TOPCON

3D-MC²

Twice the speed, twice the accuracy, over any 3D Machine Control Dozer

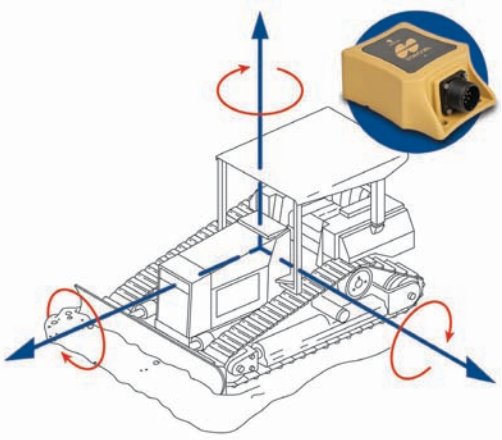
Shatter the final 3D automation production barrier - SPEED!

- Increase speeds up to 200% over existing 3D Systems
- Smoothness and grading accuracy comparable to Motorgraders
- Same easy-to-use interface as previous Topcon Machine automation systems
- Unmatched productivity that you will have to see to believe!

Shatter the Final 3D Automation Production Barrier - Speed
Traditional finish grading with a dozer took multiple passes at slower speeds. Existing 3D-GPS machine control allows operators to double their production. 3D-MC^2 uses revolutionary technology to reach an unbelievable new level of performance: four times faster than a standard dozer, two time faster than any 3D dozer! One dozer doing the work of two 3D dozers; think of the money you will save.

More Efficient Use of your Machine
3D-MC^2 will drastically change the role your dozer plays on a typical job site, in some cases it may even replace the need for a Motorgrader. It also means more efficient use of your dozer. Not only does speed increase, but fewer passes are needed, so much more work can be done in less time. That means less machine operating time translating in to less fuel, less wear on a machine and most importantly, more time that can be spent working in other areas or jobsites.

How it Works
3D-MC^2 utilizes our Topcon's GX-60 control box, GPS+ antenna, MC-R3 receiver and new MC^2 sensor and pairs them with advanced new controlling software to provide position updates up to 100 times per second. The MC^2 sensor combines a gyro, compass and inertial sensor to measure the X, Y & Z position as well as the roll, pitch, yaw and acceleration of the dozer. 3D-MC^2 is essentially using rocket science to provide the most stable and responsive control system possible.



Improved Operator Performance
3D-MC^2 is built on our same easy to use interface so your operators will have no problem putting it to work right away. As a matter of fact, with the advancements of 3D-MC^2 your less experienced operators will be able to compete with even your most skilled operators. More for less, what could be better!

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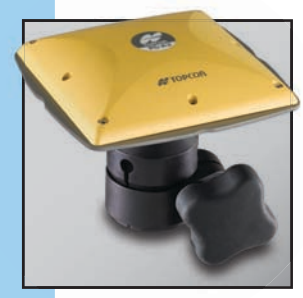
Topcon's 3D-MC^2 uses the same familiar component structure you're already used to.

GX-60 Box
- Windows XP OS
- Touch Screen Interface
- USB File Transfer
- Large 6" sunlight viewable color LCD



MC-G3
- G3 tracking technology
- Rugged housing design to work on any machine
- Lightweight

MC^2 Sensor
- Rugged housing for OEM and aftermarket installations
- 100Hz position update rate
- All electronic sensors for positioning calculations

MC-R3 GPS Receiver
- G3 Tracking technology
- Network capable receiver with GSM / CDMA
- UHF & Spread Spectrum radio options
- LED indicators for satellite tracking and controller status

Topcon's 3D-MC^2 technology allows dozers to maintain unprecedented smoothness at higher speeds, even while turning.

By incorporating Topcon's 3D-MC^2 sensor in place of the previous slope sensor, your dozer not only moves bulk material, it also cuts finished grade at speeds no one else can touch!

Radio Antenna

GX-60 Box

MC-A1 Antenna

Hydraulic Valve

MC-R3 GPS Receiver

MC^2 Sensor

The Topcon 3D-MC^2 Advantage

Fine grading with a dozer has been typically done in first gear. Not anymore. Now you can move more material at higher speeds and at a tighter accuracy with one machine. That's the Topcon advantage.

Conventional 3D System

New 3D-MC^2 System

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 dealers throughout the world provide 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 jobsite 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 laser maintains peak performance, your local Topcon dealer offers factory trained and certified service technicians. If service isn't available in your area, our factory offers a repair and return policy second to none.

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TOPCON
It's time.

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P/N: 7010-2015 Rev. c Printed in U.S.A. 9/09

Specifications	MC² Sensor	MC-R3 Controller
Electrical		
Supply Voltage	Power Input 9-32 VDC	10-30 VDC
Supply Current	Power Input 0.21 A Max at 12v 0.11 A Max at 24v	3A typical operating current 18.5A Max 3mA at 24V typical leakage current 1.5mA at 12V
Emissions	Applicable regulation: EN55022: 2006 30-230MHz 40.0dB (mV/m) Max at 10m 230-1000MHz 47.0dB (mV/m) Max at 10m	Applicable regulation: EN55022: 2006 30-230MHz 40.0dB (mV/m) Max at 10m 230-1000MHz 47.0dB (mV/m) Max at 10m
Immunity	Applicable regulation: EN55024: 1998 A1: 2001/A2: 2003 ESD: +/-8KV RF: 80-1000MHz 3 V/m Fast transient: +/-.5KV capacitively coupled RF common mode: 3V 150kHz to 8MHz (80% 1kHz AM)	Applicable regulation: EN55024: 1998 A1: 2001/A2: 2003 ESD: +/-8KV RF: 80-1000MHz 3 V/m Fast transient: +/-.5KV capacitively coupled RF common mode: 3V 150kHz to 8MHz (80% 1kHz AM)
Ports	1 ea. RS-232 (Rx Tx) for MC-R3 1 ea. CAN for Devices/ Machine interfaces 1 ea. PPS	1 ea. Topcon proprietary RS-485 port for sensors 1 ea. RS-232 dedicated port for Graphic Management Unit (GMU) 2 ea. RS-232 dedicated ports for Main and Aux GPS receivers 2 ea. RS-232 dedicated ports for mmGPS 1 ea. RS-232 dedicated port for external modem 2 ea. CAN ports 2 ea. Ethernet ports 1 ea. I²C port for Smart Knob™ 1 ea. SIM card (optional) - EDGE compatible
Housing	Powder coated cast aluminum, sealed with GORETEX vent	Powder-coated, cast aluminum
Connectors	1ea, 10 pins multipurpose I/O. Amphenol. ACS02E18-1PW-025 Receptacle 10-Pins Box Mount, Threaded	2 ea. DRC23-40P Deutsch high density connector, gold plated contacts, plastic housing, unique keyed 2 ea. Type N for GPS (optional) 1 ea. RP-TNC for radio (optional) 1 ea. TNC for LPS (optional)
Weight	2 lbs	7.5 lbs
Environmental		
Operating Temperature	-20°C to +60°C	-20°C to +60°C
Vibration Test	2-400HZ Sine Sweep 4G, 1 Oct/min, single sweep, each axis. 2-400HZ Sine Sweep 6G, 1 Oct/min, single sweep, each axis. 2-400HZ Sine Sweep 8G, 1 Oct/min, single sweep, each axis. 4-400 HZ Random 2.5Grms, 30 minutes, each axis. 4-400 HZ Random 5Grms, 30 minutes, each axis.	10-400Hz sweep 5G RMS
Shock test	Half-sine 11 ms 3 pulses each level -30g, -40g, -50g, each axis	50G 11ms 1/2 sine wave each axis

Your local Authorized Topcon dealer is: