



## Chicago White Metal Casting

High-Tech Al, Mg, & Zn Die Casting and  
Miniature 4-slide Zn & ZA-8 Die Cast Parts

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Topcon demanded ultra-ruggedness for its lightweight precision system

## “Rugged” specs for this next-generation GPS unit met by hi-tech die cast Mg

Project managers drew up housing specifications for their next generation satellite positioning system that would be as innovative as the revolutionary tracking technology inside. CWM high-tech hot-chamber Mg die casting delivered.

The G3 chip in Topcon's new GR-3 receiver system is a major breakthrough in satellite positioning technology. It not only tracks all

three of the world's current and planned satellite positioning systems, but supports all system modernizations being planned for the future.

Project managers at Topcon Positioning Systems wanted the GR-3 enclosure to be as advanced as the technology inside, including wireless operation via a Blue tooth connection.

### Specs: Ultra-Rugged but Lightweight

The housing wish list called for the strength and durability to take the punishment of any job site, including the inevitable drops to concrete. The ability to remain waterproof and dustproof would be taken for granted, as well as operating accurately at -40 to 140F (-40 to 60C).

And, as a portable unit, it should be as light in weight as possible.

Early in the design concept stage for this simple but internally complex housing the decision was made for a magnesium die cast unit, using a unique integrated I-beam configuration. The final result exceeded expectations: a lightweight, ultra-rugged innovative enclosure—matching the GR-3 tracking technology that eliminates replacement as new GPS signals come on line.

### Die Cast Mg Was the Clear Choice

The combination of high strength, light weight and the built-in EMI/RFI shielding characteristics of magnesium alloy made it the optimum choice for this advanced portable receiver.

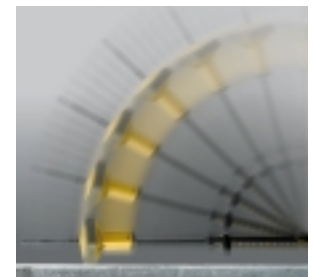
CWM high-technology hot-chamber magnesium die casting plus precision CNC machining was the cost-efficient volume production option to deliver the design configuration and complex internal features to final mating specifications.

The unit is produced to a cosmetic surface, as cast, with all external and internal design features plus required mounting bosses and ribbing. The 7 in. high (17.78 cm) I-beam die casting weighs 11.2 oz. (317.5 g).



The GR-3 magnesium enclosure, shown with its communication antenna, hot-swappable batteries and pole mount, is shock rated to survive 6.5 ft. pole drops to concrete.

After a conversion coating, it receives a fine textured powder coat finish to color match its nonmetal components, followed by pad printing.



CWM engineering guidance, skills and technologies can help assure your project's success. Call or email CWM.