

## MOTOR GRADER mmGPS CONTROL



### Easy to use, flexible 3D control

- GPS + GLONASS coverage
- LazerZone technology for reliable heights
- mm level accuracy
- Accurate like total stations and flexible as GPS

## It's time.

Topcon's 3D motor grader mmGPS systems represent a giant leap in motor grader automation. Completely user-friendly, user definable and most advanced, they're flexible to apply to even the most difficult jobs. 3D mmGPS control featuring GPS and GLONASS dual constellation, LazerZone accuracy, intuitive software and smooth, consistent hydraulic response – fully exchangeable to Topcon's 2D laser control or 3DMC LPS total station control. 3D mmGPS forms the ultimate platform for complete automatic motor grader control.

The 3D mmGPS control system includes slope, rotation and mainfall sensors to measure the blade's slope, with the GPS+ equipment on board the blade's position as well as elevation. The LazerZone system will increase the accuracy of the elevation to laser level. Comparing the actual blade's position and slope to a pre-defined design model, complete automatic control is there to use in its most accurate and flexible form.

With 3D motor grader mmGPS control, you'll eliminate over cutting and control material usage saving you time and money. With these systems the operator is really in control. Slope, elevation, speed and efficient.

### Same reference, same software

3D mmGPS gives you the flexibility to use multiple machines and survey crews with the same reference using the same laser beam signal simultaneously. On top of this, all construction machinery using Topcon's 3D systems are interfaced with the same software. Excavators, motor graders, dozers, pavers and even survey crews, all work with the same user-friendly software.

## A combination of reliable, ruggedized components, unmatched innovation and performance.



### Graphical Display

- System 5 3D platform
- High resolution, touch screen
- Easy to view graphical information
- Smooth, consistent hydraulic response
- Internal memory



### GPS+ receiver

- GPS + GLONASS
- Up to 20 Hz
- Single or dual receiver
- Rugged housing



### mmGPS transmitter

- PZL-1 Laserzone transmitter
- 600 meter working range
- 10 meter vertical working zone
- Up to four transmitters; 2.4 km range



### mmGPS receiver

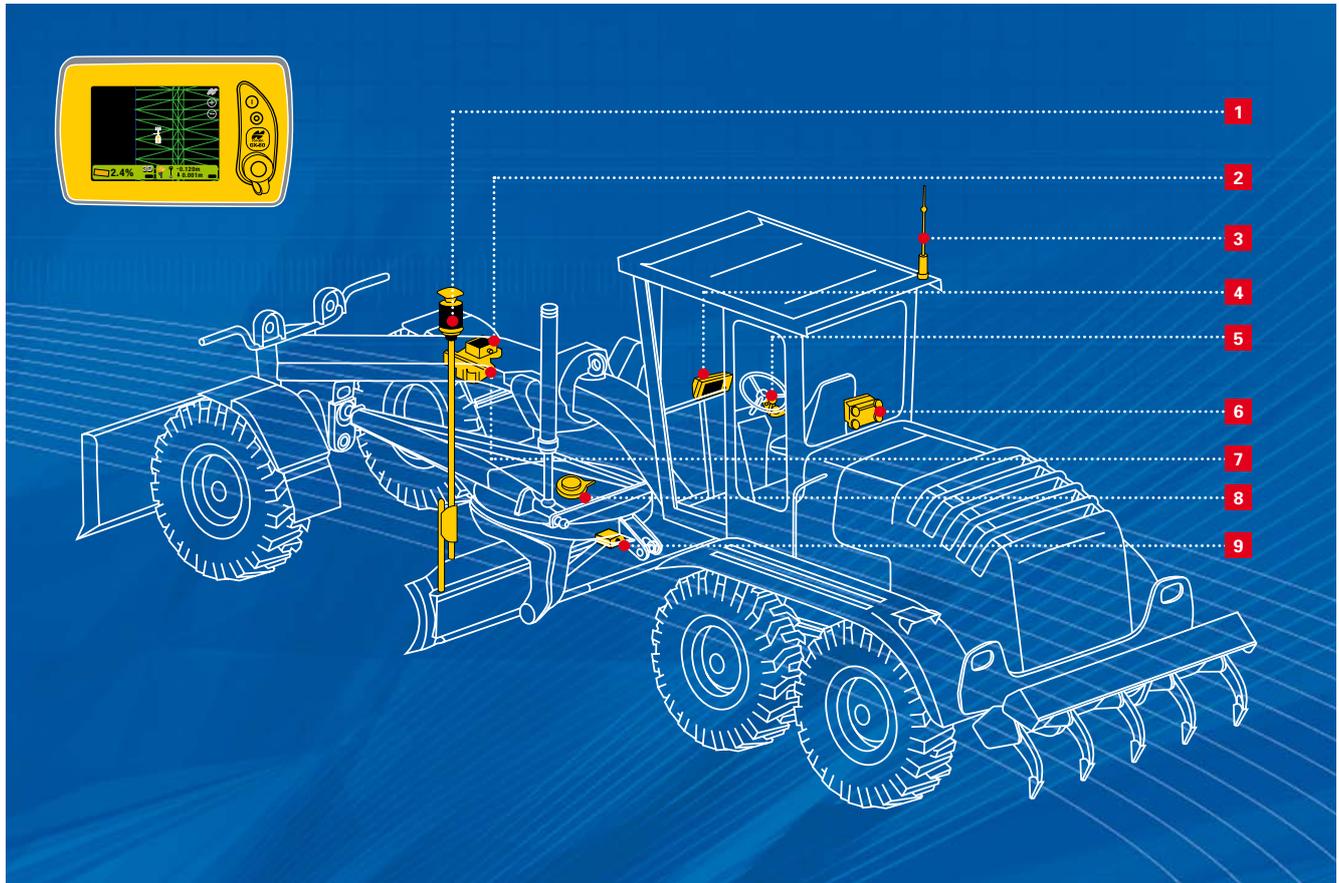
- PZS-MC Single mmGPS antenna
- Combined GPS and Laserzone receiver
- Detect up to four transmitters
- Earth-moving designed

### 3D mmGPS control – the system that grows as you grow

3D mmGPS control ties in with Topcon's 2D and 3D control systems. All Topcon machine control solutions are back and forth upgradeable. All motor grader control systems, laser – sonic – GPS+ – mmGPS – LPS, are part of a modular system. It's just a matter of swapping reference sensors.

## Topcon's mmGPS grader systems

Flexible, reliable, durable and easy to use. It's the most advanced indicate system, and everything you've come to expect from Topcon.



- |   |                            |                          |
|---|----------------------------|--------------------------|
| <b>1</b> GPS+ antenna plus mmGPS receiver | <b>4</b> Graphical Display | <b>7</b> Hydraulic valve |
| <b>2</b> Mainfall                         | <b>5</b> Automatic switch  | <b>8</b> Rotation sensor |
| <b>3</b> Radio antenna                    | <b>6</b> GPS+ receiver     | <b>9</b> Slope sensor    |



### mmGPS LaserZone transmitter

The LaserZone technology will give you mm accuracy. By setting up the LaserZone transmitter and sensor on the machine, you finish grade with all the benefits of GPS+ and the accuracy of a total station.

### GPS+ Base station

When using satellite control in real time, centimeter accuracies can be achieved. A GPS+ base station is set over a known point and corrections are calculated and transmitted to machinery. The base station can be located several kilometers away, so no line-of-sight is needed.



**It's time.**

**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 survey to inspection Topcon, through our dealer network, provides the innovative technology that gives surveyors, civil engineers, contractors, equipment owners and operators the competitive edge by addressing such critical issues as increasing profits, quality craftsmanship, improving productivity, lowering operating costs and enhancing job site safety.



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 instruments maintains peak performance, your local Topcon dealer offers factory trained and certified service technicians. If service isn't available in your area, our European Service Center offers a repair and return policy second to none.



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**Upgrade to 3D LPS control**

**When 3D mmGPS is not possible to use due to obstacles, upgrade your system to 3D LPS motor grader system.**

Experience the benefits of Topcon's standard robotic total station based LPS motor grader grade control. 3DMC LPS provides all the advantages of standard survey possibilities and accuracies with the superior performance and usability of Topcon's standard machine control.

LPS uses standard survey robotic total stations, so that either machine or surveyor can work with the same instrument.



Your local authorised Topcon distributor is:

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