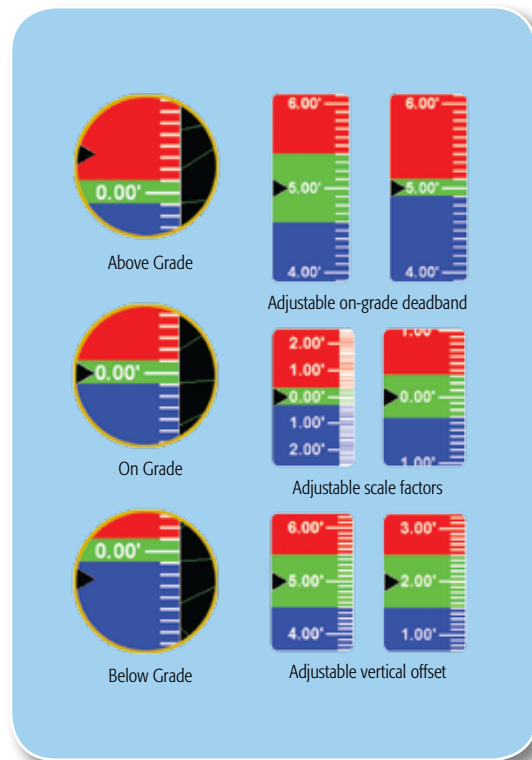
- DOZERS
- MOTORGRADERS
- EXCAVATORS
- SCRAPERS
- COMPACTORS



# 3Di-GPS+

**AFFORDABLE GPS INDICATE CONTROL**

3Di is a low cost indicate-only system ideal for bulk earthmoving machines such as dozers, scrapers and compactors. The color touch-screen control box displays where the machine is on the jobsite and cut or fill anywhere on the jobsite. Instead of traditional load counts or guessing at grades, with 3Di, you have control over all your jobs, insuring you move the material to the right place the first time. Want to make sure the project starts on time? Topcon's 3Di indicate GPS+ system can even be used for marking clearing limits, saving days waiting for a survey crew to make it to your jobsite.



## Features

- Real time cut/fill color map reduces push/haul lengths
- Simple, color coded "scrolling tape" cut/fill indicator provides instant grade info
- On-grade dead band and scale adjusts to match job tolerances
- Remote color selectable light bars for grade indication
- Multiple job views: plan, profile, cross sections

## Benefits

- Increase productivity significantly
- Low initial investment - easy upgrade path to fully automatic GPS+ system.
- Easy to use software for all your operators
- Less rework: material is moved only once
- Reduce staking on jobsite almost entirely

## For use on:

- Scrapers, Dozers, Compactors

## What is Stakeless Grading?

What's the greatest source of delay on your jobs? Placing, and replacing, stakes has been a necessary headache in construction, until now. GPS machine control combines two fantastic technologies, Satellite Positioning and Digital 3D models, so that your machine operators can see themselves moving on the site plan in real time, with cut/fill information constantly displayed anywhere. This gives them much more information than stakes can, and faster.

And now, one grade checker can work the whole site because the machines are independent. Everyone knows exactly where they are, and they have all the job information at their fingertips!

That's Stakeless Grading!



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# 3D-GPS+

## AUTOMATIC GRADE CONTROL SYSTEM

Since Topcon introduced the World's First fully automated 3D-GPS+ machine control system, grading has changed forever. For road building, site work, contour grading, or any other complex surface grading requirements, Topcon's 3D-GPS+ will put more money to your bottom line – where it counts. With the reality of nearly eliminating grade stakes, providing unmatched material control capability, and the simplest user interface in the industry, you are sure to integrate Topcon 3D technology successfully into your business.



We make sure the investment you make today will work for you in the future. Topcon's building block design allows you to add new sensors or technologies to your system such as mmGPS and Networks as they become available without having to buy a whole new system.

It's time to simplify grading and increase profits. It's time for Topcon 3D-GPS+.

### Features

- Rugged color touch-screen control box displays blade position and distance to design
- Real-time cut/fill mapping - move material only once
- Backwards compatible with existing Topcon MC systems
- Enter off-sets easily for cutting sub-grade

### Benefits

- Increase grading productivity significantly
- Reduce staking on jobsite almost entirely
- Control materials to your advantage
- Complete projects on time or ahead of schedule
- All jobs become easy to grade

### For use on:

- Dozers, Motor Graders, Compactors, Box Blades



## 3D-MC<sup>2</sup>

Topcon is dedicated to giving you the ultimate in performance and flexibility. Now Topcon brings you a game-changer: 3D-MC<sup>2</sup>.

A simple sensor upgrade to your fully automatic dozer, 3DMC<sup>2</sup> provides a grader-quality finish, at full speed! You have never seen a dozer run in automatic at this speed, and you've never seen the pristine finish it leaves behind. Cutting edge inertial technology augments our industry-leading GPS+ system to make you more competitive than ever. Get to grade faster and more accurately than ever, and do it with one machine. 3D-MC<sup>2</sup> is the future!



  
TOPCON



# Millimeter GPS

## A NEW DIMENSION OF PRECISION AND PRODUCTIVITY

Millimeter GPS+ transforms GPS into the perfect tool for blue-topping and other fine tolerance work. With Millimeter GPS+, the days of lost productivity, using stringlines or running manually off of hubs, are over.

Millimeter GPS+ combines the advantages of laser (multi-user & high vertical accuracy) with GPS (multi-user & 3D) into one versatile and easy to use system. This patented technology improves grading accuracy up to 300% over existing 3D-GPS machine systems.

Unlike any other laser technology, the PZL-1 transmitter sends out a wall of light 33' tall and up to 2000' in diameter. Simply add the PZS-MC machine control sensor or PZS-1 rover sensor to your existing GPS+ system, and watch your GPS vertical accuracy shrink down to numbers you never imagined before. Need more coverage? You can link up to four PZL-1 transmitters for a total of 8000' horizontally and 132' vertically. Unlike with total stations, multiple machines and man rovers run off one transmitter, there is no limit!



### Features

- Patented technology combines advantages of laser and GPS
- Large working range: up to 8000' horizontal & 136' vertical
- Works with existing Topcon GPS+ systems
- Control multiple machines and rovers at the same time
- Very user friendly

### For use on:

- Motor Graders, Dozers, Dirt Trimmers, Milling Machines, Asphalt Pavers

### Benefits

- Up to 300% more accurate than standard GPS
- Increased productivity - fewer passes needed to reach finish grade
- Lower investment - one system works for rough & finish grade
- Grade to tighter tolerances and eliminate high-cost material overruns
- Finish grade 24/7 even with minimal satellite coverage



## GPS + GLONASS + Galileo

Topcon was the first to offer the dramatic increase in performance of GPS+, our unique combination of both the American GPS system and the Russian GLONASS satellite system. Complex technology, but a simple result: unbeatable performance and uptime. Now, you don't need to sit idle waiting for enough satellites to be visible to your machines. You won't need to think about satellites hardly ever, because Topcon is making sure you get the performance you demand. And our new G3 technology reads not only all current satellites, but future systems as well, so that you can buy a system today and get cutting edge performance for years.

Only from Topcon.



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# LPS-900

## ROBOTIC BASED LOCAL POSITIONING GRADE AUTOMATION

GPS+ and MMGPS+ systems work extremely well when machines are capable of receiving GPS satellite signals, but what happens when the jobsite does not have visibility to open sky? Working between buildings or in heavy tree coverage can limit the performance of a 3D-GPS control machine. In these situations Topcon's LPS-900 (Local Positioning System) is the ideal system for guiding your machines.



Based on our popular 900/9000 robotic total station platform, the LPS-900 offers high accuracy position control over your entire site, to within a few millimeters. Topcon's new robotic total stations utilize the patented XTrak technology to track machines at speeds up to 35 MPH. Machine and blade position is updated 20 times per second, fast enough to meet the tightest jobsite specs. This speed and accuracy makes difficult and complex sites easy to grade.

Switching existing GPS+ systems to LPS-900 is simple. Put up the total station on a control point, place a 360° prism on the vibration pole and a RS-2 radio in the cab and you're ready to go to work. The robotic total station locates the 360° prism and sends the X, Y, Z position of the cutting edge to the machine via radio link. The operator can now work as before, but with very high accuracy. Obstructions to the sky no longer hinder your work or slow you down. Whatever the conditions are at the job, Topcon LPS-900 can help you get it done fast and accurately.

### Features

- Topcon Xtrak prism tracking technology
- 20Hz update rate
- Long range 2.4Ghz interference free radio communications
- GX-60 control box runs LPS, GPS and all 3D controls
- Visual graphic on display for acquiring lost beam

### Benefits

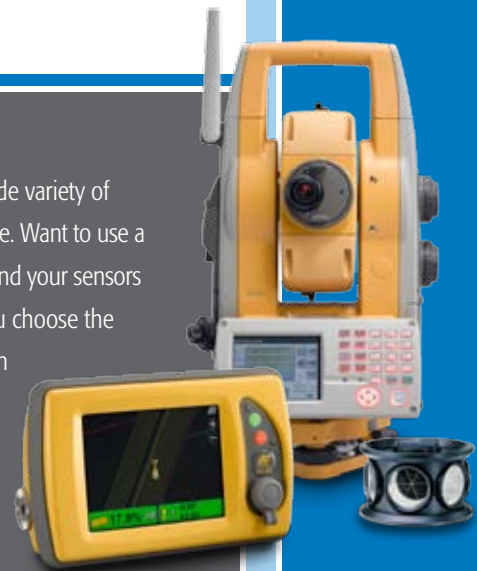
- Insures all your jobsites have 3D control 24/7
- High accuracy for tight tolerance projects
- Simple & fast conversion between LPS and GPS
- Same robot used with Pocket 3D as layout/grade checking tool

### For use on:

- Dozers and Motor Graders

## Sensor Freedom

Topcon has a long history of leadership in machine control. We build a wide variety of sensors, each of which has applications where it shines out as the best choice. Want to use a laser? A sonic system? Need the high accuracy of a total station? Want to blend your sensors on a single machine? Only Topcon allows what we call Sensor Freedom: you choose the sensor type(s) best suited to your application, plug them in to your Topcon machine control system, and off you go. Topcon's component-based system takes it all in stride, so you can too.



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# X63

## GPS+ MACHINE CONTROL FOR EXCAVATORS

It's time to experience GPS+ grade control on an excavator. Whether working in deep cuts, under water or on steep slopes, the X63 system will eliminate over-excavation and costly material overruns.

Excavating has never been easier or faster. The X63 uses 360° tilt sensors to track the motion of the bucket, and our state of the art GPS+ technology to provide precise position information. Our bright, color touch-screen control box displays bucket position in real time, providing the operator complete control. Select a variety of screen views from plan, profile, cross section or our popular cut/fill "scrolling tape" indicator. And the X63 system eliminates the need for a grade checker to constantly monitor cuts, increasing both safety and productivity.



The X63 can even keep your excavator productive when waiting for a 3D model or a change order to an existing one. Complex designs can be manually entered directly in the control box to allow complete flexibility in the field. Need to excavate utilities or footings? Simply connect the LS-B10W laser receiver and set up one of your existing lasers and you now have a constant benchmark anywhere you move on the site!

### Features

- Touch-screen control box displays real time bucket position
- Color coded Cut/Fill indicators for quick grade reference
- Operator selectable screen views: plan, profile, cross section and grade indicators
- X63 works in 3D and 2D mode - use in all jobsite applications
- Store up to six different bucket pre-sets
- Constant visibility of bucket orientation

### Benefits

- Eliminate over excavation and costly material overruns
- Dramatically increase productivity
- Improve crew safety
- Components compatible with your other Topcon systems
- Underwater & blind excavation no longer a problem

### For use on:

- Excavators and Trenchers

## Backwards Compatible / Completely Upgradeable

Only Topcon builds machine control for maximal compatibility and upgradeability. Your control box on one machine will plug directly into any other system you have installed, on any type or brand of machine. The same applies to most every other component in the Topcon system. If you want to move from an indicate system to full automatics, you can build upon existing components, saving you both money and time. No other system allows this kind of flexibility.



# Pocket 3D

## CONSTRUCTION GPS GRADE CHECKING & STAKE SYSTEM

Combine Topcon's GPS+ and Pocket 3D software to arm your crew with the perfect tool to take better control of all your construction jobsites. Pocket 3D will literally change the way you manage your sites. With this system, one grade checker can provide grade information to multiple machines over the entire jobsite, even moving job files directly from rover to machine. And if you choose to place stakes, you'll save valuable time and money doing it on your own. Pocket 3D can stake out any portion of the job and provide cut/fill anywhere.

With Topcon's Grade Management System, you can quickly verify bid quantities before any dirt is moved, measure stockpile volumes, or check job progress to keep you on schedule. Mount a Topcon GPS+ Pocket 3D system on a pickup or 4 wheeler and drive the site to easily create topo surfaces. Pocket 3D compares the topo surface to the finish design, or previous file, to give you instant cut & fill volumes. And say goodbye to manual tie-outs, because relocating manholes or water valves is a breeze.

From initial localization to final As-built, Topcon's Grade Management improves your workflow. Whether your projects are big or small, sitework or highways, Pocket 3D will make you more competitive by finishing jobs faster and more efficiently.

### Features

- Industry's easiest user interface
- Move files from Pocket 3D to 3D Machines
- Stakeout pads, roads/curbs, top and toe of slopes & daylight lines
- Topo surfaces and calculate quantities
- Compatible with all Topcon GPS+ and Robotic Systems

### Benefits

- Real time cut/fill info anywhere, not just at stakes
- Reduce survey costs by setting stakes/checking grade in-house
- Bid verification - estimate more accurately
- Rough stake a project for scrapers and dozers - start jobs faster
- Calculate quantities of dirt moved - get paid for work completed

### For use on:

- Topcon GPS and Robotic measurement systems



### Network Ready

Most users rely on their own base stations for the necessary correction signal that makes GPS+ so amazingly accurate. But pre-existing networks are spreading rapidly. If there's one in your area, you can dial in through your built-in cell modem, and spare the expense of purchasing and maintaining your own base station. Only Topcon machine control systems are designed to run from either base stations or network signals, so you have the freedom of choice.



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## The Leader in Positioning Technology...

Topcon offers positioning products that deliver unparalleled site-wide performance and integration. Topcon's history of technological advances and our reputation for superior reliability means there's no other company positioned to provide you with a better "Total Positioning Solution."

From inception to completion, Topcon and the 170+ distributors of our products throughout North and South America provide innovative technology and solutions to our customers. The competitive edge and increase of profit and productivity are paramount to the success of our customers. Helping to lower operational costs and enhance job safety are additional benefits to implementing Topcon technology.

Full positioning integration field-to-finish: That's the goal of Topcon. When it's time for you to step up to the next level, it's time to turn to Topcon.

## The Leader in Customer Satisfaction...

To ensure that your Topcon product maintains peak performance, your local Topcon dealer offers factory trained and certified service personnel. A nationwide network of factory authorized service centers, supports all Topcon products.



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